

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 1

SUMMARY TABLES FOR NERC AND REGIONAL ENTITY

PROPOSED 2020 BUDGETS AND ASSESSMENTS

NERC Proposed Budget by Program

NERC Program	2019 Budget for Statutory Functions ¹	2020 Budget for Statutory Functions
Reliability Standards and Power Risk Issue Strategic Management	\$ 6,676,078	\$ 8,249,572
Compliance Assurance and Organization Registration and Certification	13,944,416	12,292,101
Compliance Enforcement	6,857,235	6,725,572
Reliability Assessment and Performance Analysis	13,232,197	13,122,303
Situation Awareness	4,296,209	4,256,006
Event Analysis	5,299,268	4,733,857
E-ISAC (including CRISP)	27,325,627	31,284,791
Personnel Certification and Continuing Education	1,043,763	1,738,288
Training and Education	1,179,862	1,014,986
Total Budget	\$ 79,854,655	\$ 83,417,476

¹Starting in 2020, NERC will no longer include workshop fees as a funding line item, but instead account for this income in meeting expenses as an offset to costs. As such, the 2019 budget has been restated accordingly for comparable reporting.

Proposed Budget for Statutory Activities of NERC, Each Regional Entity, and WIRAB

	2019 Budget for Statutory Functions	2020 Budget for Statutory Functions
NERC	\$ 79,854,655	\$ 83,417,475
FRCC	6,695,787	-
MRO	15,980,354	17,540,969
NPCC	15,803,891	16,601,647
ReliabilityFirst	22,648,458	23,650,862
SERC	18,144,948	24,525,013
Texas RE	13,069,599	13,831,126
WECC	26,950,566	27,756,089
WIRAB	1,162,700	1,255,200
Total Budget	\$ 200,310,958	\$ 208,578,381

Proposed Assessments for Statutory Activities NERC, Each Regional Entity, and WIRAB

	Assessments for Statutory Functions 2019	Allocation to Canada 2019	Assessments for Statutory Functions 2020	Allocation to Canada 2020	Allocation to Canada 2020 Budget v 2019 Budget Over (Under)	% Over (Under)
NERC	\$ 68,883,995	\$ 6,205,577	\$ 72,011,373	\$ 6,655,929	\$ 450,352	7.26%
Regional Entities	\$ 113,461,051	\$ 10,201,225	\$ 115,725,862	\$ 10,553,076	\$ 351,851	3.45%
FRCC	5,827,925	-	-	-		
MRO	15,471,669	1,557,423	16,983,251	1,680,541		
NPCC	15,003,411	5,834,155	15,338,737	5,763,048		
ReliabilityFirst	21,255,831	-	22,318,623	-		
SERC	17,372,215	-	22,459,123	-		
Texas RE	13,248,000	-	13,344,128	-		
WECC	25,282,000	2,809,647	25,282,000	3,109,487		
WIRAB	\$ 750,000	\$ 109,030	\$ 986,300	\$ 144,259	\$ 35,229	32.31%
Total Budget	\$ 183,095,046	\$ 16,515,832	\$ 188,723,535	\$ 17,353,264	\$ 837,433	5.07%

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 2

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

PROPOSED 2020 BUSINESS PLAN AND BUDGET

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

2020 Business Plan and Budget

Final

August 7, 2019

RELIABILITY | RESILIENCE | SECURITY



3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

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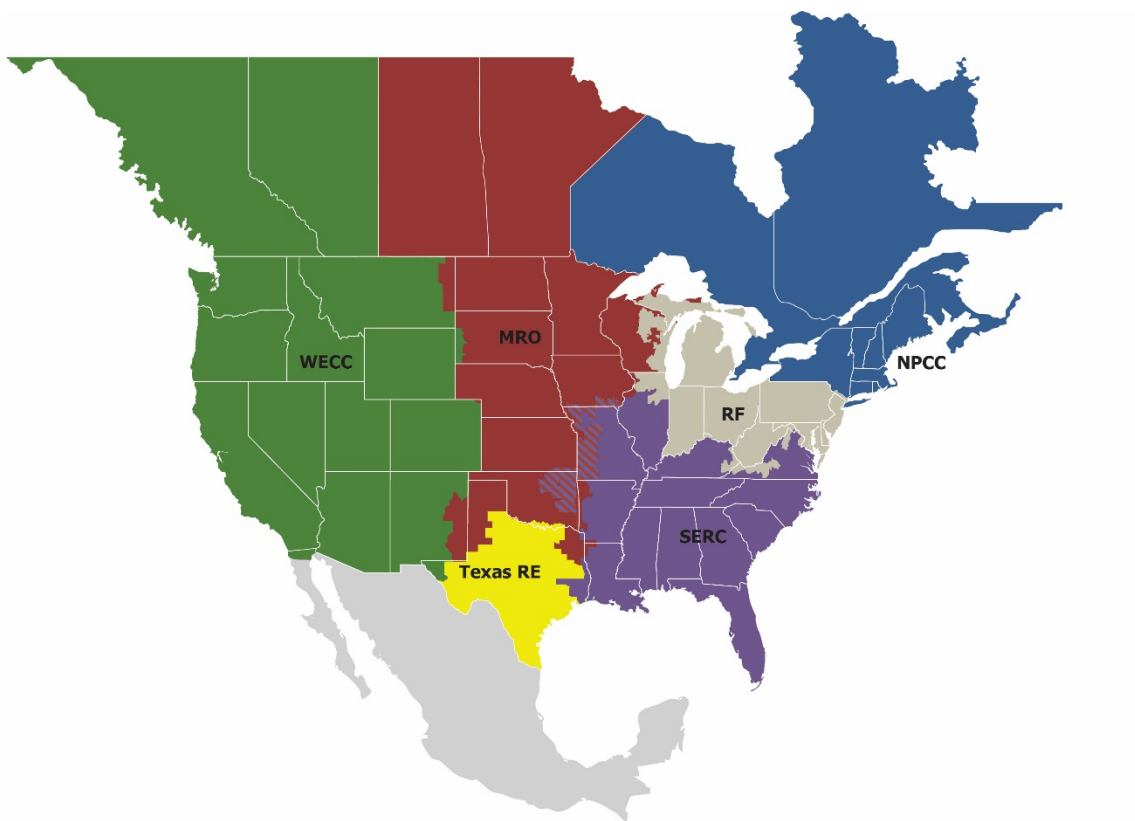
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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is divided into six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Region while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	Western Electricity Coordinating Council

About NERC

Overview

NERC is a not-for-profit entity organized under the New Jersey Nonprofit Corporation Act. NERC's area of responsibility spans the continental United States and portions of Canada and Mexico. Entities under NERC's jurisdiction are the users, owners, and operators of the BPS¹—a system that serves the needs of nearly 400 million people, includes installed electricity production capacity of approximately 1.1M megawatts, operates 469,842 circuit miles of high-voltage transmission (100 kV and above), and is comprised of assets worth more than one trillion dollars.

Electric Reliability Organization

The Federal Energy Regulatory Commission (FERC) certifies and has oversight of NERC as the ERO within the United States to establish and enforce NERC Reliability Standards for the U.S. portion of the BPS, pursuant to Section 215 of the Federal Power Act (FPA). As of June 18, 2007, FERC granted NERC the legal authority to enforce Reliability Standards with all U.S. users, owners, and operators of the BPS and made compliance with those standards mandatory and enforceable. Section 215 also requires that the organization certified by FERC as the ERO seek recognition with relevant authorities in Canada and Mexico. In 2005, the U.S. Department of Energy (DOE) and Canadian federal and provincial governments agreed to bilateral principles for a consistent, continent-wide reliability regulatory framework under a non-governmental institution (the ERO) designed to function on an international basis. To date, NERC has memoranda of understandings (MOUs) with eight Canadian provinces² and the National Energy Board of Canada in furtherance of this framework, and Mexico is in the process of implementing such a framework after a historic restructuring of Mexico's electricity industry and reforms of the country's regulatory framework were enacted in 2013 and 2014. NERC is working with the Mexican regulator, *Comisión Reguladora de Energía* (CRE) and the Mexican system and market operator, *CENACE*, under a MOU signed in 2017, to ensure that, as Mexico implements its new authorities, they will be consistent with the framework in Canada and the United States and support continent-wide reliability and security.

Membership and Governance

A 12-member Board, comprised of 11 independent trustees and NERC's president and chief executive officer (CEO) serving as the management trustee, governs NERC. The Board has formed several committees to facilitate oversight of the organization in the areas of finance and audit, governance and human resources, compliance, technology and security, nominations and enterprise-wide risk.

Membership in NERC is open to any person or entity that has an interest in the reliability of the North American BPS. Membership is voluntary and affords participants the opportunity to engage in the governance of the organization through election to the Member Representatives Committee (MRC).³ More than 500 entities and individuals are members of NERC. NERC, its members, and each applicable BPS owner, operator, and user must comply with the NERC [Rules of Procedure](#) (ROP).

¹ NERC's standards, compliance, and enforcement activities are focused on the [Bulk Electric System \(BES\)](#), which is comprised of certain BPS facilities.

² British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Nova Scotia.

³ The [MRC](#) comprises voting representatives elected from the 12 membership sectors. The MRC elects the independent trustees and, along with the Board, votes on amendments to the bylaws. The MRC also provides policy advice and recommendations to the Board on behalf of stakeholders with respect to annual budgets, business plans, and other matters pertinent to the purpose and operation of the organization.

Scope of Oversight

As the international, multijurisdictional ERO in North America, NERC:

- Proposes, supports the development of, monitors compliance with, and enforces mandatory Reliability Standards for the North American BES, subject to regulatory oversight and approvals from FERC in the United States and applicable authorities in Canada;
- Conducts near-term and long-term reliability assessments of the North American BPS;
- Certifies BPS operators as having and maintaining the necessary knowledge and skills to perform their reliability responsibilities;
- Maintains situational awareness of events and conditions that may threaten BPS reliability;
- Coordinates efforts to improve physical and cyber security for the BPS of North America;
- Conducts detailed analyses and investigations of system disturbances and unusual events as well as measuring ongoing system trends to determine root causes, uncovering lessons learned, and issuing relevant findings as advisories, recommendations, guidelines, and essential actions to the industry to mitigate and control risks to reliability; and
- Identifies and prioritizes risks to reliability and uses a broad toolkit to mitigate and control risks to reliability, including the potential need for new or modified Reliability Standards, improved compliance monitoring and enforcement methods, or other initiatives.

Delegated Authorities

In executing its responsibility, NERC delegates certain authorities to regional reliability entities (Regional Entities or the Regions) to perform aspects of the ERO functions described through delegation agreements. FERC has approved delegation agreements between NERC and the six Regional Entities. These agreements describe the authorities delegated and responsibilities assigned to the Regional Entities in the United States to address, among other things: (1) developing regional Reliability Standards; (2) monitoring compliance with and enforcement of Reliability Standards (both North American-wide and regional); (3) registering owners, operators, and users of the BES and certifying reliability entities (Reliability Coordinators [RCs], Balancing Authorities [BAs], and Transmission Operators [TOPs]); (4) assessing reliability and analyzing performance; (5) training and education; (6) event analysis and reliability improvement; and (7) situational awareness and infrastructure security. NERC expects Regional Entities whose territories and geographic footprints extend into Canadian provinces and Mexico to perform equivalent functions in those jurisdictions.

The Florida Reliability Coordinating Council (FRCC) has also performed certain reliability obligations under a delegation agreement with NERC. On February 27, 2019, NERC, jointly with FRCC and SERC, filed a petition with FERC for approvals needed to dissolve the FRCC Regional Entity (FRCC RE), including FRCC transferring the FRCC registered entities to the jurisdiction of SERC. FERC issued an order granting the requested approvals on April 30, 2019. Registered entities transferred to SERC's jurisdiction on July 1, 2019 and, under the current schedule, FRCC will wind down its regional entity operations by August 31, 2019.

ERO Enterprise Model and Transformation

The collective network of leadership, experience, skills, and technologies shared among NERC and the Regional Entities is referred to as the ERO Enterprise. The ERO Enterprise is a collaborative organization with distinct roles between NERC and the Regional Entities. The ERO Enterprise strives for consistency where necessary, but recognizes that each Regional Entity addresses reliability in unique ways based on its own challenges and stakeholder needs; the model enables innovative and distinctive approaches to address these unique reliability risks and challenges locally. As the ERO Enterprise continues to mature,

the organization is working on a transformation initiative to further leverage resources, enhance communication and collaboration, and ensure grid reliability. A set of declarations was established in 2019, marking a new commitment across the ERO Enterprise:

- The ERO Enterprise commits to work together as one team and honor each of our roles.
- The ERO Enterprise commits to listen, to actively support ERO Enterprise activities, and to eliminate unnecessary duplication of work.
- The ERO Enterprise commits to collaborate in developing clear and consistent guidance across the ERO Enterprise.
- The ERO Enterprise commits to be an information, knowledge, and resource sharing ERO Enterprise.
- The ERO Enterprise commits to develop and share harmonized messages across ERO Enterprise communications.
- The ERO Enterprise supports innovation and initiative and the sharing of best practices across the ERO Enterprise.

NERC has unique responsibilities to oversee program areas, set qualifications and expectations for the performance of delegated activities, and assess, train, and give feedback to corresponding Regional Entity programs. NERC and the Regional Entities also coordinate activities to identify, prioritize, and address risks to reliability. The Regional Entities have a mirrored set of responsibilities within the ERO Enterprise model, providing input into the overall development of each ERO program area, providing training and development to meet ERO qualifications, and ensuring delegated responsibilities are completed. Regional Entities also have an obligation to meet professional standards of independence and objectivity and provide the best available expertise for addressing regional risks.

NERC and the Regional Entities are continually refining their individual and collective operating and governance practices in support of strategic and operational goals and objectives that are designed to ensure the ERO fulfills its statutory obligations. This collaboration is done while acknowledging the unique differences across the regions, and the different corporate and governance responsibilities of each entity.

Statutory and Regulatory Background

NERC's authority as the ERO in the United States is based on FPA Section 215, as added by the Energy Policy Act of 2005,⁴ and FERC's regulations and orders issued pursuant to Section 215. In Canada, NERC's authorities are established by the memoranda of understanding and regulations previously mentioned.

Funding

FPA Section 215 and FERC's regulations specify procedures for NERC's funding in the United States. NERC's annual business plan and budget (BP&B) is subject to FERC approval in the United States and, once approved, NERC's annual funding is provided primarily through assessments to load-serving entities. These assessments are allocated on a net-energy-for-load (NEL) basis. Equivalent funding mechanisms are provided in Canada, subject to the specific laws and regulations of each province. The Regional Entities' funding requirements are addressed separately in their respective BP&Bs, which must be reviewed and approved by NERC and FERC. The U.S. assessments for the Regional Entity budgets are included in the overall NERC assessments to load-serving entities.

⁴ Section 215 of the FPA, 16 United States C. 824o.

Introduction and Executive Summary

TOTAL RESOURCES (in whole dollars)				
	2020 Budget	U.S.	Canada	Mexico
Statutory FTEs	213.38			
Non-statutory FTEs	-			
Total FTEs	213.38			
Statutory Expenses	\$ 78,711,127			
Non-Statutory Expenses	\$ -			
Total Expenses	\$ 78,711,127			
Statutory Fixed Asset Additions	\$ 4,706,349			
Non-Statutory Fixed Asset Additions	\$ -			
Total Fixed Asset Additions	\$ 4,706,349			
Statutory Funding of Reserves	\$ (650,083)			
Non-Statutory Funding of Reserves	\$ -			
Total Working Capital Requirement	\$ (650,083)			
Net Proceeds from Financing Activities	\$ (760,442)			
Total Statutory Funding Requirement	\$ 82,006,951			
Total Non-Statutory Funding Requirement	\$ -			
Total Funding Requirement	\$ 82,006,951			
	TOTAL	US	CANADA	MEXICO
Statutory Funding Assessments	\$ 72,011,373	\$ 65,130,829	\$ 6,655,929	\$ 224,615
Non-Statutory Fees	\$ -	\$ -	\$ -	\$ -
NEL	4,590,769,783	4,066,914,561	509,829,755	14,025,467
NEL%	100.00%	88.59%	11.11%	0.31%

Strategic and Operational Planning

ERO Enterprise strategic and operational planning involves multiple steps and processes:

- **Reliability Issues Steering Committee (RISC)** – The RISC holds a biennial Reliability Leadership Summit to review and discuss new and emerging risks to the BPS. Resulting from this summit is the *ERO Reliability Risk Priorities* report (RISC report) that provides a summary of these BPS risks.
- **ERO Enterprise Long-Term Strategy** – The long-term strategy discusses key challenges and strategic focus areas for the ERO Enterprise over the next five to seven years. The long-term strategy is reviewed on a periodic basis to identify any needed adjustments. The RISC report, among other sources, is used to gauge the need for updates to the long-term strategy.
- **ERO Enterprise BP&Bs** – The ERO Enterprise is transitioning away from the use of the *ERO Enterprise Operating Plan* by replacing it through updates to the *ERO Enterprise Long-Term Strategy* and additional information in the BP&Bs. The narratives in each BP&B set the specific annual activities, resources, and resource allocation in support of ERO Enterprise operations. The BP&Bs are prepared, reviewed, and approved annually for NERC and each of the Regional Entities.
- **ERO Work Plan Priorities** – NERC and each Regional Entity may create annual work plan priorities that summarize the most critical goals and objectives for the year. In many cases, these work plan priorities are also used for individual, departmental, and company performance measurement.⁵

Reliability Risks and the RISC Report

The most recent Reliability Leadership Summit, which is sponsored by the RISC, was held on March 14, 2019. The purpose of the summit was to bring industry leaders together to coordinate and agree on critical risks to the BPS. A key message from the summit is that risks to the BPS have generally remained the same from the previous summit with only one new risk identified: Critical Infrastructure Interdependencies. After the summit, an Emerging Risks Survey was distributed to various organizations and stakeholders to rank the risks in terms of likelihood and impact. The risks are as follows:

- Cyber Security Vulnerabilities
- Critical Infrastructure Interdependencies
- Changing Resource Mix
- Extreme Natural Events
- Physical Security Vulnerabilities
- Protection System Complexity
- Human Performance and Skilled Workforce
- Loss of Situational Awareness
- Resource Adequacy and Performance
- Bulk Power System Planning

These risks are continuing to be reviewed by the RISC in preparation for an updated RISC report later in 2019. The long-term strategy will also be updated later in 2019 to reflect certain items previously in the operating plan and to ensure alignment with the above risks and associated criticality.

⁵ [ERO Work Plan Priorities](#) for 2019 were approved by the Board in February 2019. NERC management and the Board will evaluate annual work plan priorities each year.

ERO Enterprise Operating Plan and Goals

While the organization is transitioning away from the existing *ERO Enterprise Operating Plan*, the goals of the operating plan are still relevant to much of the work being performed across the ERO Enterprise. In many cases, NERC and the Regional Entities will discuss departmental goals that align with the operating plan during this transition period. The following goals are in the last version of the operating plan and will be incorporated into the *ERO Enterprise Long-Term Strategy* and/or each entity's BP&B going forward.

- Risk-Responsive Reliability Standards
- Objective, Risk-Informed Compliance Monitoring, Mitigation, Enforcement, and Entity Registration
- Reduction of Known Reliability Risks
- Identification and Assessment of Emerging Reliability Risks
- Identification and Reduction of Cyber and Physical Security Risks
- Effective and Efficient Operations

Ongoing Focus on Effectiveness and Efficiency

NERC and the Regional Entities continue to collaborate to improve effectiveness and efficiency, evaluate resources, and leverage combined skillsets to improve ERO Enterprise activities and control costs. This collaboration and resulting efficiencies can be found in a number of areas. In 2019, the near-term focus was on the following:

- **Stakeholder Engagement** – As the ERO Enterprise has matured, a future state of stakeholder engagement is needed to (1) pivot quickly and refocus resources rapidly; (2) bring multi-disciplined teams together to develop complete solutions; (3) leverage scarce talent to solve problems and maximize return; and (4) work collaboratively to solve problems. A Stakeholder Engagement Team has been formed to review the existing NERC technical committee structure, drawing upon the experience of successfully enhanced Regional Entity committee models, and develop recommendations to improve the effectiveness and efficiency of the committees.
- **Compliance Monitoring and Enforcement Program (CMEP)** – NERC and the Regional Entities are concentrating on the following areas: (1) efficiency in data gathering and analysis tools, especially through the implementation of the Align application; (2) continued implementation of risk-based compliance monitoring; (3) outreach and education describing how the ERO Enterprise executes its compliance monitoring responsibilities; and (4) identifying ways to further streamline the resolution of minimal risk noncompliance. For more information on Align, see the [Align Project](#) page on the NERC website.
- **Standards Efficiency** – NERC is continuing the project to evaluate NERC Reliability Standards using a risk-based approach to identify potential efficiencies through retirement or modification of Reliability Standard Requirements. For more information, see the [Standards Efficiency Review](#) page on the NERC website.

Additional information on long-term and ongoing effectiveness and efficiency goals can be found in the *ERO Enterprise Long-Term Strategy*.

2020 Business Plan and Budget Summary

NERC and the Regional Entities use the planning processes discussed above to guide the development of their respective BP&Bs, evaluating their projected workloads and determining resource levels and allocation required to complete necessary tasks and meet their statutory obligations. In this BP&B document, *Exhibit A – Application of NERC Section 215 Criteria*, summarizes the major activities NERC proposes to undertake in 2020 and the approved FPA Section 215 criteria applicable to such activities.⁶

Budget Reporting Format and Presentation Changes

NERC and the Regional Entities' budgets are comprised of both operating and fixed asset (capital) costs. Operating costs generally include personnel, contractor support, consulting, meetings and travel, office space, software licensing, communications, and other customary services to support office operations. Fixed asset costs primarily reflect investments in equipment and software to support operations, including investments in the development of software applications and infrastructure to facilitate improved business processes and efficiency. These operating and fixed asset costs, as well as corresponding funding, are shown in a Statement of Activities and Fixed Asset Expenditures report, which is provided at both the total entity and departmental levels. These reports include funding and expenses for the current budget year and prior budget year to show year-over-year changes.

Workshop and Event Fees

Starting with its 2020 budget, NERC will no longer include workshop or event fees as a revenue funding line item, but instead account for this income in meeting expenses as an offset to costs. This supports the goal of providing a total budget amount (and annual budget percentage increase) that more closely reflects the amount of annual revenues required from assessments. In this 2020 BP&B, the 2019 workshop funding line has been removed and meeting expenses have been restated for comparable reporting.

Organizational Changes

In late 2018, NERC management went through an organizational assessment involving various program areas and re-characterized several positions and departments. The changes had no effect on the total full-time equivalents (FTEs), and the net cost impact of these movements was immaterial; however, the changes affect 2020 versus 2019 budget comparisons at the departmental level for several areas. Therefore, certain departmental budget reports have been consolidated for more comparable reporting.

Continuing Education Program

The expenses for program activities and funding from testing fees for the System Operator Certification program, which is addressed by ROP Section 600 and governed by the Personnel Certification and Governance Committee (PCGC), are budgeted to NERC's Personnel Certification department. The Continuing Education (CE) program for System Operators, addressed by ROP Section 902, has historically not been governed by the PCGC, and the associated program activities and testing fee funding has been budgeted to NERC's Training and Education department. In 2019, as part of the effectiveness and efficiency efforts to evaluate NERC's committee structure discussed above, NERC and members of the Stakeholder Engagement Team evaluated and are proposing, subject to Board and FERC approval, to move the governance of the CE program and budget to the PCGC (which may require amendments to the NERC Bylaws and ROP). As a result, the 2020 budget reflects the anticipated move of CE program expenses and funding from the Training and Education budget to the Personnel Certification budget.

Reclassifications

From time to time, the organization will evaluate accounting policies and classifications and make changes. NERC's 2020 budget reflects an evaluation and resulting reclassification of certain expenses

⁶ North American Electric Reliability Corporation, Order on Compliance, 143 FERC ¶ 61,052 (2013).

between departments or expense categories. Most notably, a number of software maintenance and support expenditures classified as Consultants and Contracts have been reclassified to the Software Licenses and Support line item under Office Costs. This is reflected as an increase in Office Costs and decrease in Consultants and Contracts expenses accordingly.

Statement of Activities and Fixed Asset Expenditures Report Changes

Beginning with the 2020 BP&Bs, NERC and the Regional Entities are implementing format revisions to the presentation of the Statement of Activities and Fixed Asset Expenditures report. These revisions are to ensure that NERC and the Regional Entities report information consistently from new accounting standards (e.g., leasing standards and right-of-use assets), provide enhanced transparency of financing activity (e.g., debt borrowing, leased-financed asset purchases, and principal payments), if applicable, and streamline sections of the report related to non-cash expenses (primarily depreciation and amortization). The goal of the new format is to improve the effectiveness of the report to the reader and to provide a total budget amount that more closely reflects the amount of annual revenues required from assessments and other funding sources. One of the more notable format revisions is that the reports will no longer show an expense item for depreciation and an equal and offsetting credit for depreciation in fixed asset activity (which resulted in depreciation having no impact on funding requirements or actual results).

As a result of these changes, in this 2020 BP&B document the 2019 budget has been restated to reflect the new reporting format when comparing 2020 to 2019 to show the year-over-year budget changes on a comparable basis. As such, depreciation expense has been removed from the 2019 operating expense budgets and projections, and the equal credit of depreciation expense has been removed from the 2019 fixed asset activity budgets and projections.

Overview of 2020 Budget and Funding Requirements

NERC's 2020 expense and fixed asset budget is approximately \$83.4M, which represents an increase of approximately \$3.6M (4.5%) from the 2019 budget. Total expenses are increasing approximately \$3.6M (4.8%) over 2019. The total fixed asset budget is approximately \$4.7M, a decrease of \$72k (1.5%) from 2019. Approximately \$8.8M (10.5%) of NERC's 2020 budget is related to CRISP, with the majority of the CRISP budget funded by participating utilities, with a small portion funded through assessments.

NERC's proposed 2020 assessment is approximately \$72.0, which represents an increase of \$3.1M (4.5%) from 2019. Factors contributing to the difference between the proposed budget increase and the proposed assessment increase include debt (capital financing) assumptions and other funding, such as from CRISP. Additionally, the allocation of assessments to Canadian entities will reflect the final determination and allocation of certain compliance and enforcement costs to Canadian entities pursuant to [NERC's Expanded Policy on Allocation of Certain Compliance and Enforcement Costs](#).

ROP Section 1107.2 specifies that penalties received from July 1 through the following June 30 will offset U.S. assessments in the subsequent budget period. In 2015, the Board and FERC approved the creation of the Assessment Stabilization Reserve, which was established to narrow the gap between annual budget and assessment percentage changes that result from year-to-year variations in penalty collections. This reserve is funded with penalty funds and surplus operating reserves. The actual amount of the contribution, as well as releases from the fund to reduce assessments, are determined as part of NERC's BP&B process. For 2019, the assessment included a \$550k transfer from the Assessment Stabilization Reserve. Management believes that due to reduced debt service, increased interest income, and a surplus of working capital, a release of funds from the Assessment Stabilization Reserve is not necessary in 2020.

The following table provides a high-level year-over-year comparison of the major categories of expenses, total budget, and FTEs.

Statement of Activities and Fixed Asset Additions 2019 and 2020 Budgets

STATUTORY

	2019 Budget	2019 Projection	Variance	2020 Budget	Variance	% Over (Under)
			2019 Projection v 2019 Budget Over(Under)		2020 Budget v 2019 Budget Over(Under)	
Funding						
ERO Funding						
NERC Assessments	\$ 68,883,995	\$ 68,883,995	\$ -	\$ 72,011,373	\$ 3,127,378	4.5%
Assessment Stabilization Reserve - Penalties	550,000	550,000	-	-	(550,000)	
Third-Party Funding (CRISP)	7,486,353	7,338,907	(147,446)	7,814,577	328,224	
Testing Fees	1,790,000	1,715,000	(75,000)	1,735,000	(55,000)	
Services & Software	40,000	40,000	-	60,000	20,000	
Miscellaneous	-	260	260	-	-	
Interest & Investment Income	185,000	544,854	359,854	386,000	201,000	
Total Funding (A)	\$ 78,935,349	\$ 79,073,016	\$ 137,668	\$ 82,006,951	\$ 3,071,602	3.9%
Expenses						
Personnel Expenses	\$ 43,952,190	\$ 44,389,285	\$ 437,095	\$ 46,598,160	\$ 2,645,970	6.0%
Meeting Expenses	3,185,400	3,433,050	247,651	3,323,250	137,850	4.3%
Operating Expenses, excluding Depreciation	27,724,893	28,581,088	856,195	28,533,094	808,200	2.9%
Other Non-Operating	214,171	139,971	(74,200)	256,623	42,452	19.8%
Total Expenses (B)	\$ 75,076,655	\$ 76,543,395	\$ 1,466,740	\$ 78,711,127	\$ 3,634,472	4.8%
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 4,778,000	\$ 3,847,990	\$ (930,010)	\$ 4,706,349	\$ (71,651)	-1.5%
Total Budget (=B+C)	\$ 79,854,655	\$ 80,391,385	\$ 536,730	\$ 83,417,476	\$ 3,562,821	4.5%
FTEs	204.92	202.16	(2.76)	213.38	8.46	4.1%

Key Budget Assumptions

Key assumptions used in the development of NERC's 2020 budget include the following:

- **A net increase to headcount of 9 (8.46 FTEs).** This reflects an increase of 7 additional positions for the E-ISAC directly and 3 positions in corporate areas in support of the E-ISAC long-term strategy. This also reflects an increase of 2 corporate support positions resulting from contractor conversions for critical roles (increase in personnel costs and reduction in consultants and contracts expenses, with a slight savings). This increase of 12 positions is offset by a decrease of 3 positions in the rest of NERC operations, resulting in a net increase of 9 positions. A 6.0% reduction to FTEs (vacancy rate) is applied to account for attrition and hiring delays, which is the same as 2019. FTEs by department are discussed later in this section.
- **Investment for the third year of the E-ISAC long-term strategy.** While the FTE increase for the E-ISAC discussed above accounts for the majority of the budget increase for E-ISAC, the strategy also calls for investment in technology, including new tools for data management, continued investment in E-ISAC portal enhancements, and contractors for overall technology support. The E-ISAC long-term strategy is discussed further below.
- **Investments in technology and tools.** This includes funding for the last year of development for the Align Project (also referred to as ALIGN or the CMEP Technology Project), planned enhancements to the Centralized Organization Registration ERO System (CORES), and maintenance and enhancements to a suite of data management tools for grid performance analysis. These projects and tools are discussed further below.
- **Market-based compensation for personnel and medical and dental benefit plan costs.** Personnel costs are increasing \$2.6M (6.0%), which reflects (1) the addition to headcount discussed above, (2) a 3.0% increase over actual 2019 base salaries for merit adjustments and, as directed by the Board, up to 0.5% for equity and market adjustments, and (3) anticipated increases for medical and dental benefit plan costs. Executive and staff compensation and benefits are established based on guidelines established by the Board's Corporate Governance

and Human Resources Committee (CGHRC) and the results of market compensation and benefit studies, most recently completed in late 2017. Medical and dental premium cost estimates are based on market data provided by the company's benefits consultant. No other changes to retirement or other benefit plans have been assumed for 2020.

E-ISAC Long-Term Strategy

Over the past several years the E-ISAC has focused on improving its technical and analytical capabilities with the goal of becoming the electricity industry's leading, trusted source for analysis and sharing of security information. Significant support from the Electricity Subsector Coordinating Council (ESCC), the ESCC Members Executive Committee (MEC), the DOE, and other stakeholders have helped the E-ISAC provide the industry with unique insights, leadership, and coordination on security matters. For more information on the E-ISAC, see the [E-ISAC website](#).

At the request of the Board and under the guidance of the ESCC and MEC, executive leadership of the E-ISAC developed the [E-ISAC Long-Term Strategic Plan](#), which was approved by the MEC on April 24, 2017 and accepted by the Board on May 11, 2017. This long-term strategic plan includes a five-year resource plan to transform the E-ISAC into a world-class intelligence collecting and analytical capability for the electricity industry. To implement this vision, the E-ISAC is undertaking a deliberate growth strategy that increases both staff and technical resources. Based on industry and stakeholder feedback, the 2020 BP&B includes the third year's recommended resource and technology additions related to this strategy, primarily related to watch operations, analytical capabilities, and engagement. See the *Electricity Information Sharing and Analysis Center* section of Section A for further information.

Align and CORES Projects

Since 2014, NERC has been working closely with the Regional Entities to evaluate and implement strategic investments in tools that will replace the current three CMEP and Registration data applications used among NERC and the Regional Entities with single, common applications, known as Align for CMEP and CORES for Registration.

The objectives and benefits of the Align project include (1) a single common portal and experience for registered entities; (2) improved integration of and access to data, as well as increased analytics; and (3) standardized business processes and consistent application of the CMEP, resulting in increased productivity and reduced application costs across the ERO Enterprise. There will be a release in 2019 that will support self-reporting, self-logging, enforcement, and mitigation. There will be two more releases in 2020, the final development year, which will support Compliance Assurance activities. For more information, see the [Align Project](#) page on the NERC website.

CORES similarly creates consistent Regional Entity and registered entity processes and improves data maintenance, including capturing data elements to be integrated with the Align application. Additionally, registered entities are able to directly manage their registration needs. The initial release of CORES is scheduled by the end of 2019, with further enhancements planned for 2020. For more information, see the [CORES Technology Project](#) page on the NERC website.

Data Management Technology and Tools

NERC is responsible for the collection, management, and analysis of data related to the performance of BPS operations. The tools used to collect and manage the data for these analyses include the Generating Availability Data System (GADS), Transmission Availability Data System (TADS), Demand Response Availability Data System (DADS), Reliability Assessment Data System (RADS), the Balancing Authority Submittal Site (BASS), as well as data management tools related to the areas of misoperations, event analysis, and situational awareness. NERC also recently developed a software tool for the collection of

wind data for GADS as a result of a ROP Section 1600 data request.⁷ NERC is also working to develop a link between performance and event analysis data to enhance its ability to conduct effective event analyses, as well as to identify key areas for trend analyses across multiple databases. As the grid evolves, the ability to collect and the quality and integration of data become increasingly important, requiring continued investment in enhancements to and maintenance of the suite of data management tools. NERC also continues to develop technology applications for the collection of new data under Section 1600 data requests. This includes the collection of Geomagnetic Disturbance (GMD) data, as directed by [FERC Order 830](#) and approved by the Board on August 16, 2018. Additionally, NERC expects to work with industry on a Section 1600 data request for the collection of data for solar energy storage associated with solar and wind generation, as well as event reporting for solar and wind generation. For more information, see the *Reliability Assessment and Performance Analysis* section of Section A.

Fixed Asset (Capital) Budget and Capital Financing

NERC's 2020 fixed asset budget is approximately \$4.7M, which represents a decrease of \$72k from 2019. This decrease is primarily due to reduced spending on ERO Enterprise software projects. The fixed asset budget for 2020 includes:

- Capital ERO Enterprise and NERC software development and enhancements, including the final development year for Align, as well as enhancements to CORES, the E-ISAC Portal, and the GADS, TADS, and DADS database systems;
- Information Technology equipment, including hardware servers, storage, disaster recovery, and network devices, as well as an upgrade to the video wall in the NERC Atlanta office situational awareness room; and
- Leasehold improvements for office and meeting space enhancements for the NERC Atlanta office.

A detailed breakdown by category is provided in Table B-12 – Fixed Assets.

Approximately \$2.0M of the \$4.7M in fixed asset expenditures is related to the planning, design, and implementation of software applications supporting ERO Enterprise tools. Of the \$2.0M, approximately \$1.8M relates to the final development year of the Align application.⁸ The remaining \$200k is for planned enhancements to CORES after the initial release in 2019. The 2020 budget assumes that this \$2.0M expenditure will be financed through the capital financing program described in and put in place as part of NERC's 2014 BP&B. Further information regarding capital financing can be found in *Exhibit C – Capital Financing*.

Program Budget and FTE Comparisons

The following table shows a 2020 versus 2019 total budget comparison by program area. The amounts reflect all direct and indirect departmental costs, including fixed asset costs. Costs incurred for general and administrative and other overheads are considered indirect and are allocated to the statutory departments based on the ratio of that department's budgeted FTEs to total budgeted statutory FTEs.

⁷ In accordance with ROP Section 1600, NERC may request data or information from registered entities that is necessary to meet NERC's obligations under Section 215 of the FPA.

⁸ The total capital expenditure for Align is expected to be approximately \$5.0–6.0M, with work spanning from 2017 through 2020.

2020 versus 2019 Total Budget by Program

Total Budget	2019 Budget	2020 Budget	Increase (Decrease)	
Reliability Standards	\$ 6,676,078	\$ 8,249,572	\$ 1,573,494	23.6%
CMEP*	20,801,651	19,017,673	(1,783,978)	-8.6%
RAPA*	13,232,197	13,122,303	(109,893)	-0.8%
Event Analysis	5,299,268	4,733,857	(565,411)	-10.7%
Situation Awareness	4,296,209	4,256,006	(40,203)	-0.9%
Personnel Certification	1,043,763	1,738,288	694,525	66.5%
Training and Education	1,179,862	1,014,986	(164,876)	-14.0%
NERC Budget, excluding E-ISAC	\$ 52,529,028	\$ 52,132,685	\$ (396,342)	-0.8%
E-ISAC (non-CRISP)	\$ 18,281,920	\$ 22,488,636	\$ 4,206,716	23.0%
E-ISAC (CRISP)	9,043,707	8,796,155	(247,552)	-2.7%
Total E-ISAC Budget	\$ 27,325,627	\$ 31,284,791	\$ 3,959,164	14.5%
Total Budget	\$ 79,854,655	\$ 83,417,476	\$ 3,562,821	4.5%

*Includes key technology application costs, including Align, CORES, and data management tool enhancements.

The primary areas of increase are in E-ISAC, Reliability Standards, and Personnel Certification. The E-ISAC increase reflects the additional staff related to the E-ISAC long-term strategy discussed above. Also as discussed above, the increases in Reliability Standards and Personnel Certification are a result of the department and position reorganization and the movement of the CE program, respectively.

The decrease in CMEP is the result of the reduction or reallocation of FTEs to other program areas, which also results in lower allocations of indirect costs and fixed assets from Administrative Services to the CMEP departments. Similarly, the decrease in Event Analysis is due to the reallocation of FTEs as a result of the reorganization, and the Training and Education decrease reflects the movement of the CE program to Personnel Certification.

The following table presents a 2020 versus 2019 comparison of budgeted FTEs by department and reflects 2020 personnel additions, interdepartmental transfers of previously budgeted positions, and attrition assumptions. The number of FTEs represents the number of employees employed full time during the year, plus the number of employees employed part time (less than full schedule) or during a portion of the year, converted to a full-time basis. Headcount represents the total number of personnel employed at any point in time. NERC's 2020 personnel budget is based upon a targeted headcount, associated compensation and benefit costs, and an assumed vacancy rate. The vacancy rate accounts for attrition and for variations from the budget assumptions on the timing of new hires.

2020 versus 2019 FTEs by Department

FTEs*	2019 Budget	2020 Budget	Increase(Decrease)	
Reliability Standards	14.57	17.86	3.29	22.6%
CMEP	39.01	33.84	(5.17)	-13.3%
RAPA	25.38	23.50	(1.88)	-7.4%
Event Analysis	11.28	9.40	(1.88)	-16.7%
Situation Awareness	5.64	5.64	-	0.0%
Personnel Certification	1.88	2.82	0.94	50.0%
Training and Education	1.88	1.88	-	0.0%
Administrative Programs	67.68	74.26	6.58	9.7%
NERC FTEs, excluding E-ISAC	167.32	169.20	1.88	1.1%
E-ISAC (non-CRISP)	33.84	41.36	7.52	22.2%
E-ISAC (CRISP)	3.76	2.82	(0.94)	-25.0%
Total E-ISAC FTEs	37.60	44.18	6.58	17.5%
Total FTEs	204.92	213.38	8.46	4.1%

**Reflects 2020 additions and transfers between departments, anticipated timing of 2020 hires, and assumes 6% attrition in all programs*

The Administrative Programs encompass a number of necessary support functions, including Information Technology, Legal and Regulatory, Finance and Accounting, and Human Resources and Administration. It also includes General and Administrative functions, which include the CEO, the Chief Reliability Officer (CRO), and their support staff, as well as Policy & External Affairs staff. For FERC and external reporting purposes, these programs are allocated as indirect expenses to the operating areas on a per FTE basis. For 2020, NERC is budgeting an increase of 10 positions in support of the E-ISAC long-term strategy, which includes 7 positions in the E-ISAC and 3 in Administrative Programs. NERC is also budgeting for an increase of an additional 2 positions in Administrative Programs resulting from contractor conversions (increase in personnel costs and reduction in consultants and contracts expenses, with a slight savings) for critical roles related to the Align application and audio video and facility security coordination. There will also be a decrease of 3 open positions in the remaining NERC departments. This results in a total net increase of 9 positions (8.46 FTEs after application of the 6% attrition factor) in 2020. The table above reflects the addition, reduction, and reallocations of staff. Currently, the proposed eliminations of 3 open positions are in the Compliance Assurance department. Overall resource allocations are subject to continual strategic evaluation.

The 2020 organizational chart can be found in Appendix 1. The difference between the number of positions reflected and total FTEs is due to assumptions regarding vacancy rates and timing of new hires.

Reserves

NERC is proposing an overall reserve budget of \$8.8M across all categories of reserves. This represents a decrease of \$247k (2.9%) from the total reserve amounts included in NERC's 2019 budget. The reserve categories are as follows:

- **Future Obligation Reserve** – Includes funding that has been received to satisfy future obligations under lease, credit, loan, or other agreements to which the company is a party. This reserve is budgeted to be \$1.6M for 2020.
- **System Operator Certification Reserve** – Includes surplus funding from operator certification and testing fees that are above incurred expenses and shall be used solely to support operator testing and certification needs. The 2020 System Operator Certification Reserve is budgeted at \$442k and comprised primarily of existing funds.
- **CRISP Reserve** – Represents funds dedicated to support CRISP. These reserves are established pursuant to a CRISP budget agreed to and funded entirely by utilities participating in CRISP. These reserves have no impact on assessments and are segregated from other reserves pursuant to the terms of the CRISP agreements. The CRISP reserves are projected to be \$500k in the 2020 budget.
- **Operating Contingency Reserve** – Includes both general working capital funds resulting from day to day operations, and additional funds for contingencies that were not anticipated. NERC's current policy on Operating Contingency Reserves requires a reserve target of 3.5–7.0%, except as otherwise approved by the Board after review and recommendation by the Board Finance and Audit Committee (FAC). This percentage is calculated against NERC's total budget for operating and capital expenditures, less those costs related to CRISP and System Operator Certification, each of which has a separate reserve category. NERC is proposing to use \$650k of the Operating Contingency Reserve for funding for the 2020 budget, resulting in an assumed Operating Contingency Reserve of approximately \$4.7M, which is 6.5% of total budgeted operating and fixed asset (capital) costs.
- **Assessment Stabilization Reserve** – To date, this reserve has been funded entirely by previously received penalties and is projected to have a balance of \$1.5M as of January 1, 2020. For the 12 months ended June 30, 2019, NERC collected no penalties. For purposes of the company's 2020 BP&B, NERC is not currently proposing any release of Assessment Stabilization Reserve funds to offset U.S. assessments. The Assessment Stabilization Reserve will be used to reduce U.S. assessments in one or more future periods in the applicable year's BP&B, subject to review and approval by the Board and FERC.

The following table is a statement of activities and fixed asset expenditures comparing the 2019 budget, 2019 projection, and 2020 budget.

Introduction and Executive Summary

Statement of Activities and Fixed Asset Additions 2019 and 2020 Budgets

STATUTORY

	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)	% Inc 2020 over 2019
Funding						
ERO Funding						
NERC Assessments	\$ 68,883,995	\$ 68,883,995	\$ -	\$ 72,011,373	\$ 3,127,378	4.5%
Assessment Stabilization Reserve - Penalties	550,000	550,000	-	-	(550,000)	
Total NERC Funding	\$ 69,433,995	\$ 69,433,995	\$ -	\$ 72,011,373	\$ 2,577,378	
Third-Party Funding (CRISP)	\$ 7,486,353	\$ 7,338,907	\$ (147,446)	\$ 7,814,577	\$ 328,224	
Testing Fees	1,790,000	1,715,000	(75,000)	1,735,000	(55,000)	
Services & Software	40,000	40,000	-	60,000	20,000	
Miscellaneous	-	260	260	-	-	
Interest & Investment Income	185,000	544,854	359,854	386,000	201,000	
Total Funding (A)	\$ 78,935,349	\$ 79,073,016	\$ 137,668	\$ 82,006,951	\$ 3,071,602	3.9%
Expenses						
Personnel Expenses						
Salaries	\$ 33,810,276	\$ 34,326,066	\$ 515,790	\$ 35,462,611	\$ 1,652,335	
Payroll Taxes	2,044,880	1,978,045	(66,835)	2,113,486	68,606	
Benefits	4,673,208	4,839,986	166,779	5,420,461	747,254	
Retirement Costs	3,423,826	3,245,187	(178,639)	3,601,601	177,776	
Total Personnel Expenses	\$ 43,952,190	\$ 44,389,285	\$ 437,095	\$ 46,598,160	\$ 2,645,970	6.0%
Meeting Expenses	\$ -					
Meetings & Conference Calls	\$ 1,001,400	\$ 1,180,636	\$ 179,236	\$ 1,112,250	\$ 110,850	
Travel	2,184,000	2,252,414	68,414	2,211,000	27,000	
Total Meeting Expenses	\$ 3,185,400	\$ 3,433,050	\$ 247,651	\$ 3,323,250	\$ 137,850	4.3%
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ 15,043,318	\$ 15,579,153	\$ 535,835	\$ 12,435,902	\$ (2,607,416)	
Office Rent	3,335,058	3,305,058	(30,000)	3,450,468	115,410	
Office Costs	6,506,917	6,921,753	414,835	10,052,374	3,545,456	
Professional Services	2,757,600	2,666,131	(91,469)	2,511,600	(246,000)	
Miscellaneous	82,000	108,993	26,993	82,750	750	
Total Operating Expenses, excluding Depreciation	\$ 27,724,893	\$ 28,581,088	\$ 856,195	\$ 28,533,094	\$ 808,200	2.9%
Total Direct Expenses	\$ 74,862,484	\$ 76,403,424	\$ 1,540,940	\$ 78,454,504	\$ 3,592,020	4.8%
Indirect Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Other Non-Operating Expenses	\$ 214,171	\$ 139,971	\$ (74,200)	\$ 256,623	\$ 42,452	19.8%
Total Expenses (B)	\$ 75,076,655	\$ 76,543,395	\$ 1,466,740	\$ 78,711,127	\$ 3,634,472	4.8%
Change in Net Assets (=A-B)	\$ 3,858,694	\$ 2,529,622	\$ (1,329,072)	\$ 3,295,824	\$ (562,870)	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 4,778,000	\$ 3,847,990	\$ (930,010)	\$ 4,706,349	\$ (71,651)	-1.5%
Total Budget (=B+C)	\$ 79,854,655	\$ 80,391,385	\$ 536,730	\$ 83,417,476	\$ 3,562,821	4.5%
Change in Working Capital (=A-B-C)*	\$ (919,306)	\$ (1,318,368)	\$ (399,063)	\$ (1,410,525)	\$ (491,219)	
FTEs	204.92	202.16	(2.76)	213.38	8.46	4.1%

* Refer to Table B-1 for a complete analysis of the Working Capital and Operating Reserve balance.

As mentioned previously, one of the changes to the Statement of Activities and Fixed Asset Expenditures report is related to providing enhanced transparency of financing activity (e.g., debt borrowing, leased-financed asset purchases, and principal payments). As discussed above, NERC has a capital financing program for major software development projects that benefit the ERO Enterprise. Additionally, NERC has a lease program for certain IT equipment.

Financing activity affects cash flow and annual assessments, which is shown as part of the Operating Reserve and Assessment Analysis (see Table B-1). Beginning in 2020, NERC will report financing activity in a new section on the Statement of Activities and Fixed Asset Expenditures report, which allows for a total budget that more closely reflects the amount of annual revenues required from assessments. This section and its effects are shown below for the 2020 budget; variance reporting for 2020 and future budgeting will be shown in this format.

Statement of Activities and Fixed Asset Additions 2020 Budget
STATUTORY

	2020 Budget
Funding	
ERO Funding	
NERC Assessments	\$ 72,011,373
Assessment Stabilization Reserve - Penalties	-
Total NERC Funding	\$ 72,011,373
Third-Party Funding (CRISP)	\$ 7,814,577
Testing Fees	1,735,000
Services & Software	60,000
Miscellaneous	-
Interest & Investment Income	386,000
Total Funding (A)	\$ 82,006,951
Expenses	
Personnel Expenses	
Salaries	\$ 35,462,611
Payroll Taxes	2,113,486
Benefits	5,420,461
Retirement Costs	3,601,601
Total Personnel Expenses	\$ 46,598,160
Meeting Expenses	
Meetings & Conference Calls	\$ 1,112,250
Travel	2,211,000
Total Meeting Expenses	\$ 3,323,250
Operating Expenses, excluding Depreciation	
Consultants & Contracts	\$ 12,435,902
Office Rent	3,450,468
Office Costs	9,102,374
Professional Services	2,511,600
Miscellaneous	82,750
Total Operating Expenses, excluding Depreciation	\$ 27,583,094
Total Direct Expenses	\$ 77,504,504
Indirect Expenses	\$ -
Other Non-Operating Expenses	\$ 306,623
Total Expenses (B)	\$ 77,811,127
Change in Net Assets (=A-B)	\$ 4,195,824
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 4,706,349
Financing Activity	
Loan or Financing Lease - Borrowing (-)	\$ (1,338,000)
Loan or Financing Lease - Principal Payments (+)	1,477,558
Net Financing Activity (D)	\$ 139,558
Total Budget (=B+C+D)	\$ 82,657,034
Change in Working Capital (=A-B-C-D)	\$ (650,083)
FTEs	213.38

Projections for 2021–2022

Management is currently developing preliminary operating and fixed asset projections for 2021 and 2022. Significant assumptions considered in preparing these projections include:

- No increase in total FTEs over the 2020 budget, except for E-ISAC long-term strategy impacts;
- Personnel and benefit cost increases are consistent with 2020 assumptions;
- Meeting and travel costs are reduced due to anticipated savings from more onsite meetings as a result of Atlanta office modifications;
- Fixed asset expenditures are decreasing due to the completion of the development of the Align and CORES applications; savings for application costs (i.e., software licenses, maintenance, and support) will be realized in future Regional Entity budgets as they transition from their legacy CMEP systems to the centralized tools;
- There will be continued investment in enhancements to and maintenance of the suite of data management tools to support advanced analytics;
- Debt service repayment obligations in connection with the company’s Capital Financing Program are consistent with the projected IT applications capital forecast; and
- E-ISAC budget increases in 2021 and 2022 will represent the vast majority of projected increases in the total NERC budget. The current budget projections for E-ISAC, including CRISP, for 2021 and 2022 are \$34.6M and \$37.4M, respectively. These increased budget projections are primarily driven by planned headcount additions and strategic program initiatives.

Currently, NERC projects a total budget increase versus the prior year of 4.5% in 2020, 2.8% in 2021, and 4.0% in 2022. Assessments are budgeted to increase 4.5% in 2020 and projected to increase 5.6% in 2021 and 5.9% in 2022, excluding any release of Assessment Stabilization Reserve funds. The assessment increase for 2020 does not include any proposed release from the Assessment Stabilization Reserve. The budget and assessment increases for 2020 and 2021 are projections that will be refined as those budgets are finalized.

Introduction and Executive Summary

Statement of Activities and Fixed Asset Additions 2020 Budget & Projected 2021 and 2022 Budgets

	2020 Budget	2021 Projection	\$ Change 21 vs 20	% Change 21 vs 20	2022 Projection	\$ Change 22 vs 21	% Change 22 vs 21
Funding							
ERO Funding							
NERC Assessments	\$ 72,011,373	\$ 76,048,625	\$ 4,037,251	5.6%	\$ 80,562,249	\$ 4,513,624	5.9%
Assessment Stabilization Reserve - Penalties	-	-	-	0.0%	-	-	0.0%
Total NERC Funding	\$ 72,011,373	\$ 76,048,625	\$ 4,037,251	5.6%	\$ 80,562,249	\$ 4,513,624	5.9%
Third-Party Funding	\$ 7,814,577	\$ 7,847,311	\$ 32,734	0.4%	\$ 8,059,943	\$ 212,632	2.7%
Testing Fees	1,735,000	1,735,000	-	0.0%	1,735,000	-	0.0%
Services & Software	60,000	60,000	-	0.0%	60,000	-	0.0%
Miscellaneous	-	-	-	0.0%	-	-	0.0%
Interest & Investment Income	386,000	386,000	-	0.0%	386,000	-	0.0%
Total Funding (A)	\$ 82,006,951	\$ 86,076,936	\$ 4,069,985	5.0%	\$ 90,803,192	\$ 4,726,256	5.5%
Expenses							
Personnel Expenses							
Salaries	\$ 35,462,611	\$ 37,771,413	\$ 2,308,802	6.5%	\$ 40,122,984	\$ 2,351,571	6.2%
Payroll Taxes	2,113,486	2,219,024	105,538	5.0%	2,324,317	105,293	4.7%
Benefits	5,420,461	6,116,708	696,247	12.8%	6,832,331	715,623	11.7%
Retirement Costs	3,601,601	3,842,989	241,388	6.7%	4,088,796	245,806	6.4%
Total Personnel Expenses	\$ 46,598,160	\$ 49,950,135	\$ 3,351,975	7.2%	\$ 53,368,428	\$ 3,418,293	6.8%
Meeting Expenses							
Meetings & Conference Calls	\$ 1,112,250	\$ 1,015,950	\$ (96,300)	-8.7%	\$ 1,015,950	\$ -	0.0%
Travel	2,211,000	2,186,000	(25,000)	-1.1%	2,186,000	-	0.0%
Total Meeting Expenses	\$ 3,323,250	\$ 3,201,950	\$ (121,300)	-3.7%	\$ 3,201,950	\$ -	0.0%
Operating Expenses, excluding Depreciation							
Consultants & Contracts	\$ 12,435,902	\$ 12,494,816	\$ 58,914	0.5%	\$ 12,486,108	\$ (8,708)	-0.1%
Office Rent	3,450,468	3,551,445	100,977	2.9%	3,742,205	190,760	5.4%
Office Costs	10,052,374	10,381,480	329,106	3.3%	10,606,350	224,870	2.2%
Professional Services	2,511,600	2,477,221	(34,379)	-1.4%	2,456,600	(20,621)	-0.8%
Miscellaneous	82,750	82,750	-	0.0%	82,750	-	0.0%
Total Operating Expenses, excluding Depreciation	\$ 28,533,094	\$ 28,987,712	\$ 454,618	1.6%	\$ 29,374,013	\$ 386,301	1.3%
Total Direct Expenses	\$ 78,454,504	\$ 82,139,796	\$ 3,685,293	4.7%	\$ 85,944,391	\$ 3,804,594	4.6%
Indirect Expenses	\$ -	\$ -	\$ -	0.0%	\$ -	\$ -	0.0%
Other Non-Operating Expenses	\$ 256,623	\$ 345,667	\$ 89,044	34.7%	\$ 337,641	\$ (8,026)	-2.3%
Total Expenses (B)	\$ 78,711,127	\$ 82,485,463	\$ 3,774,337	4.8%	\$ 86,282,032	\$ 3,796,568	4.6%
Change in Net Assets (=A-B)	\$ 3,295,824	\$ 3,591,472	\$ 295,648	9.0%	\$ 4,521,160	\$ 929,688	25.9%
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 4,706,349	\$ 3,274,349	\$ (1,432,000)	-30.4%	\$ 2,874,349	\$ (400,000)	-12.2%
Total Budget (=B+C)	\$ 83,417,476	\$ 85,759,813	\$ 2,342,337	2.8%	\$ 89,156,381	\$ 3,396,568	4.0%
FTEs	213.38	220.90	7.52	3.5%	228.42	7.52	3.4%

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Reliability Standards and Power Risk Issue Strategic Management

NERC has an Engineering and Standards department that consolidates NERC’s technical resources together and provides engineering services to support the overall needs of the organization. Two groups in this department are focused specifically on the development and improvement of Reliability Standards: the Reliability Standards group and the Power Risk Issues and Strategic Management (PRISM) group.

Reliability Standards and Power Risk Issue Strategic Management (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	14.57	17.86	3.29
Direct Expenses	\$ 3,059,581	\$ 3,865,292	\$ 805,710
Indirect Expenses	3,208,828	4,206,476	997,648
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	407,669	177,804	(229,864)
TOTAL BUDGET	\$ 6,676,078	\$ 8,249,572	\$ 1,573,494

Background and Scope

The Reliability Standards program carries out the ERO’s statutory responsibility to develop, adopt, obtain approval of, and modify (as and when appropriate) mandatory NERC Reliability Standards (both continent-wide standards and regional reliability standards) to assure the BES is planned, operated, maintained, and secured to minimize risks of cascading failures, avoid damage to major equipment, or limit interruptions of the BPS. The purpose of the Reliability Standards group is to deliver high-quality risk-based Reliability Standards, facilitate continent-wide industry engagement, and support regulatory filings.

The overarching purpose of the PRISM group is to leverage in-house expertise on Reliability Standards and standards development to implement cross-cutting efforts among NERC functions and NERC standing and technical committees. Particular emphasis is placed on developing NERC’s positions on emerging technologies and the over-arching effect of these technologies on Reliability Standards. Further, this group gauges the responses to address reliability risks and works towards monitoring risk mitigation. Additionally, this group provides in-house training on Reliability Standards to effectuate a consistent view of the meaning and purpose of the standards and their relationship with the various work products of the committees and subcommittees. The PRISM group also conducts statistical analysis around the results of standards to identify potential weaknesses, redundancies, and overall necessity.

Stakeholder Engagement and Benefit

NERC manages the work of over 200 industry contributors who serve on the Standards Committee, subgroups, and other project teams for the development of Reliability Standards. As part of the standard development process, industry technical experts scope, draft, and review new or revised Reliability Standards for approval by the industry ballot body, adoption by the Board, and filing with regulatory authorities in the United States and Canada. NERC standards staff provide project management and leadership to develop solutions necessary to address reliability risks identified through the Reliability Risk Management Process (RRMP). These solutions may include the development of or modifications to Reliability Standards, in which standards staff (1) conduct outreach activities; (2) facilitate drafting teams, including assisting teams in maintaining adherence to the development process in the [Standard Processes](#)

[Manual](#); (3) provide drafting support; and (4) ensure that the quality of documents produced is appropriate for approval by industry and the Board.

Additionally, federal, state, and provincial regulatory authorities, the Board, Regional Entities, and many industry stakeholders have expressed interest in the identification of costs incurred from implementing Reliability Standards compared to risks they address. These elements are considered by requesting industry feedback on costs throughout the standard development or revision process.

The PRISM group has significant interaction with stakeholder groups, including the NERC Planning Committee (PC), Operating Committee (OC), Critical Infrastructure Protection Committee (CIPC), the Standards Committee, and their subcommittees. The purpose of this engagement is to be apprised of all activities within the committee meetings and work plans to drive a cross-cutting approach to addressing standards-related issues. As Standard Authorization Requests (SARs) and Requests for Interpretations (RFIs) are developed, this group ensures the process to address these items is coordinated and efficient.

Tools and Technology

The main tool used by the Reliability Standards program is NERC's Standards Balloting and Commenting System (SBS). This system provides a seamless user interface for balloting and submitting comments on Reliability Standards under development. NERC's annual budget accounts for ongoing maintenance and any necessary enhancements for this system.

Key Efforts Underway

NERC ensures that the Reliability Standards Development Plan (RSDP) is effectively executed and that Reliability Standards are focused on and mitigate significant risks to BES reliability. The Reliability Standards group's key activities include:

- **Focusing on the selection of projects undertaken.** Resources are expended on issues determined to be a reliability risk through the RRMP. The Reliability Standards group applies broad project management skills to implement a variety of solutions to a reliability concern. An effective solution to an identified reliability risk may be a Reliability Standard, or it may be a guideline, information request, training, NERC Alert, technical conference, research, or a combination of these or other tools.
- **Addressing FERC directives and responding to FERC orders** through standard development projects, as necessary. Each project determines whether: (1) the directive will be complied with as issued; (2) there is another equally effective way to address the concern that fostered the directive; or (3) there is technical justification that resolution of the directive is no longer needed, including whether the directive has been overcome by other events, processes, or advances in technology.
- **Standards Efficiency Review.** In 2018, NERC and industry began a comprehensive review of the Reliability Standards to measure their effectiveness and ability to mitigate the risks to the reliability and security of the BPS as compared to the industry burden for their implementation. One outcome of this review was the need to retire or enhance requirements based on operational experience. This includes an analysis of reliability risk, particularly emerging risks, and cost effectiveness. In 2019, projects were initiated to address the results of this review to retire or modify Reliability Standards. For more information, see the [Standards Efficiency Review](#) page on the NERC website.
- **Facilitating smooth transition to new standards.** This includes working with other NERC program areas and the Regional Entities to develop guidelines, webinars, and other activities to support auditor and industry training for new standards.

Key efforts underway for the PRISM group include:

- Completing NERC position documents for Distributed Energy Resources (DER), Interconnection Reliability Operating Limits (IROL) and System Operating Limits (SOL), and Battery Storage;
- Developing statistical analysis around misoperations data to identify trends and discrete areas for improvement;
- Developing statistical analysis around BAL standards and the effects of frequency response within the four interconnections; and
- Conducting Reliability Standards training for NERC staff to enable consistent understandings.

2020 Goals and Deliverables

In 2020, the Reliability Standards group will continue the key activities discussed above by addressing potential improvements to standards, any new directives issued by FERC, as well any reliability risks identified through RRMP or by the RISC for which a Reliability Standard is part of the solution. Additionally, staff will work with industry to determine whether there is a need to make further improvements to the standards through periodic reviews that include: (1) a measured review of the content of standards, considering whether the requirements could more effectively mitigate risks to the BPS; (2) whether the standards are results-based and drafted with high quality; (3) whether the standards are concise or if the number of requirements could be reduced; and (4) whether compliance expectations are clear. The PRISM group will continue Reliability Standard training efforts for NERC staff, expand analysis for the efficacy of standards and emerging technologies affecting the BPS, and coordinate with the RISC on alignment of identified risks and mitigating activities.

Future Plans

As emerging technologies that are interconnected at scale continue to provide challenges and uncertainties to BPS reliability, standards alignment with the effects of these technologies is critical. This includes battery storage, DER, the proliferation of electric vehicles, cyber implications on system design, operations, and restoration, and systemic risks from interdependencies among gas, electric, and communications systems. NERC has access to increasing amounts of data that must be leveraged to quantitatively determine the efficacy of standards with respect to these emerging risks, and must continually evaluate approaches to ensure that standards are developed appropriately with respect to the commensurate cross-cutting influence and expertise available.

Resource Requirements

Personnel

The 3.29 increase in FTEs from the 2019 budget to the 2020 budget is a result of the department and position reorganization discussed in the *Introduction and Executive Summary*.

Consultants and Contracts

The \$40k for Consultants and Contracts expenses in 2020 is for SBS maintenance and enhancements. A detailed breakdown of 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contractor Costs*.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
RELIABILITY STANDARDS AND POWER RISK ISSUE STRATEGIC MANAGEMENT					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 6,598,401	\$ 6,598,401	\$ -	\$ 8,203,710	\$ 1,605,309
Assessment Stabilization Reserve - Penalties	\$ 58,793	58,793	-	-	(58,793)
Total NERC Funding	\$ 6,657,194	\$ 6,657,194	\$ -	\$ 8,203,710	\$ 1,546,516
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	18,884	58,805	39,921	45,862	26,978
Total Funding (A)	\$ 6,676,078	\$ 6,715,999	\$ 39,921	\$ 8,249,572	\$ 1,573,494
Expenses					
Personnel Expenses					
Salaries	\$ 2,031,580	\$ 2,392,427	\$ 360,847	\$ 2,622,756	\$ 591,176
Payroll Taxes	134,348	143,283	8,935	165,506	31,158
Benefits	297,782	326,946	29,164	416,307	118,525
Retirement Costs	224,171	249,568	25,397	290,052	65,881
Total Personnel Expenses	\$ 2,687,881	\$ 3,112,223	\$ 424,342	\$ 3,494,622	\$ 806,740
Meeting Expenses					
Meetings & Conference Calls	\$ 63,000	\$ 49,903	\$ (13,097)	\$ 59,800	\$ (3,200)
Travel	220,000	220,000	-	220,000	-
Total Meeting Expenses	\$ 283,000	\$ 269,903	\$ (13,097)	\$ 279,800	\$ (3,200)
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 50,000	\$ 50,000	\$ -	\$ 40,320	\$ (9,680)
Office Rent	-	-	-	-	-
Office Costs	38,200	45,700	7,500	50,050	11,850
Professional Services	-	-	-	-	-
Miscellaneous	500	2,000	1,500	500	-
Total Operating Expenses, excluding Depreciation	\$ 88,700	\$ 97,700	\$ 9,000	\$ 90,870	\$ 2,170
Total Direct Expenses	\$ 3,059,581	\$ 3,479,827	\$ 420,245	\$ 3,865,292	\$ 805,710
Indirect Expenses	\$ 3,208,828	\$ 3,950,525	\$ 741,697	\$ 4,206,476	\$ 997,648
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 6,268,409	\$ 7,430,352	\$ 1,161,942	\$ 8,071,768	\$ 1,803,359
Change in Net Assets (=A-B)	\$ 407,669	\$ (714,353)	\$ (1,122,022)	\$ 177,804	\$ (229,864)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 407,669	\$ 384,235	\$ (23,434)	\$ 177,804	\$ (229,864)
Total Budget (=B+C)	\$ 6,676,078	\$ 7,814,586	\$ 1,138,509	\$ 8,249,572	\$ 1,573,494
FTEs	14.57	16.56	1.99	17.86	3.29

Compliance Assurance and Organization Registration and Certification

Compliance Assurance and Organization Registration and Certification (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	25.85	21.62	(4.23)
Direct Expenses	\$ 6,576,310	\$ 5,881,314	\$ (694,996)
Indirect Expenses	5,693,082	5,092,050	(601,031)
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	1,675,025	1,318,736	(356,288)
TOTAL BUDGET	\$ 13,944,416	\$ 12,292,101	\$ (1,652,315)

Background and Scope

Compliance Assurance

NERC's Compliance Assurance group works collaboratively with the Regional Entities to ensure effective implementation of risk-based compliance monitoring under the CMEP across the entire ERO Enterprise. This program ensures that Regional Entities monitor registered entities for compliance according to their own specific facts and circumstances, including the entity's inherent risks, evaluation of controls in place to mitigate the inherent risks, and other factors, such as risk elements and entity performance. Additionally, the risk-based compliance monitoring approach allows for the appropriate allocation of resources to the issues that pose a higher level of risk to the reliability of the BPS.

The CMEP provides for Regional Entities to develop customized compliance oversight plans (COPs) for each registered entity that identify: (1) the standards or requirements to be monitored; (2) the monitoring processes (tools) to be used by the Regional Entities, including compliance audits, self-certification, and spot checking; and (3) the interval of monitoring. NERC and the Regional Entities ensure that inherent risk assessments (IRAs) for registered entities begin with a consistent framework and that Regional Entities' implementation of the CMEP coalesce around effective and efficient practices, ensuring comprehensive data management procedures that address data reporting requirements, integrity, retention, security, and confidentiality.

The Compliance Assurance group's responsibilities include but are not limited to the following major activities and functions:

- Oversight of the Regional Entities' implementation of the risk-based compliance monitoring program and NERC ROP in North America;
- Development and execution of the annual CMEP Implementation Plan (IP);
- Oversight of the use of necessary compliance-related processes, procedures, IT platforms, tools, and templates;
- Development and delivery of education and training for ERO Enterprise staff;
- Training and outreach activities for the Critical Infrastructure Protection (CIP) Reliability Standards and subsequent enhancements to support industry compliance and security;

- Coordination with the Reliability Standards group to assist in the smooth transition of standards from development to enforceability, providing feedback on risks seen in the field that are not addressed by a standard, as well as information on where a standard is too broad; and
- Support for Regional Entity and industry committees, working groups, and task forces, such as the ERO Compliance Monitoring Group (NERC and Regional Entity collaboration group), NERC Compliance and Certification Committee (CCC), and NERC CIPC.

Organization Registration and Certification

Organization Registration (Registration) identifies and registers BPS users, owners, and operators that are responsible for performing specified reliability functions to which requirements of mandatory Reliability Standards are applicable. Organization Certification (Certification) ensures that an applicant to be a RC, BA, or TOP has the tools, processes, training, and procedures to demonstrate its ability to meet the requirements of all the Reliability Standards applicable to the functions for which it is applying, thereby demonstrating the ability to become certified and then operational. The decision to certify changes to an already operating and certified RC, BA, or TOP is a collaborative decision between the affected Regional Entities and NERC. Together, the Registration and Certification groups manage the Organization Registration and Certification Program (ORCP).

Stakeholder Engagement and Benefit

Compliance Assurance engages with stakeholders in two primary ways:

1. Through the CCC. The CCC is chartered to engage with, support, and advise the Board and NERC regarding all facets of the CMEP and Registration and Certification programs. Among other things, Compliance Assurance works with the CCC on activities related to the ERO Enterprise Effectiveness Survey, in seeking input and advice on the development of draft Reliability Standard Audit Worksheets (RSAWs) and the Implementation Guidance process, and coordinating ERO Enterprise Program Alignment Process issues.
2. Through stakeholder outreach. This is conducted through webinars related to specific processes throughout the year, such as to discuss development and evolution of the CMEP IP, and through Regional Entity and NERC workshops, such as the annual NERC Standards and Compliance Workshop.

Registration and Certification engages with the CCC's Organization Registration and Certification Subcommittee (ORCS), which oversees the ORCP. Registration and Certification staff also work with entities individually on specific questions pertaining to an entity's unique facts and circumstances. As appropriate, the Registration and Certification group conducts webinars and other outreach explaining various work products or high-profile activities, including CMEP Practice Guides, modifications to existing documents, IT application developments, etc. The Registration and Certification group also engages industry stakeholders by presenting at NERC and Regional Entity workshops and other forums.

Tools and Technology

Historically, NERC has used the Compliance Reporting and Tracking System (CRATS) as its compliance database. CRATS also included modules for Reliability Standards, Technical Feasibility Exceptions (TFEs), and Registration. NERC has been working closely with the Regional Entities to evaluate and implement strategic investments in tools that will replace CRATS and the CMEP and Registration data applications used among the Regional Entities with single, common applications, known as the Align for CMEP and CORES for Registration. CORES is set to be released by the end of 2019, and 2020 is the final development year for Align. Funding for support of the CRATS application in 2020 and beyond, at reduced levels, will be required for historical purposes.

The objectives and benefits of the Align tool include (1) a single common portal and experience for registered entities; (2) improved integration of and access to data, as well as increased analytics; and (3) standardized business processes and consistent application of the CMEP, resulting in increased productivity and reduced application costs across the ERO Enterprise. There will be a release in the fall of 2019 that will support self-reporting, self-logging, enforcement, and mitigation. There will be two more releases in 2020, the final development year, which will support Compliance Assurance activities. For more information, see the [Align Project](#) page on the NERC website.

CORES similarly creates consistent Regional Entity and registered entity processes and improves data maintenance, including capturing data elements to be integrated with the Align application. Additionally, registered entities are able to directly manage their registration needs. The initial release of CORES is scheduled by the end of 2019, with further enhancements planned for 2020. For more information, see the [CORES Technology Project](#) page on the NERC website.

The BES Notification and Exception System tool (BESnet) is also used in support of the Registration group's activities. The BESnet application allows registered entities to submit to their respective Regional Entity notifications of changes to BES assets that affect the registered entity's responsibilities for compliance with the Reliability Standards.

Key Efforts Underway

Current and ongoing efforts and activities for Compliance Assurance are as follows:

NERC Oversight of Risk-Based Compliance Monitoring

NERC continues to implement risk-based compliance monitoring as part of its stated objectives of ensuring BPS reliability, improving consistency, effectiveness, and efficiency of ERO Enterprise compliance operations, focusing on identified risks and reducing unnecessary burdens on registered entities. Ensuring the successful implementation of NERC's risk-based CMEP remains the priority of Compliance Assurance's oversight plan for the Regional Entities. As part of that oversight, and in addition to offering regular feedback to the Regional Entities, NERC continues to identify areas for improvement or promoting consistency through training, guidance, or adjustments. NERC also produces an ERO Enterprise CMEP annual report, which includes an assessment of the risk-based CMEP implementation.

CIP Compliance

NERC and the Regional Entities continue to manage the smooth implementation of compliance activities for CIP Version 5 Reliability and Physical Security Standards, along with their subsequent enhancements by providing training, webinars, and other forms of outreach. The ERO Enterprise continues to provide educational programs to support industry compliance and the integration of risk assessment and internal controls.

Program Alignment Process

The ERO Enterprise continues to align CMEP activities across North America. The ERO Enterprise Program Alignment Process provides a structure for collecting, reviewing, resolving, and communicating discrepancies in practices across the ERO Enterprise. Alignment issues come to the ERO Enterprise from a variety of sources, including industry submittals and NERC oversight.

Align Project

The development of the Align tool discussed above required NERC and the Regional Entities to coordinate heavily in 2018 and 2019 to harmonize several aspects of CMEP activities, improving overall program execution and alignment.

Regional Entity Training

Compliance Assurance provides training to Regional Entity staff on the most important elements of risk-based compliance monitoring, including enhancements to registered entity IRAs, internal controls reviews, COP development, as well as Reliability Standards monitoring. NERC develops this training based on observations from its oversight activities of the Regional Entities, as well as the process reviews described above.

Small Group Advisory Sessions

Compliance Assurance periodically hosts Small Group Advisory Sessions (SGAS) with industry that include in-depth discussions around the possible implementation of controls for newly approved, but not yet effective, Reliability Standards to address and mitigate cyber and physical security risks of the BPS. In 2019, the focus of the SGAS activities was related to supporting implementation of the Cyber Security Supply Chain Risk Management Reliability Standard.

Compliance Enforcement Authority for Southwest Power Pool Regional Transmission Organization

As a result of the Southwest Power Pool Regional Entity (SPP RE) dissolution process, in early 2018 NERC assumed the Compliance Enforcement Authority (CEA) activities for the registered entity SPP Regional Transmission Organization (RTO) for two years. This is the role that is generally delegated by NERC to a Regional Entity. Essentially the CEA is responsible for planning and conducting all CMEP activities as described in the ROP and other guiding documents. NERC leverages existing internal and Regional Entity resources and expertise to undertake the CEA activities with respect to the SPP RTO. NERC also uses its CEA activities to inform program alignment.

Recent, current, and ongoing activities for Registration and Certification include:

- Transition of SPP RE registered entities to MRO and SERC, and transition of FRCC RE registered entities to SERC with respect to the dissolution of FRCC RE;⁹
- Completion of an ERO Practice Guide on Distribution Provider “Directly Connected” Determinations;
- Peak Reliability wind-down activities, including but not limited to, continuity of RC functionality, operational readiness of infrastructure and readiness of personnel, compatibility of RC methodologies, continuity of west-wide tools, seams management, and data sharing;
- Development and launch of CORES, discussed above, including continued focus on functionality for Coordinated Functional Registrations (CFRs);
- Execution of Certification engagements and response to industry changes requiring Certification review, with particular emphasis on control center relocations, Energy Management System (EMS) replacements, and RC, BA, and TOP footprint changes; and
- Processing registration change requests, including NERC-led Review Panels and BES Exceptions.

2020 Goals and Deliverables

In 2020, Compliance Assurance resources will focus on improvements implemented as a result of the risk-based compliance monitoring activities in 2017, 2018, and 2019. Specific objectives for this group are:

- Continue to mature the risk-based compliance monitoring program, providing ongoing oversight of the risk-based CMEP, including IRAs, consideration of internal controls, coordinated oversight of Multi-Region Registered Entities (MRREs), and ensuring COPs are addressing the relevant risks.

⁹ [Letter Order Approving the Joint Petition Requesting Certain Approvals in connection with the Dissolution of FRCC](#), Docket No. RR19-4-000, 167 FERC ¶ 61,095 (2019)

- Work closely with NERC’s Enforcement and IT departments, as well as staff in the Regional Entities, to implement the Align tool.
- Support the continued successful implementation of the CIP Version 5 Reliability Standards and subsequent enhancements as they become effective.
- Monitor and support effective implementation of the physical security Reliability Standard.
- Enhance and implement training to support monitoring of Reliability Standards, integrating principles from the *Compliance Monitoring Competency Guide*.
- Continue feedback to the Reliability Standards group through coordination between the standards and compliance functions to allow for clear stakeholder implementation of standards, as well as feedback on risks seen in the field. This effort will be supported through a common set of RSAWs, guidance, and outreach.
- Support international CMEP activities, including reliability and security subject matter expertise and outreach.
- Provide support and leadership to the CCC as well as its subcommittees, working groups, and task forces. Support the CCC leadership and development and implementation of annual work plans.
- Complete the NERC CEA program for SPP RTO until planned transition to MRO in 2020.

The Registration and Certification group will continue the ongoing activities described above as applicable. With CORES fully deployed, there will be an opportunity in 2020 and beyond to explore how the ERO IT platforms can further enhance work products, communication, and data tracking and reporting.

Future Plans

For 2021 and 2022, NERC anticipates full implementation of the Align tool, providing significant impetus for continued harmonization of CMEP processes across the ERO Enterprise and enhanced CMEP workflow management. Additionally, the Align implementation, along with continued coordination among NERC and the Regional Entities, should result in significant maturation of risk-based CMEP processes, particularly in realizing enhanced development and use of COPs to support CMEP planning activities.

Resource Requirements

Personnel

In prior years, personnel increased in the Compliance Assurance area through the reallocation of resources from other departments as part of ERO Enterprise efforts to strengthen the implementation and oversight of the risk-based CMEP, increase risk analysis capabilities and technical expertise, and support feedback loops that improve program oversight and the development of Reliability Standards. As the risk-based CMEP program has matured, NERC has reduced personnel in this area accordingly through the reallocation of resources or elimination of open positions. The decrease of 4.23 FTEs in the 2020 budget is a result of this continued effort to realign staff with current strategic needs. There have been no changes to FTEs for Registration and Certification.

Consultants and Contracts

The increase of approximately \$40k for Consultants and Contracts in the 2020 budget is the result of a reclassification of support costs for BESnet from the IT department to the Registration and Certification area. A detailed breakdown of the 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contractor Costs*.

Other Costs

The \$77k increase in Office Costs expenses in the 2020 budget is primarily related to the contracted cost for software licensing, maintenance, and hosting expenses for Align, for which the total annual cost is split evenly with Compliance Enforcement. The Fixed Asset budget includes approximately \$904k for the last year of development of Align (for which the total expenditure for 2020 is approximately \$1.8M, split evenly between Compliance Assurance and Compliance Enforcement), and \$200k for planned enhancements for CORES.

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
COMPLIANCE ASSURANCE, REGISTRATION, AND CERTIFICATION					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 13,806,602	\$ 13,806,602	\$ -	\$ 12,236,583	\$ (1,570,019)
Assessment Stabilization Reserve - Penalties	104,310	104,310	-	-	(104,310)
Total NERC Funding	\$ 13,910,912	\$ 13,910,912	\$ -	\$ 12,236,583	\$ (1,674,329)
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	33,504	88,866	55,363	55,517	22,014
Total Funding (A)	\$ 13,944,416	\$ 13,999,779	\$ 55,363	\$ 12,292,101	\$ (1,652,315)
Expenses					
Personnel Expenses					
Salaries	\$ 4,123,449	\$ 4,354,497	\$ 231,048	\$ 3,646,298	\$ (477,151)
Payroll Taxes	265,782	249,950	(15,832)	222,053	(43,729)
Benefits	674,062	711,896	37,834	686,630	12,568
Retirement Costs	456,866	440,021	(16,845)	404,705	(52,161)
Total Personnel Expenses	\$ 5,520,160	\$ 5,756,364	\$ 236,205	\$ 4,959,686	\$ (560,474)
Meeting Expenses					
Meetings & Conference Calls	\$ 215,650	\$ 211,953	\$ (3,697)	\$ 89,200	\$ (126,450)
Travel	525,500	400,442	(125,058)	400,000	(125,500)
Total Meeting Expenses	\$ 741,150	\$ 612,395	\$ (128,755)	\$ 489,200	\$ (251,950)
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 50,000	\$ 50,000	\$ -	\$ 90,320	\$ 40,320
Office Rent	-	-	-	-	-
Office Costs	264,000	264,000	-	341,358	77,358
Professional Services	-	6,631	6,631	-	-
Miscellaneous	1,000	4,662	3,662	750	(250)
Total Operating Expenses, excluding Depreciation	\$ 315,000	\$ 325,294	\$ 10,294	\$ 432,428	\$ 117,428
Total Direct Expenses	\$ 6,576,310	\$ 6,694,053	\$ 117,744	\$ 5,881,314	\$ (694,996)
Indirect Expenses	\$ 5,693,082	\$ 6,076,079	\$ 382,998	\$ 5,092,050	\$ (601,031)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 12,269,391	\$ 12,770,132	\$ 500,741	\$ 10,973,364	\$ (1,296,027)
Change in Net Assets (=A-B)	\$ 1,675,025	\$ 1,229,646	\$ (445,379)	\$ 1,318,736	\$ (356,288)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 1,675,025	\$ 1,670,457	\$ (4,568)	\$ 1,318,736	\$ (356,288)
Total Budget (=B+C)	\$ 13,944,416	\$ 14,440,589	\$ 496,173	\$ 12,292,101	\$ (1,652,315)
FTEs	25.85	25.47	(0.38)	21.62	(4.23)

Compliance Enforcement

Compliance Enforcement (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	13.16	12.22	(0.94)
Direct Expenses	\$ 2,977,690	\$ 2,822,301	\$ (155,389)
Indirect Expenses	2,898,296	2,878,115	(20,181)
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	981,249	1,025,155	43,906
TOTAL BUDGET	\$ 6,857,235	\$ 6,725,572	\$ (131,663)

Background and Scope

The Enforcement group is responsible for overseeing enforcement processes, the application of penalties or sanctions, and activities to mitigate and prevent recurrence of noncompliance with Reliability Standards. The group works collaboratively with the Regional Entities to ensure consistent and effective implementation of the risk-based CMEP. The group focuses on ensuring that the ERO Enterprise dedicates resources to the matters that pose the greatest risk to the reliability of the BPS. The scope of the Enforcement group's activities include the following:

- Monitoring Regional Entities' enforcement processes and providing oversight of their outcomes to ensure alignment across the ERO Enterprise;
- Collecting and analyzing enforcement data and trends to help identify emerging risks to the BPS and inform the development of enforcement policies and processes;
- Filing Notices of Penalty (NOPs) and other disposition documents associated with noncompliance discovered through Regional Entity or NERC-led CMEP activities;
- Collaborating with other NERC departments, including Compliance Assurance, Reliability Standards, and Event Analysis; and
- Training ERO Enterprise staff and registered entities, as well as supporting other outreach efforts.

Stakeholder Engagement and Benefit

Enforcement engages with stakeholders through interaction with and presentations to the CCC, NERC and Regional Entity workshops, and ERO Enterprise webinars to communicate with registered entities about the most significant risks to reliability and security. Enforcement uses those forums to share information about violations and their mitigation to reduce those significant risks.

Tools and Technology

Historically, NERC has used CRATS to track violations, mitigation plans, and reporting required by NERC as the ERO. As discussed in the *Compliance Assurance and Organization Registration and Certification* section above, NERC has been working closely with the Regional Entities to evaluate and implement strategic investments in tools that will replace CRATS and the CMEP applications used among the Regional Entities with a single, common application known as Align. There will be a release in 2019 that will support self-reporting, self-logging, enforcement, and mitigation. There will be two more releases in 2020, the final development year, which will support Compliance Assurance. Funding for support of the CRATS application in 2020 and beyond, at reduced levels, will be required for historical purposes. For more information, see the [Align Project](#) page on the NERC website.

Key Efforts Underway

Risk-based Enforcement

The ERO Enterprise’s responsibility to address risks to reliability and security includes resolving violations that posed significant risks. Enforcement is identifying those serious violations, ensuring appropriate resolution of those cases, and communicating results to industry. New in 2019 is a series of webinars addressing the themes of violations in major cases.

Streamlining of Minimal Risk Noncompliance

Enforcement continues to enhance risk-based enforcement by identifying additional opportunities to streamline the resolution of minimal risk noncompliance. This effort includes examining the processes to review and assess the risk of noncompliance in order to resolve minimal risk noncompliance more efficiently. Enforcement also considers modifications to the Self-Logging Program to make the program more beneficial to participants and facilitate more efficient resolution of self-logged issues.

Program Alignment Process

The ERO Enterprise continues to align CMEP activities across North America. The ERO Enterprise Program Alignment Process provides a structure for collecting, reviewing, resolving, and communicating discrepancies in practices across the ERO Enterprise. Alignment issues come to the ERO Enterprise from a variety of sources, including industry submittals and NERC oversight.

Align Project

The development of the Align tool discussed above required NERC and the Regional Entities to coordinate heavily in 2018 and 2019 to harmonize several aspects of CMEP activities, improving overall program execution and alignment.

Continued Outreach

NERC CMEP staff provides CMEP training to ERO Enterprise staff through workshops, instructor-led training events, eLearning opportunities, and oversight of the training and education activities of the Regional Entities. These opportunities focus on identifying gaps in staff knowledge and capabilities related to the risk-based CMEP.

2020 Goals and Deliverables

Specific 2020 objectives for the Enforcement department include continuing to:

- Focus on identifying and mitigating the greatest risks to reliability and security.
- Support the development and implementation of the Align tool.
- Streamline minimal risk noncompliance, including Compliance Exceptions and the self-logging program.
- Align the risk assessment process and educate relevant parties.
- Mature the Coordinated Oversight program for MRREs.

Future Plans

In 2021 and beyond, NERC and the Regional Entities will continue to conduct outreach activities that focus on self-logging, compliance exceptions, mitigation, and risk assessment of noncompliance. NERC plans to use existing industry events, such as the standards and compliance workshops and industry webinars, to provide information on enforcement activities. Enforcement will continue to identify areas for improvement and promotion of alignment through training, guidance, or other adjustments.

Resource Requirements

Personnel

The decrease of 0.94 FTEs in 2020 is the result of resource allocations to realign staff with current needs.

Consultants and Contracts

The decrease of \$161k in Consultants and Contracts in the 2020 budget is a result of a reclassification of CRATS support and maintenance costs to Office Costs. A detailed breakdown of the 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contractor Costs*.

Other Costs

The \$159k increase in Office Costs expenses in the 2020 budget is primarily related to the reclassification of CRATS support and maintenance costs from Consultants and Contracts noted above, as well as the contracted cost for software licensing, maintenance, and hosting expenses for Align, for which the total annual cost is split evenly with Compliance Assurance. The Fixed Asset budget includes approximately \$904k for the last year of development of Align (for which the total expenditure for 2020 is approximately \$1.8M, split evenly between Compliance Assurance and Compliance Enforcement).

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
COMPLIANCE ENFORCEMENT					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 6,787,076	\$ 6,787,076	\$ -	\$ 6,694,193	\$ (92,883)
Assessment Stabilization Reserve - Penalties	53,103	53,103	-	-	(53,103)
Total NERC Funding	\$ 6,840,179	\$ 6,840,179	\$ -	\$ 6,694,193	\$ (145,986)
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	17,056	45,031	27,975	31,379	14,323
Total Funding (A)	\$ 6,857,235	\$ 6,885,210	\$ 27,975	\$ 6,725,572	\$ (131,663)
Expenses					
Personnel Expenses					
Salaries	\$ 1,991,052	\$ 1,771,998	\$ (219,053)	\$ 1,829,637	\$ (161,414)
Payroll Taxes	126,256	120,482	(5,773)	113,039	(13,217)
Benefits	198,145	211,505	13,360	230,971	32,826
Retirement Costs	218,788	193,202	(25,586)	197,746	(21,042)
Total Personnel Expenses	\$ 2,534,240	\$ 2,297,188	\$ (237,052)	\$ 2,371,393	\$ (162,847)
Meeting Expenses					
Meetings & Conference Calls	\$ 4,400	\$ 14,427	\$ 10,027	\$ 6,200	\$ 1,800
Travel	47,500	82,903	35,403	55,000	7,500
Total Meeting Expenses	\$ 51,900	\$ 97,331	\$ 45,431	\$ 61,200	\$ 9,300
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 161,000	\$ 161,000	\$ -	\$ -	\$ (161,000)
Office Rent	-	-	-	-	-
Office Costs	230,050	230,050	-	389,208	159,158
Professional Services	-	-	-	-	-
Miscellaneous	500	3,000	2,500	500	-
Total Operating Expenses, excluding Depreciation	\$ 391,550	\$ 394,050	\$ 2,500	\$ 389,708	\$ (1,842)
Total Direct Expenses	\$ 2,977,690	\$ 2,788,568	\$ (189,122)	\$ 2,822,301	\$ (155,389)
Indirect Expenses	\$ 2,898,296	\$ 2,879,398	\$ (18,898)	\$ 2,878,115	\$ (20,181)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 5,875,986	\$ 5,667,967	\$ (208,020)	\$ 5,700,417	\$ (175,570)
Change in Net Assets (=A-B)	\$ 981,249	\$ 1,217,243	\$ 235,994	\$ 1,025,155	\$ 43,906
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 981,249	\$ 945,396	\$ (35,853)	\$ 1,025,155	\$ 43,906
Total Budget (=B+C)	\$ 6,857,235	\$ 6,613,362	\$ (243,873)	\$ 6,725,572	\$ (131,663)
FTEs	13.16	12.07	(1.09)	12.22	(0.94)

Reliability Assessments and Performance Analysis

The Reliability Assessments and Performance Analysis (RAPA) program identifies, prioritizes, and enables activities to reduce known and emerging risks to the BPS. Four groups between two NERC departments are focused on this program: (1) the Reliability Assessments and Technical Committees group and (2) the Performance Analysis group, which are part of the Risk Identification and Mitigation department, and (3) the Power System Analysis and (4) the Advanced System Analytics and Modeling group, which are part of the Engineering and Standards department.

Reliability Assessments and Performance Analysis			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	25.38	23.50	(1.88)
Direct Expenses	\$ 7,455,074	6,753,513	\$ (701,561)
Indirect Expenses	5,589,571	5,534,837	(54,734)
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	187,552	833,953	646,401
TOTAL BUDGET	\$ 13,232,197	\$ 13,122,303	\$ (109,893)

Background and Scope

Reliability Assessments and Technical Committees

The Reliability Assessments (RA) and Technical Committees group includes RA staff as well as the NERC staff secretaries of the OC, PC, and CIPC. RA staff carry out the ERO's statutory responsibility to conduct assessments of the overall reliability and adequacy of the BPS and associated emerging reliability risks that could impact the short, mid, and long-term planning horizons, as well as other reliability issues requiring in-depth analysis. Additionally, RA staff publishes the annual *State of Reliability Report* that looks at the year-over-year performance indicators of the grid. RA activities directly address the risk priorities established by the RISC, and the group relies on its own engineering and analysis expertise, as well as Regional Entity and stakeholder resources. Annual reports and assessments produced by RA staff include:

- Long-Term Reliability Assessment (LTRA) (supplemented by the Probabilistic Assessment)
- Summer and Winter Reliability Assessments
- *State of Reliability Report*
- Special Reliability Assessments (selected based on high-risk issues that require an independent assessment from the ERO)

The NERC technical committees, which include the PC, OC, CIPC, and their subgroups, provide the oversight, guidance, and leadership essential to enhancing BPS reliability by addressing areas of strategic focus efficiently and comprehensively, and ensuring technical accuracy. The NERC staff secretaries of the technical committees coordinate and administer these activities and efforts. NERC staff also coordinates the Standing Committee Coordinating Group, which organizes the leadership of each of the standing committees to address and coordinate on cross-cutting efforts.

The RA and Technical Committees group works closely with stakeholders to create assessment development schedules with adequate stakeholder review at every level. All NERC reliability assessments typically have a sponsoring technical committee, subcommittee, or other subgroup. The long-term and seasonal assessments are conducted by the PC's Reliability Assessment Subcommittee (RAS), and

ultimately endorsed by the PC. Special assessments often require a separate and specialized task force or advisory group to help construct, conduct, and produce special topic assessments.

Performance Analysis

The Performance Analysis (PA) group monitors the performance of and identifies risks to reliability of the BPS through analyzing data from industry and measuring historic trends. As such, PA is responsible for the collection, management, and analysis of data related to the performance of five areas of BPS operations: transmission, conventional generation, wind generation, protection system misoperations, and demand response. Analysis performed by PA includes identifying potential risks of concern related to system, equipment, entity, and organizational performance that may indicate a need to develop remediation strategies, improvements to the reporting applications, new data collection or analysis tools, or data used to create, revise, or retire Reliability Standards or consider new reliability standards or reporting areas. Such analyses provide the foundation for the annual *State of Reliability* report and other analytical reports and technical papers to the industry.

Power System Analysis

The Power System Analysis (PSA) group provides technical leadership and support in the areas of resource and demand balancing and system analysis and modeling, including technical support for the NERC balancing (BAL) and modeling (MOD) Reliability Standards. This has become particularly important as new technologies are added to the system, and significant changes in the resource mix are being both experienced and projected. The PSA group is responsible for:

- Assisting the RA and Technical Committees group in their independent reliability assessments;
- Interconnection-wide analysis of steady-state and dynamic conditions, including frequency, ERS, stability, short circuit ratio, and oscillatory behavior aspects; and
- Assuring that the BES electrical elements necessary for its reliable operation are identified and subject to the Reliability Standards.

Advanced System Analytics and Modeling

The Advanced System Analytics and Modeling (ASAM) group provides support for the development and improvement of long-term, sustainable interconnection-based power flow, dynamic, and load models that exhibit the accuracy and fidelity reflecting actual BES reliability performance and dynamic conditions. As new technology incorporation into the BPS accelerates, there is a need for new and improved models towards simulation of their contributions and impacts on reliability. This will facilitate improved design and maximize technology incorporation while maintaining the reliable operation of the BPS. The group:

- Provides guidance on the appropriate use of new and existing models to study emerging risks;
- Advances understanding of power system characteristics and behaviors by gathering larger phasor measurement units (PMU) datasets for advanced data analytics and modeling improvements; and
- Promotes and expands understanding of the growing need and available methods for probabilistic studies to augment deterministic studies in system planning studies.

ASAM further provides advanced statistical analysis functions to support the RA and Technical Committees group's *State of Reliability* report and various reliability assessments, PSA's interconnection-wide analysis of frequency response and other parameters, and PRISM's analytical review of Reliability Standard effectiveness.

Stakeholder Engagement and Benefit

The groups described above work collaboratively with NERC stakeholders, particularly through the PC and OC and their technical subgroups, to create a reliability strategy that is relevant, timely, and effective to address the most important reliability risks. These efforts include:

- Synthesizing key information identified through analysis and assessment efforts;
- Extracting and prioritizing the associated reliability risks;
- Sharing and integrating risk analysis insights across the ERO Enterprise; and
- Translating knowledge into actionable guidance and recommendations for the Board and industry, along with state, federal, and provincial policymakers.

Further, these groups continue to work closely with other organizations, including but not limited to the DOE, Electric Power Research Institute (EPRI), Institute of Electrical and Electronics Engineers (IEEE), Institute of Nuclear Power Operations (INPO), North American Transmission Forum (NATF), North American Generator Forum (NAGF), Interstate Natural Gas Association of America (INGAA), Natural Gas Supply Association (NGSA), Canadian Electricity Association (CEA), and International Council on Large Electric Systems (CIGRÉ).

Tools and Technology

The following tools are used by RA, PA, PSA, and ASAM staff to support their activities:

- Advanced analytics and analysis software
- Planning software
- Infrastructure and geographic-related vulnerabilities analysis software
- Data management systems, including GADS, GADS Wind, TADS, DADS, RADS, BASS, the Frequency Response Analysis Tools (FRAT), and the Misoperations Information Data Analysis System (MIDAS)

Key Efforts Underway

In addition to the development of the annual assessments and reports, RA focus areas and ongoing activities include:

- Effective ERS. These efforts are expected to lead to a broad set of recommendations that will culminate with defined elements, an evaluation of initial metrics and data compilation of actual performance, and refinement of the ongoing assessment of ERS measures;
- Advancing the value of the seasonal reliability assessment by providing predictive evaluations of the operational risk in each assessment area. In addition to the Planning Reserve Margin analysis, future seasonal reliability assessments will use historical resource performance data to identify expected and potentially extreme operational risks;
- Advancing probabilistic assessments and evaluations of energy assurance; and
- Enhancing ERO Enterprise-wide effectiveness and efficiency of RA-related functions. This includes coordinating data and information systems across the ERO Enterprise and providing consistent oversight regarding data collection, checking, validation, and assessment.

Additionally, in FERC's Order No. 830 approving Reliability Standard TPL-007-1 (*Transmission System Planned Performance for Geomagnetic Disturbance Events*), FERC directed NERC to file a research work plan describing how NERC will conduct research into the GMD-related topics identified in the order. NERC

developed a research plan¹⁰ with EPRI and filed it with FERC on April 19, 2018. This \$3.4M research project is being co-funded by NERC along with more than 20 owners and operators from the electric industry. As part of this effort and directed by FERC, the Board approved an ROP Section 1600 data request to collect GMD data August 16, 2018. Further, NERC continues to work with industry to collect information on geomagnetically induced current (GIC) and the potential impacts on power system reliability.

The technical committees recognize the need to strengthen the ties among each other to ensure expertise is leveraged and amplified, thereby increasing the relevance and value of results. NERC staff is supporting a Stakeholder Engagement Team that has been formed to review the structure, drawing upon the experience of successfully enhanced Regional Entity committee models, and develop recommendations to improve the effectiveness and efficiency of the committees.

PA continues to oversee and evaluate reliability trends that identify reliability risks by analyzing data contained in GADS, TADS, and DADS, along with reliability metrics and protection and controls system misoperations data. PA is currently expanding the GADS data trend analysis and has begun reflecting post-seasonal reliability review, insights from analysis of the GADS, TADS, and DADS, and integration of event analysis and misoperations. Additionally, in 2019, PA began development of reporting requirements for solar and associated energy storage data collection.

The PSA group is focusing on:

- Developing technical analyses in key reliability areas, resulting in comprehensive reports addressing areas of concern (e.g., frequency response, short circuit strength, inter-area oscillation, DER, etc.). The purpose of these technical analyses is to understand and evaluate BPS characteristics, behavior, and performance due to the changing resource mix and integration of new technology, thereby providing guidance and technical expertise to address key planning-related issues and Interconnection-wide concerns;
- Continuing to explore the use of state-of-the-art software to conduct power system analysis by enhancing the usage of real-time tools used by the industry to sharpen and fine-tune models as the system evolves with the integration of new technology;
- Conducting detailed forensic analyses of significant system disturbances; and
- Providing technical expertise, research, and feedback to the industry, including those that support development of key reliability planning-related standards.

ASAM's current key focus areas include:

- Provide industry insight related to modeling improvements and interconnection-wide system analysis through a State of Modeling report, with recommendations for enhancement and industry engagement.
- In coordination with the PC's Inverter-Based Resource Performance Task Force (IRPTF), perform event analyses and investigate abnormal performance of inverter-based resources, particularly solar photovoltaic. Develop industry recommendations and address potential reliability gaps.
- Support industry in the reliable integration of increased levels of DER, and provide industry technical guidance on key reliability impacts. Develop recommended practices and guidelines (modeling, planning, and operations) to ensure BPS reliability.

¹⁰ [Revised Geomagnetic Disturbance Research Work Plan of the North American Electric Reliability Corporation](#)

- Support industry adoption and advancement of synchrophasor technology through the PC's Synchronized Measurement Subcommittee (SMS). Study interconnection-wide oscillatory behavior (and other interconnection-wide phenomena) through PMU data collected from RCs.
- Support industry understanding and expertise in power plant modeling through the PC's System Analysis and Modeling Subcommittee's (SAMS's) Power Plant Modeling and Verification Task Force (PPMVTf). Advance capabilities to perform a disturbance based model verification, working with software vendors. Support industry implementation of MOD-026-1 and MOD-027-1.
- Drive improvements of dynamic load modeling capabilities in support of industry stability studies for planning and real-time reliability assessments. Advance state-of-the-art modeling capability across North America. Support the SAMS's Load Modeling Task Force (LMTF) efforts.
- Support studies and technical positions on the changing nature of end use loads and advocate for grid-friendly load behavior. Engage with industries collaboratively, working with utility members, to represent BPS needs.
- Perform annual assessments of case quality and fidelity on the interconnection-wide cases released by the MOD-032 designees. Develop a feedback loop mechanism with the MOD-032 designees to instigate improvements to models.
- Proactively address deficiencies in interconnection-wide models and provide industry education on key modeling topics (e.g., generic model notifications for wind, solar, battery) as identified by NERC or industry.
- Coordinate with the PC's Methods for Establishing IROls Task Force (MEITF) and support improvements to the methods, practices, and tools used for establishing IROls. Coordinate with industry and FERC on potential new approaches to characterize IROls while ensuring reliable operation of the BPS.
- Conduct a Composite Reliability Study using probabilistic—or near probabilistic—methods for transmission as well as resources.
- Conduct a Joint WECC/NERC Battery Study of the Western Interconnection to determine the adequacy of battery energy injection to support frequency response, steady-state and dynamic support, primary frequency reserve margin, etc.
- Conduct advanced statistical studies in support of the Standards Efficiency Review and the *State of Reliability Report*.

2020 Goals and Deliverables

In 2020, the RA and Technical Committees, PA, PSA, and ASAM groups will continue the efforts described above as applicable, with particular focus on evaluation and assessment of future energy assurance, a Special Reliability Assessment on electricity storage, an Interconnection-wide short circuit study and report, as well as implementation of an effectiveness and efficiency strategy for NERC's committee structure.

As the grid evolves, the ability to collect and the quality and integration of data becomes increasingly important, requiring continued investment in enhancements to and maintenance of the suite of data management tools, including GADS, GADS Wind, TADS, DADS, RADS, and BASS. NERC also continues to develop technology applications for the collection of new data under Section 1600 data requests. This includes the collection of GMD data as a result of FERC Order 830 discussed above. NERC also expects to work with industry on a Section 1600 data request for the collection of data for solar energy storage associated with solar and wind generation, as well as event reporting for solar and wind generation, which will require the development of a GADS Solar data management system.

Future Plans

In 2021 and beyond, NERC will need to continue to build and maintain the analytical capabilities needed to support the reliability of the changing grid. This will include the implementation of data collection applications to include solar inventory, event, and performance reporting, as well as the integration of energy storage with the solar and wind facilities, and the development of a strategic plan to re-platform data collection applications as needed to create better integration of collection efforts and analysis for the ERO Enterprise. These shared analytics, data warehouses, and tools advance the capabilities and credibility of the ERO as a trusted source for reliability assessment information and decision-making guidance. In addition, these capabilities provide industry and other stakeholders with important information to assist them in ensuring reliability in light of the unprecedented changes of the character and composition of the BPS.

Resource Requirements

Personnel

The decrease of 1.88 FTEs in the 2020 budget is a result of the department and position reorganization discussed in the *Introduction and Executive Summary*.

Consultants and Contracts

The decrease of \$526k for Consultants and Contracts in the 2020 budget is primarily a result of a reclassification of maintenance and enhancement costs for GADS, TADS, and DADS to Office Costs and Fixed Assets, respectively. A detailed breakdown of 2019 and 2020 budgeted expenses are shown in *Exhibit B – Consultant and Contract Costs*.

Other Costs

The \$140k increase for Meeting Expenses in the 2020 budget is primarily a result of the department and position reorganization (discussed in the *Introduction and Executive Summary*) due to the movement of associated costs for the NERC technical committee meetings to the RA and Technical Committees group. The \$219k increase for Office Costs is due to the reclassification of maintenance and enhancement costs for GADS, TADS, and DADS from Consultants and Contracts. The Fixed Asset budget for 2020 includes \$600k for enhancements for the GADS, TADS, and DADS tools and development of GADS Solar, discussed above.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
RELIABILITY ASSESSMENTS AND PERFORMANCE ANALYSIS					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 13,056,888	\$ 13,056,888	\$ -	\$ 13,001,958	\$ (54,930)
Assessment Stabilization Reserve - Penalties	102,414	102,414	-	-	(102,414)
Total NERC Funding	\$ 13,159,302	\$ 13,159,302	\$ -	\$ 13,001,958	\$ (157,344)
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	40,000	40,000	-	60,000	20,000
Miscellaneous	-	-	-	-	-
Interest & Investment Income	32,894	86,656	53,762	60,345	27,450
Total Funding (A)	\$ 13,232,197	\$ 13,285,958	\$ 53,762	\$ 13,122,303	\$ (109,893)
Expenses					
Personnel Expenses					
Salaries	\$ 4,170,057	\$ 3,788,384	\$ (381,674)	\$ 3,662,883	\$ (507,174)
Payroll Taxes	260,940	236,077	(24,863)	233,091	(27,849)
Benefits	541,751	554,185	12,434	595,261	53,511
Retirement Costs	461,661	408,079	(53,582)	407,604	(54,057)
Total Personnel Expenses	\$ 5,434,409	\$ 4,986,724	\$ (447,685)	\$ 4,898,839	\$ (535,570)
Meeting Expenses					
Meetings & Conference Calls	\$ 117,100	\$ 117,504	\$ 404	\$ 286,800	\$ 169,700
Travel	330,000	368,463	38,463	300,000	(30,000)
Total Meeting Expenses	\$ 447,100	\$ 485,967	\$ 38,867	\$ 586,800	\$ 139,700
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 1,278,565	\$ 1,260,243	\$ (18,322)	\$ 752,570	\$ (525,995)
Office Rent	-	-	-	-	-
Office Costs	294,000	294,000	-	513,304	219,304
Professional Services	-	-	-	-	-
Miscellaneous	1,000	1,000	-	2,000	1,000
Total Operating Expenses, excluding Depreciation	\$ 1,573,565	\$ 1,555,243	\$ (18,322)	\$ 1,267,874	\$ (305,691)
Total Direct Expenses	\$ 7,455,074	\$ 7,027,935	\$ (427,139)	\$ 6,753,513	\$ (701,561)
Indirect Expenses	\$ 5,589,571	\$ 5,875,690	\$ 286,119	\$ 5,534,837	\$ (54,734)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 13,044,645	\$ 12,903,625	\$ (141,020)	\$ 12,288,351	\$ (756,294)
Change in Net Assets (=A-B)	\$ 187,552	\$ 382,334	\$ 194,782	\$ 833,953	\$ 646,401
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 187,552	\$ 125,284	\$ (62,268)	\$ 833,953	\$ 646,401
Total Budget (=B+C)	\$ 13,232,197	\$ 13,028,908	\$ (203,288)	\$ 13,122,303	\$ (109,893)
FTEs	25.38	24.63	(0.75)	23.50	(1.88)

Situation Awareness

Situation Awareness (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	5.64	5.64	-
Direct Expenses	\$ 2,612,404	\$ 2,578,597	\$ (33,807)
Indirect Expenses	1,242,127	1,328,361	86,234
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	441,678	349,049	(92,630)
TOTAL BUDGET	\$ 4,296,209	\$ 4,256,006	\$ (40,203)

Background and Scope

NERC's Situation Awareness group and the Regional Entities monitor BPS conditions, significant occurrences and emerging risks, and threats across the 14 RC regions in North America to maintain an understanding of conditions and situations that could impact reliable operation. This group also supports the development and publication of NERC Alerts and awareness products and facilitates information sharing among industry, the Regional Entities, and the government during crisis situations and major system disturbances. The process for understanding the potential threats or vulnerabilities to BPS reliability starts with understanding occurrences and events in the context in which they occur.

Stakeholder Engagement and Benefit

BPS conditions continually change and provide recognizable signatures through automated tools, mandatory reports and voluntary information sharing, and third-party publicly available sources. The significant majority of these signatures represents conditions and occurrences that have little or no reliability impact, either positive or adverse, on the BPS. However, being cognizant of the short-term condition of the BPS and the signatures associated with the entire range of reliability performance helps the ERO identify significant occurrences more accurately and efficiently. Registered entities continue to robustly share information and collaborate with the ERO to maintain and improve overall reliability.

The Situation Awareness group assists the OC's Operating Reliability Subcommittee (ORS) in enhancing BPS reliability with their efforts to provide operational guidance to the industry by managing NERC-sponsored technology tools and services that support operational coordination, and by providing technical support and advice as requested.

Tools and Technology

The group uses and supports the following reliability-related tools in support of Situation Awareness activities:

- **Resource Adequacy (Area Control Error [ACE] Frequency) Tool** – This software application provides continuous monitoring of key resource adequacy performance metrics, including pre-established thresholds and limits defined in standards. It alerts RCs and resource subcommittees to conditions that could result in critical inadequacies, such as major tie errors, inaccurate load forecasts, and inadequate frequency response.
- **Inadvertent Interchange** – This tool facilitates the entering of monthly scheduling data and submittal of monthly inadvertent performance standards reports to NERC. It also assists in the monitoring and resolution of reliability issues originated by inadvertent interchange imbalances.

- **Frequency Monitoring Network (FNet)** – Operated by the Power Information Technology Laboratory at the University of Tennessee, FNet is a low-cost, quickly deployable GPS-synchronized wide-area frequency measurement network. High dynamic accuracy frequency disturbance recorders are used to measure the frequency, phase angle, and voltage of the power system at ordinary 120V outlets. This measurement data is continuously transmitted via the Internet to the FNet servers hosted at the University of Tennessee and Virginia Tech.
- **Intelligent Alarms Tool** – This tool detects short-term and long-term frequency deviations using data transmitted to NERC by the BAs. When coupled with FNet, this tool allows immediate differentiation of the cause of a frequency deviation—a generator trip or a scheduling error.
- **PowerIQ and Power RT** – These tools provide more detailed insight into current-day conditions impacting BPS conditions in both normal operations and stressed conditions.
- **Situation Awareness for NERC, FERC, and the Regional Entities (SAFNR)** – This system provides near real-time information about the current operating conditions of the BPS and valuable information from a wide-area view about BPS impacts from hurricanes, hot and cold weather extremes, and varying system conditions.
- **Reliability Coordinator Information System (RCIS)** – This system allows RCs to post messages and share operating information in real time.
- **NERC Alerts** – This secure alerting system enables NERC to issue alerts to registered entities and the electricity sector when NERC discovers, identifies, or is provided with information that is critical to ensuring the reliability of the BPS.
- **Process Information (PI) Historian System** – The PI Historian system initially provided the ability to collect and analyze system inertia data in support of the recommendations in the 2015 Essential Reliability Services Task Force (ERSTF) report. The system also offers longer term value by enabling the continued strategy to transition away from outside applications by replicating the functionality of Resource Adequacy and Intelligent Alarms in-house. The system also creates the necessary foundation for NERC’s eventual receipt and consumption of streaming synchrophasor data in near real time.

Key Efforts Underway

Situation Awareness is focusing on the following priorities and ongoing activities:

- Ensuring that the ERO is aware of all BES events above a threshold of impact;
- Enabling the sharing of information and data to facilitate wide-area situational awareness;
- Facilitating the exchange of information among industry, the Regional Entities, and the U.S. and Canadian governments during crisis situations;
- Keeping industry informed of emerging reliability threats and risks, including any expected actions;
- Administering the NERC Alerts process as specified in ROP Section 810 to issue Advisory (Level 1) Alerts on significant and emerging reliability and security-related topics as needed, and facilitate the tracking of actions specified in Recommendation (Level 2) and Essential Action (Level 3) Alerts;
- Continuing to set the conditions to bring in limited streaming synchrophasor data for wide-area situational awareness and event triage applications; and
- Looking at the importance of having visibility and understanding of the reliability or availability of natural gas and its interdependency with electrical generation.

Additionally, in 2019, the Situation Awareness group is focusing on the upgrade to the SAFNR software application, which is expected to be released by the end of the year. The current SAFNR platform limits the Situation Awareness group's ability to accurately understand current conditions on the BPS due to the inability to easily or cost-effectively update the underlying power system information. The upgrade will allow for rapid and accurate situational awareness that appropriately protects the proprietary information in the tool while maximizing the value of understanding shared to the right audiences. Further, enhancing SAFNR will incorporate functionality elements piloted during GridEx IV that will enable the Situation Awareness group to provide the E-ISAC and the ESCC with more timely and understandable common operating picture information.

2020 Goals and Deliverables

In 2020, the Situation Awareness group will continue to execute the activities discussed above, including implementation of the upgraded SAFNR system and development of any needed enhancements. Additional 2020 plans include (1) an upgrade to the video wall in the NERC Atlanta office situational awareness room; (2) enhancing natural gas situational awareness by working with vendors to gain a better understanding of the tools and methods that are and will be available to monitor natural gas availability, transmission, and distribution across the BES; and (3) working with the E-ISAC to increase situational awareness related to physical security.

Future Plans

In 2021 and beyond, efforts related to natural gas and physical security situational awareness will continue. The Situation Awareness group is also planning for needed upgrades to or replacements of the RCIS, Resource Adequacy Tool, and NERC Alerts applications.

Resource Requirements

Personnel

There is no change in FTEs for the 2020 budget from the 2019 budget.

Consultants and Contracts

The \$1.3M decrease in Consultants and Contracts in the 2020 budget is a result of a reclassification of costs for licenses, support, and maintenance for the Situation Awareness tools discussed above to Office Costs. A detailed breakdown of the 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contract Costs*.

Other Costs

The \$1.1M increase for Office Costs in the 2020 budget is a result of the reclassification of costs for licenses, support, and maintenance for the Situation Awareness tools discussed above from Contracts and Consultants. The costs for these tools in 2020 is consistent with the 2019 budget. The total Fixed Assets budget includes \$250k for an upgrade to the video wall in the NERC Atlanta office situational awareness room.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
SITUATION AWARENESS					
	2019	2019	Variance	2020	Variance
	Budget	Projection	2019 Projection	Budget	2020 Budget
			v 2019 Budget		v 2019 Budget
			Over(Under)		Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 4,266,141	\$ 4,266,141	\$ -	\$ 4,241,524	\$ (24,617)
Assessment Stabilization Reserve - Penalties	22,759	22,759	-	-	(22,759)
Total NERC Funding	\$ 4,288,899	\$ 4,288,899	\$ -	\$ 4,241,524	\$ (47,376)
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	7,310	19,581	12,271	14,483	7,173
Total Funding (A)	\$ 4,296,209	\$ 4,308,480	\$ 12,271	\$ 4,256,006	\$ (40,203)
Expenses					
Personnel Expenses					
Salaries	\$ 865,683	\$ 902,298	\$ 36,615	\$ 900,228	\$ 34,546
Payroll Taxes	58,475	56,755	(1,720)	59,293	817
Benefits	182,721	209,972	27,252	227,569	44,849
Retirement Costs	95,435	85,885	(9,551)	100,163	4,727
Total Personnel Expenses	\$ 1,202,314	\$ 1,254,910	\$ 52,596	\$ 1,287,253	\$ 84,939
Meeting Expenses					
Meetings & Conference Calls	\$ 2,000	\$ 3,896	\$ 1,896	\$ 30,000	\$ 28,000
Travel	33,000	50,000	17,000	35,000	2,000
Total Meeting Expenses	\$ 35,000	\$ 53,896	\$ 18,896	\$ 65,000	\$ 30,000
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 1,280,990	\$ 1,329,740	\$ 48,750	\$ -	\$ (1,280,990)
Office Rent	-	-	-	-	-
Office Costs	93,600	255,722	162,122	1,225,844	1,132,244
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Total Operating Expenses, excluding Depreciation	\$ 1,375,090	\$ 1,585,962	\$ 210,872	\$ 1,226,344	\$ (148,746)
Total Direct Expenses	\$ 2,612,404	\$ 2,894,769	\$ 282,365	\$ 2,578,597	\$ (33,807)
Indirect Expenses	\$ 1,242,127	\$ 1,381,252	\$ 139,125	\$ 1,328,361	\$ 86,234
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 3,854,531	\$ 4,276,021	\$ 421,490	\$ 3,906,958	\$ 52,427
Change in Net Assets (=A-B)	\$ 441,678	\$ 32,459	\$ (409,219)	\$ 349,049	\$ (92,630)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 441,678	\$ 162,785	\$ (278,894)	\$ 349,049	\$ (92,630)
Total Budget (=B+C)	\$ 4,296,209	\$ 4,438,806	\$ 142,597	\$ 4,256,006	\$ (40,203)
FTEs	5.64	5.79	0.15	5.64	-

Event Analysis

Event Analysis (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	11.28	9.40	(1.88)
Direct Expenses	\$ 2,731,658	\$ 2,426,341	\$ (305,317)
Indirect Expenses	2,484,254	2,213,935	(270,319)
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	83,356	93,581	10,225
TOTAL BUDGET	\$ 5,299,268	\$ 4,733,857	\$ (565,411)

Background and Scope

The Event Analysis group performs assessments of the reliability and adequacy of the BES. This includes identifying potential issues of concern related to system, equipment, entity, and human performance that may indicate a need to develop remediation strategies, action plans, or data used to revise or retire Reliability Standards or consider new Reliability Standards. The group analyzes and determines the cause of the events, promptly ensures tracking of corrective actions to prevent recurrence, and provides lessons learned to the industry. Event Analysis ensures that reporting and analysis are consistent to allow wide-area assessment of trends and risks. The group analyzes all reportable events for sequence of events, root cause, risk to reliability, and mitigation, and keeps the industry well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions.

Additional resources within this group focus on identifying human-error risks and those precursor factors that allow human error to impact system reliability. The group educates industry regarding risks, precursors, and mitigation methods. Resources also support compliance and Reliability Standards training initiatives and trending and analysis to identify emerging reliability risks. These efforts are conducted in collaboration with industry human performance projects, including those of WECC's Human Performance Working Group, the OC's Event Analysis Subcommittee (EAS), and others.

Stakeholder Engagement and Benefit

The Event Analysis group coordinates the use of collective resources, consistency in analysis, and timely delivery of event analysis reports as per the [ERO Event Analysis Process](#). The ERO disseminates lessons learned and other useful information to the electric industry obtained from or as a result of event analysis. The Event Analysis team conducts in-depth analyses of approximately 150 events per year on average. Each year, the team also conducts calls facilitated by the Regional Entities with over 140 registered entities to discuss in detail and finalize root and contributing causes for the categorized events analyzed. Major analysis to date includes continuing assessment of EMS outages, continued collaboration with the RAPA groups on frequency response performance, analyses of substation equipment failure events, and protective relay trends, including ground overcurrent relay misoperations, relay communication system failures, and the importance of commissioning testing. Additionally, substantial work and analysis is being done in the area of inverters and inverter technologies.

Tools and Technology

The Event Analysis Management System (TEAMS) is used to track and process records originating from the EOP-004 reporting, OE-417 reporting, Event Analysis, and the ERO Cause Code Assignment processes. Relevant reports are recorded, uploaded, and tied together into a single event. The data in TEAMS is used to fuel event cause coding, general system performance analysis, and key performance indicators.

Key Efforts Underway

Event Analysis focus areas and ongoing activities include:

- Work with the Regional Entities to obtain and review information from registered entities on qualifying events and disturbances to advance awareness of events above a threshold level; facilitate analysis of root and contributing causes, risks to reliability, wide-area assessments, and remediation efforts; and disseminate information regarding events in a timely manner.
- Ensure that all reportable events are analyzed for sequence of events, root cause, risk to reliability, and mitigation.
- Continue to refine risk-based methods to support better identification of reliability risks, including the use of more sophisticated cause codes for analysis.
- Conduct training (webinars, workshops, and conference support) to inform industry and the ERO of lessons learned, root cause analysis, trends, human performance, and extreme weather preparedness and recommendations, including events like the annual NERC Monitoring and Situational Awareness Conference and annual Human Performance Conference.
- Develop reliability recommendations and alerts as needed and track industry accountability for critical reliability recommendations.
- Ensure that industry is well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions.
- Conduct major event analysis and reporting of major findings and recommendations that will improve reliability.

The Event Analysis department also supports several of the top-priority reliability risk projects as identified and described in the *Reliability Assessment and Performance Analysis* section.

2020 Goals and Deliverables

In addition to continuing the activities described above, in 2020 the Event Analysis group will focus on updating/upgrading data collection and shortage capabilities and capacity for TEAMS. Additionally, the Event Analysis and PA groups will work to develop a link between performance and event analysis data to enhance the ability to conduct effective event analyses, as well as to identify key areas for trend analyses across multiple databases.

Future Plans

In 2021 and beyond, the Event Analysis group will continue to work to improve the depth of event analyses across the ERO Enterprise, including enhancing data collection abilities and capacity and integration with other database systems.

Resource Requirements

Personnel

The 1.88 decrease in FTEs in the 2020 budget is a result of the department and position reorganization discussed in the *Introduction and Executive Summary*.

Consultants and Contracts

The \$10k for Consultants and Contracts in the 2020 budget is for Event Analysis review support.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
EVENT ANALYSIS					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 5,239,131	\$ 5,239,131	\$ -	\$ 4,709,719	\$ (529,412)
Assessment Stabilization Reserve - Penalties	45,517	45,517	-	-	(45,517)
Total NERC Funding	\$ 5,284,648	\$ 5,284,648	\$ -	\$ 4,709,719	\$ (574,929)
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	14,620	33,050	18,431	24,138	9,518
Total Funding (A)	\$ 5,299,268	\$ 5,317,699	\$ 18,431	\$ 4,733,857	\$ (565,411)
Expenses					
Personnel Expenses					
Salaries	\$ 1,903,950	\$ 1,696,731	\$ (207,220)	\$ 1,651,222	\$ (252,728)
Payroll Taxes	113,420	93,235	(20,185)	94,949	(18,472)
Benefits	264,308	234,796	(29,512)	259,683	(4,625)
Retirement Costs	210,479	180,160	(30,319)	181,837	(28,643)
Total Personnel Expenses	\$ 2,492,158	\$ 2,204,922	\$ (287,236)	\$ 2,187,691	\$ (304,467)
Meeting Expenses					
Meetings & Conference Calls	\$ 41,500	\$ 23,214	\$ (18,286)	\$ 33,600	\$ (7,900)
Travel	150,000	150,000	-	150,000	-
Total Meeting Expenses	\$ 191,500	\$ 173,214	\$ (18,286)	\$ 183,600	\$ (7,900)
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ 10,000	\$ 10,000
Office Rent	-	-	-	-	-
Office Costs	47,500	47,500	-	44,550	(2,950)
Professional Services	-	-	-	-	-
Miscellaneous	500	4,461	3,961	500	-
Total Operating Expenses, excluding Depreciation	\$ 48,000	\$ 51,961	\$ 3,961	\$ 55,050	\$ 7,050
Total Direct Expenses	\$ 2,731,658	\$ 2,430,097	\$ (301,561)	\$ 2,426,341	\$ (305,317)
Indirect Expenses	\$ 2,484,254	\$ 2,311,630	\$ (172,624)	\$ 2,213,935	\$ (270,319)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 5,215,912	\$ 4,741,727	\$ (474,185)	\$ 4,640,276	\$ (575,636)
Change in Net Assets (=A-B)	\$ 83,356	\$ 575,972	\$ 492,616	\$ 93,581	\$ 10,225
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 83,356	\$ 49,289	\$ (34,067)	\$ 93,581	\$ 10,225
Total Budget (=B+C)	\$ 5,299,268	\$ 4,791,016	\$ (508,252)	\$ 4,733,857	\$ (565,411)
FTEs	11.28	9.69	(1.59)	9.40	(1.88)

Electricity Information Sharing and Analysis Center

E-ISAC (including CRISP) (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	37.60	44.18	6.58
Direct Expenses	\$ 17,959,819	\$ 20,018,016	\$ 2,058,197
Indirect Expenses	8,392,122	10,405,494	2,013,372
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	973,686	861,280	(112,405)
TOTAL BUDGET	\$ 27,325,627	\$ 31,284,791	\$ 3,959,164

Background and Scope

The Electricity Information Sharing and Analysis Center (E-ISAC) mission is to reduce cyber and physical security risk to the electricity industry across North America through unique insights, leadership, and collaboration. At the request of the Board and under the guidance of the ESCC and MEC, executive leadership of the E-ISAC developed the [E-ISAC Long-Term Strategic Plan](#), which was approved by the MEC on April 24, 2017 and accepted by the Board on May 11, 2017. This long-term strategy includes a five-year resource plan to transform the E-ISAC into a world-class intelligence collecting and analytical capability for the electricity industry. The goal is to build the E-ISAC into a world-class, trusted source of quality analysis and rapid sharing of security information for the electricity industry. The strategic plan contemplates a measured increase in resources over an initial five year period, with the exact timing of resource additions dependent on management’s progress executing the long-term strategy and receiving required corporate and regulatory authorizations.

The E-ISAC also oversees the Cybersecurity Risk Information Sharing Program (CRISP), a unique public-private initiative among the E-ISAC, the North American electric utility industry, DOE, and the U.S. Intelligence Community that delivers real-time, relevant, and actionable cyber security risk information to all E-ISAC member electricity asset owners and operators, including those from Canada and Mexico. The program leverages subject matter expertise and resources from the E-ISAC, DOE, the Pacific Northwest National Laboratory (PNNL), and the Argonne National Laboratory. Using passive information sharing devices (ISD) on participant networks outside boundary firewalls, participant data is collected and then matched against known threat signatures—classified and unclassified—to identify potential threats and provide participants with recommended mitigation steps. Aggregated indicators of compromise and other relevant security information are shared with all E-ISAC members, regardless of participation in CRISP. The majority of the CRISP budget is funded by participating utilities, with a small portion funded through NERC assessments.

Stakeholder Engagement and Benefit

The E-ISAC’s engagement with stakeholders is best described in the context of the three primary foundational focus areas, which are further described the E-ISAC’s long-term strategy: (1) engagement, (2) information sharing, and (3) analysis.

Engagement

A member-first culture drives the E-ISAC focus to provide value to the electricity industry asset owners and operators, and active engagement of members and partners (government and other security organizations) increases data sources and leverage cross-sector security resources. Successful

engagement with electric industry members and other stakeholders is critical to building trust, which is vital to cyber and physical security risk identification, sharing, analysis, and mitigation.

The E-ISAC Portal is the primary tool for communications with members and partners. The Portal includes a user-community capability that allows members with similar security concerns to collaborate directly on a trusted, secure platform. The user communities bring together expertise regarding common issue areas and build trust through increased interaction among members. In addition to Portal communications, the E-ISAC issues bulletins, develops periodic reports, and holds monthly and dynamic briefings. The E-ISAC also developed a Critical Broadcast Program (CBP) to facilitate more rapid information sharing with industry regarding potential security threats.

The E-ISAC also hosts industry members through its Industry Engagement Program (IEP). The IEP embeds industry security analysts at the E-ISAC, who interact with E-ISAC staff, observe data collection and handling procedures, and share their own expertise with E-ISAC personnel. Participants also provide valuable feedback regarding their organizations' security practices and needs, which helps inform ongoing and future practices and programs within the E-ISAC.

The E-ISAC also regularly interacts with industry members in coordination with various trade associations, including the American Public Power Association (APPA), CEA, EEI, and the National Rural Electric Cooperative Association (NRECA) by providing analyst briefings and information regarding E-ISAC programs and services. Participating in planned regional security programs enables the E-ISAC to share actionable security information across industry.

Since 2011, the E-ISAC has sponsored a biennial grid security exercise (GridEx). This geographically-distributed exercise is designed to exercise the electricity industry's crisis response to simulated coordinated cyber and physical security threats and incidents, to strengthen utilities' crisis response functions, and to provide input for lessons learned. The E-ISAC manages the program and collects industry information during and after the exercise subject to existing data collection and protection policies. During the exercise, E-ISAC Watch Operations and analyst staff exercise the E-ISAC mission and share crisis information and analysis towards mitigating the threats and attacks. Lessons learned and recommendations are shared with exercise participants via restricted reports, and also shared publicly at a high level.

Also since 2011, NERC has also sponsored an annual grid security conference (GridSecCon). This conference brings together hundreds of industry and government subject matter experts on cyber, physical, and operations technology threats and solutions, with training sessions and classified or official-use briefs on topics vital to grid security. The E-ISAC provides expertise and gathers appropriate speakers, panelists, and training providers.

The E-ISAC is committed to strengthening ongoing collaboration between industry and government, which is a key component of GridEx and other security exercises. Exercises like GridEx are vital to effectively responding to any crisis affecting the electric grid. The E-ISAC continues to build relationships with the government intelligence community, with the goal of increased access to government-informed threat information and analysis. The E-ISAC is engaged in regular communications with the DOE, the Department of Homeland Security (DHS), the Department of Defense (DOD), and FERC's Office of Energy and Infrastructure Security, and continues to build on its cross-sector relationships with the other ISACs (e.g., financial services, multi-state, downstream natural gas, water, communications, and nuclear).

In 2018, the E-ISAC launched a Canadian engagement strategy to strengthen collaboration and information sharing between the E-ISAC and the Canadian electric industry, as well as between the E-ISAC

and applicable trade associations, Canadian regulatory authorities, and the Canadian cyber security intelligence community. This strategy includes ongoing partnership outreach tours and face-to-face meetings with industry leaders in each of the interconnected provinces. Other initiatives involving Canadian entities include participation in the E-ISAC's IEP and unclassified and classified briefings.

Information Sharing

Timely and effective information sharing is critical to sector engagement, security risk identification, and mitigation. Focus areas include: developing and implementing high priority notification procedures, using automated information sharing technology, improving E-ISAC Portal functionality, and improving industry personnel's access to classified information. The E-ISAC Portal capabilities include publishing immediate notifications and other informational products, exchanging threat indicator information, and providing self-service access to user security awareness services. Beyond the Portal notifications, the E-ISAC developed the CBP to deliver information rapidly to stakeholders about emerging security threats based on the best analysis available at the time, with follow-on updates as more details emerge. The CBP allows a faster response to events and a higher level of awareness for members provided by E-ISAC analysts.

As discussed above, the E-ISAC delivers real-time, relevant, and actionable cyber security risk information to all E-ISAC member electricity asset owners and operators through CRISP. The E-ISAC has also broadened automated information sharing capabilities beyond CRISP, piloting a program using the Structured Threat Information Expression/Trusted Automated Exchange of Indicator Information (STIX/TAXII) protocols in use by many organizations, including DHS. To that end, during 2017 and early 2018, the E-ISAC and several industry partners piloted the Cyber Automated Information Sharing System (CAISS). The pilot evaluated technological solutions for bi-directional communication, workflow between participants, the handling and vetting of shared information, and lessons learned from the technology and processes overall. CAISS became operational in 2019 and is available for voluntary participation from industry asset owners and operators.

Analysis

As mentioned previously, the E-ISAC publishes reports, bulletins, and advisories; conducts monthly webinars; and convenes experts for classified and unclassified briefings for its members. The most valuable content in those activities comes from analysis by E-ISAC cyber security, physical security, and threat intelligence teams, as well as incorporating independent analysis from members, government partners, the cross-sector community, strategic vendors, and other partners.

The E-ISAC Plan has guided investments in hiring and training skilled security analysts, identifying and leveraging additional technology, enhancing relationships with and access to government analysis sources, and developing strategic vendor relationships, which are all crucial to the E-ISAC's goal of providing credible, timely analytics that turn member, cross-sector, third-party, and government data into sector-specific insights and allow for member action against threats.

Building and maintaining highly-skilled cyber and physical security analysis teams are significant and ongoing areas of management focus. The E-ISAC also continually evaluates and, where appropriate, contracts with outside service providers with security analysis expertise to support highly-specialized analytical needs, as well as to supplement in-house capabilities.

Tools and Technology

The primary technologies and tools used in support of the E-ISAC's operations include:

- The E-ISAC Portal
- Hardware and software funded and supported as part of CRISP

- Industry broadcast communication systems
- A customer relationship management (CRM) system
- An event management system
- A high frequency disaster recovery communication system
- Data storage and management systems
- E-mail and secure text communications systems
- Technology to facilitate threat communications among members
- Incident management tools
- Various third-party physical and cyber security sharing information services

Key Efforts Underway

As noted above, the three primary elements of E-ISAC's long-term strategy are engagement, information sharing, and analysis. The following are current efforts related to those areas, as well as other supporting activities:

Engagement

- Organizing and advertising industry briefings and IEPs;
- Ongoing execution of the Canadian engagement strategy, including expanding Canadian membership growth and Portal usage;
- Continuing to build and strengthen governmental, cross-sector, and international relationships, including with U.S. and Canadian intelligence communities, as well as collaborating with Ontario Independent Electric System Operator (IESO) cyber security information sharing operations. Discussions with IESO have focused on the mutual benefits of entering into a pilot collaboration agreement, which builds on the strengths of both organizations and improves the overall efficiency and effectiveness in the execution of their common objective of assisting industry with cyber security awareness and reducing cyber security risks.
- Expanding participation in the 2019 GridEx V program, including identifying action items, lessons learned, and obtaining feedback on execution of the exercise;

Information Sharing

- Procuring and deploying CRM technology;
- Implementing Portal enhancements, expanding Portal user groups, and integrating CRM-related capabilities with the Portal;
- Onboarding new CRISP participants and increasing cross-sector information sharing;
- Creating governance and control procedures for bidirectional information exchanges with U.S. and Canadian security organizations;
- Creating governance frameworks and procedures to support information sharing with other ISACs;

Analysis

- Executing hiring plan for watch officers and analysts;
- Expanding internal threat analysis using available data sources;
- Expanding collaborative relationships with federally funded research organizations;
- Providing for advanced training for analysts;

Metrics

- Developing metrics to more effectively measure progress in execution of the long term strategy, including the effectiveness of activities in supporting achievement of approved goals and objectives; and

Internal Controls

- Refining and updating internal control procedures, as well as developing additional procedures as appropriate.

2020 Goals and Deliverables

The E-ISAC remains focused on furtherance of the strategic efforts discussed above as 2020 marks the third year of the long-term strategy. Building on the resources and foundation put in place in the 2018 and 2019 BP&Bs, the E-ISAC 2020 budget reflects a continued measured approach in strengthening the resources and technology required to support the three primary elements of the E-ISAC's long-term strategy: engagement, information sharing, and analysis.

Engagement

- Building and enriching the value of E-ISAC membership;
- Strengthening trusted-source relationships;
- Enhancing engagement with Canada;
- Evolving the GridEx program;

Information Sharing

- Continuing to improve Portal features and capabilities;
- Increasing information sharing by trusted source partners and industry;
- Improving value added actionable information sharing with industry;
- Implementation of 24x7 watch capabilities;

Analysis

- Leveraging technology, data sources, and analytical capabilities to increase sharing of valued added and actionable threat information to industry;
- Continuing to strengthen watch operations and analysis team skills;
- Developing new data sources, analytical tools, and capabilities; and
- Strengthening analytical capabilities through strategic partnerships.

Future Plans

In 2021 and 2022, the E-ISAC will continue execution of the long-term strategy, including:

- Strengthening analytical and value added information sharing resources and capabilities, including effectively building out watch operations and increasing analytical bench strength;
- Building on trusted source partnerships with governmental agencies, including DOE, DHS and DOD, the national laboratories, and the intelligence community;
- Expanding sources of valuable threat information and analysis; and
- Making investments in technology to support both ongoing operations and key initiatives. This includes continuing to enhance Portal features and capabilities, and investing in the infrastructure necessary to support the expanded intake, storage, and management of data from multiple sources, with solid business cases supporting each new investment and disciplined execution ensuring solid results and returns on investment.

Resource Requirements

Personnel

The increase of 6.58 FTEs is to address the watch operations, analytical, and engagement capabilities discussed above in support of the long-term strategy for the E-ISAC. An additional 2.82 FTEs are being added to Administrative Programs areas for E-ISAC support activities.

Consultants and Contracts

Consultants and contracts expenses for the E-ISAC 2020 budget, including CRISP, are approximately \$8.1M, which is consistent with the 2019 budget. CRISP's consultants and contracts expenses are \$6.7M, which is \$200k more than the 2019 budget, largely due to an increase in scope and funding for the outside auditor security review. A detailed breakdown of the budgeted 2019 and 2020 costs is provided in *Exhibit B – Consultant and Contractor Costs*.

Other Costs

The \$560k increase in Office Costs is primarily due to additional software licensing and support costs for tools and technology in support of the E-ISAC long-term strategy, including the E-ISAC Portal and CRM and CBP systems. The \$116k increase in Meeting Expenses is a result of increased travel costs due to personnel increases and engagement efforts, as well as enhanced conference call capabilities. The total Fixed Asset budget includes \$350k for continued enhancements to the E-ISAC Portal.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
E-ISAC (including CRISP)					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 19,627,897	\$ 19,627,897	\$ -	\$ 23,328,006	\$ 3,700,109
Assessment Stabilization Reserve - Penalties	155,517	155,517	-	-	(155,517)
Total NERC Funding	\$ 19,783,414	\$ 19,783,414	\$ -	\$ 23,328,006	\$ 3,544,592
Third-Party Funding	\$ 7,486,353	\$ 7,338,907	\$ (147,446)	\$ 7,814,577	\$ 328,224
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	55,859	182,380	126,521	142,207	86,348
Total Funding (A)	\$ 27,325,627	\$ 27,304,702	\$ (20,925)	\$ 31,284,791	\$ 3,959,164
Expenses					
Personnel Expenses					
Salaries	\$ 6,297,594	\$ 5,872,142	\$ (425,452)	\$ 7,494,261	\$ 1,196,667
Payroll Taxes	384,429	360,457	(23,972)	461,786	77,356
Benefits	825,677	835,508	9,832	1,060,720	235,043
Retirement Costs	672,423	595,942	(76,481)	808,861	136,438
Total Personnel Expenses	\$ 8,180,123	\$ 7,664,050	\$ (516,073)	\$ 9,825,628	\$ 1,645,504
Meeting Expenses					
Meetings & Conference Calls	\$ 57,000	\$ 256,142	\$ 199,142	\$ 103,200	\$ 46,200
Travel	291,000	336,000	45,000	361,000	70,000
Total Meeting Expenses	\$ 348,000	\$ 592,142	\$ 244,142	\$ 464,200	\$ 116,200
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 8,278,000	\$ 8,716,975	\$ 438,975	\$ 8,090,000	\$ (188,000)
Office Rent	-	-	-	-	-
Office Costs	903,196	1,034,196	131,000	1,462,689	559,493
Professional Services	250,000	205,000	(45,000)	175,000	(75,000)
Miscellaneous	500	4,924	4,424	500	-
Total Operating Expenses, excluding Depreciation	\$ 9,431,696	\$ 9,961,095	\$ 529,399	\$ 9,728,189	\$ 296,493
Total Direct Expenses	\$ 17,959,819	\$ 18,217,287	\$ 257,468	\$ 20,018,016	\$ 2,058,197
Indirect Expenses	\$ 8,392,122	\$ 7,991,702	\$ (400,420)	\$ 10,405,494	\$ 2,013,372
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 26,351,941	\$ 26,208,989	\$ (142,952)	\$ 30,423,510	\$ 4,071,569
Change in Net Assets (=A-B)	\$ 973,686	\$ 1,095,713	\$ 122,027	\$ 861,280	\$ (112,405)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 973,686	\$ 490,402	\$ (483,284)	\$ 861,280	\$ (112,405)
Total Budget (=B+C)	\$ 27,325,627	\$ 26,699,391	\$ (626,235)	\$ 31,284,791	\$ 3,959,164
FTEs	37.60	33.50	(4.10)	44.18	6.58

Personnel Certification and Continuing Education

Personnel Certification and Continuing Education (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	1.88	2.82	0.94
Direct Expenses	\$ 615,828	\$ 1,046,033	\$ 430,206
Indirect Expenses	414,042	664,180	250,138
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	13,893	28,074	14,182
TOTAL BUDGET	\$ 1,043,763	\$ 1,738,288	\$ 694,525

Background and Scope

The Personnel Certification and Continuing Education (PCCE) group oversees the System Operator Certification program, which ensures that System Operators have the skills, training, and qualifications needed to operate the system reliably. NERC maintains credentials for over 7,500 System Operator credential holders who work in various industry areas. NERC's System Operator Certification exam prepares operators for complying with requirements of Reliability Standards and, appropriately, operating the BPS during normal and emergency operations. The System Operator Certification program is governed by the PCGC, which is comprised of an industry group of operations experts, trainers, and supervisors. Certification exams are created by the PCGC's Exam Working Group (EWG), which consists of an industry group of operations subject matter experts. Under the PCGC oversight, the EWG reviews and updates job tasks and certification exams. ROP Section 600 addresses Personnel Certification activities in the area of System Operator Certification.

Credential maintenance of the System Operator Certification program is accomplished by obtaining Continuing Education Hours (CEHs). The Continuing Education (CE) program acknowledges high quality learning activities within the electric utility industry via the approval of CE providers and their approved courses. Comprised of industry training experts, the OC's Personnel Subcommittee (PS) provides oversight of the CE program. ROP Section 902 addresses the specific CE program expectations and activities.

The System Operator Certification and CE programs are self-funded through exam fees, and the PCGC oversees the programs' budgets.

Stakeholder Engagement and Benefit

The PCCE group collaborates with the PCGC and EWG on the completion of System Operator Certification program tasks. PCCE staff coordinate and administer the PCGC and EWG meetings and all activities associated with the System Operator Certification program. Industry stakeholders also benefit from the ability to participate in the Job Task Analysis (JTA) and the Item Writing Workshop (IWW), which occur every three years. The group also collaborates and meets with the PS throughout the year. As part of the course evaluation, industry stakeholders have an opportunity to provide feedback on every course taken in the CE program.

Tools and Technology

The primary tool of the System Operator Certification program and the CE program is a credential maintenance database known as the System Operator Certification Continuing Education Database (SOCCED). Candidates and System Operators use the tool for purchasing a certification exam application

and, upon successfully passing the exam, credential maintenance. CE providers use SOCCED to upload courses for approval as well as earned CEHs to System Operator transcripts.

Key Efforts Underway

The PCCE department is focused on the following priorities and ongoing activities:

- Analysis of System Operator Certification program survey results;
- Updates to the System Operator Certification Exam Item Bank to ensure relevance to current Reliability Standards;
- Enhancements to the exam “skills assessment” process to better assess the skills and knowledge of System Operators;
- Upon industry and FERC acceptance, development of an implementation plan for One Credential transition;
- Evaluating credential review and rationalization to maintain credentials;
- Reinstatement of Provider Renewal Audits;
- Revising the Continuing Education Program Manual; and
- Continued improvements to the SOCCED system to enhance user experiences.

2020 Goals and Deliverables

Under the guidance of the PCGC, the PCCE group is dedicated to enhancing the System Operator Certification program to support reliable operation of the BPS. In 2020, the group will focus on further development of the credential maintenance portion of the certification program. Key deliverables for the System Operator Certification program include:

- Analysis of System Operator Certification Program survey results;
- Annual analysis of the System Operator Certification Exam Item Bank;
- Annual analysis of Appendix A topics;
- Credential maintenance requirements; and
- Continued enhancements for SOCCED.

Under the guidance of the PS, the PCCE group will continue to focus on revisions, approval, and implementation of the new Continuing Education Program manual to provide clear and concise definitions, instructions, and processes for the CE program. The PS is also overseeing the development of guidelines that will assist industry with the creation and administration of their own System Operator Certification CE programs.

Future Plans

In 2021 and beyond, the PCCE group will focus on transition and implementation plans for the primary activities in 2020. For the System Operator Certification program, this includes transitioning to One Credential and the appropriate credential maintenance requirements, and for the CE program this includes implementation of the new Continuing Education Program manual.

Resource Requirements

Personnel

The 0.94 increase in FTEs is the result of the reallocation of resources to realign staff with current needs.

Consultants and Contracts

The \$120k increase for Consultants and Contracts in the 2020 budget is attributed to the movement of CE program expenses from Training and Education to PCCE (as explained in the *Introduction and Executive Summary*), as well as an increase for SOCCED database improvements. A detailed breakdown of 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contract Costs*.

Other Costs

The \$121k increase for Office Costs in the 2020 budget is due primarily to the movement of CE program expenses from Training and Education to PCCE, as well as an increase in SOCCED database support.

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
PERSONNEL CERTIFICATION AND CONTINUING EDUCATION					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserve - Penalties	-	-	-	-	-
Total NERC Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	1,190,000	1,190,000	-	1,735,000	545,000
Services & Software	-	-	-	-	-
Miscellaneous	-	260	260	-	-
Interest & Investment Income	2,437	23,513	21,076	7,241	4,805
Total Funding (A)	\$ 1,192,437	\$ 1,213,773	\$ 21,336	\$ 1,742,241	\$ 549,805
Expenses					
Personnel Expenses					
Salaries	\$ 258,133	\$ 309,120	\$ 50,987	\$ 372,765	\$ 114,632
Payroll Taxes	17,873	19,109	1,236	24,774	6,901
Benefits	32,946	40,383	7,437	64,235	31,289
Retirement Costs	28,276	31,803	3,528	40,459	12,183
Total Personnel Expenses	\$ 337,228	\$ 400,416	\$ 63,188	\$ 502,233	\$ 165,006
Meeting Expenses					
Meetings & Conference Calls	\$ 33,200	\$ 32,634	\$ (566)	\$ 34,400	\$ 1,200
Travel	7,000	31,655	24,655	30,000	23,000
Total Meeting Expenses	\$ 40,200	\$ 64,290	\$ 24,090	\$ 64,400	\$ 24,200
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 162,000	\$ 312,000	\$ 150,000	\$ 282,000	\$ 120,000
Office Rent	-	-	-	-	-
Office Costs	76,400	76,400	-	197,400	121,000
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses, excluding Depreciation	\$ 238,400	\$ 388,400	\$ 150,000	\$ 479,400	\$ 241,000
Total Direct Expenses	\$ 615,828	\$ 853,105	\$ 237,277	\$ 1,046,033	\$ 430,206
Indirect Expenses	\$ 414,042	\$ 472,345	\$ 58,303	\$ 664,180	\$ 250,138
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 1,029,870	\$ 1,325,450	\$ 295,580	\$ 1,710,214	\$ 680,344
Change in Net Assets (=A-B)	\$ 162,566	\$ (111,677)	\$ (274,244)	\$ 32,027	\$ (130,539)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 13,893	\$ 10,072	\$ (3,821)	\$ 28,074	\$ 14,182
Total Budget (=B+C)	\$ 1,043,763	\$ 1,335,522	\$ 291,759	\$ 1,738,288	\$ 694,525
FTEs	1.88	1.98	0.10	2.82	0.94

Training and Education

Training and Education (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	1.88	1.88	-
Direct Expenses	\$ 751,927	\$ 553,483	\$ (198,444)
Indirect Expenses	414,042	442,787	28,745
Other Non-Operating Expenses	-	-	-
Fixed Asset Additions	13,893	18,716	4,824
TOTAL BUDGET	\$ 1,179,862	\$ 1,014,986	\$ (164,876)

Background and Scope

ROP Section 901 acknowledges the need to acquire and sustain informed, knowledgeable, and skilled personnel in order to assure the reliable operation of the North American BPS. The Training and Education group facilitates the learning and development of ERO Enterprise staff¹¹ as well as BPS industry participants. The program oversees and coordinates learning activities and resources that support the acquisition and increase of knowledge and skills among stakeholders.

In support of the ERO Enterprise’s ongoing efforts to engage and retain highly qualified talent with the leadership and technical skills needed to support its mission, the Training and Education group facilitates continuous learning among the ERO Enterprise’s executive and professional staff. These learning opportunities and resources are aimed at improving competencies critical to success and succession planning.

Stakeholder Engagement and Benefit

The Training and Education group’s stakeholders are comprised of ERO Enterprise employees and BPS industry learners, project sponsors and managers, subject matter experts, and anyone else with a vested interest in the outcome of a learning event. The Training and Education program uses one-way mass communication media, such as emails, newsletters, flyers and marketing videos to convey information about learning events and resources. Two-way communication methods, such as face-to-face meetings and webinars, are used whenever three or more stakeholders are engaged to analyze learning needs, mutually solve problems, or delegate responsibilities and tasks. Learners are typically engaged through learning events and products and resources, such as custom-made and off-the-shelf interactive self-paced e-learning modules, video-based learning, and in-person and live-webinar instructor-led training.

Tools and Technology

The Training and Education group uses the following tools and technology to support their activities:

- Learning Management System (LMS) platform and content library for online learning modules
- E-learning content management systems and authoring tools
- Graphic design and video editing software
- Video camera, lighting, green screen, and audio equipment
- Audience Response Ware (ARW) technology (interactive audience response software and hardware)

¹¹ NERC’s Human Resources group focuses on learning and development for NERC staff specifically.

Key Efforts Underway

The Training and Education team's key efforts are based on the ERO Enterprise's long-term strategic goal of increasing workforce training that develops the skills needed to perform high quality rigorous activities while keeping up with the fast changing pace of supporting technology. The Training and Education group is currently focused on the follow priorities and ongoing activities:

- Assisting in the facilitation of the ERO Enterprise CMEP staff workshop by designing, developing, and delivering video-based and interactive e-learning resources as well as the management of supporting resources, such as the ARW technology;
- Developing learning products for industry-facing workshops and conferences, including the annual Standards and Compliance Workshop, the Gas Infrastructure Technical Workshop, and the annual Human Performance Conference;
- Developing CMEP e-learning modules for ERO Enterprise auditors, systems training products for data systems, including DADS and GADS Wind, and functional program training modules, such as the Cause Analysis e-learning module;
- Developing promotional and training videos, e-learning modules, and instructor-led training in support of the CORES and first Align system software release;
- Designing the ERO Enterprise Systems Training website; and
- Deploying a new LMS system as well as a new off-the-shelf content management system for the ERO Enterprise.

2020 Goals and Deliverables

The Training and Education group's deliverables for 2020 include:

- Development of promotional and training videos, e-learning modules and instructor-led training in support of the second release of the Align system software;
- Identification, design, development, and implementation of a management development program;
- Any necessary updates or enhancements to existing instructional design support tools and software;
- Implementing training and adoption for the new LMS among ERO Enterprise employees;
- Continued development of the ERO Enterprise Systems Training website; and
- Updating systems training products for data systems including GADS, GADS Wind, TADS, DADS, etc. to reflect the enhancements to the data systems.

Future Plans

In 2021 and beyond, the Training and Education group expects to focus on the following:

- Development of learning resources for subsequent releases of/enhancements to the Align and CORES applications;
- Implementation of the management development program;
- Continued development of the ERO Enterprise Systems Training website;
- Delivery of an orientation/onboarding program for ERO Enterprise employees; and
- Any necessary updates or enhancements to existing instructional design support tools and software.

Resource Requirements

Personnel

There is no change in FTEs for the 2020 budget from the 2019 budget.

Consultants and Contracts

The \$225k decrease is a result of (1) the movement of CE program expenses from Training and Education to PCCE; (2) a reclassification of LMS license and support costs to Office Costs; and (3) a reclassification of NERC staff technical training costs to Human Resources. A detailed breakdown of 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contract Costs*.

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
TRAINING AND EDUCATION					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 569,839	\$ 569,839	\$ -	\$ 1,010,158	\$ 440,319
Assessment Stabilization Reserve - Penalties	7,586	7,586	-	-	(7,586)
Total NERC Funding	\$ 577,426	\$ 577,426	\$ -	\$ 1,010,158	\$ 432,733
Third-Party Funding	-	-	-	-	-
Testing Fees	600,000	525,000	(75,000)	-	(600,000)
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	2,437	6,971	4,535	4,828	2,391
Total Funding (A)	\$ 1,179,862	\$ 1,109,397	\$ (70,465)	\$ 1,014,986	\$ (164,876)
Expenses					
Personnel Expenses					
Salaries	\$ 203,480	\$ 220,754	\$ 17,274	\$ 212,108	\$ 8,628
Payroll Taxes	16,740	17,051	310	17,391	651
Benefits	45,441	43,759	(1,682)	52,397	6,956
Retirement Costs	22,891	24,467	1,575	23,836	945
Total Personnel Expenses	\$ 288,553	\$ 306,030	\$ 17,477	\$ 305,733	\$ 17,180
Meeting Expenses					
Meetings & Conference Calls	\$ 12,250	\$ 12,884	\$ 634	\$ 12,250	\$ -
Travel	10,000	1,748	(8,252)	10,000	-
Total Meeting Expenses	\$ 22,250	\$ 14,632	\$ (7,618)	\$ 22,250	\$ -
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 335,000	\$ 320,000	\$ (15,000)	\$ 110,000	\$ (225,000)
Office Rent	-	-	-	-	-
Office Costs	105,624	105,624	-	115,000	9,376
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Total Operating Expenses, excluding Depreciation	\$ 441,124	\$ 426,124	\$ (15,000)	\$ 225,500	\$ (215,624)
Total Direct Expenses	\$ 751,927	\$ 746,787	\$ (5,141)	\$ 553,483	\$ (198,444)
Indirect Expenses	\$ 414,042	\$ 472,345	\$ 58,303	\$ 442,787	\$ 28,745
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 1,165,969	\$ 1,219,132	\$ 53,162	\$ 996,270	\$ (169,700)
Change in Net Assets (=A-B)	\$ 13,893	\$ (109,735)	\$ (123,628)	\$ 18,716	\$ 4,824
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 13,893	\$ 10,072	\$ (3,821)	\$ 18,716	\$ 4,824
Total Budget (=B+C)	\$ 1,179,862	\$ 1,229,203	\$ 49,341	\$ 1,014,986	\$ (164,876)
FTEs	1.88	1.98	0.10	1.88	-

Administrative Programs

Administrative Programs (in whole dollars)						
	Direct Expenses and Fixed Asset Additions			FTEs		
	2019 Budget	2020 Budget	Increase (Decrease)	2019 Budget	2020 Budget	Increase (Decrease)
General & Administrative	\$ 10,654,921	\$ 11,084,094	\$ 429,172	14.10	16.92	2.82
Legal and Regulatory	3,878,791	4,588,376	709,585	13.16	15.04	1.88
Information Technology	10,686,532	11,945,975	1,259,442	23.50	24.44	0.94
Human Resources & Administration	2,562,371	2,724,553	162,182	9.40	9.40	-
Finance and Accounting	2,553,747	2,423,239	(130,508)	7.52	8.46	0.94
Total Administrative Programs	\$ 30,336,363	\$ 32,766,236	\$ 2,429,873	67.68	74.26	6.58

Program Scope and Functional Description

NERC's Administrative Programs area includes the budget for all business and administrative functions of the organization, including (1) General and Administrative; (2) Legal and Regulatory; (3) Information Technology; (4) Human Resources & Administration; (5) Finance and Accounting; and (6) other general administrative expenses necessary to support program area activities. The costs of the Administrative Programs functions are allocated to the statutory programs as indirect expenses. The resource requirements and comparative budget information for each of these functions are described below.

General and Administrative

The General and Administrative area is responsible for the administration and general management of the organization. Expenses allocated in this area include office rent as well as personnel and related costs of (1) the CEO, the CRO, and their support staff; (2) Policy and External Affairs staff, described below; and (3) Board costs, detailed below.

Policy and External Affairs

The Policy and External Affairs group provides strategic and communications advice on policy-related matters, manages internal and external messaging and outreach, and serves as the primary representative for NERC on policy-related matters to external audiences, including those in the United States, Canada, and Mexico. The Policy and External Affairs group includes staff who are focused on three areas:

- **Legislative and Regulatory** – Addresses policy matters that arise in legislative arenas and manages regulatory outreach related to FPA Section 215. Engagement occurs with federal and state regulators and legislators, and other governmental and non-governmental stakeholder organizations. NERC is registered as a lobbying organization and complies with all lobbying rules and regulations. Engagement occurs through direct communication with legislators, regulators, government officials and their staffs.
- **Communications** – Manages all external and internal communications that support NERC initiatives, including newsletters, media coordination and messaging, as well as facilitating consistency of message across the ERO Enterprise. This group works with senior management on identified strategic objectives of the corporation as well as internal initiatives, and is responsible for managing the content of NERC's website and NERC's social media presence.
- **International Affairs** – Serves as the liaison between NERC and non-U.S. reliability stakeholders, including Mexican federal and Canadian provincial governments and stakeholder organizations, such as NARUC's international committee, FERC, and trade association international efforts.

The Policy and External Affairs group is focused on the following efforts and activities:

Legislative and Regulatory

- Communications coordination with executive branch agencies (i.e., DOE, White House) on reliability, security, and related matters
- Coordinating with Government Accountability Office, Congressional Research Service, and other government entities on reports
- Congressional hearing preparation and coordination on energy and security legislation and related matters
- FERC technical conferences, meetings, and Chairman, Commissioner and staff outreach related to NERC initiatives
- Education and communication on reliability and security matters to states (NARUC)
- Building strategic partnerships with stakeholders and policymakers
- Supporting business units through guidance, advice, and written materials related to external messaging for the E-ISAC, Reliability Assessments, and other initiatives

Communication

- Supporting ERO Enterprise-wide communication efforts
- Coordinating with IT department to improve the NERC website, reducing extraneous, outdated pages and documents, and improving search capability and improve user experience
- Supporting the E-ISAC in communication and outreach efforts, especially as related to GridSecCon and GridEx, including convening and chairing a communications working group
- Managing media inquiries and messaging
- Working with NERC departments on communication matters related to Align and adapting the Standards and Compliance Bulletin to reflect the entire ERO Enterprise footprint

International Affairs

- Reviewing standards adoption and Canadian enforcement status in coordination with NERC business units
- Identifying and expanding messaging related to international value of the ERO with international organizations and agencies.
- Maintaining relationships across the ERO Enterprise, focusing on those Regional Entities with international borders
- Acting as the primary liaison with Canadian provincial, federal, and industry stakeholder groups related to reliability
- Supporting the outreach efforts to Canada and Mexico by NERC business units and the E-ISAC
- Communicating the value of an international ERO to external stakeholders and policymakers

Policy and External Affairs continues to see increased activity in the legislative and regulatory arenas. As a lobbying organization, tracking and monitoring advocacy efforts for reliability and security could potentially include reporting requirements at the state level, calling for more vigilance. Additionally,

communications activities are increasing to support further coordination across the ERO Enterprise, the growing E-ISAC, and a potential future website redesign.

Resource Requirements

The 2.82 increase in FTEs in General and Administrative is the result of an additional FTE in the Policy and External Affairs group in support of the E-ISAC long-term strategy, and the reorganization of two positions from the Human Resources and Administrative area to Policy and External Affairs. Consultants and Contracts for General and Administrative are decreasing \$220k due to a reclassification of expenses to other departments.

Board Costs

The following table details the Board costs included in the total General and Administrative expenses.

Board of Trustee Expenses	2019 Budget	2020 Budget	Increase (Decrease)	
Meeting and Travel Expenses				
Quarterly Board Meetings	\$ 185,000	\$ 185,000	\$ -	0.0%
Trustee Travel	130,000	165,000	35,000	26.9%
Total	\$ 315,000	\$ 350,000	\$ 35,000	11.1%
Professional Services				
Independent Trustee Fees	\$ 1,410,000	\$ 1,410,000	\$ -	0.0%
Trustee Search Fees	100,000	50,000	(50,000)	-50.0%
Total	\$ 1,510,000	\$ 1,460,000	\$ (50,000)	-3.3%
Total	\$ 1,825,000	\$ 1,810,000	\$ (15,000)	-0.8%

Legal and Regulatory

The Legal and Regulatory department supports the NERC program areas and is responsible for providing a wide range of legal support to the NERC management team regarding antitrust, corporate, commercial, insurance, contract, employment, real estate, copyright, tax, legislation, and other legal matters. The department also addresses legal and regulatory matters that arise in connection with the delegation agreements with the Regional Entities. Additionally, the Legal and Regulatory department includes the Internal Audit and Corporate Risk Management group, explained further below.

Internal Audit and Corporate Risk Management

The Internal Audit and Corporate Risk Management (IACRM) group performs independent, objective activities designed to add value and improve NERC and Regional Entity operations. The group's activities ensure:

- Risks are appropriately identified, prioritized, and managed across NERC and the ERO Enterprise;
- The effectiveness of risk management processes is monitored and evaluated;
- Systems of internal control are adequately promoted and are effectively functioning; and
- Significant risk exposures and control issues, including fraud risks, governance issues, and other matters needed or requested by the Board are reported.

The Internal Audit (IA) function specifically engages with the CCC to collaborate on ERO Enterprise audits as required by ROP Sections 406, 506, and Appendix 4A. As part of IA's audit efforts on behalf of the CCC, IA collaborates with NERC's CMEP and ORCP teams to take an ERO Enterprise-wide approach to the

annual CMEP and ORCP self-certification process. IA, the CCC, and the Board Enterprise-wide Risk Committee (EWRC) collectively determine whether NERC and the ERO Enterprise comply with the ROP, allowing for timely reporting and consistent remediation effort, as necessary. Currently, the IA, CMEP, and ORCP teams are collaborating to eliminate real and perceived duplication of efforts among these groups with respect to Regional Entity audit and oversight activities.

The Corporate Risk Management (CRM) function is also continuing to work with the Regional Entities to enhance the ERO Enterprise-wide corporate risk identification and risk mitigation efforts. This occurs through collaborative interactions to identify high priority ERO Enterprise risks, remediating internal control weaknesses, implementing performance improvement recommendations, and sharing lessons learned and best practices. Deliverables include more streamlined and coordinated reports and harmonized assessment of ERO Enterprise risks and processes. At times, CRM also interfaces with stakeholders to perform risk assessment activities.

In 2020 and beyond, IACRM will continue to perform risk-based audits and participate in special projects that will provide value to NERC and the ERO Enterprise. IACRM also hopes to leverage the CMEP's Align application, with minimum customization, to implement a governance, risk management, and compliance (GRC) tool to support IACRM activities.

Resource Requirements

The increase of 1.88 FTEs in Legal and Regulatory is the result of an additional FTE in the Legal area in support of the E-ISAC long-term strategy and the reallocation of FTEs to realign staff with current needs. There is a \$300k increase for Contracts and Consultants as a result of a reclassification of internal controls and outside auditor support for IACRM from Finance and Accounting. A detailed breakdown of 2019 and 2020 budgeted expenses are shown in *Exhibit B – Consultant and Contract Costs*. Outside law firms and consultants supporting the Legal area are budgeted and tracked as Professional Services. The Professional Services budget for Legal and Regulatory in 2020 is unchanged from 2019.

Information Technology

NERC's IT department supports the technology needs necessary to the existence and function of the organization in executing ERO statutory activities. IT also supports, configures, and secures corporate and enterprise applications and infrastructure leveraged by the ERO Enterprise and registered entities. The IT department includes a Project Management Office (PMO) that provides project management skills and leadership for major ERO Enterprise and NERC IT projects, including those of the E-ISAC.

NERC's IT strategy includes the following:

- Emphasis on reducing the NERC infrastructure and support footprint in order to allocate a larger portion of budget funding to enhance and improve the registered entity and Regional Entity experience;
- Adoption of an enterprise IT investment planning methodology that ensures only projects with compelling and approved business cases are funded; and
- A "platform" strategy that enables more cost-effective configuration solutions versus creating custom solutions. Examples of these platforms include Microsoft Dynamics xRM, Microsoft SharePoint, the Ingeniux content publication system, the Salesforce CRM system, and the BWISE GRC system.

NERC's IT department is currently focused on three key areas: ERO Enterprise new functionality, ERO Enterprise application and infrastructure support, and NERC infrastructure support.

ERO Enterprise New Functionality. This includes technologies designed to improve or add capability to the registered entities, Regional Entities, and NERC staff. For those projects that involve regional or registered entities, stakeholders are regularly engaged as subject matter experts on the project team to provide business requirements, functionality testing, and outreach. The benefits of this approach ensure that the systems delivered are the systems that meet stakeholder needs now and in the future. IT and PMO staff are currently focused on supporting the following key ERO Enterprise IT projects, including development, implementation, and future enhancements:

- The Align and CORES projects – NERC has been working closely with the Regional Entities to evaluate and implement strategic investments in tools that will replace the current three CMEP and Registration data applications used among NERC and the Regional Entities with single, common applications, known as Align for CMEP and CORES for Registration. For more information, see the *Compliance Assurance and Organization Registration and Certification* section and the [Align Project](#) and [CORES Technology Project](#) pages on the NERC website.
- SAFNR upgrade – This system provides near real-time information to NERC, FERC, and the Regional Entities on current operating conditions of the BPS from a wide-area view. The upgrade will allow for rapid and accurate situational awareness that appropriately protects the proprietary information in the tool while maximizing the value of understanding shared to the right audiences. For more information, see the *Situation Awareness* section.
- Data management system enhancements – As the grid evolves, the ERO Enterprise’s ability to collect and the quality and integration of data becomes increasingly important, requiring continued investment in enhancements to the suite of data management tools, including GADS, GADS Wind, TADS, DADS, and RADS. Additionally, technology applications are needed for the collection of new data under ROP Section 1600 data requests, including a tool for GMD data submittals as well as a system for data associated with solar energy storage (i.e., GADS Solar). For more information, see the *Reliability Assessment and Performance Analysis* section.

ERO Enterprise Application and Infrastructure Support. This includes the underlying infrastructure and resources required to support existing and future ERO Enterprise applications, such as server host machines, virtual servers, storage, back-up and restore systems, and network, communications, business continuity, and security tools.

NERC Infrastructure Support. This includes similar items as noted above in the ERO Enterprise application and infrastructure support category, including but not limited to Microsoft Office productivity tools, audio visual systems, laptops, and business continuity and security technologies.

In 2021 and beyond, NERC IT and PMO staff will continue to oversee the requirements, design, and implementation of new and enhanced technology for NERC and the ERO Enterprise. This includes planned enhancements for Align, CORES, and the suite of data management tools, as well as upgrades to or replacements of RCIS, the NERC Alerts system, and the NERC website.

Resource Requirements

The increase of 0.94 FTEs in IT in 2020 is the result of a contractor conversion (increase in personnel costs and a reduction in consultants and contracts expenses) for a critical role related to the Align application. There is a \$237k decrease for consultants and contracts expenses overall as a result of the contractor conversion and the reclassification of expenses to other departments. A detailed breakdown of 2019 and 2020 budgeted consultants and contracts expenses are shown in *Exhibit B – Consultant and Contract Costs*. There is a \$976k increase in Office Costs as a result of increased software license and support expenses, particularly for enhanced security, as well as additional leased audio visual and computer equipment.

Human Resources and Administration

The Human Resources and Administration group primarily includes benefits administration, employee relations, performance and compensation management, training and development, facilities management of NERC's two office locations, and meeting planning and coordination.

Leadership, Management, and Professional and Administrative Staff Training and Development

As part of the ERO Enterprise's ongoing efforts to engage and retain highly qualified talent with the leadership and technical skills to support its mission, NERC's executives, managers, and professional and support staff participate in ongoing training and development to improve competencies critical to success and succession planning. As such, NERC continues to invest in learning opportunities in several areas, including (1) an e-learning platform for improving soft and technical skills; (2) broad-based staff development training through real-world access via tours of and training on control centers, electric substations, and power generation plants; and (3) access to additional education, including but not limited to degree-oriented university education, pursuit of specialized certifications, and other in-house and external training that provides essential competencies and skills development.

Compensation Strategy

NERC relies on data and advisory from multiple perspectives to hire and retain the necessary staff to support the company's goals and objectives. Under the mandate of the CGHRC, NERC performs periodic market compensation studies to benchmark the pay practices of similar organizations and roles for which NERC hires. Management will continue to closely monitor market conditions through periodic compensation studies and real-time pay trends of its candidate pool.

Compensation Consulting

Consultants are periodically retained to examine appropriate compensation based on current market data. This ensures that decisions affecting compensation are made in light of the current market climate and that qualified employees are attracted and retained within a defined total remuneration range. NERC also periodically retains compensation subject matter experts to perform periodic assessments of the Board compensation model to ensure alignment with market practices.

Surveys

NERC periodically retains a vendor to conduct Board and committee effectiveness surveys to identify improvement opportunities. Human Resources will also launch additional surveys as appropriate, based on business needs, which may include periodic internal climate surveys.

Succession Planning

Minimizing disruption of knowledge, skill, and experience of key staff is critical to the company's success. Human Resource works with senior management to identify essential roles and develop strategies to build succession and contingency plans for any loss of staff.

Human Resources Products and Services Automation

Human Resource continues to operate, maintain, and investigate investment in additional electronic platforms for Human Resource support services that reduce administrative burden and improve employee access to tools and information.

Resource Requirements

There is a 1.88 increase in FTEs in the Human Resources and Administration area in 2020 as a result of an additional FTE in support of the increase in staffing in the E-ISAC and a contractor conversion (increase in personnel costs and a reduction in consultants and contracts expenses) for audio visual and facility security coordination. This is offset by the decrease of 1.88 FTEs as a result of the reorganization of two

positions from the Human Resources and Administrative area to Policy and External Affairs. Consultants and Contracts are increasing \$70k for this area as a result of a reclassification of expenses from Training and Education and General and Administrative. A detailed breakdown of 2019 and 2020 budgeted expenses is shown in in *Exhibit B – Consultant and Contract Costs*.

Finance and Accounting

NERC's Finance and Accounting department manages all finance and accounting functions, including employee payroll, 401(k), 457(b), and 457(f) plans, travel and expense reporting, monthly financial reporting, sales and use tax, and insurance. This area also holds primary responsibility for the development of the annual BP&B. Over the past several years, NERC's Finance and Accounting department implemented additional systems, policies, procedures, and controls governing day-to-day practices, including contract and personnel procurements, expense reimbursement, and back office systems and procedures. The department will continue to refine, improve and, where necessary, implement additional procedures and controls.

Resource Requirements

The increase of 0.94 FTEs is due to the reallocation of resources to realign staff with current needs. There is a \$300k decrease for Consultants and Contracts in this area as a result of a reclassification of internal controls and outside auditor support for IACRM to Legal and Regulatory. A detailed breakdown of 2019 and 2020 budgeted expenses is shown in *Exhibit B – Consultant and Contact Costs*.

Miscellaneous Expenses

Miscellaneous expenses include community responsibility, employee engagement, and employee rewards and recognition.

Section A – 2020 Business Plan and Budget Program Area and Department Detail

Statement of Activities and Fixed Asset Additions					
2019 Budget & Projection, and 2020 Budget					
ADMINISTRATIVE SERVICES					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ (1,067,980)	\$ (1,067,980)	\$ -	\$ (1,414,478)	\$ (346,499)
Assessment Stabilization Reserve - Penalties	-	-	-	-	-
Total NERC Funding	\$ (1,067,980)	\$ (1,067,980)	\$ -	\$ (1,414,478)	\$ (346,499)
Third-Party Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Interest & Investment Income	-	-	-	-	-
Total Funding (A)	\$ (1,067,980)	\$ (1,067,980)	\$ -	\$ (1,414,478)	\$ (346,499)
Expenses					
Personnel Expenses					
Salaries	\$ 11,965,297	\$ 13,017,715	\$ 1,052,418	\$ 13,070,451	\$ 1,105,154
Payroll Taxes	666,617	681,647	15,030	721,605	54,988
Benefits	1,610,374	1,671,036	60,661	1,826,687	216,312
Retirement Costs	1,032,835	1,036,060	3,225	1,146,339	113,504
Total Personnel Expenses	\$ 15,275,124	\$ 16,406,457	\$ 1,131,333	\$ 16,765,082	\$ 1,489,958
Meeting Expenses					
Meetings & Conference Calls	\$ 455,300	\$ 458,077	\$ 2,777	\$ 456,800	\$ 1,500
Travel	570,000	611,203	41,203	650,000	80,000
Total Meeting Expenses	\$ 1,025,300	\$ 1,069,280	\$ 43,980	\$ 1,106,800	\$ 81,500
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 3,447,763	\$ 3,379,195	\$ (68,568)	\$ 3,060,692	\$ (387,071)
Office Rent	3,335,058	3,305,058	(30,000)	3,450,468	115,410
Office Costs	4,454,347	4,568,561	114,213	5,712,971	1,258,624
Professional Services	2,507,600	2,454,500	(53,100)	2,336,600	(171,000)
Miscellaneous	77,000	87,945	10,945	77,000	-
Total Operating Expenses, excluding Depreciation	\$ 13,821,768	\$ 13,795,259	\$ (26,509)	\$ 14,637,731	\$ 815,963
Total Direct Expenses	\$ 30,122,192	\$ 31,270,996	\$ 1,148,804	\$ 32,509,613	\$ 2,387,421
Indirect Expenses	\$ (30,336,363)	\$ (31,410,967)	\$ (1,074,604)	\$ (32,766,236)	\$ (2,429,873)
Other Non-Operating Expenses	\$ 214,171	\$ 139,971	\$ (74,200)	\$ 256,623	\$ 42,452
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A-B)	\$ (1,067,980)	\$ (1,067,980)	\$ -	\$ (1,414,478)	\$ (346,499)
Fixed Asset Additions, excluding Right of Use Assets (C)					
	\$ -	\$ -	\$ -	\$ -	\$ -
Total Budget (=B+C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	67.68	70.49	2.81	74.26	6.58

Section B – Supplemental Financial Information

Breakdown by Statement of Activity Sections

The following detailed schedules support the consolidated Statement of Activities.

Table B-1 – Operating Reserve and Assessment Analysis

Operating Reserve and Assessment Analysis						
Statutory						
	Total Reserves	Future Obligation Reserve ¹	Operating Contingency Reserve	System Operator Certification Reserve	CRISP Reserve	Assessment Stabilization Reserve
Beginning Operating Reserves Balance - 1/1/2019	\$ 11,342,801	\$ 2,535,333	\$ 5,644,358	\$ 592,110	\$ 500,000	\$ 2,071,000
Generation or (Use) from 2019 Operations						
From 2019 budgeted operations	\$ (1,294,975)	\$ (480,457)	\$ (963,192)	\$ 148,674	\$ -	\$ -
From 2019 approved addition/(use) of reserves	-	-	-	-	-	-
Proceeds from financing activities (non-current portion only) ²	1,089,333	-	1,089,333	-	-	-
Debt service ³	(394,687)	-	(394,687)	-	-	-
Other addition/(use) of reserves ⁴	(788,366)	64,843	-	(303,209)	-	(550,000)
Projected Operating Reserves - 12/31/19	\$ 9,954,106	\$ 2,119,719	\$ 5,375,812	\$ 437,575	\$ 500,000	\$ 1,521,000
Required Working Capital and Operating Reserves - 12/31/20	\$ 8,818,065	\$ 1,633,761	\$ 4,721,776	\$ 441,528	\$ 500,000	\$ 1,521,000
Adjustment in funding to achieve required reserve balance	(1,136,041)	(485,958)	(654,036)	3,953	-	-
Penalty sanctions received 7/1/2018 - 6/30/2019 (See Table B-2)	-	-	-	-	-	-
Less: Assessment Stabilization Reserve Release - Penalties	-	-	-	-	-	-
Total Adjustments to Reserves	\$ (1,136,041)	\$ (485,958)	\$ (654,036)	\$ 3,953	\$ -	\$ -
Assessment Reconciliation						
2020 Expenses and Capital Expenditures	\$ 83,417,476					
Less: Assessment Stabilization Reserve Release - Penalties	-					
Adjustment in funding to achieve required reserve balance	(650,083)					
Less: Other Funding Sources	(9,995,577)					
Less: Proceeds from financing activities (non-current only)	(1,338,000)					
Plus: Debt service	577,557					
2020 NERC Assessment	\$ 72,011,373					

¹As further explained in the discussion of the Working Capital Reserve amount in Exhibit D, the Future Obligations Reserve offsets future, non-current liabilities.

²Proceeds from financing activities amount is equal to two-thirds of the amount financed or to be financed in the year. See Exhibit D.

³Debt Service amount is equal to Annual Payments for Debt Service less Interest Expense. See Exhibit C.

⁴Represents transactions recorded only on the Statement of Financial Position (balance sheet) and do not impact the Statement of Activities (income statement), including recording of capitalized leases, amortization of future obligations, and funding the 457f plan.

Table B-2 – Penalties

Penalty Sanctions and Allocation Method

ROP Section 1107.2 specifies that penalty monies received by NERC during the 12 months ended June 30 are to be used in the subsequent budget year to offset assessments. In 2015, the Board approved an updated *Working Capital and Operating Reserves Policy* that was approved by FERC. This updated policy allows NERC, with Board and FERC approval pursuant to ROP Section 1107.4, to place penalty funds into an Assessment Stabilization Reserve for use in future years to offset assessments. Penalty sanctions released from the Asset Stabilization Reserve are allocated to the following statutory programs to reduce assessments: (1) Reliability Standards and PRISM, (2) Compliance Assurance and Organization Registration and Certification, (3) Compliance Enforcement, (4) RAPA, (5) Situation Awareness, (6) Event Analysis, (7) E-ISAC (including CRISP), and (8) Training and Education. Penalty sanctions are allocated based on the number of FTEs in the program divided by the aggregate total FTEs in the programs receiving the allocation.

For the period July 1, 2018–June 30, 2019, NERC did not collect any penalty funds to deposit into the Assessment Stabilization Reserve. Also, due to reduced debt service, increased interest income, and a surplus of working capital, the 2020 assessment currently does not reflect a proposed release of funds from this reserve. The balance held in the Assessment Stabilization Reserve will be used for assessment offsets in future years.

Penalty Sanctions	Date Received	Amount Received
Penalties received between 7/1/2018 and 6/30/2019	N/A	\$ -
		\$ -
Penalties received prior to 6/30/2018, held in the assessment stabilization reserve		\$ 1,521,000
Total penalties available on 1/1/2020 to offset assessments		<u>\$ 1,521,000</u>
Adjustments		
Total penalties released to offset assessments in the 2020 Budget		\$ -
Total penalties held in Assessment Stabilization Reserve 12/31/2020		<u>\$ 1,521,000</u>

Table B-3 – Outside Funding

Outside Funding Breakdown By Program (Excludes Penalty Sanction)	2019 Budget	2020 Budget	Increase (Decrease)
Reliability Standards			
Interest & Investment Income Allocation	18,884	45,862	26,978
Total	\$ 18,884	\$ 45,862	\$ 26,978
Compliance Assurance, Certification, and Registration			
Interest & Investment Income Allocation	\$ 33,504	\$ 55,517	\$ 22,014
Total	\$ 33,504	\$ 55,517	\$ 22,014
Compliance Enforcement			
Interest & Investment Income Allocation	\$ 17,056	\$ 31,379	\$ 14,323
Total	\$ 17,056	\$ 31,379	\$ 14,323
Reliability Assessment and Performance Analysis			
Services and Software	\$ 40,000	\$ 60,000	\$ 20,000
Interest & Investment Income Allocation	32,894	60,345	27,450
Total	\$ 72,894	\$ 120,345	\$ 47,450
Personnel Certification and Continuing Education			
Testing Fees	\$ 540,000	\$ 455,000	\$ (85,000)
Certificate Renewals	650,000	780,000	130,000
Continuing Education Fees	600,000	500,000	(100,000)
Interest & Investment Income Allocation	2,437	7,241	4,805
Total	\$ 1,792,437	\$ 1,742,241	\$ (50,195)
Training and Education			
Interest & Investment Income Allocation	\$ 2,437	4,828	\$ 2,391
Total	\$ 2,437	\$ 4,828	\$ 2,391
Event Analysis			
Interest & Investment Income Allocation	14,620	24,138	9,518
Total	\$ 14,620	\$ 24,138	\$ 9,518
Situation Awareness			
Interest & Investment Income Allocation	\$ 7,310	\$ 14,483	\$ 7,173
Total	\$ 7,310	\$ 14,483	\$ 7,173
E-ISAC			
Third Party Funding (CRISP)	\$ 7,486,353	\$ 7,814,577	\$ 328,224
Interest & Investment Income Allocation	55,859	142,207	86,348
Total	\$ 7,542,213	\$ 7,956,784	\$ 414,572
Grand Total	\$ 9,501,353	\$ 9,995,577	\$ 494,224

As discussed in the *Introduction and Executive Summary*, starting with the 2020 BP&B, NERC will no longer include workshop or event fees as a funding line item, but instead account for this income in meeting expenses as an offset to costs. This supports the goal of providing a total budget amount that more closely reflects the amount of annual revenues required for assessments. As such, 2019 budgeted income from workshop fees is no longer reflected in the funding line item, and meeting expenses reflect the costs net of this revenue.

Table B-4 – Personnel

Personnel	2019 Budget	2020 Budget	Increase (Decrease)	
Salaries	\$ 33,810,276	\$ 35,462,611	\$ 1,652,335	4.9%
Payroll Taxes	2,044,880	2,113,486	68,606	3.4%
Benefits	4,673,208	5,420,461	747,254	16.0%
Retirement	3,423,826	3,601,601	177,776	5.2%
Total	\$ 43,952,190	\$ 46,598,160	\$ 2,645,970	6.02%
FTEs	204.92	213.38	8.46	4.1%
Cost per FTE				
Salaries	\$ 164,993	\$ 166,195	\$ 1,202	0.7%
Payroll Taxes	9,979	9,905	(74)	-0.7%
Benefits	22,805	25,403	2,598	11.4%
Retirement	16,708	16,879	171	1.0%
Total	\$ 214,485	\$ 218,381	\$ 3,896	1.82%

Total salary expense is comprised of base salaries, incentive compensation, deferred compensation, employment agency fees, and temporary office expenses. The 2020 budget for base salaries assumes a 3.0% increase over actual 2019 base salaries for merit adjustments and, as requested by the Board, up to 0.5% for equity and market adjustments. The 2020 budget for incentive compensation is based on historical actuals and is comparable to prior years. The 2020 budgets for deferred compensation, employment agency fees, and temporary office expenses are generally consistent with 2019.

Benefits are budgeted to increase 16.0% primarily due to a 13.0% increase in health insurance premiums and costs for additional FTEs.

There have been no changes to NERC's retirement plans.

Table B-5 – Meetings

Meetings	2019 Budget	2020 Budget	Increase (Decrease)	
Meetings & Conference Calls	\$ 1,001,400	\$ 1,112,250	\$ 110,850	11.1%
Travel	2,184,000	2,211,000	27,000	1.2%
Total	\$ 3,185,400	\$ 3,323,250	\$ 137,850	4.3%

Meeting and travel expenses are increasing in 2020 mainly due to E-ISAC personnel increases, engagement efforts, and enhanced conference call capabilities.

Table B-6 – Consultants and Contracts

Refer to Exhibit B – Consultant and Contract Costs

Table B-7 – Rent

Office Rent	2019 Budget	2020 Budget	Increase (Decrease)	
Office Rent	\$ 3,122,808	\$ 3,228,468	\$ 105,660	3.4%
Maintenance	212,250	222,000	9,750	4.6%
Total	\$ 3,335,058	\$ 3,450,468	\$ 115,410	3.5%

Table B-8 – Office Costs

Office Costs	2019 Budget	2020 Budget	Increase (Decrease)	
Telephone	\$ 312,851	\$ 356,562	\$ 43,711	14.0%
Telephone Answering Service	1,200	-	(1,200)	-100.0%
Internet	241,500	269,350	27,850	11.5%
Office Supplies	175,700	250,050	74,350	42.3%
Computer Supplies	183,500	186,448	2,948	1.6%
Software License and Support	4,140,834	7,214,718	3,073,884	74.2%
Subscription and Publications	228,420	307,370	78,950	34.6%
Dues	69,611	86,050	16,439	23.6%
Postage	10,540	10,540	(0)	0.0%
Express Shipping	28,992	33,742	4,750	16.4%
Copying	117,642	80,042	(37,600)	-32.0%
Audio/Visual and Hardware Lease	752,529	1,005,501	252,972	33.6%
Equipment Repair/Service Contracts	132,497	144,000	11,503	8.7%
Bank Charges	25,000	28,000	3,000	12.0%
Merchant Card Fees	86,100	80,000	(6,100)	-7.1%
Total	\$ 6,506,917	\$ 10,052,374	\$ 3,545,456	54.5%

Office Supplies is increasing \$74k primarily as a result of a higher capitalization threshold established in 2018. This is offset by a decrease in fixed asset (capital) expenditures accordingly.

Software Licenses and Support includes non-capital software license and support costs, as well as support and service expenses for infrastructure management software, data center co-location, offsite backup of data, and network and security monitoring. The \$3.1M increase in 2020 is primarily due to a combination of an increase in these expenses in IT, particularly for enhanced security, and a reclassification of these costs from Consultants and Contracts (offset by a \$2.6M decrease in Consultants and Contracts).

Subscriptions and Publications is increasing \$79k primarily as a result of a combination of increased costs for these expenses in E-ISAC, IT, and Legal, and a reclassification of these costs from Outside Services.

Audio/Visual and Hardware Lease costs consist of lease payments for audio visual equipment, computers, laptops, servers, and switches that were leased, in lieu of purchasing, beginning in January 2017. The \$253k increase in the 2020 budget is the result of additional leased audio visual and computer equipment for the NERC Atlanta office expansion and increased FTEs in E-ISAC.

Table B-9 – Professional Services

Professional Services	2019 Budget	2020 Budget	Increase (Decrease)	
Independent Trustee Fees	\$ 1,410,000	\$ 1,410,000	\$ -	0.0%
Trustee Search Fees	100,000	50,000	(50,000)	-50.0%
Outside Legal	645,500	585,500	(60,000)	-9.3%
Lobbying	72,000	72,000	-	0.0%
Accounting and Auditing Fees	128,000	155,000	27,000	21.1%
Insurance Commercial	225,000	225,000	-	0.0%
Outside Services	177,100	14,100	(163,000)	-92.0%
Total	\$ 2,757,600	\$ 2,511,600	\$ (246,000)	-8.9%

The \$163k decrease in Outside Services is due primarily to a reclassification of these expenses to other areas.

Table B-10 – Miscellaneous

Miscellaneous Expenses	2019 Budget	2020 Budget	Increase (Decrease)	
Miscellaneous Expense	\$ 7,000	\$ 7,750	\$ 750	10.7%
Employee Rewards and Recognition	48,000	48,000	-	0.0%
Community Responsibility & Employee Engagement	4,500	4,500	-	0.0%
Sponsorships	22,500	22,500	-	0.0%
Total	\$ 82,000	\$ 82,750	\$ 750	0.9%

Table B-11 – Other Non-Operating Expenses

Other Non-Operating Expenses	2019 Budget	2020 Budget	Increase (Decrease)	
Property and Other Tax Expense	\$ 120,000	\$ 165,000	\$ 45,000	37.5%
Interest Expense	94,171	91,623	(2,548)	-2.7%
Total	\$ 214,171	\$ 256,623	\$ 42,452	19.8%

The \$45k increase in Property and Other Tax Expense is due to increased property and state excise taxes.

Table B-12 – Fixed Assets

Fixed Asset Additions	2019 Budget	2020 Budget	Increase (Decrease)	
Computer & Software CapEx	\$ 3,488,000	\$ 3,271,349	\$ (216,651)	-6.2%
Furniture & Fixtures CapEx	-	-	-	0.0%
Equipment CapEx	890,000	935,000	45,000	5.1%
Leasehold Improvements	400,000	500,000	100,000	25.0%
Total	\$ 4,778,000	\$ 4,706,349	\$ (71,651)	-1.5%

As discussed in the *Introduction and Executive Summary*, expenditures for fixed assets are budgeted to be \$72k less in 2020 compared to 2019. This decrease is primarily due to reduced spending on ERO Enterprise software projects.

Table B-13 – 2021–2022 Projections

Refer to the *Introduction and Executive Summary* section on pages 17–18

Section C – Non-Statutory Activity

NERC has no non-statutory activities.

Section D – Consolidated Statement of Activities by Program

Consolidated Statement of Activities Program 2020 Budget	Statutory Activities														
	Statutory Total	Reliability Standards and Risk Management	Compliance Assurance, Registration, and Certification	Event Analysis	Compliance Enforcement	Personnel Certification	Training and Education	Reliability Assessment and Performance Analysis	Situation Awareness	E-ISAC (Including CRISP)	General and Administrative (Includes Executive and Gov't Relations)	Legal and Regulatory	Information Technology	Human Resources and Administration	Accounting and Finance
Funding															
ERO Funding															
NERC Assessments	\$ 72,011,373	\$ 8,203,710	\$ 12,236,583	\$ 4,709,719	\$ 6,694,193	\$ -	\$ 1,010,158	\$ 13,001,958	\$ 4,241,524	\$ 23,328,006	\$ (1,414,478)	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserve - Penalties	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total NERC Funding	\$ 72,011,373	\$ 8,203,710	\$ 12,236,583	\$ 4,709,719	\$ 6,694,193	\$ -	\$ 1,010,158	\$ 13,001,958	\$ 4,241,524	\$ 23,328,006	\$ (1,414,478)	\$ -	\$ -	\$ -	\$ -
Third-Party Funding	\$ 7,814,577	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,814,577	\$ -	\$ -	\$ -	\$ -	\$ -
Testing Fees	1,735,000	-	-	-	-	1,735,000	-	-	-	-	-	-	-	-	-
Services & Software	60,000	-	-	-	-	-	-	60,000	-	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest & Investment Income	386,000	45,862	55,517	24,138	31,379	7,241	4,828	60,345	14,483	142,207	-	-	-	-	-
Total Funding (A)	\$ 82,006,951	\$ 8,249,572	\$ 12,292,101	\$ 4,733,857	\$ 6,725,572	\$ 1,742,241	\$ 1,014,986	\$ 13,122,303	\$ 4,256,006	\$ 31,284,791	\$ (1,414,478)	\$ -	\$ -	\$ -	\$ -
Expenses															
Personnel Expenses															
Salaries	\$ 35,462,611	\$ 2,622,756	\$ 3,646,298	\$ 1,651,222	\$ 1,829,637	\$ 372,765	\$ 212,108	\$ 3,662,883	\$ 900,228	\$ 7,494,261	\$ 3,511,022	\$ 2,957,499	\$ 3,971,134	\$ 1,324,004	\$ 1,306,791
Payroll Taxes	2,113,486	165,506	222,053	94,949	113,039	24,774	17,391	233,091	59,293	461,786	172,264	161,986	242,980	70,580	73,794
Benefits	5,420,461	416,307	686,630	259,683	230,971	64,235	52,397	595,261	227,569	1,060,720	480,745	344,613	609,073	207,069	185,187
Retirement Costs	3,601,601	290,052	404,705	181,837	197,746	40,459	23,836	407,604	100,163	808,861	149,671	316,578	433,924	110,100	136,066
Total Personnel Expenses	\$ 46,598,160	\$ 3,494,622	\$ 4,959,686	\$ 2,187,691	\$ 2,371,393	\$ 502,233	\$ 305,733	\$ 4,898,839	\$ 1,287,253	\$ 9,825,628	\$ 4,313,703	\$ 3,780,676	\$ 5,257,112	\$ 1,711,753	\$ 1,701,839
Meeting Expenses															
Meetings & Conference Calls	\$ 1,112,250	\$ 59,800	\$ 89,200	\$ 33,600	\$ 6,200	\$ 34,400	\$ 12,250	\$ 286,800	\$ 30,000	\$ 103,200	\$ 338,400	\$ 13,600	\$ 83,800	\$ 13,600	\$ 7,400
Travel	2,211,000	220,000	400,000	150,000	55,000	30,000	10,000	300,000	35,000	361,000	408,000	75,000	100,000	27,000	40,000
Total Meeting Expenses	\$ 3,323,250	\$ 279,800	\$ 489,200	\$ 183,600	\$ 61,200	\$ 64,400	\$ 22,250	\$ 586,800	\$ 65,000	\$ 464,200	\$ 746,400	\$ 88,600	\$ 183,800	\$ 40,600	\$ 47,400
Operating Expenses, excluding Depreciation															
Consultants & Contracts	\$ 12,435,902	\$ 40,320	\$ 90,320	\$ 10,000	\$ -	\$ 282,000	\$ 110,000	\$ 752,570	\$ -	\$ 8,090,000	\$ 20,000	\$ 300,000	\$ 1,805,692	\$ 760,000	\$ 175,000
Office Rent	3,450,468	-	-	-	-	-	-	-	-	-	3,450,468	-	-	-	-
Office Costs	10,052,374	50,050	341,358	44,550	389,208	197,400	115,000	513,304	1,225,844	1,462,689	559,900	65,100	4,698,871	150,600	238,500
Professional Services	2,511,600	-	-	-	-	-	-	-	-	175,000	1,714,000	353,500	-	9,100	260,000
Miscellaneous	82,750	500	750	500	500	-	500	2,000	500	500	23,000	500	500	52,500	500
Total Operating Expenses, excluding Depreciation	\$ 28,533,094	\$ 90,870	\$ 432,428	\$ 55,050	\$ 389,708	\$ 479,400	\$ 225,500	\$ 1,267,874	\$ 1,226,344	\$ 9,728,189	\$ 5,767,368	\$ 719,100	\$ 6,505,063	\$ 972,200	\$ 674,000
Total Direct Expenses	\$ 78,454,504	\$ 3,865,292	\$ 5,881,314	\$ 2,426,341	\$ 2,822,301	\$ 1,046,033	\$ 553,483	\$ 6,753,513	\$ 2,578,597	\$ 20,018,016	\$ 10,827,471	\$ 4,588,376	\$ 11,945,975	\$ 2,724,553	\$ 2,423,239
Indirect Expenses	\$ -	\$ 4,206,476	\$ 5,092,050	\$ 2,213,935	\$ 2,878,115	\$ 664,180	\$ 442,787	\$ 5,534,837	\$ 1,328,361	\$ 10,405,494	\$ (11,084,094)	\$ (4,588,376)	\$ (11,945,975)	\$ (2,724,553)	\$ (2,423,239)
Other Non-Operating Expenses	\$ 256,623	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 256,623	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 78,711,127	\$ 8,071,768	\$ 10,973,364	\$ 4,640,276	\$ 5,700,417	\$ 1,710,214	\$ 996,270	\$ 12,288,351	\$ 3,906,958	\$ 30,423,510	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A-B)	\$ 3,295,824	\$ 177,804	\$ 1,318,736	\$ 93,581	\$ 1,025,155	\$ 32,027	\$ 18,716	\$ 833,953	\$ 349,049	\$ 861,280	\$ (1,414,478)	\$ -	\$ -	\$ -	\$ -
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 4,706,349	\$ 177,804	\$ 1,318,736	\$ 93,581	\$ 1,025,155	\$ 28,074	\$ 18,716	\$ 833,953	\$ 349,049	\$ 861,280	\$ -	\$ -	\$ -	\$ -	\$ -
Total Budget (=B+C)	\$ 83,417,476	\$ 8,249,572	\$ 12,292,101	\$ 4,733,857	\$ 6,725,572	\$ 1,738,288	\$ 1,014,986	\$ 13,122,303	\$ 4,256,006	\$ 31,284,791	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Working Capital (=A-B-C)	\$ (1,410,525)	\$ -	\$ -	\$ -	\$ -	\$ 3,953	\$ -	\$ -	\$ -	\$ -	\$ (1,414,478)	\$ -	\$ -	\$ -	\$ -
FTEs	213.38	17.86	21.62	9.40	12.22	2.82	1.88	23.50	5.64	44.18	16.92	15.04	24.44	9.40	8.46

Exhibit A – Application of NERC Section 215 Criteria

DISCUSSION OF HOW THE NERC MAJOR ACTIVITIES IN THE 2020 BUSINESS PLAN AND BUDGET MEET THE NERC WRITTEN CRITERIA FOR DETERMINING WHETHER A RELIABILITY ACTIVITY IS ELIGIBLE TO BE FUNDED UNDER FEDERAL POWER ACT SECTION 215

I. Introduction

This Exhibit discusses how the major activities in NERC’s 2020 Business Plan and Budget meet the NERC written criteria for determining whether a reliability activity is eligible to be funded under §215 of the Federal Power Act (FPA §215). This Exhibit is intended to satisfy Recommendation No. 38 resulting from the financial performance review of NERC conducted by the Federal Energy Regulatory Commission’s (Commission’s) Division of Audits (DA) in 2012–2013 and adopted by the Commission in its November 2, 2012 order on NERC’s 2013 Business Plan and Budget.¹² NERC submitted the written criteria to the Commission in a compliance filing dated February 21, 2013 in Docket No. FA11-21-000.¹³ The Commission approved the NERC written criteria, with modifications, in an order issued in that docket on April 18, 2013.¹⁴ The NERC written criteria as used in this Exhibit incorporate the modifications specified in the Compliance Order.¹⁵

II. Reliability Standards and Power Risk Issue Strategic Management 2020 Major Activities

The major activities of Reliability Standards and Power Risk Issue Strategic Management (PRISM) are described at pages 19–21 of the 2020 Business Plan and Budget. Reliability Standards carries out the ERO’s responsibility to develop, adopt, obtain approval of, and modify as and when appropriate, mandatory Reliability Standards to assure the Bulk Electric System (BES) is planned, operated, maintained, and secured to minimize risks of cascading failures, avoid damages to major equipment, and limit interruptions. The major activity of PRISM is to leverage in-house expertise on Reliability Standards and standards development to implement cross-cutting efforts among NERC functions and the NERC standing and technical committees, with emphasis on developing NERC’s positions on emerging technologies and the effect of these technologies on Reliability Standards. The PRISM group provides in-house training on Reliability Standards and conducts statistical analyses concerning the results of standards to identify potential weaknesses, redundancies, and overall necessity.

The major activities for the Reliability Standards program include (1) providing project management and leadership to the reliability standard development process to deliver high quality, continent-wide Reliability Standards, both new and modified, to provide solutions to address reliability risks identified through the Reliability Risk Management Process, including standard development outreach activities, facilitation of drafting team activities, drafting support, assisting drafting teams in adhering to the processes in the *Standard Processes Manual*, and ensuring that the quality of documents produced are appropriate for approval by industry and the NERC Board; (2) facilitating continent-wide industry

¹² *North American Electric Reliability Corporation, Order Accepting 2013 Business Plan and Budget of the North American Electric Reliability Corporation and Ordering Compliance Filing*, 141 FERC ¶ 61,086 (2012) (“2013 Budget Order”). Recommendation 38, as adopted in the 2013 Budget Order, is: “In its annual business plan and budget filings, [NERC should] provide an explanation as to why the proposed activities to be undertaken by each program area for the budget year are statutory, including, at a minimum: a description and the purpose of the major activities to be taken by each program area and an explanation for why the activity is a statutory activity.” *Id.* at P 16.

¹³ *Compliance Filing of the North American Electric Reliability Corporation in Response to Paragraph 30 of November 2, 2012 Commission Order – NERC Written Criteria for Determining Whether a Reliability Activity is Eligible to be Funded Under Federal Power Act Section 215*, filed February 1, 2013 in Docket No. FA 11-21-000 (“February 1, 2013 Compliance Filing”).

¹⁴ *North American Electric Reliability Corporation, Order on Compliance*, 143 FERC ¶ 61,052 (2013) (“Compliance Order”).

¹⁵ For ease of reference, the complete NERC written criteria, as modified in accordance with the Compliance Order, are provided at the end of this Exhibit.

engagement in the standard development processes; and (3) conducting industry balloting on standards, disseminating information on standards and the standard development processes, and supporting regulatory filings and proceedings relating to standards. In response to input from regulatory authorities, Regional Entities, and industry stakeholders, the Reliability Standards program gathers industry feedback during the standard development and revision processes on costs of proposed standards and the risks they are intended to address. The PRISM group interacts with stakeholder groups, including NERC technical committees and subcommittees, and ensures that the processes to address Standards Authorization Requests and Requests for Interpretations of standards are coordinated and efficient.

For 2020, the major activities of the Reliability Standards program will continue to focus on (1) selection of standards projects to be undertaken based on the nature of the reliability issue, and whether a standard or another solution is most appropriate to address the issue; (2) addressing Commission directives and responding to Commission orders as necessary through the standards process; (3) continuing to implement the results of the comprehensive review of standards completed in 2018, by initiating projects to modify or retire standards, including analyzing the need to retire or enhance standards requirements based on operational experience; and (4) facilitating smooth transitions to new standards, including by working with the other NERC program areas and the Regional Entities to develop guidelines, webinars, and other activities to support auditor and industry training for new standards. Also in 2020, this program will continue to work with stakeholders to determine whether there is a need to make further improvements to Reliability Standards through periodic reviews that include a measured review of the contents of standards, considering whether the requirements could more effectively mitigate risks to the Bulk Power System (BPS); whether the standards are results-based and drafted with high quality; whether the standards are concise or if the number of requirements could be reduced; and whether compliance expectations are clear. The PRISM group will continue standards training activities for NERC staff, expand its analysis for the efficacy of standards and emerging technologies affecting the BPS, and coordinate with the Reliability Issues Steering Committee (RISC) on alignment of identified risks and mitigating activities.

The major activities of the Reliability Standards program satisfy the following criteria:

- I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure (ROP)?
- I.B: Is the activity necessary or appropriate for providing guidance and assistance to Regional Entities in carrying out Regional Reliability Standards development activities?
- I.C: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated?
- I.D: Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures, and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, (iii) industry personnel?
- II.F.1: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (ii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.

- IV: Is the activity one that was required or directed by a Commission order issued pursuant to §215? (Reliability Standards development projects are often initiated in response to directives in Commission orders).
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for the Reliability Standards Program are §300 and Appendix 3A.)
- VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?
- X. Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

III. Compliance Assurance, Organization Registration and Certification, and Compliance Enforcement 2020 Major Activities

The major activities of Compliance Assurance, Organization Registration and Certification, and Compliance Enforcement are described on pages 23–27 and 29–30 of the 2020 Business Plan and Budget. This Program Area is comprised of (1) Compliance Assurance, (2) Organization Registration and Certification, and (3) Compliance Enforcement.

The Compliance Assurance group works collaboratively with the Regional Entities to ensure effective implementation of risk-based compliance monitoring under the Compliance Monitoring and Enforcement Program (CMEP) across the entire ERO Enterprise. This group’s activities include the following major activities and functions: (1) oversight of the Regional Entities’ implementation of the risk-based compliance monitoring program and the NERC ROP, including ensuring that Regional Entities monitor registered entities for compliance according to their specific facts and circumstances, developing customized compliance oversight plans (COPs) for each registered entity based on its inherent risk assessment (IRA) and other factors; (2) development and execution of the annual CMEP Implementation Plan; (3) oversight of use of necessary compliance-related processes, procedures, information technology (IT) platforms, tools and templates; (4) development and delivery of education and training for ERO Enterprise staff; (5) training and outreach activities for the Critical Infrastructure Protection (CIP) Reliability Standards and subsequent enhancements to support industry compliance and security; (6) coordinating with the Reliability Standards program to assist in smooth transition for standards from development to enforceability and to provide feedback on risks seen in the field that are not addressed by a standard, as well as information on whether a standard is too broad; and (7) supporting Regional Entity and industry committees, working groups and task forces, such as the ERO Compliance Monitoring Group (NERC and Regional Entity collaboration group), NERC Compliance and Certification Committee (CCC), and NERC Critical Infrastructure Protection Committee (CIPC). Ensuring successful implementation of the risk-based CMEP is the priority of Compliance Assurance’s oversight plan for the Regional Entities. Compliance Assurance provides training to Regional Entity staffs on the elements of risk-based compliance monitoring, including enhancements to registered entities’ IRAs, internal controls reviews, COP

development, and Reliability Standards monitoring. Compliance Assurance is also involved, with the Regional Entities, in development of the ERO Enterprise-wide Align application (CMEP Technology Project).

The ongoing and new major activities of the Compliance Assurance group for 2020 will include: (1) continuing to mature the risk-based compliance program, including ongoing oversight of the risk-based CMEP, IRAs, internal controls, coordinated oversight of Multi-Region Registered Entities (MRREs), and ensuring that COPs are addressing the relevant risks; (2) working with NERC Enforcement and IT and with Regional Entities to implement the Align tool; (3) supporting the continued successful implementation of CIP V5 standards and subsequent enhancements as they become effective; (4) monitoring and supporting effective implementation and monitoring of the Physical Security Reliability Standard; (5) enhancing and implementing training to support monitoring of compliance with Reliability Standards, integrating principles from the Compliance Monitoring Competency Guide; (6) continuing to provide feedback to the Reliability Standards program through coordination between the standards and compliance functions to allow clear stakeholder implementation of standards and feedback on risks seen in the field, and supporting this effort through a common set of Reliability Standard Audit Worksheets, guidance, and outreach; (7) supporting international CMEP activities including reliability and security subject matter expertise and outreach; (8) providing support and leadership to applicable committees and subcommittees including the CIPC and the CCC. Additionally, in connection with dissolution of the SPP Regional Entity, NERC, through the Compliance Assurance group, will continue to act as the Compliance Enforcement Authority (CEA) with respect to the SPP Regional Transmission Organization registered functions until the planned transition of CEA responsibilities to Midwest Reliability Organization in 2020.

Organization Registration and Certification manages the Organization Registration and Certification Program (ORCP). Organization Registration identifies and registers BPS users, owners, and operators that are responsible for performing specific reliability functions to which Reliability Standards requirements are applicable. Organization Certification ensures that an applicant to be a Reliability Coordinator (RC), Balancing Authority (BA), or Transmission Operator (TOP) has the tools, processes, training, and procedures to demonstrate its ability to become certified and operational for the applicable functions. This includes responding to industry changes requiring Certification review, including control center relocations, energy management system replacements, and RC, BA and TOP footprint changes. Organization Registration and Certification work with the CCC's Organization Registration and Certification Subcommittee, which oversees the ORCP, and provides training, guidance, and outreach to stakeholders through NERC and Regional Entity workshops and other forums as well as on an individual basis with entities. Organization Registration and Certification is involved in development and implementation of both the Align and the Centralized Organization Registration ERO System (CORES) applications.

Compliance Enforcement is responsible for overseeing enforcement processes, the application of Penalties or sanctions, and activities to mitigate and prevent recurrence of noncompliance with Reliability Standards. This group works collaboratively with the Regional Entities to ensure consistent and effective implementation of the risk-based CMEP. It also focuses on ensuring that the ERO Enterprise dedicates resources to the matters that pose the greatest risk to reliability. Compliance Enforcement monitors Regional Entities' enforcement processes and provides oversight over the outcomes of such processes, to ensure alignment across the ERO Enterprise; collects and analyzes compliance enforcement data and trends to help identify emerging risks to the BPS and inform the development of enforcement policies and procedures; files Notices of Penalty and other disposition documents associated with noncompliance discovered through Regional Entity or NERC-led CMEP activities; collaborates with other NERC departments, including Reliability Standards, Compliance Assurance, and Event Analysis; and delivers

training to ERO Enterprise staff and registered entities and supports other outreach efforts. During 2020, the major activities of Compliance Enforcement will include: (1) identifying and mitigating the greatest risks to reliability and security; (2) supporting development and implementation of the Align tool; (3) streamlining minimal risk noncompliances, including Compliance Exceptions and the self-logging program; (4) aligning the risk assessment process and educating relevant parties; and (5) maturing the Coordinated Oversight program for MRREs.

The major activities of Compliance Assurance, Organization Registration and Certification, and Compliance Enforcement satisfy the following criteria:

- I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC ROP?
- I.C: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated?
- II. Is the activity necessary or appropriate for the monitoring and enforcement of compliance with Reliability Standards?
 - A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the BPS that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?
 - B: Is the activity necessary or appropriate for the Certification of RCs, TOPs, and BAs as having the requisite personnel, qualifications and facilities and equipment needed to perform these reliability functions in accordance with the applicable Requirements of Reliability Standards?
 - D: Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?
 - E: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards.
 - F: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents. (2) Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the process? This includes development of guidance documents. (3) Disseminating, through workshops, webinars, Advisories/Recommendations/Essential Actions, and other publications, “lessons learned” information on compliance concerns

and reliability risks obtained through compliance monitoring and enforcement activities, monitoring and investigation of BPS major events, off-normal occurrences and near miss events, and other BPS monitoring activities? (4) Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?

- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for these major activities are §400 and 500 and Appendices 4B, 4C, 5A, 5B and 5C.)
- VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?
- IX: Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in the activities encompassed by one or more of the other criteria?
- X: Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

IV. Reliability Assessments and Performance Analysis 2020 Major Activities

The major activities of Reliability Assessments and Performance Analysis (RAPA) are described at pages 32–37 of the 2020 Business Plan and Budget. RAPA is comprised of the Risk Identification and Mitigation Department, which in turn is comprised of the Reliability Assessments and Technical Committees (RATC) group and the Performance Analysis (PA) group; and the Engineering and Standards department, which in turn is comprised of the Power System Analysis (PSA) group and the Advanced System Analytics and Modeling (ASAM) group.

The RATC group, which includes the NERC staff secretaries of the Operating Committee (OC), Planning Committee (PC), and CIPC, carries out the ERO’s responsibility to conduct assessments of the reliability and adequacy of the BPS and associated emerging reliability risks, as well as other reliability issues requiring in-depth analysis. Annual reports and assessments produced by this group include the Long-Term Reliability Assessment (supplemented by the Probabilistic Assessment), the Summer and Winter Reliability Assessments, the *State of Reliability Report*, and Special Reliability Assessments that are selected based on high risk issues requiring an independent assessment from the ERO. The NERC staff secretaries for the NERC technical committees coordinate and administer the activities of these committees, which include providing oversight, guidance, and leadership essential to enhancing BPS reliability. In addition to developing the annual and other assessments, the major ongoing activities of the RATC include focusing on effective Essential Reliability Standards (ERS), advancing the value of the seasonal reliability assessments, advancing probabilistic assessments and evaluations of energy assurance, and enhancing ERO Enterprise-wide effectiveness and efficiency of reliability assurance-related functions. Activities in 2020 will include a Special Reliability Assessment on electricity storage, an interconnection-wide short circuit study and report, and implementation of an effectiveness and efficiency strategy for NERC’s committee structure. The RATC group is also implementing the research work plan concerning geomagnetic disturbance effects that was developed and submitted to the

Commission pursuant to Order No. 830, including collection of data pursuant to an ROP Section 1600 data request and other means.

PA monitors the performance of and identifies risks to reliability of the BPS through analyzing data from industry and measuring historic trends, in five areas of BPS operations: transmission, conventional generation, wind generation, protection system misoperations, and demand response. Analysis performed by PA includes identifying potential risks that may indicate a need to develop remediation strategies, improvements to reporting applications, and new data collection or analysis tools which may be used to create, retire, or revise Reliability Standards. To evaluate reliability trends that identify reliability risks, PA analyzes data in the Generation Availability Data System (GADS), Transmission Availability Data System (TADS), and Demand Response Availability System (DADS), as well as reliability metrics and protection and control system misoperations data.

PSA provides technical leadership and support in the areas of resource and demand balancing and system analysis and modeling, including technical support for the balancing (BAL) and modeling (MOD) Reliability Standards. PSA assists the RERC in its independent reliability assessments; performs Interconnection-wide analysis of steady state and dynamic conditions, including frequency, ERS, stability, short circuit ratio, and oscillatory behavior aspects; and assures that the BES electrical elements necessary for reliable operation are identified and subject to Reliability Standards. PSA's ongoing major activities include developing technical analyses in key reliability area to address areas of concern, in order to evaluate BPS characteristics, behavior and performance due to the changing resource mix and integration of new technologies; continuing to explore use of state-of-the-art software to conduct power system analysis; conducting detailed forensic analysis of significant system disturbances; and providing technical expertise, research, and feedback to the industry, including those that support development of key reliability planning-related Reliability Standards.

ASAM provides support for development and improvement of long-term, sustainable interconnection-based power flow, dynamic, and load models that reflect actual BES reliability performance and dynamic conditions. ASAM provides guidance on appropriate use of new and existing models to study emerging risks; advances understanding of power system characteristics and behaviors by gathering larger phasor measurement unit data sets for advanced data analytics and modeling improvements; and promotes understanding of the need and available methods for probabilistic studies to augment deterministic studies in system planning. ASAM provides advanced statistical analysis support to RERC's *State of Reliability Report* and reliability assessments; PSA's interconnection-wide analysis of frequency response and other parameters; and PRISM's analytical review of Reliability Standard effectiveness. ASAM's ongoing major activities include providing industry insight on modeling improvements through a State of Modeling report; in coordination with the PC's Inverter-Based Resource Performance Task Force, performing event analyses and investigating abnormal performance of inverter-based resources to develop industry recommendations and address potential reliability gaps; supporting industry in the reliable integration of increased levels of Distributed Energy Resources; supporting industry adoption and advancement of synchrophasor technology through the PC's Synchronized Measurement Subcommittee; supporting industry understanding and expertise in power plant modeling through the PC's System Analysis and Modeling Subcommittee's Power Plant Modeling and Verification Task Force; advancing improvements in dynamic load modeling in support of industry stability studies for planning and real-time reliability assessments; supporting studies and technical positions on the changing nature of end-use loads; performing annual assessments of case quality and fidelity on interconnection-wide cases released by the MOD-032 designees; addressing deficiencies in interconnection-wide models and providing industry education on key modeling topics; coordinating with the PC's Methods for Establishing Interconnection Reliability Operating Limits (IROLs) Task Force and supporting improvements to the

methods, practice, and tools used to establish IROLs; conducting a Composite Reliability Study using probabilistic or near-probabilistic methods for transmission and resources; conducting a WECC/NERC Battery Study of the Western Interconnection to determine the adequacy of battery energy injection to support frequency response, steady-state and dynamic support, and primary frequency reserve margin; and conducting advanced statistical studies in support of the Standards Efficiency Review and the *State of Reliability Report*.

The RAPA groups work closely with other governmental and industry organizations, including the U.S. Department of Energy, Electric Power Research Institute, Institute of Electrical and Electronics Engineers, Institute of Nuclear Power Operations, North American Transmission Forum, North American Generators Forum, Interstate Natural Gas Association of America, Natural Gas Supply Association, Canadian Electricity Association, and International Council on Large Electric Systems.

The major activities of RAPA satisfy the following criteria:

- I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC ROP?
- I.C: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (1) Measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks? (2) Monitoring, event analysis and investigation of BPS major events, off-normal occurrences and near miss events?
- II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the BPS that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?
- III.A: Is the activity necessary or appropriate for the preparation or dissemination of long-term, seasonal, and special assessments of the reliability and adequacy of the BPS?
- III.B: Is the activity necessary or appropriate for measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the BPS based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?
- III.C: Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the BPS in connection with BPS major events and off-normal occurrences, but not real-time operational control of the BPS?
- III.D: Is the activity necessary or appropriate for awareness of circumstances on the BPS and to contribute to understanding risks to reliability?
- III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the BPS?

- IV: Is the activity one that was required or directed by a Commission order issued pursuant to §215? (FERC orders directed NERC to develop and implement a revised definition of “Bulk Electric System” and a procedure for requesting and receiving exceptions from the BES definition, and subsequently approved NERC’s proposed revised BES definition and its proposed BES exception procedure.)
- V. Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for major activities of the RAPA program are §801-806, §809-810, and Appendix 5C.)
- VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?
- IX: Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?
- X: Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

V. Situation Awareness 2020 Major Activities

The major activities of Situation Awareness are described at pages 39–41 of the 2020 Business Plan and Budget. The Situation Awareness group, along with the Regional Entities, monitors BPS conditions, significant occurrences and emerging risks, and threats across the 14 Reliability Coordinator regions in North America, to maintain an understanding of conditions and situations that could impact reliable operations. Situation Awareness supports development and publication of NERC Alerts and awareness products, and facilitates information sharing among industry, Regional Entities and government during crisis situations and major system disturbances. Situation Awareness assists the NERC OC’s Operating Reliability Subcommittee in enhancing BPS reliability with efforts to provide operational guidance to industry by managing NERC-sponsored technology tools and services that support operational coordination, as well as by providing technical support and advice. Situation Awareness uses and supports reliability-related tools in support of Situation Awareness activities, including the Resource Adequacy (Area Control Error Frequency) Tool; Inadvertent Interchange; FNet; Intelligent Alarms Tool; PowerIQ and PowerRT tools; Situation Awareness for NERC, FERC, and the Regional Entities (SAFNR); Reliability Coordinator Information System (RCIS); NERC Alerts (secure alerting system); and the Process Information (PI) Historian System.

The ongoing and new major activities of the Situation Awareness department for 2020 include: ensuring that the ERO is aware of all BES events above a threshold of impact; enabling the sharing of information and data to facilitate wide-area situational awareness; during crisis situations, facilitating the exchange of information among industry, Regions, and U.S. and Canadian governments; keeping the industry informed of emerging reliability threats and risks, including any expected actions; administering the NERC Alerts process as specified in §810 of the ROP to issue Advisory (Level 1) Alerts on significant and emerging reliability and security related topics, and facilitate the tracking of actions specified in Recommendation (Level 2) and Essential Action (Level 3) Alerts; continuing to set the conditions to bring in limited streaming synchrophasor data for wide-area situational awareness and event triage applications; evaluating the

importance of having visibility and understanding of the reliability or availability of natural gas and its interdependency with electrical generation; and developing and implementing upgrades to SAFNR. During 2020, Situation Awareness will continue the implementation of the upgraded SAFNR system and development of any needed enhancements, as well as upgrading the video wall in the NERC situational awareness room; enhancing natural gas situational awareness; and working with the E-ISAC to increase situational awareness related to physical security.

The major activities of the Situation Awareness group satisfy the following criteria:

- I.C.2: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (2) Monitoring, event analysis and investigations of BPS major events, off-normal occurrences and near-miss events?
- II.G: Is the activity necessary or appropriate for the development and provision of tools and services that are useful for the provision of adequate reliability, because they relate specifically to compliance with existing Reliability Standards and they proactively help avert Reliability Standard violations and BPS disturbances?
- III.C: Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the BPS in connection with BPS major events and off-normal occurrences, but not real-time operational control of the BPS?
- III.D: Is the activity necessary or appropriate for awareness of circumstances on the BPS System and to contribute to understanding risks to reliability?
- III.E: Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the BPS?
- III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the BPS?
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provision for these major activities is §1001.)
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

VI. Event Analysis 2020 Major Activities

The major activities of Event Analysis are described at pages 43–44 of the 2020 Business Plan and Budget. The Event Analysis group performs assessments of the reliability and adequacy of the BES to identify potential issues of concern related to system, equipment, entity, and human performance that may indicate a need to develop remediation strategies, action plans, or data used to revise or retire Reliability Standards or consider new Reliability Standards. Event Analysis analyzes and determines the causes of

events, promptly assures tracking of corrective actions to prevent recurrence, and provides lessons learned to the industry. Event Analysis analyzes all reportable events for sequence of events, root cause, risks to reliability, and mitigation and keeps the industry well-informed of system events, emerging trends, risk analysis, lessons learned, and expected actions. Event Analysis conducts in-depth analyses of approximately 150 events per year on average, and also conducts calls facilitated by Regional Entities with registered entities to discuss in detail and finalize root and contributing causes for the events analyzed. Event Analysis identifies human error risks and precursor factors that allow human error to affect BES reliability, and educates industry regarding such risks, precursors, and related mitigation methods. Event Analysis works in collaboration with and supports the activities of other groups involved in human performance analysis, including the NERC OC's Event Analysis Subcommittee, the WECC Human Performance Working Group, and others. Additionally, Event Analysis supports compliance and standards training initiatives and trending and analysis to identify emerging reliability risks.

The ongoing and new major activities for 2020 for the Event Analysis group include: (1) Working with Regional Entities to obtain and review information from registered entities on qualifying events and disturbances in order to advance awareness of events above a threshold level; facilitating analysis of root and contributing causes, risks to reliability, wide-area assessments and remediation efforts; and disseminating information regarding events in a timely manner. (2) Ensuring that all reportable events are analyzed for sequence of events, root cause, risk to reliability, and mitigation. (3) Continuing to refine risk-based methodologies to support better identification of reliability risks, including use of more sophisticated cause codes for analysis. (4) Conducting training (webinars, workshops and conference support) to inform industry and the ERO of lessons learned, root cause analysis, trends, human performance, and extreme weather preparedness and recommendations, including events like the annual NERC Monitoring and Situational Awareness Conference and annual Human Performance Conference. (5) Developing reliability recommendations and Alerts as needed, and tracking industry accountability for critical reliability recommendations. (6) Ensuring that industry is well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions. (7) Conducting major event analysis and reporting of major findings and recommendations that will improve reliability. The Event Analysis department will also support several top priority reliability risk projects being led by RAPA. Additionally, in 2020, Event Analysis will focus on updating and upgrading data collection and shortage capabilities and capacity for the Event Analysis Management System (TEAMS); as well as working to develop a link between performance and event analysis data to enhance the availability to conduct effective event analyses and to identify key areas for trend analyses across multiple databases.

The major activities of the Event Analysis group satisfy the following criteria:

- I.C.2: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (2) Monitoring, event analysis and investigations of BPS major events, off-normal occurrences and near-miss events?
- II.E.2: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards, such as: (2) Monitoring, event analysis and investigation of BPS major events, off-normal occurrences, and near miss events?

- II.F.3: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (3) Disseminating, through workshops, webinars, Advisories, Recommendations, Essential Actions, and other publications; “lessons learned” information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities; monitoring and investigation of BPS major events, off-normal occurrences and near miss events, and other BPS monitoring activities?
- III.B. Is the activity necessary or appropriate for measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the BPS based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?
- III.C. Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the BPS in connection with BPS major events and off-normal occurrences, but not real-time operational control of the BPS?
- III.D. Is the activity necessary or appropriate for awareness of circumstances on the BPS and to contribute to understanding risks to reliability?
- III.E: Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the BPS?
- III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the BPS?
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for these major activities are §801-811 and Appendix 8.)
- VI. Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

VII. Electricity Information Sharing and Analysis Center 2020 Major Activities

The major activities of the Electricity Information Sharing and Analysis Center (E-ISAC) are described at pages 46–51 of the 2020 Business Plan and Budget. The primary function of E-ISAC is to reduce cyber and physical risk to the electricity industry across North America by providing unique insights, leadership and coordination, and to be a world-class trusted source of quality analysis and rapid sharing of security information for the electric industry. E-ISAC oversees the Cybersecurity Risk Information Sharing Program (CRISP). CRISP delivers real-time, relevant, and actionable cybersecurity risk information to E-ISAC

member electricity asset owners and operators. E-ISAC also supports an annual grid security conference and a biennial Grid Security Exercise.

The E-ISAC's major activities for 2020 are focused on three areas: (1) Engagement with industry participants using the E-ISAC Portal as the primary tool for communication to promote cyber and physical security risk identification, sharing, analysis, and mitigation. The E-ISAC also strives to strengthen relationships with the government intelligence community, with the goal of increased access to government-informed threat information and analysis. (2) Information sharing, including developing and implementing high priority notification procedures, using automated information sharing technology, improving E-ISAC Portal functionality, and improving industry personnel's access to classified information. (3) Analysis—the E-ISAC publishes reports, bulletins, and advisories, conducts monthly webinars, and convenes experts for classified and unclassified briefings with members. These activities provide information obtained through analysis by E-ISAC cyber and physical security and threat intelligence teams, as well as independent analysis from members, government, the cross-sector community, strategic vendors, and other partners.

- I.C.1: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (1) Measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the BPS based on such measurements; and/or identifying approaches to mitigating or eliminating such risks? (2) Monitoring, event analysis and investigation of BPS major events, off-normal occurrences and near-miss events?
- III.D: Is the activity necessary or appropriate for awareness of circumstances on the BPS and to contribute to understanding risks to reliability.
- III.E: Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the BPS.
- III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the BPS?
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's ROP that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for these major activities are §810 and 1003.)

VIII. Personnel Certification and Continuing Education 2020 Major Activities

NERC has placed the System Operator Certification Program and the Continuing Education (CE) program into a separate group overseen by the NERC Personnel Certification Governance Committee. These programs are funded entirely through examination fees, and do not receive any funding from FPA §215 statutory assessments. For completeness, however, a summary of the major activities of the Personnel Certification and Continuing Education (PCCE) group is provided in this Exhibit A.

The major activities of the PCCE group are described at pages 53–54 of the 2020 Business Plan and Budget. The System Operator Certification program ensures personnel operating the BPS have the skills, training

and qualifications needed to operate the system reliably. This program maintains the credentials required to work in various industry areas across North America for over 7,500 system operators. NERC’s System Operator Certification exam prepares operators for complying with the requirements of Reliability Standards and appropriately operating the BPS during normal and emergency operations. Credential maintenance of the System Operator Certification program is accomplished by obtaining CE Hours. The Continuing Education Program approves CE providers and their courses. NERC’s OC Personnel Subcommittee provides oversight of the CE Program.

Major ongoing and new activities of the PCCE include analysis of System Operator Certification program survey results; updates to the System Operator Certification Exam Item Bank to ensure relevance to current Reliability Standards; enhancements to the exam “skills assessment” process to better assess the skills and knowledge of system operators; development of an implementation plan for One Credential transition; evaluating credential review and rationalization to maintain credentials (credential maintenance requirements); reinstatement of Provider Renewal Audits; revising the CE Program Manual; and continued improvements to the System Operator Certification Continuing Education Database to enhance user experiences.

The major activities of the PCCE group satisfy the following criteria:

- I.D: Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel?
- II.C: Is the activity necessary or appropriate for the Certification of system operating personnel as qualified to carry out the duties and responsibilities of their positions in accordance with the Requirements of applicable Reliability Standards?
- II.F.1: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provision for the major activities of the Personnel Certification Program is §900.)
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

IX. Training and Education 2020 Major Activities

The major activities of Training and Education are described at pages 56–57 of the 2020 Business Plan and Budget. The Training and Education group oversees and coordinates the delivery of training programs to ERO Enterprise staff and BPS industry participants. Training and Education uses both one-way mass communication media (e-mails, newsletters, flyers and videos) and two-way communication methods (face-to-face meetings and webinars) to convey learning materials and information. The ongoing and new major activities of the Training and Education group include assisting in facilitation of the ERO Enterprise

CMEP staff workshop; developing learning products for industry-facing workshops and conferences, including the annual Standards and Compliance Workshop, the Gas Infrastructure Technical Workshop, and the Human Performance Conference; developing CMEP e-learning modules for ERO Enterprise auditors; developing and updating systems training products for data systems (GADS, GADS Wind, TADS, DADS); developing learning products in support of the implementation of Align and CORES; designing and developing the ERO Enterprise training website; development and implementation of a management development program; and implementing training and adoption for the new Learning Management System among ERO Enterprise staff.

The major activities of Training and Education satisfy the following criteria:

- I.D: Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel?
- II.F: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents. (2) Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the processes? This includes development of guidance documents. (3) Disseminating, through workshops, webinars, Advisories/Recommendations/Essential Actions, and other publications, “lessons learned” information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities, monitoring and investigation of BPS major events, off-normal occurrences and near miss events, and other BPS monitoring activities. (4) Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?
- III.E: Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the BPS?
- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for the major activities of the Training and Education are in §900.)
- VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and the applicable provisions of Commission orders.

X. Administrative Services 2020 Major Activities

NERC’s Administrative Services Departments are General and Administrative, Legal and Regulatory, Information Technology (IT), Human Resources and Administration, and Finance and Accounting. The major activities of these departments are described at pages 59–65 of the 2020 Business Plan and Budget.

General and Administrative is responsible for the administration and general management of the organization and includes the Chief Executive Officer and Chief Reliability Officer and support staff; Policy and External Affairs staff (legislative and regulatory, communications, and international affairs activities); and Board of Trustees costs.

Legal and Regulatory provides legal support to the organization, including management and the NERC program areas. General corporate legal support is provided in areas including antitrust, corporate, commercial, insurance, contracts, employment, real estate, copyright, tax, and legislation. Legal and regulatory support is also provided in connection with delegation agreements with Regional Entities. Legal and Regulatory also includes the Internal Audit and Corporate Risk Management functions.

IT supports the technology needs necessary to the existence and function of the organization in executing statutory activities, and supports, configures, and secures corporate and enterprise applications and infrastructure leveraged by the ERO Enterprise and registered entities. IT's Project Management Office provides project management skills and leadership for major ERO Enterprise and NERC IT projects. IT's major activities are focused on three areas: (1) developing ERO Enterprise new functionality, including Align, CORES, the SAFNR upgrade, enhancements to data management systems (GADS, GADS Wind, TADS, DADS and the Reliability Assessment Data System), and technology applications for collection of data under ROP Section 1600 data requests); (2) ERO Enterprise application and infrastructure support; and (3) NERC infrastructure support.

Human Resources and Administration's activities include hiring, benefits administration, employee relations, performance and compensation management, training and development for leadership, management, and professional and administrative staff, facilities management of NERC's two office locations, and meeting planning and coordination. Under the direction of the NERC Board Corporate Governance and Human Resources Committee, Human Resources and Administration develops compensation strategy and performs or obtains (through consultants) market compensation studies, effectiveness studies, and other compensation and staffing related studies as needed.

Finance and Accounting manages all finance and accounting functions of NERC, including employee payroll, 401(k), 457(b) and 457(f) plans, travel and expense reporting, monthly financial reporting, sales and use tax, insurance, and development of the annual business plan and budget.

The major activities of NERC's Administrative Services Departments satisfy the following criteria:

- I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC ROP?
- II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the BPS that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?
- II.D: Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?
- III.C: Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the BPS in connection with BPS major events and off-normal occurrences, but not real-time operational control of the BPS?

- V: Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable ROP provisions for ERO Enterprise audits conducted by the Internal Audit group in Legal and Regulatory are §406, §506, and Appendix 4A, and for major activities of Finance and Accounting is §1100.)
- VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and the applicable provisions of Commission orders.
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?
- XI: Is the activity a governance or administrative/overhead function, activity or service necessary or appropriate for the activities encompassed by the other criteria and, in general, necessary and appropriate to operate a functioning organization?

**NERC WRITTEN CRITERIA FOR DETERMINING
WHETHER AN ACTIVITY IS ELIGIBLE TO BE FUNDED
UNDER SECTION 215 OF THE FEDERAL POWER ACT**

For purposes of internal management approval of a proposed new activity or group of related activities (“major activity”), the proposed activity or major activity must be shown to fall within at least one of the criteria listed below. When sub-criteria are listed below a roman numeral numbered major criterion, the proposed activity should be a positive answer to at least one of the sub-criteria. Conversely, an activity that falls under a sub-criterion should pertain to the subject matter of the major criterion.

NERC’s annual business plan and budget will describe how each major activity falls within one or more of the criteria listed below. If the major activity is substantially the same as a major activity that was shown to fall within the criteria in a previous year’s business plan and budget, the current year’s business plan and budget can refer to the prior year business plan and budget.

A determination that an activity falls within FPA §215 does not necessarily mean that NERC will propose or undertake such activity. The determination of whether an activity falling under FPA §215 should or will be undertaken in a given budget year will be addressed in the context of the applicable business plan and budget and will include opportunities for stakeholder input.

The criteria listed below are not necessarily each distinct from the others. An activity or major activity may fall within more than one of the criteria listed below.

- I. Is the activity necessary or appropriate for the development of Reliability Standards?
 - A. Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC ROP?
 - B. Is the activity necessary or appropriate for providing guidance and assistance to Regional Entities in carrying out Regional Reliability Standards development activities?
 - C. Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as:
 1. Measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System (BPS)¹⁶ based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?
 2. Monitoring, event analysis and investigation of BPS major events, off-normal occurrences and near miss events?
 - D. Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel?

¹⁶ This document uses the term “Bulk Power System” because that is the term defined and used in FPA §215. NERC recognizes that a different term, “Bulk Electric System,” is used to define the current reach of reliability standards.

- II. Is the activity necessary or appropriate for the monitoring and enforcement of compliance with Reliability Standards?
- A. Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the BPS that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?
 - B. Is the activity necessary or appropriate for the Certification of RCs, TOPS, and BAs as having the requisite personnel, qualifications and facilities and equipment needed to perform these reliability functions in accordance with the applicable Requirements of Reliability Standards?
 - C. Is the activity necessary or appropriate for the Certification of system operating personnel as qualified to carry out the duties and responsibilities of their positions in accordance with the Requirements of applicable Reliability Standards?¹⁷
 - D. Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?
 - E. Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards, such as:
 - 1. Measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the BPS based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?
 - 2. Monitoring, event analysis and investigation of BPS major events, off-normal occurrences, and near miss events?
 - F. Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as:
 - 1. Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.
 - 2. Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the processes? This includes development of guidance documents.

¹⁷ Although certification of system operating personnel is an activity falling within the scope of, and eligible to be funded pursuant to, FPA §215, NERC strives to fully fund the costs of this activity through fees charged to participants.

3. Disseminating, through workshops, webinars, Advisories, Recommendations, Essential Actions, and other publications; “lessons learned” information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities; monitoring and investigation of BPS major events, off-normal occurrences and near miss events, and other BPS monitoring activities?
4. Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?
- G. Is the activity necessary or appropriate for the development and provision of tools and services that are useful for the provision of adequate reliability, because they relate specifically to compliance with existing Reliability Standards and they proactively help avert Reliability Standard violations and BPS disturbances?
- III. Is the activity necessary or appropriate for conducting and disseminating periodic assessments of the reliability of the BPS or monitoring the reliability of the BPS?
 - A. Is the activity necessary or appropriate for the preparation or dissemination of long-term, seasonal, and special assessments of the reliability and adequacy of the BPS?
 - B. Is the activity necessary or appropriate for measuring reliability performance—past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the BPS based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?
 - C. Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the BPS in connection with BPS major events and off-normal occurrences, but not real-time operational control of the BPS?
 - D. Is the activity necessary or appropriate for awareness of circumstances on the BPS and to contribute to understanding risks to reliability?
 - E. Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the BPS?
 - F. Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the BPS?
 - G. Is the activity necessary or appropriate for data collection and analysis of information regarding BPS reliability matters mandated by the Commission?
- IV. Is the activity one that was required or directed by a Commission order issued pursuant to FPA §215? Justification of an activity as a FPA §215 activity based on this category must reference the particular Commission order and directive.
- V. Is the activity one that is required or specified by, or carries out, the provisions of NERC’s ROP that have been approved by the Commission as “Electric Reliability Organization Rules” (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)?

- VI. Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?
- VII. Is the activity necessary or appropriate to maintain NERC’s certification as the Electric Reliability Organization? This Criterion includes conducting periodic assessments of NERC’s and the Regional Entities’ performance as the Electric Reliability Organization as required by 18 C.F.R. §39.3(c).
- VIII. Does the activity respond to or is it necessary or appropriate for audits of NERC and the Regional Entities conducted by the Commission?
- IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?
- X. Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?
- XI. Is the activity a governance or administrative/overhead function, activity or service necessary or appropriate for the activities encompassed by the other criteria and, in general, necessary and appropriate to operate a functioning organization? (Should NERC perform any non-FPA §215 activities, the costs of governance and administrative/overhead functions must be appropriately allocated.)

NERC’s current governance and administrative/overhead functions are carried out in the following program areas:

- A. Technical Committees and Members’ Forum Programs
- B. General and administrative (includes, but is not limited to, executive, board of trustees, communications, government affairs, and facilities and related services)
- C. Legal and Regulatory
- D. Information Technology
- E. Human Resources
- F. Accounting and Finance

The following matters are excluded from the scope of FPA §215 activities. While a list of non-FPA §215 activities would be infinite, the following excluded matters are listed here because they are expressly referred to in FPA §215, the Commission’s ERO regulations and/or a Commission order issued pursuant to FPA §215:

- A. Developing or enforcing requirements to enlarge BPS facilities, or to construct new transmission capacity or generation capacity, or requirements for adequacy or safety of electric facilities or services.
- B. Activities entailing Real-time operational control of the BPS.
- C. Activities pertaining to facilities used in the local distribution of electricity.

Exhibit B – Consultant and Contract Costs

Consultants & Contracts	2019 Budget	2020 Budget	Increase (Decrease)
Reliability Standards			
Standards Balloting System Maintenance and Enhancements	\$ 50,000	\$ 40,320	\$ (9,680)
Total	\$ 50,000	\$ 40,320	\$ (9,680)
Compliance Assurance and Organization Registration and Certification			
Compliance Assurance Program Support	\$ 50,000	\$ 50,000	\$ -
BESnet Maintenance and Enhancements	\$ -	\$ 40,320	\$ 40,320
Total	\$ 50,000	\$ 90,320	\$ 40,320
Compliance Enforcement			
CRATS Maintenance	\$ 161,000	\$ -	\$ (161,000)
Total	\$ 161,000	\$ -	\$ (161,000)
Reliability Assessment and Performance Analysis			
RADS Maintenance and Enhancements	\$ -	\$ 40,320	\$ 40,320
Reliability Effects of GMD	\$ 200,000	\$ 100,000	\$ (100,000)
Environmental Regulatory Analysis	\$ 250,000	\$ 225,000	\$ (25,000)
Probabilistic Analysis	\$ 75,000	\$ 75,000	\$ -
Emerging Technology Analysis	\$ 100,000	\$ 100,000	\$ -
Power System Analysis Support	\$ -	\$ 63,000	\$ 63,000
GADS/TADS/DADS Support	\$ 653,565	\$ 149,250	\$ (504,315)
Total	\$ 1,278,565	\$ 752,570	\$ (525,995)
Event Analysis			
Event Analysis Review Support	\$ -	\$ 10,000	\$ 10,000
Total	\$ -	\$ 10,000	\$ 10,000
Situation Awareness			
Reliability Tools	\$ 1,280,990	\$ -	\$ (1,280,990)
Total	\$ 1,280,990	\$ -	\$ (1,280,990)
E-ISAC			
Security Consulting	\$ 33,000	\$ 35,000	\$ 2,000
GridEx Support	\$ 550,000	\$ 275,000	\$ (275,000)
Program-Level Capabilities	\$ 725,000	\$ 420,000	\$ (305,000)
Techology Support	\$ -	\$ 582,500	\$ 582,500
Portal Improvement	\$ 462,500	\$ 50,000	\$ (412,500)
Events and Outreach	\$ 50,000	\$ 50,000	\$ -
CRISP	\$ 6,457,500	\$ 6,677,500	\$ 220,000
Total	\$ 8,278,000	\$ 8,090,000	\$ (188,000)
Personnel Certification			
System Operator Testing Expenses	\$ 62,000	\$ 62,000	\$ -
System Operator Examination Development	\$ 50,000	\$ 50,000	\$ -
Continuing Education Program	\$ 85,000	\$ 95,000	\$ 10,000
SOCCEd Database Improvements	\$ 50,000	\$ 75,000	\$ 25,000
Total	\$ 247,000	\$ 282,000	\$ 35,000
Training and Education			
ERO Enterprise Learning Portal	\$ 105,000	\$ -	\$ (105,000)
ERO Enterprise and Industry Course Development	\$ 110,000	\$ 110,000	\$ -
NERC Staff Technical Training	\$ 35,000	\$ -	\$ (35,000)
Total	\$ 250,000	\$ 110,000	\$ (140,000)
General and Administrative			
Communications Support	\$ 20,000	\$ 20,000	\$ -
ERO Enterprise Effectiveness Survey	\$ 20,000	\$ -	\$ (20,000)
Management Consulting	\$ 200,000	\$ -	\$ (200,000)
Total	\$ 240,000	\$ 20,000	\$ (220,000)
Information Technology			
Applications Enhancements, Support, and Ongoing Operations	\$ 2,042,763	\$ 1,805,692	\$ (237,071)
Total	\$ 2,042,763	\$ 1,805,692	\$ (237,071)
Human Resources			
Training and Development	\$ 400,000	\$ 500,000	\$ 100,000
Compensation Consulting	\$ 225,000	\$ 125,000	\$ (100,000)
Employee, Industry, and Board Surveys	\$ 40,000	\$ 100,000	\$ 60,000
HR Consulting Services	\$ 25,000	\$ 35,000	\$ 10,000
Total	\$ 690,000	\$ 760,000	\$ 70,000
Finance and Accounting			
Internal Controls and Outside Auditor Consulting Support	\$ 300,000	\$ -	\$ (300,000)
Finance and Accounting Support	\$ 175,000	\$ 175,000	\$ -
Total	\$ 475,000	\$ 175,000	\$ (300,000)
Legal & Regulatory			
Internal Controls and Outside Auditor Consulting Support	\$ -	\$ 300,000	\$ 300,000
Total	\$ -	\$ 300,000	\$ 300,000
Total Consultants & Contracts	\$ 15,043,318	\$ 12,435,902	\$ (2,607,416)

Exhibit C – Capital Financing

The company initiated a capital financing program in January 2014 as a funding source for major software application development projects that primarily benefit the ERO Enterprise. The total size of the original non-revolving credit facility was \$7.5M and was used to finance a portion of NERC's capital expenditures (including IT hardware and software application development costs) made through December 2016. A similar non-revolving credit facility was closed in November 2016, totaling \$5.0M, and is available to finance certain capital expenditures made from January 2017 to December 2019. The interest rate for both credit facilities is floating and equal to LIBOR plus 275 basis points. NERC projects the average interest rate during 2020 will be 6.5%. Authorized annual borrowings under the facilities are limited to the amount approved by the Board and FERC in each year's BP&B. Borrowings under the credit facilities are amortized over a three-year period, and can be prepaid without penalty.

As discussed in the *Introduction and Executive Summary* and shown in the table below, NERC has a proposed 2020 capital (fixed asset) budget of approximately \$4.7M, of which it is proposing to finance \$2.0M.

NERC Capital Budget	2019 Budget	2020 Budget	Increase(Decrease)	
ERO Application Development	\$ 3,268,000	\$ 2,007,000	\$ (1,261,000)	-38.6%
Hardware (storage, servers)	565,000	685,000	120,000	21.2%
Other Equipment	425,000	250,000	(175,000)	-41.2%
NERC Capital Software	120,000	1,264,349	1,144,349	953.6%
Leasehold Improvements	400,000	500,000	100,000	25.0%
Total	\$ 4,778,000	\$ 4,706,349	\$ (71,651)	-1.5%

The tables below show projected year-end outstanding debt and the future annual payments for debt service.

	Year-End Outstanding Debt Balance				
	Prior Years	2019	2020	2021	2022
	Actual	Projected	Budget	Projected	Projected
Prior Years (2016 - 2018 Borrowings)	\$ 427,578	\$ 32,890	\$ -	\$ -	\$ -
2019 Projection	-	1,634,000	1,089,333	544,667	-
2020 Budgeted	-	-	2,007,000	1,338,000	669,000
2021 Projected	-	-	-	1,300,000	866,667
2022 Projected	-	-	-	-	-
Total Outstanding Balance	\$ 427,578	\$ 1,666,890	\$ 3,096,333	\$ 3,182,667	\$ 1,535,667

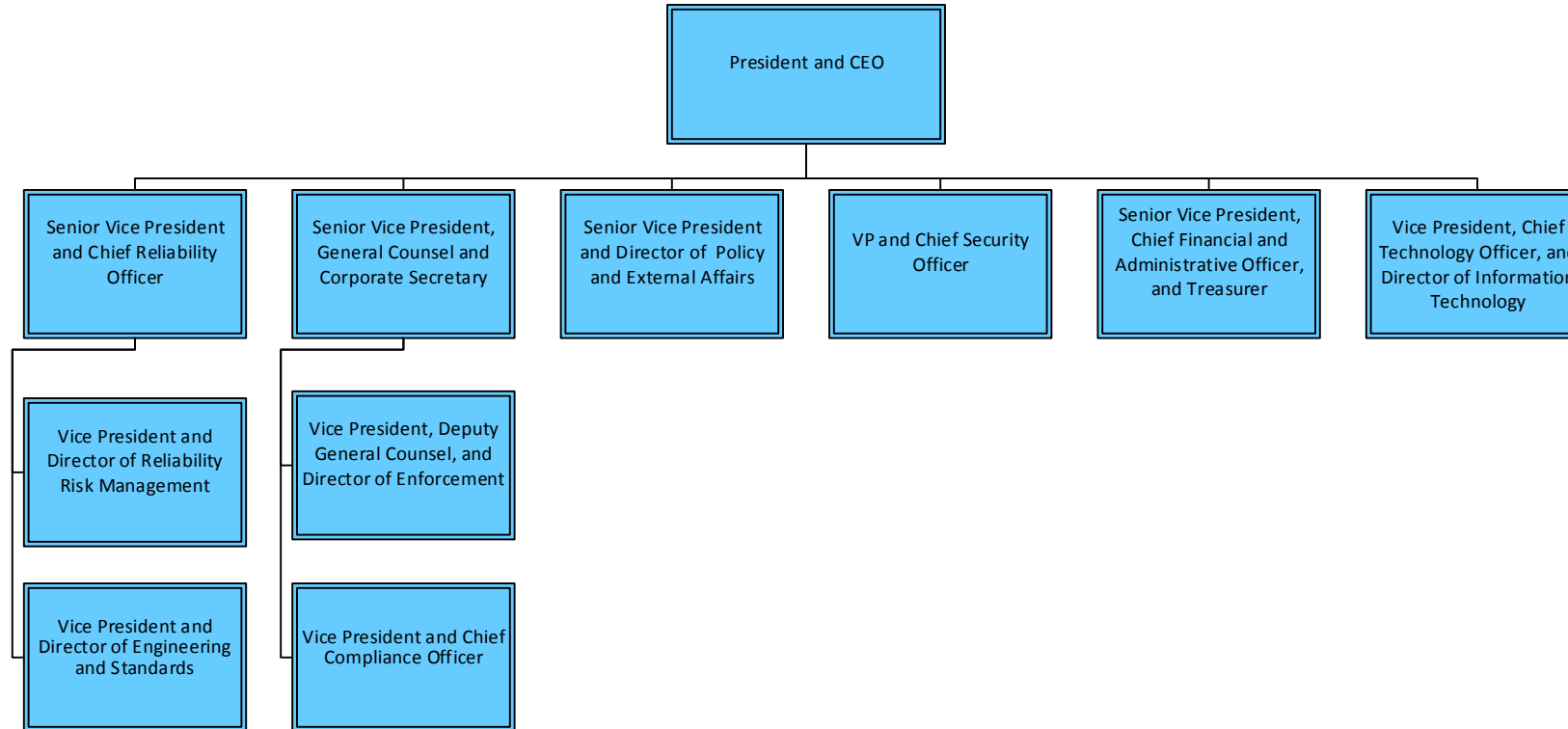
	Future Annual Payments for Debt Service			
	2019	2020	2021	2022
	Projected	Budget	Projected	Projected
Prior Years - Principal	\$ 394,688	\$ 32,890	\$ -	\$ -
2019 Projection	-	544,667	544,667	544,667
2020 Budgeted	-	-	669,000	669,000
2021 Projected	-	-	-	433,333
2022 Projected	-	-	-	-
Interest Expense	13,708	91,626	180,670	172,644
Total Principal and Interest Costs	\$ 408,396	\$ 669,183	\$ 1,394,337	\$ 1,819,644

Exhibit D – Reserve Amounts

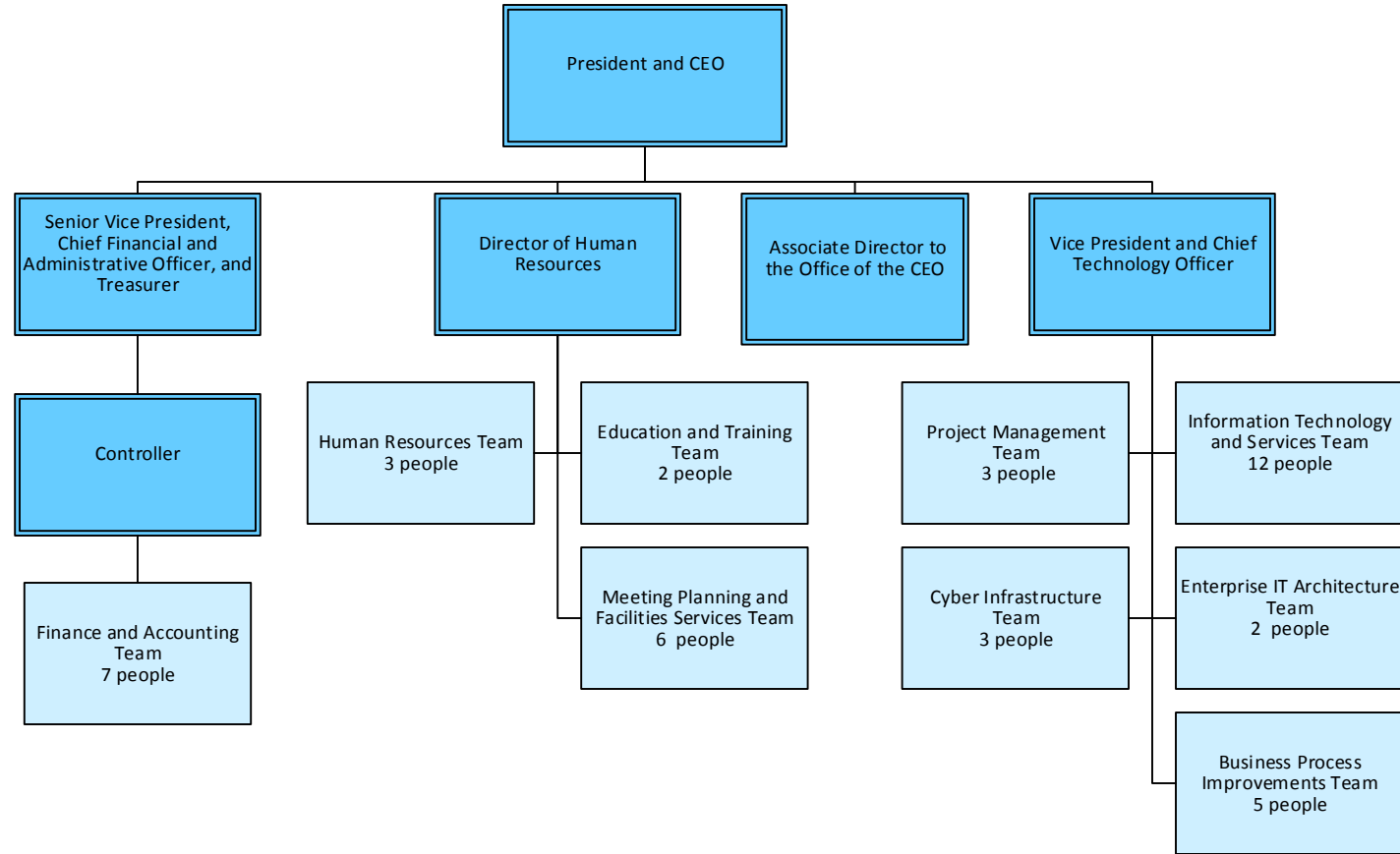
NERC is proposing an overall reserve budget of \$8.8M across all categories of reserves. This represents a decrease of \$247k (2.9%) from the total reserve amounts included in NERC's 2019 budget. The reserve categories are as follows:

- **Future Obligation Reserve** – Includes funding that has been received to satisfy future obligations under lease, credit, loan, or other agreements to which the company is a party. This reserve is budgeted to be \$1.6M for 2020.
- **System Operator Certification Reserve** – Includes surplus funding from operator certification and testing fees that are above incurred expenses and shall be used solely to support operator testing and certification needs. The 2020 System Operator Certification Reserve is budgeted at \$442k and comprised primarily of existing funds.
- **CRISP Reserve** – Represents funds dedicated to support CRISP. These reserves are established pursuant to a CRISP budget agreed to and funded entirely by utilities participating in CRISP. These reserves have no impact on assessments and are segregated from other reserves pursuant to the terms of the CRISP agreements. The CRISP reserves are projected to be \$500k in the 2020 budget.
- **Operating Contingency Reserve** – Includes both general working capital funds resulting from day to day operations, and additional funds for contingencies that were not anticipated. NERC's current policy on Operating Contingency Reserves requires a reserve target of 3.5–7.0%, except as otherwise approved by the Board after review and recommendation by the Board Finance and Audit Committee (FAC). This percentage is calculated against NERC's total budget for operating and capital expenditures, less those costs related to CRISP and System Operator Certification, each of which has a separate reserve category. NERC is proposing to use \$650k of the Operating Contingency Reserve for funding for the 2020 budget, resulting in an assumed Operating Contingency Reserve of approximately \$4.7M, which is 6.5% of total budgeted operating and fixed asset (capital) costs.
- **Assessment Stabilization Reserve** – To date, this reserve has been funded entirely by previously received penalties and is projected to have a balance of \$1.5M as of January 1, 2020. For the 12 months ended June 30, 2019, NERC collected no penalties. For purposes of the company's 2020 BP&B, NERC is not currently proposing any release of Assessment Stabilization Reserve funds to offset U.S. assessments. The Assessment Stabilization Reserve will be used to reduce U.S. assessments in one or more future periods in the applicable year's BP&B, subject to review and approval by the Board and FERC.

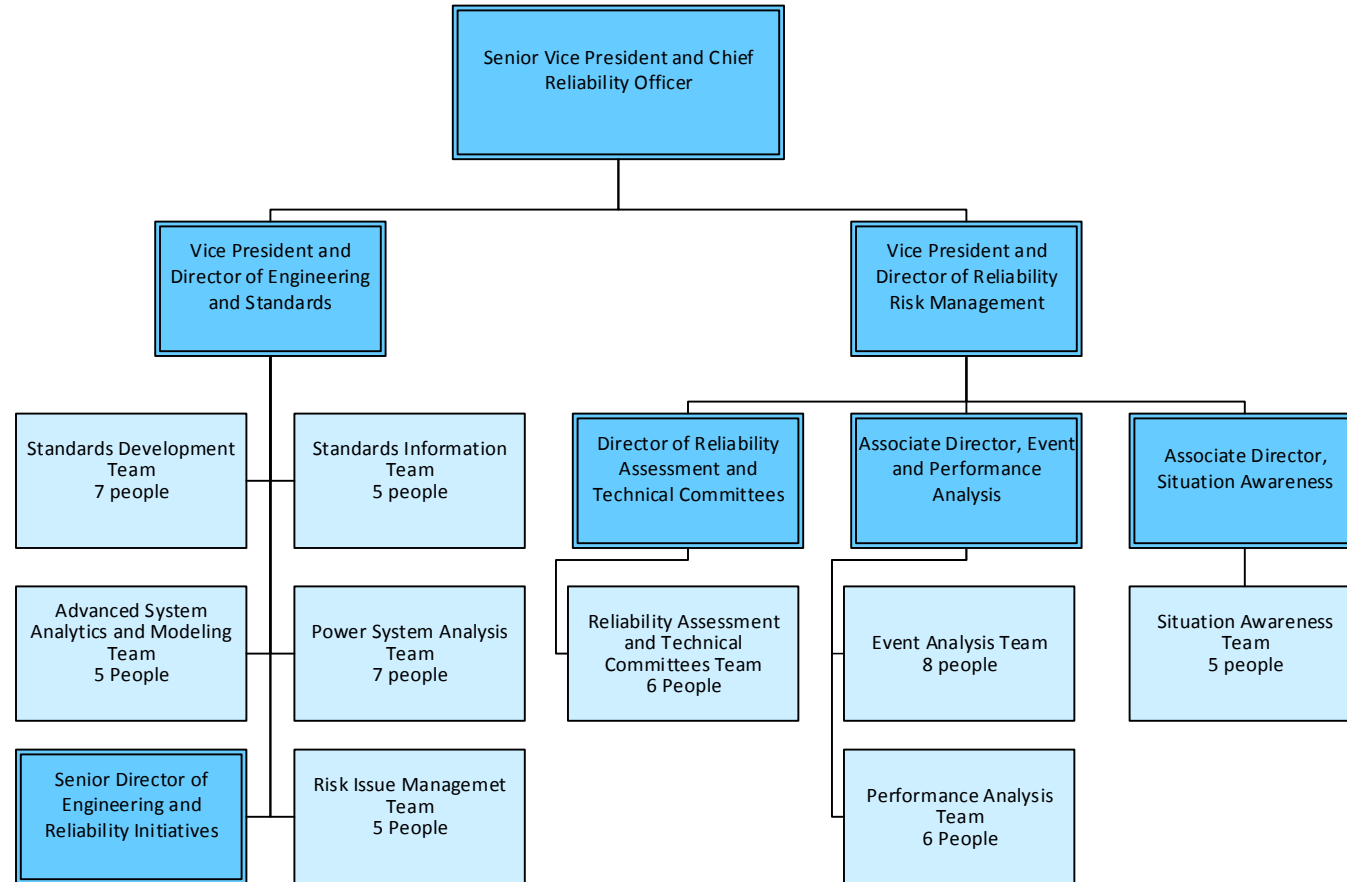
Appendix 1 – NERC Staff Organization Chart – Budget 2020



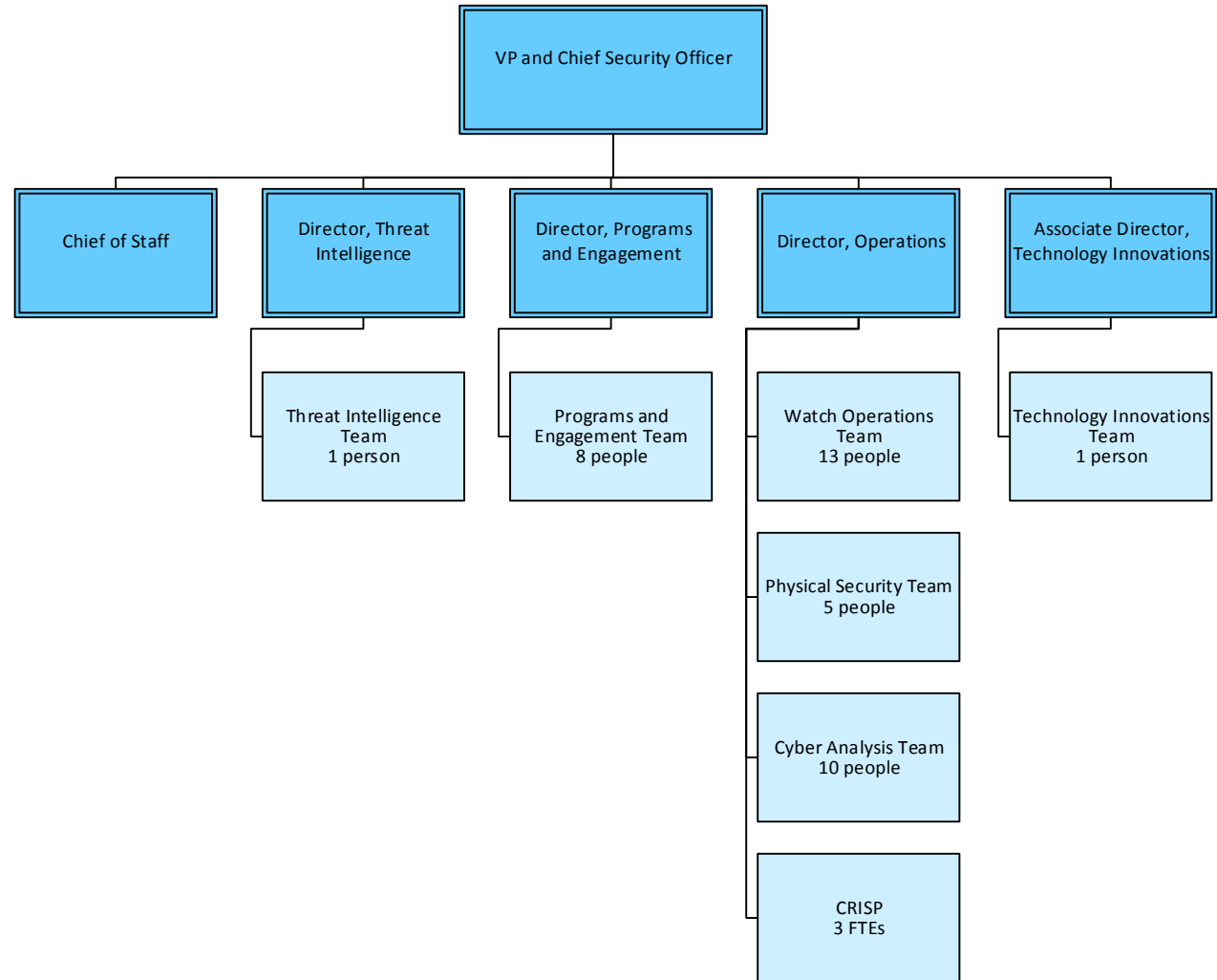
Executive, IT, Finance, & HR and Administration



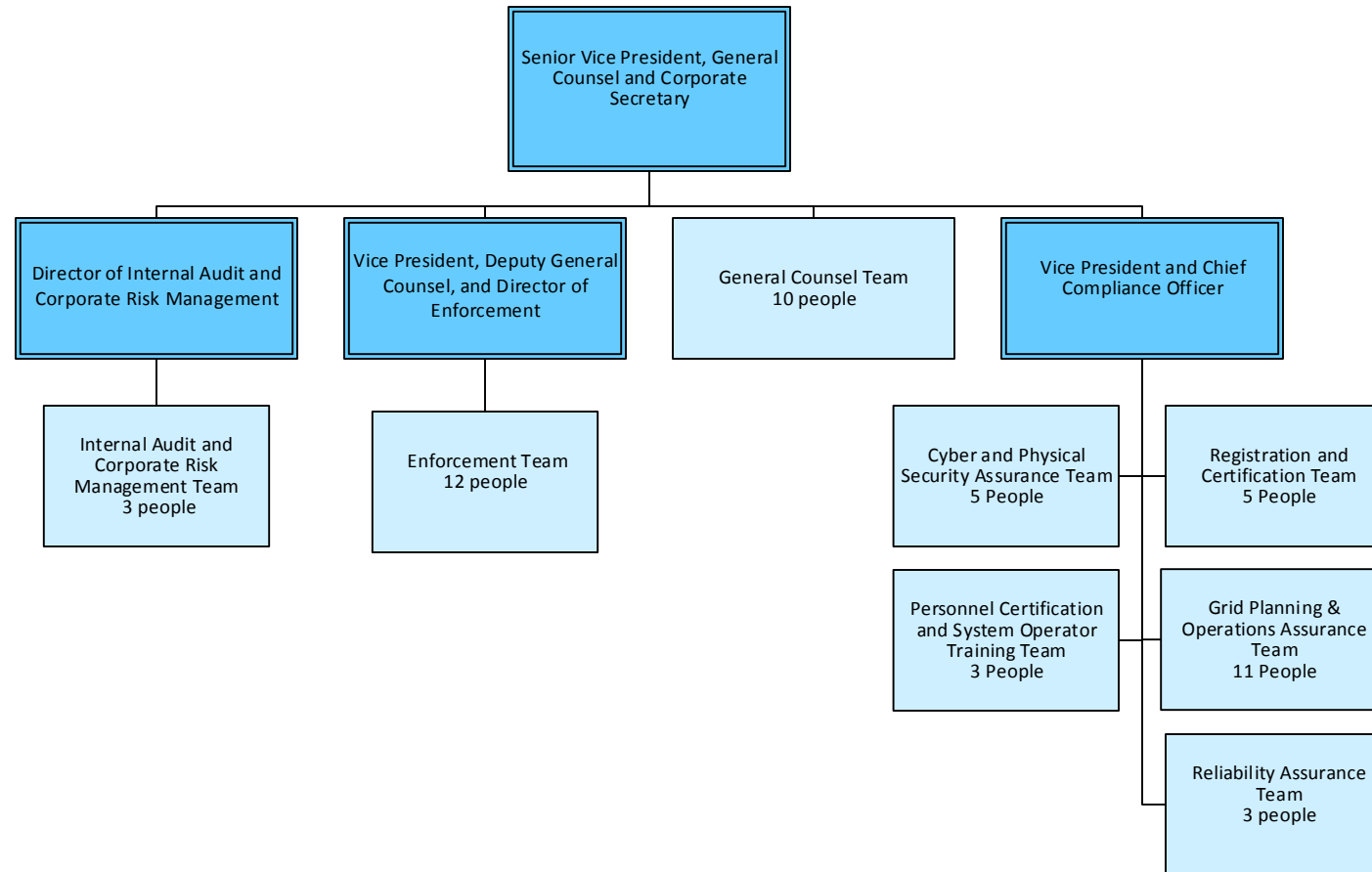
Engineering and Standards & Reliability Risk Management



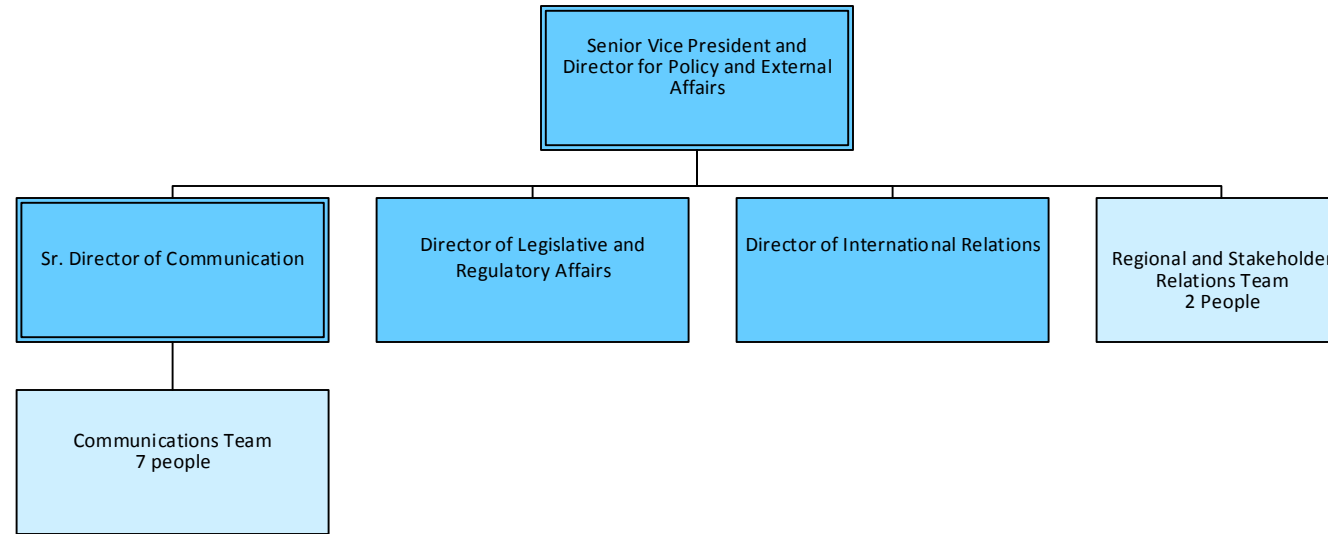
Electricity Information Sharing and Analysis Center



Legal and Regulatory, Internal Audit and Corporate Risk Management, Compliance, & Enforcement



Policy and External Affairs



2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	MRO	C-1217	Manitoba Hydro	Canada	21,844,216	-	21,844,216	-	4.433%	0.000%	4.433%	0.000%	0.476%
2018	MRO	C-1235	SaskPower	Canada	25,362,600	-	25,362,600	-	5.147%	0.000%	5.147%	0.000%	0.552%
2018	MRO	C-1707	AEP-VEMCO	U.S.	702,074	702,074	-	-	0.142%	0.142%	0.000%	0.000%	0.015%
2018	MRO	C-1195	Alliant Energy (ALTE- WPL & ALTW IPL)	U.S.	29,416,568	29,416,568	-	-	5.970%	5.970%	0.000%	0.000%	0.641%
2018	MRO	C-1246	American Electric Power Service Corporation	U.S.	38,195,257	38,195,257	-	-	7.752%	7.752%	0.000%	0.000%	0.832%
2018	MRO	C-1196	Ames Municipal Electric System	U.S.	793,382	793,382	-	-	0.161%	0.161%	0.000%	0.000%	0.017%
2018	MRO	C-1986	Arkansas Electric Cooperative Corporation (AECC)	U.S.	4,386,469	4,386,469	-	-	0.890%	0.890%	0.000%	0.000%	0.096%
2018	MRO	C-1604	Atlantic Municipal Utilities (AMU)	U.S.	119,111	119,111	-	-	0.024%	0.024%	0.000%	0.000%	0.003%
2018	MRO	C-1199	Basin Electric Power Cooperative (BEPC)	U.S.	21,146,049	21,146,049	-	-	4.292%	4.292%	0.000%	0.000%	0.461%
2018	MRO	C-1247	Board of Public Utilities (Kansas City, KS) (BPU)	U.S.	2,534,999	2,534,999	-	-	0.514%	0.514%	0.000%	0.000%	0.055%
2018	MRO	C-1620	Board of Public Utilities City of McPherson, KS (MCPHER)	U.S.	1,081,746	1,081,746	-	-	0.220%	0.220%	0.000%	0.000%	0.024%
2018	MRO	C-1647	Carthage Water and Light	U.S.	308,114	308,114	-	-	0.063%	0.063%	0.000%	0.000%	0.007%
2018	MRO	C-1200	Cedar Falls Utilities (CFU)	U.S.	540,009	540,009	-	-	0.110%	0.110%	0.000%	0.000%	0.012%
2018	MRO	C-1201	Central Iowa Power Cooperative (CIPCO)	U.S.	3,040,106	3,040,106	-	-	0.617%	0.617%	0.000%	0.000%	0.066%
2018	MRO	C-1477	Central Minnesota Municipal Power Agency (CMMPA)	U.S.	395,224	395,224	-	-	0.080%	0.080%	0.000%	0.000%	0.009%
2018	MRO	C-1469	Central Valley Electric Cooperative (CVEC)	U.S.	919,865	919,865	-	-	0.187%	0.187%	0.000%	0.000%	0.020%
2018	MRO	C-1556	City of Bentonville (BENVILL)	U.S.	727,709	727,709	-	-	0.148%	0.148%	0.000%	0.000%	0.016%
2018	MRO	C-1713	City of Bloomer (Bloomer Electric & Water Co.)	U.S.	59,542	59,542	-	-	0.012%	0.012%	0.000%	0.000%	0.001%
2018	MRO	C-1703	City of Chanute (CHANUTEKS)	U.S.	517,802	517,802	-	-	0.105%	0.105%	0.000%	0.000%	0.011%
2018	MRO	C-1203	City of Escanaba (EME)	U.S.	135,821	135,821	-	-	0.028%	0.028%	0.000%	0.000%	0.003%
2018	MRO	C-1718	City of Guttenberg	U.S.	20,545	20,545	-	-	0.004%	0.004%	0.000%	0.000%	0.000%
2018	MRO	C-1719	City of Kasota	U.S.	3,848	3,848	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	MRO	C-1709	City of Nixa	U.S.	162,349	162,349	-	-	0.033%	0.033%	0.000%	0.000%	0.004%
2018	MRO	C-1722	City of Spooner	U.S.	33,190	33,190	-	-	0.007%	0.007%	0.000%	0.000%	0.001%
2018	MRO	C-1436	City Utilities of Springfield, MO (SPRM)	U.S.	3,308,873	3,308,873	-	-	0.672%	0.672%	0.000%	0.000%	0.072%
2018	MRO	C-1204	Corn Belt Power Cooperative (CBPC)	U.S.	2,097,851	2,097,851	-	-	0.426%	0.426%	0.000%	0.000%	0.046%
2018	MRO	C-1710	Dahlberg Electric Company	U.S.	120,192	120,192	-	-	0.024%	0.024%	0.000%	0.000%	0.003%
2018	MRO	C-1207	Dairyland Power Cooperative (DPC)	U.S.	6,153,644	6,153,644	-	-	1.249%	1.249%	0.000%	0.000%	0.134%
2018	MRO	C-1437	East Texas Electric Cooperative, Inc. (ETEC)	U.S.	993,093	993,093	-	-	0.202%	0.202%	0.000%	0.000%	0.022%
2018	MRO	C-1716	Eldridge Electric and Water Utilities	U.S.	45,503	45,503	-	-	0.009%	0.009%	0.000%	0.000%	0.001%
2018	MRO	C-1250	Empire District Electric Co.	U.S.	5,576,268	5,576,268	-	-	1.132%	1.132%	0.000%	0.000%	0.121%
2018	MRO	C-1205	Falls City Water & Light Department	U.S.	62,052	62,052	-	-	0.013%	0.013%	0.000%	0.000%	0.001%
2018	MRO	C-1470	Farmers Electric Cooperative, Inc. of New Mexico (FARMCOOPN)	U.S.	334,453	334,453	-	-	0.068%	0.068%	0.000%	0.000%	0.007%
2018	MRO	C-1206	Fremont Department of Utilities (City of)	U.S.	449,092	449,092	-	-	0.091%	0.091%	0.000%	0.000%	0.010%
2018	MRO	C-1208	Geneseo Municipal Utilities	U.S.	68,724	68,724	-	-	0.014%	0.014%	0.000%	0.000%	0.001%
2018	MRO	C-1438	Golden Spread Electric Cooperative, Inc (GSEC)	U.S.	5,748,189	5,748,189	-	-	1.167%	1.167%	0.000%	0.000%	0.125%
2018	MRO	C-1209	Grand Island Utilities Department	U.S.	784,152	784,152	-	-	0.159%	0.159%	0.000%	0.000%	0.017%
2018	MRO	C-1251	Grand River Dam Authority (GRDA)	U.S.	5,412,295	5,412,295	-	-	1.098%	1.098%	0.000%	0.000%	0.118%
2018	MRO	C-1717	Great Lakes Utilities	U.S.	1,546,506	1,546,506	-	-	0.314%	0.314%	0.000%	0.000%	0.034%
2018	MRO	C-1210	Great River Energy (GRE)	U.S.	13,804,581	13,804,581	-	-	2.802%	2.802%	0.000%	0.000%	0.301%
2018	MRO	C-1606	Harlan Municipal Utilities	U.S.	18,236	18,236	-	-	0.004%	0.004%	0.000%	0.000%	0.000%
2018	MRO	C-1211	Hastings Utilities (HAST)	U.S.	452,538	452,538	-	-	0.092%	0.092%	0.000%	0.000%	0.010%
2018	MRO	C-1212	Heartland Consumers Power District (HCPD)	U.S.	465,868	465,868	-	-	0.095%	0.095%	0.000%	0.000%	0.010%
2018	MRO	C-1213	Hutchinson Utilities Commission (HUCH)	U.S.	292,676	292,676	-	-	0.059%	0.059%	0.000%	0.000%	0.006%
2018	MRO	C-1248	Independence Power & Light (Independence, MO) (INDN)	U.S.	1,111,073	1,111,073	-	-	0.225%	0.225%	0.000%	0.000%	0.024%
2018	MRO	C-1252	Kansas City Power & Light (KCPL)	U.S.	16,365,682	16,365,682	-	-	3.321%	3.321%	0.000%	0.000%	0.356%
2018	MRO	C-1439	Kansas Electric Power Cooperative (KEPC)	U.S.	2,244,537	2,244,537	-	-	0.456%	0.456%	0.000%	0.000%	0.049%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	MRO	C-1440	Kansas Municipal Energy Agency (KMEA)	U.S.	1,625,136	1,625,136	-	-	0.330%	0.330%	0.000%	0.000%	0.035%
2018	MRO	C-1637	Kansas Power Pool (KPP)	U.S.	893,092	893,092	-	-	0.181%	0.181%	0.000%	0.000%	0.019%
2018	MRO	C-1598	KCPL - Greater Missouri Operations (KCPL-GMO)	U.S.	9,064,961	9,064,961	-	-	1.840%	1.840%	0.000%	0.000%	0.197%
2018	MRO	C-1649	Kennett Board of Public Works	U.S.	145,108	145,108	-	-	0.029%	0.029%	0.000%	0.000%	0.003%
2018	MRO	C-1472	Lea County Electric Cooperative (LCEC)	U.S.	1,290,350	1,290,350	-	-	0.262%	0.262%	0.000%	0.000%	0.028%
2018	MRO	C-1215	Lincoln Electric System (LES)	U.S.	3,331,594	3,331,594	-	-	0.676%	0.676%	0.000%	0.000%	0.073%
2018	MRO	C-1216	Madison, Gas and Electric (MGE)	U.S.	3,429,690	3,429,690	-	-	0.696%	0.696%	0.000%	0.000%	0.075%
2018	MRO	C-1650	Malden Board of Public Works	U.S.	52,027	52,027	-	-	0.011%	0.011%	0.000%	0.000%	0.001%
2018	MRO	C-1220	MidAmerican Energy Company (MEC)	U.S.	27,044,047	27,044,047	-	-	5.489%	5.489%	0.000%	0.000%	0.589%
2018	MRO	C-1441	Midwest Energy, Inc (MIDW)	U.S.	1,846,660	1,846,660	-	-	0.375%	0.375%	0.000%	0.000%	0.040%
2018	MRO	C-1224	Minnesota Municipal Power Agency (MMPA) Avant Energy Inc	U.S.	1,714,989	1,714,989	-	-	0.348%	0.348%	0.000%	0.000%	0.037%
2018	MRO	C-1221	Minnesota Power (MP)	U.S.	12,860,981	12,860,981	-	-	2.610%	2.610%	0.000%	0.000%	0.280%
2018	MRO	C-1222	Minnkota Power Cooperative, Inc. (MPC)	U.S.	4,034,240	4,034,240	-	-	0.819%	0.819%	0.000%	0.000%	0.088%
2018	MRO	C-1987	Missouri Joint Municipal Electric Utility	U.S.	448,892	448,892	-	-	0.091%	0.091%	0.000%	0.000%	0.010%
2018	MRO	C-1223	Missouri River Energy Services	U.S.	2,823,597	2,823,597	-	-	0.573%	0.573%	0.000%	0.000%	0.062%
2018	MRO	C-1226	Montana-Dakota Utilities Co. (MDU)	U.S.	3,313,387	3,313,387	-	-	0.672%	0.672%	0.000%	0.000%	0.072%
2018	MRO	C-1607	Montezuma Municipal Light & Power	U.S.	25,612	25,612	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	MRO	C-1227	Municipal Energy Agency of Nebraska (MEAN)	U.S.	1,042,189	1,042,189	-	-	0.212%	0.212%	0.000%	0.000%	0.023%
2018	MRO	C-1228	Muscataine Power and Water (MPW)	U.S.	904,415	904,415	-	-	0.184%	0.184%	0.000%	0.000%	0.020%
2018	MRO	C-1229	Nebraska City Utilities	U.S.	136,624	136,624	-	-	0.028%	0.028%	0.000%	0.000%	0.003%
2018	MRO	C-1230	Nebraska Public Power District (NPPD)	U.S.	13,471,227	13,471,227	-	-	2.734%	2.734%	0.000%	0.000%	0.293%
2018	MRO	C-1711	North Central Power Company	U.S.	39,076	39,076	-	-	0.008%	0.008%	0.000%	0.000%	0.001%
2018	MRO	C-1442	Northeast Texas Electric Cooperative, Inc. (NTEC)	U.S.	3,366,102	3,366,102	-	-	0.683%	0.683%	0.000%	0.000%	0.073%
2018	MRO	C-1231	NorthWestern Energy (NWE)	U.S.	1,689,236	1,689,236	-	-	0.343%	0.343%	0.000%	0.000%	0.037%
2018	MRO	C-1712	NorthWestern Wisconsin Electric Company	U.S.	193,833	193,833	-	-	0.039%	0.039%	0.000%	0.000%	0.004%
2018	MRO	C-1255	Oklahoma Gas and Electric Co. (OKGE)	U.S.	30,799,370	30,799,370	-	-	6.251%	6.251%	0.000%	0.000%	0.671%
2018	MRO	C-1444	Oklahoma Municipal Power Authority (OMPA)	U.S.	2,949,759	2,949,759	-	-	0.599%	0.599%	0.000%	0.000%	0.064%
2018	MRO	C-1232	Omaha Public Power District (OPPD)	U.S.	11,515,154	11,515,154	-	-	2.337%	2.337%	0.000%	0.000%	0.251%
2018	MRO	C-1233	Otter Tail Power Company (OTP)	U.S.	5,153,902	5,153,902	-	-	1.046%	1.046%	0.000%	0.000%	0.112%
2018	MRO	C-1651	Paragould Light, Water & Cable (PARAGOULD)	U.S.	621,451	621,451	-	-	0.126%	0.126%	0.000%	0.000%	0.014%
2018	MRO	C-1725	Peoples Electric Cooperative (PEC)	U.S.	748,961	748,961	-	-	0.152%	0.152%	0.000%	0.000%	0.016%
2018	MRO	C-1652	Piggott Municipal Light, Water & Sewer	U.S.	39,295	39,295	-	-	0.008%	0.008%	0.000%	0.000%	0.001%
2018	MRO	C-1653	Poplar Bluff Municipal Utilities	U.S.	384,309	384,309	-	-	0.078%	0.078%	0.000%	0.000%	0.008%
2018	MRO	C-1720	Resale Power Group of Iowa	U.S.	576,903	576,903	-	-	0.117%	0.117%	0.000%	0.000%	0.013%
2018	MRO	C-1721	Rice Lake Utilities	U.S.	169,304	169,304	-	-	0.034%	0.034%	0.000%	0.000%	0.004%
2018	MRO	C-1234	Rochester Public Utilities (RPU)	U.S.	3,345	3,345	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	MRO	C-1473	Roosevelt County Electric Cooperative	U.S.	169,360	169,360	-	-	0.034%	0.034%	0.000%	0.000%	0.004%
2018	MRO	C-1654	Sikeston Board of Municipal Utilities	U.S.	398,606	398,606	-	-	0.081%	0.081%	0.000%	0.000%	0.009%
2018	MRO	C-1236	Southern Minnesota Municipal Power Agency (SMMMPA)	U.S.	2,832,024	2,832,024	-	-	0.575%	0.575%	0.000%	0.000%	0.062%
2018	MRO	C-1257	Southwestern Public Service Co. Xcel Energy (SPS)	U.S.	22,418,820	22,418,820	-	-	4.550%	4.550%	0.000%	0.000%	0.488%
2018	MRO	C-1256	Sunflower Electric Cooperative (SECI)	U.S.	4,705,079	4,705,079	-	-	0.955%	0.955%	0.000%	0.000%	0.102%
2018	MRO	C-1475	Tri County Electric Cooperative, Inc. of Oklahoma (TRICEC)	U.S.	384,063	384,063	-	-	0.078%	0.078%	0.000%	0.000%	0.008%
2018	MRO	C-1665	Upper Peninsula Power Co (UPPC)	U.S.	699,072	699,072	-	-	0.142%	0.142%	0.000%	0.000%	0.015%
2018	MRO	C-1714	Village of Caddott	U.S.	13,092	13,092	-	-	0.003%	0.003%	0.000%	0.000%	0.000%
2018	MRO	C-1260	Westar Energy (WR)	U.S.	21,696,934	21,696,934	-	-	4.403%	4.403%	0.000%	0.000%	0.473%
2018	MRO	C-1239	Western Area Power Administration Rocky Mountain Region (	U.S.	46,581	46,581	-	-	0.009%	0.009%	0.000%	0.000%	0.001%
2018	MRO	C-1240	Western Area Power Administration Upper Great Plains (UM) (	U.S.	9,237,592	9,237,592	-	-	1.875%	1.875%	0.000%	0.000%	0.201%
2018	MRO	C-1259	Western Farmers Electric Cooperative (WFEC)	U.S.	9,475,735	9,475,735	-	-	1.923%	1.923%	0.000%	0.000%	0.206%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	MRO	C-1501	West Texas Municipal Power Agency (WTMPA)	U.S.	2,971,109	2,971,109	-	-	0.603%	0.603%	0.000%	0.000%	0.065%
2018	MRO	C-1241	Willmar Municipal Utilities (WLMRWL)	U.S.	259,937	259,937	-	-	0.053%	0.053%	0.000%	0.000%	0.006%
2018	MRO	C-1242	Wisconsin Public Power, Inc. (East and West regions) (WPPI)	U.S.	5,346,925	5,346,925	-	-	1.085%	1.085%	0.000%	0.000%	0.116%
2018	MRO	C-1983	Wolverine Power Marketing Cooperative	U.S.	41,905	41,905	-	-	0.009%	0.009%	0.000%	0.000%	0.001%
2018	MRO	C-1244	Xcel Energy Company Northern States Power (NSP)	U.S.	44,381,781	44,381,781	-	-	9.007%	9.007%	0.000%	0.000%	0.967%
TOTAL MRO					492,730,106	445,523,290	47,206,816	-	100.000%	90.419%	9.581%	0.000%	10.733%
2018	NPCC	C-1336	New England	U.S.	123,472,000	123,472,000	-	-	19.905%	19.905%	0.000%	0.000%	2.690%
2018	NPCC	C-1339	New York	U.S.	161,114,000	161,114,000	-	-	25.973%	25.973%	0.000%	0.000%	3.510%
2018	NPCC	C-1337	Ontario	Canada	137,437,000	-	137,437,000	-	22.156%	0.000%	22.156%	0.000%	2.994%
2018	NPCC		Quebec	Canada	172,900,000	-	172,900,000	-	27.873%	0.000%	27.873%	0.000%	3.766%
2018		C-1341	Hydro Quebec	Canada	-	-	-	-	-	-	-	-	-
2018		C-1572	Regie	Canada	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1705	New Brunswick	Canada	14,077,000	-	14,077,000	-	2.269%	0.000%	2.269%	0.000%	0.307%
2018	NPCC	C-1340	Nova Scotia	Canada	11,311,000	-	11,311,000	-	1.823%	0.000%	1.823%	0.000%	0.246%
TOTAL NPCC					620,311,000	284,586,000	335,725,000	-	100.000%	45.878%	54.122%	0.000%	13.512%
2018	RF	C-1102	Cannelton Utilities	U.S.	15,144	15,144	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	RF	C-1106	City of Croswell	U.S.	40,168	40,168	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	RF	C-1490	City of Lansing	U.S.	2,196,875	2,196,875	-	-	0.240%	0.240%	0.000%	0.000%	0.048%
2018	RF	C-1120	Cloverland Electric Cooperative	U.S.	750,490	750,490	-	-	0.082%	0.082%	0.000%	0.000%	0.016%
2018	RF	C-1122	CMS ERM Michigan LLC	U.S.	176,076	176,076	-	-	0.019%	0.019%	0.000%	0.000%	0.004%
2018	RF	C-1124	Constellation New Energy (MECS-CONS)	U.S.	1,808,348	1,808,348	-	-	0.197%	0.197%	0.000%	0.000%	0.039%
2018	RF	C-1123	Constellation New Energy (MECS-DET)	U.S.	2,098,296	2,098,296	-	-	0.229%	0.229%	0.000%	0.000%	0.046%
2018	RF	C-1126	Consumers Energy Company	U.S.	34,088,752	34,088,752	-	-	3.721%	3.721%	0.000%	0.000%	0.743%
2018	RF	C-1128	Detroit Edison Company	U.S.	46,584,894	46,584,894	-	-	5.085%	5.085%	0.000%	0.000%	1.015%
2018	RF	C-1166	Duke Energy Indiana	U.S.	30,612,465	30,612,465	-	-	3.342%	3.342%	0.000%	0.000%	0.667%
2018	RF	C-1135	Ferdinand Municipal Light & Water	U.S.	45,002	45,002	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	RF	C-1646	FirstEnergy Solutions (MECS-CONS)	U.S.	892,833	892,833	-	-	0.097%	0.097%	0.000%	0.000%	0.019%
2018	RF	C-1549	FirstEnergy Solutions (MECS-DET)	U.S.	96,307	96,307	-	-	0.011%	0.011%	0.000%	0.000%	0.002%
2018	RF	C-1145	Hoosier Energy	U.S.	8,063,908	8,063,908	-	-	0.880%	0.880%	0.000%	0.000%	0.176%
2018	RF	C-1148	Indiana Municipal Power Agency (DUKE CIN)	U.S.	3,190,789	3,190,789	-	-	0.348%	0.348%	0.000%	0.000%	0.070%
2018	RF	C-1485	Indiana Municipal Power Agency (NIPSCO)	U.S.	443,311	443,311	-	-	0.048%	0.048%	0.000%	0.000%	0.010%
2018	RF	C-1486	Indiana Municipal Power Agency (SIGE)	U.S.	608,977	608,977	-	-	0.066%	0.066%	0.000%	0.000%	0.013%
2018	RF	C-1149	Indianapolis Power & Light Co.	U.S.	14,505,039	14,505,039	-	-	1.583%	1.583%	0.000%	0.000%	0.316%
2018	RF	C-1666	Constellation New Energy(FKA Integrys Energy Services)	U.S.	308,455	308,455	-	-	0.034%	0.034%	0.000%	0.000%	0.007%
2018	RF	C-1614	Just Energy (MECS-DET)	U.S.	7,789	7,789	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	RF	C-1154	Michigan Public Power Agency	U.S.	3,885,349	3,885,349	-	-	0.424%	0.424%	0.000%	0.000%	0.085%
2018	RF	C-1155	Michigan South Central Power Agency	U.S.	793,895	793,895	-	-	0.087%	0.087%	0.000%	0.000%	0.017%
2018	RF	C-1158	MidAmerican Energy Company Retail	U.S.	4,146	4,146	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	RF	C-1163	Northern Indiana Public Service Co.	U.S.	16,935,739	16,935,739	-	-	1.849%	1.849%	0.000%	0.000%	0.369%
2018	RF	C-1164	Ontonagon County Rural Electrification Assoc.	U.S.	28,351	28,351	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	RF	C-1265	PJM Interconnection, LLC	U.S.	690,262,435	690,262,435	-	-	75.350%	75.350%	0.000%	0.000%	15.036%
2018	RF	C-1172	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solution	U.S.	322,629	322,629	-	-	0.035%	0.035%	0.000%	0.000%	0.007%
2018	RF	C-1171	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solution	U.S.	618,056	618,056	-	-	0.067%	0.067%	0.000%	0.000%	0.013%
2018	RF	C-1176	Direct Energy (fka:Strategic Energy,LLC) (MECS-CONS)	U.S.	53,888	53,888	-	-	0.006%	0.006%	0.000%	0.000%	0.001%
2018	RF	C-1174	Direct Energy (fka:Strategic Energy,LLC) (MECS-DET)	U.S.	1,675,828	1,675,828	-	-	0.183%	0.183%	0.000%	0.000%	0.037%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	RF	C-1581	Spartan Renewable Energy	U.S.	130,966	130,966	-	-	0.014%	0.014%	0.000%	0.000%	0.003%
2018	RF	C-1985	Spartan Renewable Energy (MI UP)	U.S.	73,882	73,882	-	-	0.008%	0.008%	0.000%	0.000%	0.002%
2018	RF	C-1180	Thumb Electric Cooperative	U.S.	189,597	189,597	-	-	0.021%	0.021%	0.000%	0.000%	0.004%
2018	RF	C-2027	Upper Michigan Energy Resources	U.S.	663,504	663,504	-	-	0.072%	0.072%	0.000%	0.000%	0.014%
2018	RF	C-1181	Vectren Energy Delivery of IN	U.S.	5,307,406	5,307,406	-	-	0.579%	0.579%	0.000%	0.000%	0.116%
2018	RF	C-1184	Wabash Valley Power Association Inc. (DUKE CIN)	U.S.	3,015,144	3,015,144	-	-	0.329%	0.329%	0.000%	0.000%	0.066%
2018	RF	C-1488	Wabash Valley Power Association Inc.(NIPSCO)	U.S.	1,791,934	1,791,934	-	-	0.196%	0.196%	0.000%	0.000%	0.039%
2018	RF	C-1185	Wisconsin Electric Power Co.	U.S.	28,083,469	28,083,469	-	-	3.066%	3.066%	0.000%	0.000%	0.612%
2018	RF	C-1664	Wisconsin Public Service Co.	U.S.	11,641,000	11,641,000	-	-	1.271%	1.271%	0.000%	0.000%	0.254%
2018	RF	C-1189	Wolverine Power Marketing Cooperative	U.S.	695,804	695,804	-	-	0.076%	0.076%	0.000%	0.000%	0.015%
2018	RF	C-1191	Wolverine Power Supply Cooperative	U.S.	2,849,623	2,849,623	-	-	0.311%	0.311%	0.000%	0.000%	0.062%
2018	RF	C-1190	Wolverine Power Marketing Cooperative(MECS-DET)	U.S.	522,450	522,450	-	-	0.057%	0.057%	0.000%	0.000%	0.011%
TOTAL RELIABILITYFIRST					916,079,013	916,079,013	-	-	100.000%	100.000%	0.000%	0.000%	19.955%
2018	SERC	C-1267	Alabama Municipal Electric Authority	U.S.	3,489,885	3,489,885	-	-	0.265%	0.265%	0.000%	0.000%	0.076%
2018	SERC	C-1268	Alabama Power Company	U.S.	57,888,213	57,888,213	-	-	4.399%	4.399%	0.000%	0.000%	1.261%
2018	SERC	C-1269	Ameren - Illinois	U.S.	43,347,000	43,347,000	-	-	3.294%	3.294%	0.000%	0.000%	0.944%
2018	SERC	C-1271	Ameren - Missouri	U.S.	38,300,000	38,300,000	-	-	2.910%	2.910%	0.000%	0.000%	0.834%
2018	SERC	C-1273	Associated Electric Cooperative Inc.	U.S.	21,033,000	21,033,000	-	-	1.598%	1.598%	0.000%	0.000%	0.458%
2018	SERC	C-1582	Beauregard Electric Cooperative, Inc.	U.S.	1,259,080	1,259,080	-	-	0.096%	0.096%	0.000%	0.000%	0.027%
2018	SERC	C-1462	Benton Utility District	U.S.	268,534	268,534	-	-	0.020%	0.020%	0.000%	0.000%	0.006%
2018	SERC	C-1274	Big Rivers Electric Corporation	U.S.	3,873,413	3,873,413	-	-	0.294%	0.294%	0.000%	0.000%	0.084%
2018	SERC	C-1275	Black Warrior EMC	U.S.	435,118	435,118	-	-	0.033%	0.033%	0.000%	0.000%	0.009%
2018	SERC	C-1276	Blue Ridge EMC	U.S.	1,457,916	1,457,916	-	-	0.111%	0.111%	0.000%	0.000%	0.032%
2018	SERC	C-1628	Brazos Electric Power Cooperative, Inc.	U.S.	514,270	514,270	-	-	0.039%	0.039%	0.000%	0.000%	0.011%
2018	SERC	C-1463	Canton, MS	U.S.	128,081	128,081	-	-	0.010%	0.010%	0.000%	0.000%	0.003%
2018	SERC	C-1277	Central Electric Power Cooperative Inc.	U.S.	18,077,510	18,077,510	-	-	1.374%	1.374%	0.000%	0.000%	0.394%
2018	SERC	C-1667	Century Aluminum - Hawesville	U.S.	3,152,323	3,152,323	-	-	0.240%	0.240%	0.000%	0.000%	0.069%
2018	SERC	C-1668	Century Aluminum - Sebree	U.S.	2,111,397	2,111,397	-	-	0.160%	0.160%	0.000%	0.000%	0.046%
2018	SERC	C-1278	City of Blountstown FL	U.S.	34,504	34,504	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	SERC	C-1279	City of Camden SC	U.S.	201,000	201,000	-	-	0.015%	0.015%	0.000%	0.000%	0.004%
2018	SERC	C-1280	City of Collins MS	U.S.	46,800	46,800	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	SERC	C-1281	City of Columbia MO	U.S.	1,234,936	1,234,936	-	-	0.094%	0.094%	0.000%	0.000%	0.027%
2018	SERC	C-1282	City of Conway AR (Conway Corporation)	U.S.	1,035,563	1,035,563	-	-	0.079%	0.079%	0.000%	0.000%	0.023%
2018	SERC	C-1284	City of Evergreen AL	U.S.	57,166	57,166	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	SERC	C-1285	City of Hampton GA	U.S.	32,393	32,393	-	-	0.002%	0.002%	0.000%	0.000%	0.001%
2018	SERC	C-1286	City of Hartford AL	U.S.	26,946	26,946	-	-	0.002%	0.002%	0.000%	0.000%	0.001%
2018	SERC	C-1287	City of Henderson (KY) Municipal Power & Light	U.S.	621,088	621,088	-	-	0.047%	0.047%	0.000%	0.000%	0.014%
2018	SERC	C-1288	City of North Little Rock AR (DENL)	U.S.	959,814	959,814	-	-	0.073%	0.073%	0.000%	0.000%	0.021%
2018	SERC	C-1289	City of Orangeburg SC Department of Public Utilities	U.S.	837,000	837,000	-	-	0.064%	0.064%	0.000%	0.000%	0.018%
2018	SERC	C-1290	City of Robertsedale AL	U.S.	88,855	88,855	-	-	0.007%	0.007%	0.000%	0.000%	0.002%
2018	SERC	C-1291	City of Ruston LA (DERS)	U.S.	282,805	282,805	-	-	0.021%	0.021%	0.000%	0.000%	0.006%
2018	SERC	C-1292	Seneca Light & Power	U.S.	166,706	166,706	-	-	0.013%	0.013%	0.000%	0.000%	0.004%
2018	SERC	C-1115	City of Springfield (CWLP)	U.S.	1,778,877	1,778,877	-	-	0.135%	0.135%	0.000%	0.000%	0.039%
2018	SERC	C-1465	City of Thayer, MO	U.S.	19,742	19,742	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	SERC	C-1293	City of Troy AL	U.S.	423,350	423,350	-	-	0.032%	0.032%	0.000%	0.000%	0.009%
2018	SERC	C-1294	City of West Memphis AR (West Memphis Utilities)	U.S.	395,556	395,556	-	-	0.030%	0.030%	0.000%	0.000%	0.009%
2018	SERC	C-1583	Claiborne Electric Cooperative, Inc.	U.S.	688,198	688,198	-	-	0.052%	0.052%	0.000%	0.000%	0.015%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	SERC	C-1584	Concordia Electric Cooperative, Inc.	U.S.	227,729	227,729	-	-	0.017%	0.017%	0.000%	0.000%	0.005%
2018	SERC	C-1726	Cube Hydro Carolinas	U.S.	19,415	19,415	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	SERC	C-1283	Dalton Utilities	U.S.	1,888,549	1,888,549	-	-	0.144%	0.144%	0.000%	0.000%	0.041%
2018	SERC	C-1585	Dixie Electric Membership Corporation	U.S.	2,305,267	2,305,267	-	-	0.175%	0.175%	0.000%	0.000%	0.050%
2018	SERC	C-1295	Dominion Virginia Power	U.S.	89,685,136	89,685,136	-	-	6.815%	6.815%	0.000%	0.000%	1.954%
2018	SERC	C-1296	Duke Energy Carolinas, LLC	U.S.	87,973,075	87,973,075	-	-	6.685%	6.685%	0.000%	0.000%	1.916%
2018	SERC	C-1466	Durant, MS	U.S.	25,693	25,693	-	-	0.002%	0.002%	0.000%	0.000%	0.001%
2018	SERC	C-1478	LG&E and KU Services Co as agent for LG&E Co and KU Co	U.S.	35,304,745	35,304,745	-	-	2.683%	2.683%	0.000%	0.000%	0.769%
2018	SERC	C-1297	East Kentucky Power Cooperative	U.S.	14,284,486	14,284,486	-	-	1.085%	1.085%	0.000%	0.000%	0.311%
2018	SERC	C-1298	East Mississippi Electric Power Association	U.S.	441,394	441,394	-	-	0.034%	0.034%	0.000%	0.000%	0.010%
2018	SERC	C-1669	Electricities of North Carolina Inc	U.S.	12,114,883	12,114,883	-	-	0.921%	0.921%	0.000%	0.000%	0.264%
2018	SERC	C-1300	EnergyUnited EMC	U.S.	2,723,294	2,723,294	-	-	0.207%	0.207%	0.000%	0.000%	0.059%
2018	SERC	C-1301	Entergy	U.S.	122,478,194	122,478,194	-	-	9.307%	9.307%	0.000%	0.000%	2.668%
2018	SERC	C-1302	Fayetteville (NC) Public Works Commission	U.S.	2,185,584	2,185,584	-	-	0.166%	0.166%	0.000%	0.000%	0.048%
2018	SERC	C-1303	Florida Public Utilities (FL Panhandle Load)	U.S.	296,525	296,525	-	-	0.023%	0.023%	0.000%	0.000%	0.006%
2018	SERC	C-1304	French Broad EMC	U.S.	568,758	568,758	-	-	0.043%	0.043%	0.000%	0.000%	0.012%
2018	SERC	C-1305	Georgia Power Company	U.S.	88,267,632	88,267,632	-	-	6.707%	6.707%	0.000%	0.000%	1.923%
2018	SERC	C-1306	Georgia System Optns Corporation	U.S.	41,250,410	41,250,410	-	-	3.135%	3.135%	0.000%	0.000%	0.899%
2018	SERC	C-1479	Greenwood (MS) Utilities Commission	U.S.	278,805	278,805	-	-	0.021%	0.021%	0.000%	0.000%	0.006%
2018	SERC	C-1307	Greenwood (SC) Commissioners of Public Works	U.S.	328,557	328,557	-	-	0.025%	0.025%	0.000%	0.000%	0.007%
2018	SERC	C-1308	Gulf Power Company	U.S.	11,740,179	11,740,179	-	-	0.892%	0.892%	0.000%	0.000%	0.256%
2018	SERC	C-1586	Haywood EMC	U.S.	334,165	334,165	-	-	0.025%	0.025%	0.000%	0.000%	0.007%
2018	SERC	C-1984	Hoosier Energy REC, Inc	U.S.	453,934	453,934	-	-	0.034%	0.034%	0.000%	0.000%	0.010%
2018	SERC	C-1309	Illinois Municipal Electric Agency	U.S.	1,863,500	1,863,500	-	-	0.142%	0.142%	0.000%	0.000%	0.041%
2018	SERC	C-1480	Itta Bena, MS	U.S.	14,853	14,853	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	SERC	C-1587	Jefferson Davis Electric Cooperative, Inc.	U.S.	283,836	283,836	-	-	0.022%	0.022%	0.000%	0.000%	0.006%
2018	SERC	C-1617	Kentucky Municipal Power	U.S.	708,254	708,254	-	-	0.054%	0.054%	0.000%	0.000%	0.015%
2018	SERC	C-1481	Kosciusko, MS	U.S.	75,935	75,935	-	-	0.006%	0.006%	0.000%	0.000%	0.002%
2018	SERC	C-1482	Leland, MS	U.S.	31,186	31,186	-	-	0.002%	0.002%	0.000%	0.000%	0.001%
2018	SERC	C-1313	McCormick Commission of Public Works	U.S.	16,760	16,760	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	SERC	C-1314	Mississippi Power Company	U.S.	10,341,880	10,341,880	-	-	0.786%	0.786%	0.000%	0.000%	0.225%
2018	SERC	C-1630	Mt. Carmel Public Utility	U.S.	102,762	102,762	-	-	0.008%	0.008%	0.000%	0.000%	0.002%
2018	SERC	C-1315	Municipal Electric Authority of Georgia	U.S.	11,332,939	11,332,939	-	-	0.861%	0.861%	0.000%	0.000%	0.247%
2018	SERC	C-1316	N.C. Electric Membership Corp.	U.S.	13,525,354	13,525,354	-	-	1.028%	1.028%	0.000%	0.000%	0.295%
2018	SERC	C-1588	Northeast Louisiana Power Cooperative, Inc.	U.S.	309,290	309,290	-	-	0.024%	0.024%	0.000%	0.000%	0.007%
2018	SERC	C-1574	Northern Virginia Electric Cooperative	U.S.	5,542,085	5,542,085	-	-	0.421%	0.421%	0.000%	0.000%	0.121%
2018	SERC	C-1319	Old Dominion Electric Cooperative	U.S.	5,129,702	5,129,702	-	-	0.390%	0.390%	0.000%	0.000%	0.112%
2018	SERC	C-1618	Osceola (Arkansas) Municipal Light and Power	U.S.	154,994	154,994	-	-	0.012%	0.012%	0.000%	0.000%	0.003%
2018	SERC	C-1320	Owensboro (KY) Municipal Utilities	U.S.	837,295	837,295	-	-	0.064%	0.064%	0.000%	0.000%	0.018%
2018	SERC	C-1321	Piedmont EMC in Duke and Progress Areas	U.S.	554,804	554,804	-	-	0.042%	0.042%	0.000%	0.000%	0.012%
2018	SERC	C-1323	Piedmont Municipal Power Agency (PMPA)	U.S.	2,466,704	2,466,704	-	-	0.187%	0.187%	0.000%	0.000%	0.054%
2018	SERC	C-1589	Pointe Coupee Electric Memb. Corp.	U.S.	256,022	256,022	-	-	0.019%	0.019%	0.000%	0.000%	0.006%
2018	SERC	C-1266	PowerSouth Energy	U.S.	9,105,730	9,105,730	-	-	0.692%	0.692%	0.000%	0.000%	0.198%
2018	SERC	C-1330	Prairie Power, Inc.	U.S.	1,625,617	1,625,617	-	-	0.124%	0.124%	0.000%	0.000%	0.035%
2018	SERC	C-1706	Duke Energy Progress	U.S.	47,126,091	47,126,091	-	-	3.581%	3.581%	0.000%	0.000%	1.027%
2018	SERC	C-1325	Rutherford EMC	U.S.	1,408,483	1,408,483	-	-	0.107%	0.107%	0.000%	0.000%	0.031%
2018	SERC	C-1631	Sam Rayburn G&T Electric Cooperative Inc.	U.S.	-	-	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	SERC	C-1326	South Carolina Electric & Gas Company	U.S.	23,849,155	23,849,155	-	-	1.812%	1.812%	0.000%	0.000%	0.520%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	SERC	C-1327	South Carolina Public Service Authority	U.S.	8,908,150	8,908,150	-	-	0.677%	0.677%	0.000%	0.000%	0.194%
2018	SERC	C-1590	South Louisiana Electric Cooperative Association	U.S.	583,230	583,230	-	-	0.044%	0.044%	0.000%	0.000%	0.013%
2018	SERC	C-1328	Cooperative Energy (formerly SMEPA)	U.S.	10,182,071	10,182,071	-	-	0.774%	0.774%	0.000%	0.000%	0.222%
2018	SERC	C-1329	Southern Illinois Power Cooperative	U.S.	1,594,946	1,594,946	-	-	0.121%	0.121%	0.000%	0.000%	0.035%
2018	SERC	C-1591	Southwest Louisiana Electric Membership Corporation	U.S.	2,615,861	2,615,861	-	-	0.199%	0.199%	0.000%	0.000%	0.057%
2018	SERC	C-1619	Southwestern Electric Cooperative, Inc.	U.S.	480,308	480,308	-	-	0.036%	0.036%	0.000%	0.000%	0.010%
2018	SERC	C-1331	Tennessee Valley Authority	U.S.	163,614,076	163,614,076	-	-	12.433%	12.433%	0.000%	0.000%	3.564%
2018	SERC	C-1632	Tex-La Electric Cooperative of Texas, Inc	U.S.	2,191,220	2,191,220	-	-	0.167%	0.167%	0.000%	0.000%	0.048%
2018	SERC	C-1332	Tombigbee Electric Cooperative Inc.	U.S.	134,922	134,922	-	-	0.010%	0.010%	0.000%	0.000%	0.003%
2018	SERC	C-1594	Town of Sharpsburg, N.C.	U.S.	19,000	19,000	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	SERC	C-1595	Town of Stantonsburg, N.C. JRO	U.S.	57,794	57,794	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	SERC	C-1333	Town of Waynesville NC	U.S.	89,631	89,631	-	-	0.007%	0.007%	0.000%	0.000%	0.002%
2018	SERC	C-1334	Town of Winnsboro SC	U.S.	63,655	63,655	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	SERC	C-1335	Town of Winterville NC	U.S.	55,803	55,803	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	SERC	C-1597	Washington-St.Tammany Electric Cooperative, Inc.	U.S.	1,101,921	1,101,921	-	-	0.084%	0.084%	0.000%	0.000%	0.024%
2018	SERC	C-1435	Arkansas Electric Cooperative Corporation	U.S.	11,027,765	11,027,765	-	-	0.838%	0.838%	0.000%	0.000%	0.240%
2018	SERC	C-1557	City of Clarksdale, Mississippi	U.S.	140,185	140,185	-	-	0.011%	0.011%	0.000%	0.000%	0.003%
2018	SERC	C-1708	City of Abbeville	U.S.	139,192	139,192	-	-	0.011%	0.011%	0.000%	0.000%	0.003%
2018	SERC	C-1558	Hope Water & Light (HWL)	U.S.	312,484	312,484	-	-	0.024%	0.024%	0.000%	0.000%	0.007%
2018	SERC	C-1559	City of Minden	U.S.	150,730	150,730	-	-	0.011%	0.011%	0.000%	0.000%	0.003%
2018	SERC	C-1249	Cleco Power LLC	U.S.	11,684,293	11,684,293	-	-	0.888%	0.888%	0.000%	0.000%	0.255%
2018	SERC	C-1648	Jonesboro City Water & Light	U.S.	1,461,178	1,461,178	-	-	0.111%	0.111%	0.000%	0.000%	0.032%
2018	SERC	C-1471	Lafayette Utilities System	U.S.	2,101,182	2,101,182	-	-	0.160%	0.160%	0.000%	0.000%	0.046%
2018	SERC	C-1253	Louisiana Energy & Power Authority (LEPA)	U.S.	989,593	989,593	-	-	0.075%	0.075%	0.000%	0.000%	0.022%
2018	SERC	C-1443	Missouri Joint Municipal Electric Utility Commission	U.S.	2,105,953	2,105,953	-	-	0.160%	0.160%	0.000%	0.000%	0.046%
2018	SERC	C-1639	OzMo Ozark Missouri, West Plains MO	U.S.	198,128	198,128	-	-	0.015%	0.015%	0.000%	0.000%	0.004%
2018	SERC	C-1653	Poplar Bluff Municipal Utilities	U.S.	386,123	386,123	-	-	0.029%	0.029%	0.000%	0.000%	0.008%
2018	SERC	C-1636	City of Prescott	U.S.	88,449	88,449	-	-	0.007%	0.007%	0.000%	0.000%	0.002%
2018	SERC	C-1561	Public Service Commission of Yazoo City of Mississippi	U.S.	122,814	122,814	-	-	0.009%	0.009%	0.000%	0.000%	0.003%
2018	SERC	C-1654	Sikeston Board of Municipal Utilities	U.S.	376,941	376,941	-	-	0.029%	0.029%	0.000%	0.000%	0.008%
2018	SERC	C-1074	Alachua, City of	U.S.	137,600	137,600	-	-	0.010%	0.010%	0.000%	0.000%	0.003%
2018	SERC	C-1075	Bartow, City of	U.S.	292,800	292,800	-	-	0.022%	0.022%	0.000%	0.000%	0.006%
2018	SERC	C-1076	Chattahoochee, City of	U.S.	36,300	36,300	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	SERC	C-1077	Florida Keys Electric Cooperative Assn	U.S.	738,000	738,000	-	-	0.056%	0.056%	0.000%	0.000%	0.016%
2018	SERC	C-1078	Florida Power & Light Co.	U.S.	115,759,000	115,759,000	-	-	8.796%	8.796%	0.000%	0.000%	2.522%
2018	SERC	C-1079	Florida Public Utilities Company	U.S.	350,000	350,000	-	-	0.027%	0.027%	0.000%	0.000%	0.008%
2018	SERC	C-1080	Gainesville Regional Utilities	U.S.	1,857,100	1,857,100	-	-	0.141%	0.141%	0.000%	0.000%	0.040%
2018	SERC	C-1081	Homestead, City of	U.S.	533,000	533,000	-	-	0.041%	0.041%	0.000%	0.000%	0.012%
2018	SERC	C-1082	JEA	U.S.	12,813,000	12,813,000	-	-	0.974%	0.974%	0.000%	0.000%	0.279%
2018	SERC	C-1083	Lakeland Electric	U.S.	3,180,000	3,180,000	-	-	0.242%	0.242%	0.000%	0.000%	0.069%
2018	SERC	C-1626	Lee County Electric Cooperative, Inc	U.S.	4,225,000	4,225,000	-	-	0.321%	0.321%	0.000%	0.000%	0.092%
2018	SERC	C-1661	City of Lake Worth	U.S.	480,000	480,000	-	-	0.036%	0.036%	0.000%	0.000%	0.010%
2018	SERC	C-1084	Mount Dora, City of	U.S.	93,300	93,300	-	-	0.007%	0.007%	0.000%	0.000%	0.002%
2018	SERC	C-1085	New Smyrna Beach, Utilities Commission of	U.S.	443,000	443,000	-	-	0.034%	0.034%	0.000%	0.000%	0.010%
2018	SERC	C-1086	Orlando Utilities Commission	U.S.	6,150,300	6,150,300	-	-	0.467%	0.467%	0.000%	0.000%	0.134%
2018	SERC	C-1087	Duke Energy Florida	U.S.	42,467,000	42,467,000	-	-	3.227%	3.227%	0.000%	0.000%	0.925%
2018	SERC	C-1088	Quincy, City of	U.S.	126,700	126,700	-	-	0.010%	0.010%	0.000%	0.000%	0.003%
2018	SERC	C-1089	Reedy Creek Improvement District	U.S.	1,206,000	1,206,000	-	-	0.092%	0.092%	0.000%	0.000%	0.026%

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2018	SERC	C-1090	St. Cloud, City of (OUC)	U.S.	807,700	807,700	-	-	0.061%	0.061%	0.000%	0.000%	0.018%
2018	SERC	C-1091	Tallahassee, City of	U.S.	2,820,000	2,820,000	-	-	0.214%	0.214%	0.000%	0.000%	0.061%
2018	SERC	C-1092	Tampa Electric Company	U.S.	20,663,000	20,663,000	-	-	1.570%	1.570%	0.000%	0.000%	0.450%
2018	SERC	C-1093	Wauchula, City of	U.S.	68,000	68,000	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	SERC	C-1094	Williston, City of	U.S.	36,400	36,400	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	SERC	C-1095	Winter Park, City of	U.S.	447,500	447,500	-	-	0.034%	0.034%	0.000%	0.000%	0.010%
2018	SERC	C-1724	Moore Haven, City of	U.S.	16,000	16,000	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	SERC	C-1072	Florida Municipal Power Agency	U.S.	6,126,600	6,126,600	-	-	0.466%	0.466%	0.000%	0.000%	0.133%
2018	SERC	C-1073	Seminole Electric Cooperative	U.S.	15,011,000	15,011,000	-	-	1.141%	1.141%	0.000%	0.000%	0.327%
TOTAL SERC					1,315,968,578	1,315,968,578	-	-	100.000%	100.000%	0.000%	0.000%	28.666%
2018	Texas RE	C-1019	ERCOT	U.S.	378,081,531	378,081,531	-	-	100.000%	100.000%	0.000%	0.000%	8.236%
TOTAL ERCOT					378,081,531	378,081,531	-	-	100.000%	100.000%	0.000%	0.000%	8.236%
2018	WECC		Alberta Electric System Operator	Canada	63,849,731	-	63,849,731	-	7.359%	0.000%	7.359%	0.000%	1.391%
2018	WECC		British Columbia Hydro & Power Authority	Canada	63,048,208	-	63,048,208	-	7.267%	0.000%	7.267%	0.000%	1.373%
2018	WECC		Centro Nacional de Control de Energia	Mexico	14,025,467	-	-	14,025,467	1.617%	0.000%	0.000%	1.617%	0.306%
2018	WECC		3 Phases Renewables	U.S.	3,934	3,934	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		Aguila Irrigation District - APS	U.S.	33,320	33,320	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	WECC		Aha Macav Power Service	U.S.	18,698	18,698	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		Ajo Improvement District	U.S.	10,934	10,934	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Arizona Electric Power Cooperative, Inc	U.S.	3,623,095	3,623,095	-	-	0.418%	0.418%	0.000%	0.000%	0.079%
2018	WECC		Arizona Public Service Company	U.S.	28,908,360	28,908,360	-	-	3.332%	3.332%	0.000%	0.000%	0.630%
2018	WECC		Arkansas River Power Authority (ARPA)	U.S.	267,286	267,286	-	-	0.031%	0.031%	0.000%	0.000%	0.006%
2018	WECC		Avangrid Renewables	U.S.	100,202	100,202	-	-	0.012%	0.012%	0.000%	0.000%	0.002%
2018	WECC		Avista Corporation	U.S.	9,417,612	9,417,612	-	-	1.085%	1.085%	0.000%	0.000%	0.205%
2018	WECC		Barrick Goldstrike Mines Inc.	U.S.	1,396,377	1,396,377	-	-	0.161%	0.161%	0.000%	0.000%	0.030%
2018	WECC		Basin Electric Power Cooperative - CM	U.S.	2,099,388	2,099,388	-	-	0.242%	0.242%	0.000%	0.000%	0.046%
2018	WECC		Basin Electric Power Cooperative - NW	U.S.	814,635	814,635	-	-	0.094%	0.094%	0.000%	0.000%	0.018%
2018	WECC		Basin Electric Power Cooperative - UG	U.S.	148,832	148,832	-	-	0.017%	0.017%	0.000%	0.000%	0.003%
2018	WECC		Beartooth Electric Cooperative	U.S.	77,819	77,819	-	-	0.009%	0.009%	0.000%	0.000%	0.002%
2018	WECC		Big Horn County Electric Cooperative	U.S.	70,081	70,081	-	-	0.008%	0.008%	0.000%	0.000%	0.002%
2018	WECC		Black Hills Energy	U.S.	2,124,645	2,124,645	-	-	0.245%	0.245%	0.000%	0.000%	0.046%
2018	WECC		Black Hills Power/Cheyenne Light Fuel & Power	U.S.	4,468,619	4,468,619	-	-	0.515%	0.515%	0.000%	0.000%	0.097%
2018	WECC		Black Hills State University South Dakota	U.S.	20,012	20,012	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		Bonneville Power Administration	U.S.	199,636	199,636	-	-	0.023%	0.023%	0.000%	0.000%	0.004%
2018	WECC		Bonneville Power Administration-Power Services	U.S.	6,320,424	6,320,424	-	-	0.728%	0.728%	0.000%	0.000%	0.138%
2018	WECC		Bonneville Power Administration-Transmission	U.S.	55,393,873	55,393,873	-	-	6.385%	6.385%	0.000%	0.000%	1.207%
2018	WECC		Buckeye Water Conservation and Drainage District - APS	U.S.	22,816	22,816	-	-	0.003%	0.003%	0.000%	0.000%	0.000%
2018	WECC		Bureau of Reclamation (Desalter) - c/o DSW EMMO	U.S.	100	100	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		Bureau of Reclamation (Wellfield)	U.S.	10,266	10,266	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Burlington	U.S.	31,196	31,196	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	WECC		Caesars Entertainment LLC/North	U.S.	62,265	62,265	-	-	0.007%	0.007%	0.000%	0.000%	0.001%
2018	WECC		Caesars Entertainment LLC/South	U.S.	479,344	479,344	-	-	0.055%	0.055%	0.000%	0.000%	0.010%
2018	WECC		California Independent System Operator	U.S.	222,160,888	222,160,888	-	-	25.606%	25.606%	0.000%	0.000%	4.839%
2018	WECC		Calpine Energy Solutions, LLC.	U.S.	1,340,069	1,340,069	-	-	0.154%	0.154%	0.000%	0.000%	0.029%
2018	WECC		Central Arizona Water Conservation District - 1	U.S.	2,420,819	2,420,819	-	-	0.279%	0.279%	0.000%	0.000%	0.053%
2018	WECC		City of Aztec Electric Dept	U.S.	36,147	36,147	-	-	0.004%	0.004%	0.000%	0.000%	0.001%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	WECC		City of Fallon	U.S.	95,794	95,794	-	-	0.011%	0.011%	0.000%	0.000%	0.002%
2018	WECC		City of Farmington	U.S.	1,000,432	1,000,432	-	-	0.115%	0.115%	0.000%	0.000%	0.022%
2018	WECC		City of Gallup	U.S.	209,623	209,623	-	-	0.024%	0.024%	0.000%	0.000%	0.005%
2018	WECC		City of Henderson	U.S.	40,779	40,779	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		City of Las Vegas	U.S.	43,044	43,044	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		City of Mesa	U.S.	268,100	268,100	-	-	0.031%	0.031%	0.000%	0.000%	0.006%
2018	WECC		City of North Las Vegas	U.S.	21,573	21,573	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		City of Page	U.S.	80,163	80,163	-	-	0.009%	0.009%	0.000%	0.000%	0.002%
2018	WECC		City of Redding	U.S.	756,263	756,263	-	-	0.087%	0.087%	0.000%	0.000%	0.016%
2018	WECC		City of Roseville	U.S.	1,199,896	1,199,896	-	-	0.138%	0.138%	0.000%	0.000%	0.026%
2018	WECC		City of Tacoma DBA Tacoma Power	U.S.	4,860,320	4,860,320	-	-	0.560%	0.560%	0.000%	0.000%	0.106%
2018	WECC		City of Williams	U.S.	46,986	46,986	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		Clark County Water Reclamation District	U.S.	80,125	80,125	-	-	0.009%	0.009%	0.000%	0.000%	0.002%
2018	WECC		Colorado River Agency-Bureau of Indian Affairs	U.S.	24,722	24,722	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	WECC		Colorado River Commission of Nevada	U.S.	381,992	381,992	-	-	0.044%	0.044%	0.000%	0.000%	0.008%
2018	WECC		Colorado Springs Utilities	U.S.	4,721,624	4,721,624	-	-	0.544%	0.544%	0.000%	0.000%	0.103%
2018	WECC		Colorado Springs Utilities	U.S.	68,014	68,014	-	-	0.008%	0.008%	0.000%	0.000%	0.001%
2018	WECC		Constellation New Energy	U.S.	469,011	469,011	-	-	0.054%	0.054%	0.000%	0.000%	0.010%
2018	WECC		Deseret Generation & Transmission Cooperative	U.S.	131,571	131,571	-	-	0.015%	0.015%	0.000%	0.000%	0.003%
2018	WECC		Douglas Palisades / PUD No. 1 of DC	U.S.	19,158	19,158	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		El Paso Electric Company	U.S.	8,606,045	8,606,045	-	-	0.992%	0.992%	0.000%	0.000%	0.187%
2018	WECC		Electrical District #2	U.S.	202,414	202,414	-	-	0.023%	0.023%	0.000%	0.000%	0.004%
2018	WECC		Electrical District #2 - Coolidge Generating Station	U.S.	9,292	9,292	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Electrical District No. 6 of Pinal County - APS	U.S.	1,033	1,033	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		Electrical District No. 7 of Maricopa County - APS	U.S.	46,579	46,579	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		Electrical District No. 8 of Maricopa County - APS	U.S.	372,972	372,972	-	-	0.043%	0.043%	0.000%	0.000%	0.008%
2018	WECC		Francis E. Warren Air Force Base	U.S.	23,570	23,570	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	WECC		Grand Valley Power	U.S.	250,454	250,454	-	-	0.029%	0.029%	0.000%	0.000%	0.005%
2018	WECC		Harquahala Valley Power Districts - APS	U.S.	112,615	112,615	-	-	0.013%	0.013%	0.000%	0.000%	0.002%
2018	WECC		Holy Cross Energy	U.S.	1,076,142	1,076,142	-	-	0.124%	0.124%	0.000%	0.000%	0.023%
2018	WECC		Idaho Power Company	U.S.	15,868,701	15,868,701	-	-	1.829%	1.829%	0.000%	0.000%	0.346%
2018	WECC		Imperial Irrigation District	U.S.	3,763,277	3,763,277	-	-	0.434%	0.434%	0.000%	0.000%	0.082%
2018	WECC		Intermountain Rural Electric Association	U.S.	2,337,654	2,337,654	-	-	0.269%	0.269%	0.000%	0.000%	0.051%
2018	WECC		Jicarilla Apache Nation Power Authority	U.S.	22,033	22,033	-	-	0.003%	0.003%	0.000%	0.000%	0.000%
2018	WECC		Kaiser Aluminum Fabricated Products LLC	U.S.	310,882	310,882	-	-	0.036%	0.036%	0.000%	0.000%	0.007%
2018	WECC		Kit Carson Electric Inc	U.S.	296,032	296,032	-	-	0.034%	0.034%	0.000%	0.000%	0.006%
2018	WECC		Las Vegas Valley Water District	U.S.	109,260	109,260	-	-	0.013%	0.013%	0.000%	0.000%	0.002%
2018	WECC		Little Colorado Water District	U.S.	556	556	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		Los Angeles Department of Water and Power	U.S.	27,750,672	27,750,672	-	-	3.199%	3.199%	0.000%	0.000%	0.604%
2018	WECC		Maricopa County Municipal Water Conservation Dist No. 1 - AP	U.S.	53,983	53,983	-	-	0.006%	0.006%	0.000%	0.000%	0.001%
2018	WECC		McMullen Valley Water Conservation & Drainage District - APS	U.S.	138,358	138,358	-	-	0.016%	0.016%	0.000%	0.000%	0.003%
2018	WECC		Merced Irrigation District	U.S.	524,361	524,361	-	-	0.060%	0.060%	0.000%	0.000%	0.011%
2018	WECC		MGM Resorts International	U.S.	920,148	920,148	-	-	0.106%	0.106%	0.000%	0.000%	0.020%
2018	WECC		Modesto Irrigation District	U.S.	2,522,065	2,522,065	-	-	0.291%	0.291%	0.000%	0.000%	0.055%
2018	WECC		Montana-Dakota Utilities Co.	U.S.	21,293	21,293	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		Mt. Wheeler Power	U.S.	566,431	566,431	-	-	0.065%	0.065%	0.000%	0.000%	0.012%
2018	WECC		Municipal Energy Agency of Nebraska	U.S.	640,037	640,037	-	-	0.074%	0.074%	0.000%	0.000%	0.014%
2018	WECC		Municipal Energy Agency of Nebraska - 1	U.S.	179,193	179,193	-	-	0.021%	0.021%	0.000%	0.000%	0.004%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	WECC		Navajo Agricultural Products Industry (NAPI)	U.S.	5,146	5,146	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Navajo Tribal Utility Authority-Arizona	U.S.	57,879	57,879	-	-	0.007%	0.007%	0.000%	0.000%	0.001%
2018	WECC		Navajo Tribal Utility Authority-Colorado	U.S.	314,900	314,900	-	-	0.036%	0.036%	0.000%	0.000%	0.007%
2018	WECC		Navajo Tribal Utility Authority-New Mexico	U.S.	185,765	185,765	-	-	0.021%	0.021%	0.000%	0.000%	0.004%
2018	WECC		Nebraska Public Power Marketing	U.S.	3,769	3,769	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		Needles Public Utilities Authority	U.S.	40,690	40,690	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		Nevada Power Company dba NV Energy	U.S.	31,500,057	31,500,057	-	-	3.631%	3.631%	0.000%	0.000%	0.686%
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC	U.S.	291,069	291,069	-	-	0.034%	0.034%	0.000%	0.000%	0.006%
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC - 1	U.S.	9,680,830	9,680,830	-	-	1.116%	1.116%	0.000%	0.000%	0.211%
2018	WECC		Okanogan PUD	U.S.	625,139	625,139	-	-	0.072%	0.072%	0.000%	0.000%	0.014%
2018	WECC		Overton Power District No. 5	U.S.	413,053	413,053	-	-	0.048%	0.048%	0.000%	0.000%	0.009%
2018	WECC		PacifiCorp (EasternBalAuth)	U.S.	50,789,939	50,789,939	-	-	5.854%	5.854%	0.000%	0.000%	1.106%
2018	WECC		PacifiCorp (IPC)	U.S.	1,999	1,999	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		PacifiCorp (Portland)	U.S.	4,289	4,289	-	-	0.000%	0.000%	0.000%	0.000%	0.000%
2018	WECC		PacifiCorp (WAPA-CO-MO)	U.S.	108,514	108,514	-	-	0.013%	0.013%	0.000%	0.000%	0.002%
2018	WECC		PacifiCorp West (PACW)	U.S.	20,657,966	20,657,966	-	-	2.381%	2.381%	0.000%	0.000%	0.450%
2018	WECC		Pend Oreille County PUD No. 1	U.S.	1,020,628	1,020,628	-	-	0.118%	0.118%	0.000%	0.000%	0.022%
2018	WECC		Peppermill Hotel Casino	U.S.	41,832	41,832	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		Platte River Power Authority	U.S.	3,272,760	3,272,760	-	-	0.377%	0.377%	0.000%	0.000%	0.071%
2018	WECC		Portland General Electric Company	U.S.	17,757,445	17,757,445	-	-	2.047%	2.047%	0.000%	0.000%	0.387%
2018	WECC		Public Service Company of Colorado (Xcel)	U.S.	31,242,210	31,242,210	-	-	3.601%	3.601%	0.000%	0.000%	0.681%
2018	WECC		Public Service Company of Colorado (Xcel)-(WAPA-CO-MO)	U.S.	117,174	117,174	-	-	0.014%	0.014%	0.000%	0.000%	0.003%
2018	WECC		Public Service Company of New Mexico	U.S.	9,347,241	9,347,241	-	-	1.077%	1.077%	0.000%	0.000%	0.204%
2018	WECC		Public Utility District No. 1 of Chelan County	U.S.	1,762,693	1,762,693	-	-	0.203%	0.203%	0.000%	0.000%	0.038%
2018	WECC		PUD No. 1 of Douglas County	U.S.	988,969	988,969	-	-	0.114%	0.114%	0.000%	0.000%	0.022%
2018	WECC		PUD No. 2 of Grant County	U.S.	5,002,216	5,002,216	-	-	0.577%	0.577%	0.000%	0.000%	0.109%
2018	WECC		PUD No. 2 of Grant County - 1	U.S.	92,583	92,583	-	-	0.011%	0.011%	0.000%	0.000%	0.002%
2018	WECC		Puget Sound Energy, Inc.	U.S.	23,811,162	23,811,162	-	-	2.744%	2.744%	0.000%	0.000%	0.519%
2018	WECC		Raton Public Service	U.S.	48,997	48,997	-	-	0.006%	0.006%	0.000%	0.000%	0.001%
2018	WECC		Roosevelt Irrigation District - APS	U.S.	44,168	44,168	-	-	0.005%	0.005%	0.000%	0.000%	0.001%
2018	WECC		Sacramento Municipal Utility District	U.S.	11,235,741	11,235,741	-	-	1.295%	1.295%	0.000%	0.000%	0.245%
2018	WECC		Salt River Project	U.S.	30,503,047	30,503,047	-	-	3.516%	3.516%	0.000%	0.000%	0.664%
2018	WECC		Seattle City Light	U.S.	9,663,811	9,663,811	-	-	1.114%	1.114%	0.000%	0.000%	0.211%
2018	WECC		Shell Energy North America	U.S.	170,313	170,313	-	-	0.020%	0.020%	0.000%	0.000%	0.004%
2018	WECC		Silver State Energy Association	U.S.	674,288	674,288	-	-	0.078%	0.078%	0.000%	0.000%	0.015%
2018	WECC		Southern Nevada Water Authority	U.S.	122,716	122,716	-	-	0.014%	0.014%	0.000%	0.000%	0.003%
2018	WECC		Switch-North	U.S.	26,764	26,764	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	WECC		Switch-South	U.S.	533,645	533,645	-	-	0.062%	0.062%	0.000%	0.000%	0.012%
2018	WECC		The Incorporated County of Los Alamos	U.S.	606,556	606,556	-	-	0.070%	0.070%	0.000%	0.000%	0.013%
2018	WECC		Tohono O'Odham Utility Authority	U.S.	62,006	62,006	-	-	0.007%	0.007%	0.000%	0.000%	0.001%
2018	WECC		Tonopah Irrigation District - APS	U.S.	35,128	35,128	-	-	0.004%	0.004%	0.000%	0.000%	0.001%
2018	WECC		Town of Center	U.S.	17,216	17,216	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		Town of Fredonia	U.S.	11,247	11,247	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Town of Wickenburg	U.S.	26,608	26,608	-	-	0.003%	0.003%	0.000%	0.000%	0.001%
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability	U.S.	8,606,271	8,606,271	-	-	0.992%	0.992%	0.000%	0.000%	0.187%
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability - 1	U.S.	2,703,908	2,703,908	-	-	0.312%	0.312%	0.000%	0.000%	0.059%
2018	WECC		Tri-State Generation & Transmission Association, Inc.	U.S.	2,761,516	2,761,516	-	-	0.318%	0.318%	0.000%	0.000%	0.060%
2018	WECC		Truckee Donner Public Utility District	U.S.	158,790	158,790	-	-	0.018%	0.018%	0.000%	0.000%	0.003%

Data Year	Regional Entity	NERC ID	Entity	Country	Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL	% of RE total	US Total	Canada Total	Mexico Total	% of ERO Total
2018	WECC		Tucson Electric Power Company	U.S.	14,715,005	14,715,005	-	-	1.696%	1.696%	0.000%	0.000%	0.321%
2018	WECC		Turlock Irrigation District	U.S.	2,172,228	2,172,228	-	-	0.250%	0.250%	0.000%	0.000%	0.047%
2018	WECC		U.S. Army Yuma Proving Ground	U.S.	20,033	20,033	-	-	0.002%	0.002%	0.000%	0.000%	0.000%
2018	WECC		US Dept of Energy - Kirtland AFB	U.S.	429,527	429,527	-	-	0.050%	0.050%	0.000%	0.000%	0.009%
2018	WECC		Western Area Power - Loveland, CO	U.S.	172,939	172,939	-	-	0.020%	0.020%	0.000%	0.000%	0.004%
2018	WECC		Western Area Power - Loveland, CO - CM	U.S.	2,052,297	2,052,297	-	-	0.237%	0.237%	0.000%	0.000%	0.045%
2018	WECC		Western Area Power Administration - CRSP	U.S.	2,073,216	2,073,216	-	-	0.239%	0.239%	0.000%	0.000%	0.045%
2018	WECC		Western Area Power Administration-Desert Southwest Region	U.S.	1,687,327	1,687,327	-	-	0.194%	0.194%	0.000%	0.000%	0.037%
2018	WECC		Western Area Power Administration-Sierra Nevada Region	U.S.	1,519,910	1,519,910	-	-	0.175%	0.175%	0.000%	0.000%	0.033%
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	384,534	384,534	-	-	0.044%	0.044%	0.000%	0.000%	0.008%
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	8,118	8,118	-	-	0.001%	0.001%	0.000%	0.000%	0.000%
2018	WECC		Wynn Las Vegas	U.S.	177,107	177,107	-	-	0.020%	0.020%	0.000%	0.000%	0.004%
2018	WECC		Wyoming Municipal Power Agency	U.S.	219,920	219,920	-	-	0.025%	0.025%	0.000%	0.000%	0.005%
2018	WECC		Yampa Valley Electric Association	U.S.	566,401	566,401	-	-	0.065%	0.065%	0.000%	0.000%	0.012%
TOTAL WECC					867,599,555	726,676,149	126,897,939	14,025,467	100.000%	83.757%	14.626%	1.617%	18.899%
TOTAL ERO					4,590,769,783	4,066,914,561	509,829,755	14,025,467	600.000%	520.054%	78.329%	1.617%	100.000%

Summary by Regional Entity					Total NEL (MWh)	U.S. NEL	Canada NEL	Mexico NEL					
2018	MRO				492,730,106	445,523,290	47,206,816	-	100.000%	90.419%	9.581%	0.000%	10.733%
2018	NPCC				620,311,000	284,586,000	335,725,000	-	100.000%	45.878%	54.122%	0.000%	13.512%
2018	RF				916,079,013	916,079,013	-	-	100.000%	100.000%	0.000%	0.000%	19.955%
2018	SERC				1,315,968,578	1,315,968,578	-	-	100.000%	100.000%	0.000%	0.000%	28.666%
2018	Texas RE				378,081,531	378,081,531	-	-	100.000%	100.000%	0.000%	0.000%	8.236%
2018	WECC				867,599,555	726,676,149	126,897,939	14,025,467	100.000%	83.757%	14.626%	1.617%	18.899%
Total					4,590,769,783	4,066,914,561	509,829,755	14,025,467	600.000%	520.054%	78.329%	1.617%	100.000%

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	MRO	C-1217	Manitoba Hydro	Canada	1,127,475	-	1,127,475	-	349,831	-	349,831	-	777,644	-	777,644	-
2018	MRO	C-1235	SaskPower	Canada	1,309,074	-	1,309,074	-	406,177	-	406,177	-	902,897	-	902,897	-
2018	MRO	C-1707	AEP-VEMCO	U.S.	35,358	35,358	-	-	11,244	11,244	-	-	24,115	24,115	-	-
2018	MRO	C-1195	Alliant Energy (ALTE- WPL & ALTW IPL)	U.S.	1,481,493	1,481,493	-	-	471,100	471,100	-	-	1,010,392	1,010,392	-	-
2018	MRO	C-1246	American Electric Power Service Corporation	U.S.	1,923,609	1,923,609	-	-	611,689	611,689	-	-	1,311,920	1,311,920	-	-
2018	MRO	C-1196	Ames Municipal Electric System	U.S.	39,957	39,957	-	-	12,706	12,706	-	-	27,251	27,251	-	-
2018	MRO	C-1986	Arkansas Electric Cooperative Corporation (AECC)	U.S.	220,914	220,914	-	-	70,248	70,248	-	-	150,665	150,665	-	-
2018	MRO	C-1604	Atlantic Municipal Utilities (AMU)	U.S.	5,999	5,999	-	-	1,908	1,908	-	-	4,091	4,091	-	-
2018	MRO	C-1199	Basin Electric Power Cooperative (BEPCC)	U.S.	1,064,968	1,064,968	-	-	338,650	338,650	-	-	726,319	726,319	-	-
2018	MRO	C-1247	Board of Public Utilities (Kansas City, KS) (BPU)	U.S.	127,669	127,669	-	-	40,598	40,598	-	-	87,071	87,071	-	-
2018	MRO	C-1620	Board of Public Utilities City of McPherson, KS (MCPHER)	U.S.	54,479	54,479	-	-	17,324	17,324	-	-	37,156	37,156	-	-
2018	MRO	C-1647	Carthage Water and Light	U.S.	15,517	15,517	-	-	4,934	4,934	-	-	10,583	10,583	-	-
2018	MRO	C-1200	Cedar Falls Utilities (CFU)	U.S.	27,196	27,196	-	-	8,648	8,648	-	-	18,548	18,548	-	-
2018	MRO	C-1201	Central Iowa Power Cooperative (CIPCO)	U.S.	153,107	153,107	-	-	48,687	48,687	-	-	104,421	104,421	-	-
2018	MRO	C-1477	Central Minnesota Municipal Power Agency (CMMMPA)	U.S.	19,904	19,904	-	-	6,329	6,329	-	-	13,575	13,575	-	-
2018	MRO	C-1469	Central Valley Electric Cooperative (CVEC)	U.S.	46,327	46,327	-	-	14,731	14,731	-	-	31,595	31,595	-	-
2018	MRO	C-1556	City of Bentonville (BENVILL)	U.S.	36,649	36,649	-	-	11,654	11,654	-	-	24,995	24,995	-	-
2018	MRO	C-1713	City of Bloomer (Bloomer Electric & Water Co.)	U.S.	2,999	2,999	-	-	954	954	-	-	2,045	2,045	-	-
2018	MRO	C-1703	City of Chanute (CHANUTEKS)	U.S.	26,078	26,078	-	-	8,292	8,292	-	-	17,785	17,785	-	-
2018	MRO	C-1203	City of Escanaba (EME)	U.S.	6,840	6,840	-	-	2,175	2,175	-	-	4,665	4,665	-	-
2018	MRO	C-1718	City of Guttenberg	U.S.	1,035	1,035	-	-	329	329	-	-	706	706	-	-
2018	MRO	C-1719	City of Kasota	U.S.	194	194	-	-	62	62	-	-	132	132	-	-
2018	MRO	C-1709	City of Nixa	U.S.	8,176	8,176	-	-	2,600	2,600	-	-	5,576	5,576	-	-
2018	MRO	C-1722	City of Spooner	U.S.	1,672	1,672	-	-	532	532	-	-	1,140	1,140	-	-
2018	MRO	C-1436	City Utilities of Springfield, MO (SPRM)	U.S.	166,643	166,643	-	-	52,991	52,991	-	-	113,652	113,652	-	-
2018	MRO	C-1204	Corn Belt Power Cooperative (CBPC)	U.S.	105,653	105,653	-	-	33,597	33,597	-	-	72,056	72,056	-	-
2018	MRO	C-1710	Dahlberg Electric Company	U.S.	6,053	6,053	-	-	1,925	1,925	-	-	4,128	4,128	-	-
2018	MRO	C-1207	Dairyland Power Cooperative (DPC)	U.S.	309,913	309,913	-	-	98,549	98,549	-	-	211,364	211,364	-	-
2018	MRO	C-1437	East Texas Electric Cooperative, Inc. (ETEC)	U.S.	50,015	50,015	-	-	15,904	15,904	-	-	34,110	34,110	-	-
2018	MRO	C-1716	Eldridge Electric and Water Utilities	U.S.	2,292	2,292	-	-	729	729	-	-	1,563	1,563	-	-
2018	MRO	C-1250	Empire District Electric Co.	U.S.	280,835	280,835	-	-	89,303	89,303	-	-	191,532	191,532	-	-
2018	MRO	C-1205	Falls City Water & Light Department	U.S.	3,125	3,125	-	-	994	994	-	-	2,131	2,131	-	-
2018	MRO	C-1470	Farmers Electric Cooperative, Inc. of New Mexico (FARMCOOPN)	U.S.	16,844	16,844	-	-	5,356	5,356	-	-	11,488	11,488	-	-
2018	MRO	C-1206	Fremont Department of Utilities (City of)	U.S.	22,617	22,617	-	-	7,192	7,192	-	-	15,425	15,425	-	-
2018	MRO	C-1208	Geneseo Municipal Utilities	U.S.	3,461	3,461	-	-	1,101	1,101	-	-	2,361	2,361	-	-
2018	MRO	C-1438	Golden Spread Electric Cooperative, Inc (GSEC)	U.S.	289,493	289,493	-	-	92,056	92,056	-	-	197,437	197,437	-	-
2018	MRO	C-1209	Grand Island Utilities Department	U.S.	39,492	39,492	-	-	12,558	12,558	-	-	26,934	26,934	-	-
2018	MRO	C-1251	Grand River Dam Authority (GRDA)	U.S.	272,577	272,577	-	-	86,677	86,677	-	-	185,900	185,900	-	-
2018	MRO	C-1717	Great Lakes Utilities	U.S.	77,886	77,886	-	-	24,767	24,767	-	-	53,119	53,119	-	-
2018	MRO	C-1210	Great River Energy (GRE)	U.S.	695,234	695,234	-	-	221,078	221,078	-	-	474,156	474,156	-	-
2018	MRO	C-1606	Harlan Municipal Utilities	U.S.	918	918	-	-	292	292	-	-	626	626	-	-
2018	MRO	C-1211	Hastings Utilities (HAST)	U.S.	22,791	22,791	-	-	7,247	7,247	-	-	15,544	15,544	-	-
2018	MRO	C-1212	Heartland Consumers Power District (HCPD)	U.S.	23,462	23,462	-	-	7,461	7,461	-	-	16,002	16,002	-	-
2018	MRO	C-1213	Hutchinson Utilities Commission (HUCH)	U.S.	14,740	14,740	-	-	4,687	4,687	-	-	10,053	10,053	-	-
2018	MRO	C-1248	Independence Power & Light (Independence, MO) (INDN)	U.S.	55,956	55,956	-	-	17,794	17,794	-	-	38,163	38,163	-	-
2018	MRO	C-1252	Kansas City Power & Light (KCPL)	U.S.	824,217	824,217	-	-	262,093	262,093	-	-	562,124	562,124	-	-
2018	MRO	C-1439	Kansas Electric Power Cooperative (KEPC)	U.S.	113,041	113,041	-	-	35,946	35,946	-	-	77,095	77,095	-	-
2018	MRO	C-1440	Kansas Municipal Energy Agency (KMEA)	U.S.	81,846	81,846	-	-	26,026	26,026	-	-	55,820	55,820	-	-
2018	MRO	C-1637	Kansas Power Pool (KPP)	U.S.	44,978	44,978	-	-	14,303	14,303	-	-	30,676	30,676	-	-
2018	MRO	C-1598	KCP&L - Greater Missouri Operations (KCPL-GMO)	U.S.	456,534	456,534	-	-	145,174	145,174	-	-	311,361	311,361	-	-
2018	MRO	C-1649	Kennett Board of Public Works	U.S.	7,308	7,308	-	-	2,324	2,324	-	-	4,984	4,984	-	-
2018	MRO	C-1472	Lea County Electric Cooperative (LCEC)	U.S.	64,985	64,985	-	-	20,665	20,665	-	-	44,321	44,321	-	-
2018	MRO	C-1215	Lincoln Electric System (LES)	U.S.	167,787	167,787	-	-	53,355	53,355	-	-	114,433	114,433	-	-
2018	MRO	C-1216	Madison, Gas and Electric (MGE)	U.S.	172,728	172,728	-	-	54,926	54,926	-	-	117,802	117,802	-	-
2018	MRO	C-1650	Malden Board of Public Works	U.S.	2,620	2,620	-	-	833	833	-	-	1,787	1,787	-	-
2018	MRO	C-1220	MidAmerican Energy Company (MEC)	U.S.	1,362,006	1,362,006	-	-	433,105	433,105	-	-	928,901	928,901	-	-
2018	MRO	C-1441	Midwest Energy, Inc (MIDW)	U.S.	93,002	93,002	-	-	29,574	29,574	-	-	63,429	63,429	-	-
2018	MRO	C-1224	Minnesota Municipal Power Agency (MMPA) Avant Energy Inc	U.S.	86,371	86,371	-	-	27,465	27,465	-	-	58,906	58,906	-	-
2018	MRO	C-1221	Minnesota Power (MP)	U.S.	647,711	647,711	-	-	205,966	205,966	-	-	441,745	441,745	-	-
2018	MRO	C-1222	Minnkota Power Cooperative, Inc. (MPC)	U.S.	203,175	203,175	-	-	64,608	64,608	-	-	138,567	138,567	-	-
2018	MRO	C-1987	Missouri Joint Municipal Electric Utility	U.S.	22,607	22,607	-	-	7,189	7,189	-	-	15,418	15,418	-	-
2018	MRO	C-1223	Missouri River Energy Services	U.S.	142,203	142,203	-	-	45,219	45,219	-	-	96,984	96,984	-	-
2018	MRO	C-1226	Montana-Dakota Utilities Co. (MDU)	U.S.	166,871	166,871	-	-	53,063	53,063	-	-	113,807	113,807	-	-
2018	MRO	C-1607	Montezuma Municipal Light & Power	U.S.	1,290	1,290	-	-	410	410	-	-	880	880	-	-
2018	MRO	C-1227	Municipal Energy Agency of Nebraska (MEAN)	U.S.	52,487	52,487	-	-	16,690	16,690	-	-	35,797	35,797	-	-
2018	MRO	C-1228	Muscatine Power and Water (MPW)	U.S.	45,549	45,549	-	-	14,484	14,484	-	-	31,065	31,065	-	-
2018	MRO	C-1229	Nebraska City Utilities	U.S.	6,881	6,881	-	-	2,188	2,188	-	-	4,693	4,693	-	-
2018	MRO	C-1230	Nebraska Public Power District (NPPD)	U.S.	678,445	678,445	-	-	215,739	215,739	-	-	462,706	462,706	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	MRO	C-1711	North Central Power Company	U.S.	1,968	1,968	-	-	626	626	-	-	1,342	1,342	-	-
2018	MRO	C-1442	Northeast Texas Electric Cooperative, Inc. (NTEC)	U.S.	169,525	169,525	-	-	53,907	53,907	-	-	115,618	115,618	-	-
2018	MRO	C-1231	NorthWestern Energy (NWE)	U.S.	85,074	85,074	-	-	27,053	27,053	-	-	58,021	58,021	-	-
2018	MRO	C-1712	NorthWestern Wisconsin Electric Company	U.S.	9,762	9,762	-	-	3,104	3,104	-	-	6,658	6,658	-	-
2018	MRO	C-1255	Oklahoma Gas and Electric Co. (OKGE)	U.S.	1,551,134	1,551,134	-	-	493,246	493,246	-	-	1,057,888	1,057,888	-	-
2018	MRO	C-1444	Oklahoma Municipal Power Authority (OMPA)	U.S.	148,557	148,557	-	-	47,240	47,240	-	-	101,317	101,317	-	-
2018	MRO	C-1232	Omaha Public Power District (OPPD)	U.S.	579,932	579,932	-	-	184,413	184,413	-	-	395,519	395,519	-	-
2018	MRO	C-1233	Otter Tail Power Company (OTP)	U.S.	259,564	259,564	-	-	82,539	82,539	-	-	177,025	177,025	-	-
2018	MRO	C-1651	Paragould Light, Water & Cable (PARAGOULD)	U.S.	31,298	31,298	-	-	9,952	9,952	-	-	21,345	21,345	-	-
2018	MRO	C-1725	Peoples Electric Cooperative (PEC)	U.S.	37,220	37,220	-	-	11,994	11,994	-	-	25,225	25,225	-	-
2018	MRO	C-1652	Piggott Municipal Light, Water & Sewer	U.S.	1,979	1,979	-	-	629	629	-	-	1,350	1,350	-	-
2018	MRO	C-1653	Poplar Bluff Municipal Utilities	U.S.	19,355	19,355	-	-	6,155	6,155	-	-	13,200	13,200	-	-
2018	MRO	C-1720	Resale Power Group of Iowa	U.S.	29,054	29,054	-	-	9,239	9,239	-	-	19,815	19,815	-	-
2018	MRO	C-1721	Rice Lake Utilities	U.S.	8,527	8,527	-	-	2,711	2,711	-	-	5,815	5,815	-	-
2018	MRO	C-1234	Rochester Public Utilities (RPU)	U.S.	168	168	-	-	54	54	-	-	115	115	-	-
2018	MRO	C-1473	Roosevelt County Electric Cooperative	U.S.	8,529	8,529	-	-	2,712	2,712	-	-	5,817	5,817	-	-
2018	MRO	C-1654	Sikeston Board of Municipal Utilities	U.S.	20,075	20,075	-	-	6,384	6,384	-	-	13,691	13,691	-	-
2018	MRO	C-1236	Southern Minnesota Municipal Power Agency (SMMMPA)	U.S.	142,628	142,628	-	-	45,354	45,354	-	-	97,274	97,274	-	-
2018	MRO	C-1257	Southwestern Public Service Co. Xcel Energy (SPS)	U.S.	1,129,068	1,129,068	-	-	359,033	359,033	-	-	770,035	770,035	-	-
2018	MRO	C-1256	Sunflower Electric Cooperative (SECI)	U.S.	236,960	236,960	-	-	75,351	75,351	-	-	161,609	161,609	-	-
2018	MRO	C-1475	Tri County Electric Cooperative, Inc. of Oklahoma (TRICEC)	U.S.	19,342	19,342	-	-	6,151	6,151	-	-	13,192	13,192	-	-
2018	MRO	C-1665	Upper Peninsula Power Co (UPPC)	U.S.	35,207	35,207	-	-	11,195	11,195	-	-	24,012	24,012	-	-
2018	MRO	C-1714	Village of Caddott	U.S.	659	659	-	-	210	210	-	-	450	450	-	-
2018	MRO	C-1260	Westar Energy (WR)	U.S.	1,092,712	1,092,712	-	-	347,472	347,472	-	-	745,240	745,240	-	-
2018	MRO	C-1239	Western Area Power Administration Rocky Mountain Region (t	U.S.	2,346	2,346	-	-	746	746	-	-	1,600	1,600	-	-
2018	MRO	C-1240	Western Area Power Administration Upper Great Plains (UM) (t	U.S.	465,228	465,228	-	-	147,938	147,938	-	-	317,290	317,290	-	-
2018	MRO	C-1259	Western Farmers Electric Cooperative (WFEC)	U.S.	477,222	477,222	-	-	151,752	151,752	-	-	325,470	325,470	-	-
2018	MRO	C-1501	West Texas Municipal Power Agency (WTMPA)	U.S.	149,633	149,633	-	-	47,582	47,582	-	-	102,051	102,051	-	-
2018	MRO	C-1241	Willmar Municipal Utilities (WLMRWL)	U.S.	13,091	13,091	-	-	4,163	4,163	-	-	8,928	8,928	-	-
2018	MRO	C-1242	Wisconsin Public Power, Inc. (East and West regions) (WPPPI)	U.S.	269,285	269,285	-	-	85,630	85,630	-	-	183,655	183,655	-	-
2018	MRO	C-1983	Wolverine Power Marketing Cooperative	U.S.	2,110	2,110	-	-	671	671	-	-	1,439	1,439	-	-
2018	MRO	C-1244	Xcel Energy Company Northern States Power (NSP)	U.S.	2,235,178	2,235,178	-	-	710,765	710,765	-	-	1,524,413	1,524,413	-	-
TOTAL MRO					24,874,226	22,437,677	2,436,549	-	7,890,975	7,134,967	756,008	-	16,983,251	15,302,710	1,680,541	-
2018	NPCC	C-1336	New England	U.S.	6,131,930	6,131,930	-	-	1,977,380	1,977,380	-	-	4,154,551	4,154,551	-	-
2018	NPCC	C-1339	New York	U.S.	8,001,347	8,001,347	-	-	2,580,209	2,580,209	-	-	5,421,138	5,421,138	-	-
2018	NPCC	C-1337	Ontario	Canada	3,761,960	-	3,761,960	-	1,601,276	-	1,601,276	-	2,160,683	-	2,160,683	-
2018	NPCC	C-1341	Quebec	Canada	5,208,353	-	5,208,353	-	2,213,431	-	2,213,431	-	2,994,921	-	2,994,921	-
2018		C-1572	Hydro Quebec	Canada	-	-	-	-	-	-	-	-	-	-	-	-
2018		C-1572	Regie	Canada	-	-	-	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1705	New Brunswick	Canada	521,556	-	521,556	-	164,031	-	164,031	-	357,526	-	357,526	-
2018	NPCC	C-1340	Nova Scotia	Canada	431,061	-	431,061	-	181,143	-	181,143	-	249,918	-	249,918	-
TOTAL NPCC					24,056,207	14,133,277	9,922,930	-	8,717,470	4,557,588	4,159,882	-	15,338,737	9,575,689	5,763,048	-
2018	RF	C-1102	Cannelton Utilities	U.S.	611	611	-	-	243	243	-	-	369	369	-	-
2018	RF	C-1106	City of Croswell	U.S.	1,622	1,622	-	-	643	643	-	-	979	979	-	-
2018	RF	C-1490	City of Lansing	U.S.	88,705	88,705	-	-	35,183	35,183	-	-	53,523	53,523	-	-
2018	RF	C-1120	Cloverland Electric Cooperative	U.S.	30,303	30,303	-	-	12,019	12,019	-	-	18,284	18,284	-	-
2018	RF	C-1122	CMS ERM Michigan LLC	U.S.	7,110	7,110	-	-	2,820	2,820	-	-	4,290	4,290	-	-
2018	RF	C-1124	Constellation New Energy (MECS-CONS)	U.S.	73,017	73,017	-	-	28,960	28,960	-	-	44,057	44,057	-	-
2018	RF	C-1123	Constellation New Energy (MECS-DET)	U.S.	84,725	84,725	-	-	33,604	33,604	-	-	51,121	51,121	-	-
2018	RF	C-1126	Consumers Energy Company	U.S.	1,376,436	1,376,436	-	-	545,925	545,925	-	-	830,511	830,511	-	-
2018	RF	C-1128	Detroit Edison Company	U.S.	1,881,005	1,881,005	-	-	746,048	746,048	-	-	1,134,957	1,134,957	-	-
2018	RF	C-1166	Duke Energy Indiana	U.S.	1,236,070	1,236,070	-	-	490,253	490,253	-	-	745,818	745,818	-	-
2018	RF	C-1135	Ferdinand Municipal Light & Water	U.S.	1,817	1,817	-	-	721	721	-	-	1,096	1,096	-	-
2018	RF	C-1646	FirstEnergy Solutions (MECS-CONS)	U.S.	36,051	36,051	-	-	14,299	14,299	-	-	21,752	21,752	-	-
2018	RF	C-1549	FirstEnergy Solutions (MECS-DET)	U.S.	3,889	3,889	-	-	1,542	1,542	-	-	2,346	2,346	-	-
2018	RF	C-1145	Hoosier Energy	U.S.	325,605	325,605	-	-	129,142	129,142	-	-	196,463	196,463	-	-
2018	RF	C-1148	Indiana Municipal Power Agency (DUKE CIN)	U.S.	128,838	128,838	-	-	51,100	51,100	-	-	77,738	77,738	-	-
2018	RF	C-1485	Indiana Municipal Power Agency (NIPSCO)	U.S.	17,900	17,900	-	-	7,100	7,100	-	-	10,800	10,800	-	-
2018	RF	C-1486	Indiana Municipal Power Agency (SIGE)	U.S.	24,589	24,589	-	-	9,753	9,753	-	-	14,837	14,837	-	-
2018	RF	C-1149	Indianapolis Power & Light Co.	U.S.	585,685	585,685	-	-	232,295	232,295	-	-	353,389	353,389	-	-
2018	RF	C-1666	Constellation New Energy(FKA Integrys Energy Services)	U.S.	12,455	12,455	-	-	4,940	4,940	-	-	7,515	7,515	-	-
2018	RF	C-1614	Just Energy (MECS-DET)	U.S.	315	315	-	-	125	125	-	-	190	190	-	-
2018	RF	C-1154	Michigan Public Power Agency	U.S.	156,883	156,883	-	-	62,223	62,223	-	-	94,660	94,660	-	-
2018	RF	C-1155	Michigan South Central Power Agency	U.S.	32,056	32,056	-	-	12,714	12,714	-	-	19,342	19,342	-	-
2018	RF	C-1158	MidAmerican Energy Company Retail	U.S.	167	167	-	-	66	66	-	-	101	101	-	-
2018	RF	C-1163	Northern Indiana Public Service Co.	U.S.	683,831	683,831	-	-	271,222	271,222	-	-	412,609	412,609	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	RF	C-1164	Ontonagon County Rural Electrification Assoc.	U.S.	1,145	1,145	-	-	454	454	-	-	691	691	-	-
2018	RF	C-1265	PJM Interconnection, LLC	U.S.	27,871,423	27,871,423	-	-	11,054,416	11,054,416	-	-	16,817,007	16,817,007	-	-
2018	RF	C-1172	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solutions)	U.S.	13,027	13,027	-	-	5,167	5,167	-	-	7,860	7,860	-	-
2018	RF	C-1171	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solutions)	U.S.	24,956	24,956	-	-	9,898	9,898	-	-	15,058	15,058	-	-
2018	RF	C-1176	Direct Energy (fka:Strategic Energy,LLC) (MECS-CONS)	U.S.	2,176	2,176	-	-	863	863	-	-	1,313	1,313	-	-
2018	RF	C-1174	Direct Energy (fka:Strategic Energy,LLC) (MECS-DET)	U.S.	67,667	67,667	-	-	26,838	26,838	-	-	40,829	40,829	-	-
2018	RF	C-1581	Spartan Renewable Energy	U.S.	5,288	5,288	-	-	2,097	2,097	-	-	3,191	3,191	-	-
2018	RF	C-1985	Spartan Renewable Energy (MI UP)	U.S.	2,983	2,983	-	-	1,183	1,183	-	-	1,800	1,800	-	-
2018	RF	C-1180	Thumb Electric Cooperative	U.S.	7,656	7,656	-	-	3,036	3,036	-	-	4,619	4,619	-	-
2018	RF	C-2027	Upper Michigan Energy Resources	U.S.	26,791	26,791	-	-	10,626	10,626	-	-	16,165	16,165	-	-
2018	RF	C-1181	Vectren Energy Delivery of IN	U.S.	214,302	214,302	-	-	84,997	84,997	-	-	129,305	129,305	-	-
2018	RF	C-1184	Wabash Valley Power Association Inc. (DUKE CIN)	U.S.	121,746	121,746	-	-	48,287	48,287	-	-	73,459	73,459	-	-
2018	RF	C-1488	Wabash Valley Power Association Inc.(NIPSCO)	U.S.	72,355	72,355	-	-	28,697	28,697	-	-	43,657	43,657	-	-
2018	RF	C-1185	Wisconsin Electric Power Co.	U.S.	1,133,955	1,133,955	-	-	449,751	449,751	-	-	684,203	684,203	-	-
2018	RF	C-1664	Wisconsin Public Service Co.	U.S.	470,040	470,040	-	-	186,428	186,428	-	-	283,612	283,612	-	-
2018	RF	C-1189	Wolverine Power Marketing Cooperative	U.S.	28,095	28,095	-	-	11,143	11,143	-	-	16,952	16,952	-	-
2018	RF	C-1191	Wolverine Power Supply Cooperative	U.S.	115,062	115,062	-	-	45,636	45,636	-	-	69,426	69,426	-	-
2018	RF	C-1190	Wolverine Power Marketing Cooperative(MECS-DET)	U.S.	21,095	21,095	-	-	8,367	8,367	-	-	12,729	12,729	-	-
TOTAL RELIABILITYFIRST					36,989,446	36,989,446	-	-	14,670,823	14,670,823	-	-	22,318,623	22,318,623	-	-
2018	SERC	C-1267	Alabama Municipal Electric Authority	U.S.	115,450	115,450	-	-	55,890	55,890	-	-	59,561	59,561	-	-
2018	SERC	C-1268	Alabama Power Company	U.S.	1,915,024	1,915,024	-	-	927,068	927,068	-	-	987,956	987,956	-	-
2018	SERC	C-1269	Ameren - Illinois	U.S.	1,433,980	1,433,980	-	-	694,194	694,194	-	-	739,786	739,786	-	-
2018	SERC	C-1271	Ameren - Missouri	U.S.	1,267,018	1,267,018	-	-	613,367	613,367	-	-	653,651	653,651	-	-
2018	SERC	C-1273	Associated Electric Cooperative Inc.	U.S.	695,801	695,801	-	-	336,839	336,839	-	-	358,962	358,962	-	-
2018	SERC	C-1582	Beauregard Electric Cooperative, Inc.	U.S.	41,652	41,652	-	-	20,164	20,164	-	-	21,488	21,488	-	-
2018	SERC	C-1462	Benton Utility District	U.S.	8,883	8,883	-	-	4,301	4,301	-	-	4,583	4,583	-	-
2018	SERC	C-1274	Big Rivers Electric Corporation	U.S.	128,138	128,138	-	-	62,032	62,032	-	-	66,106	66,106	-	-
2018	SERC	C-1275	Black Warrior EMC	U.S.	14,394	14,394	-	-	6,968	6,968	-	-	7,426	7,426	-	-
2018	SERC	C-1276	Blue Ridge EMC	U.S.	48,230	48,230	-	-	23,348	23,348	-	-	24,882	24,882	-	-
2018	SERC	C-1628	Brazos Electric Power Cooperative, Inc.	U.S.	17,013	17,013	-	-	8,236	8,236	-	-	8,777	8,777	-	-
2018	SERC	C-1463	Canton, MS	U.S.	4,237	4,237	-	-	2,051	2,051	-	-	2,186	2,186	-	-
2018	SERC	C-1277	Central Electric Power Cooperative Inc.	U.S.	598,030	598,030	-	-	289,508	289,508	-	-	308,522	308,522	-	-
2018	SERC	C-1667	Century Aluminum - Hawesville	U.S.	104,283	104,283	-	-	50,484	50,484	-	-	53,799	53,799	-	-
2018	SERC	C-1668	Century Aluminum - Sebree	U.S.	69,848	69,848	-	-	33,814	33,814	-	-	36,034	36,034	-	-
2018	SERC	C-1278	City of Blountstown FL	U.S.	1,141	1,141	-	-	553	553	-	-	589	589	-	-
2018	SERC	C-1279	City of Camden SC	U.S.	6,649	6,649	-	-	3,219	3,219	-	-	3,430	3,430	-	-
2018	SERC	C-1280	City of Collins MS	U.S.	1,548	1,548	-	-	749	749	-	-	799	799	-	-
2018	SERC	C-1281	City of Columbia MO	U.S.	40,853	40,853	-	-	19,777	19,777	-	-	21,076	21,076	-	-
2018	SERC	C-1282	City of Conway AR (Conway Corporation)	U.S.	34,258	34,258	-	-	16,584	16,584	-	-	17,674	17,674	-	-
2018	SERC	C-1284	City of Evergreen AL	U.S.	1,891	1,891	-	-	916	916	-	-	976	976	-	-
2018	SERC	C-1285	City of Hampton GA	U.S.	1,072	1,072	-	-	519	519	-	-	553	553	-	-
2018	SERC	C-1286	City of Hartford AL	U.S.	891	891	-	-	432	432	-	-	460	460	-	-
2018	SERC	C-1287	City of Henderson (KY) Municipal Power & Light	U.S.	20,546	20,546	-	-	9,947	9,947	-	-	10,600	10,600	-	-
2018	SERC	C-1288	City of North Little Rock AR (DENL)	U.S.	31,752	31,752	-	-	15,371	15,371	-	-	16,381	16,381	-	-
2018	SERC	C-1289	City of Orangeburg SC Department of Public Utilities	U.S.	27,689	27,689	-	-	13,404	13,404	-	-	14,285	14,285	-	-
2018	SERC	C-1290	City of Robertsdale AL	U.S.	2,939	2,939	-	-	1,423	1,423	-	-	1,516	1,516	-	-
2018	SERC	C-1291	City of Ruston LA (DERS)	U.S.	9,356	9,356	-	-	4,529	4,529	-	-	4,827	4,827	-	-
2018	SERC	C-1292	Seneca Light & Power	U.S.	5,515	5,515	-	-	2,670	2,670	-	-	2,845	2,845	-	-
2018	SERC	C-1115	City of Springfield (CWLP)	U.S.	58,848	58,848	-	-	28,488	28,488	-	-	30,359	30,359	-	-
2018	SERC	C-1465	City of Thayer, MO	U.S.	653	653	-	-	316	316	-	-	337	337	-	-
2018	SERC	C-1293	City of Troy AL	U.S.	14,005	14,005	-	-	6,780	6,780	-	-	7,225	7,225	-	-
2018	SERC	C-1294	City of West Memphis AR (West Memphis Utilities)	U.S.	13,086	13,086	-	-	6,335	6,335	-	-	6,751	6,751	-	-
2018	SERC	C-1583	Claiborne Electric Cooperative, Inc.	U.S.	22,767	22,767	-	-	11,021	11,021	-	-	11,745	11,745	-	-
2018	SERC	C-1584	Concordia Electric Cooperative, Inc.	U.S.	7,534	7,534	-	-	3,647	3,647	-	-	3,887	3,887	-	-
2018	SERC	C-1726	Cube Hydro Carolinas	U.S.	642	642	-	-	311	311	-	-	331	331	-	-
2018	SERC	C-1283	Dalton Utilities	U.S.	62,476	62,476	-	-	30,245	30,245	-	-	32,231	32,231	-	-
2018	SERC	C-1585	Dixie Electric Membership Corporation	U.S.	76,261	76,261	-	-	36,918	36,918	-	-	39,343	39,343	-	-
2018	SERC	C-1295	Dominion Virginia Power	U.S.	2,966,911	2,966,911	-	-	1,436,290	1,436,290	-	-	1,530,621	1,530,621	-	-
2018	SERC	C-1296	Duke Energy Carolinas, LLC	U.S.	2,910,274	2,910,274	-	-	1,408,871	1,408,871	-	-	1,501,402	1,501,402	-	-
2018	SERC	C-1466	Durant, MS	U.S.	850	850	-	-	411	411	-	-	438	438	-	-
2018	SERC	C-1478	LG&E and KU Services Co as agent for LG&E Co and KU Co	U.S.	1,167,931	1,167,931	-	-	565,398	565,398	-	-	602,532	602,532	-	-
2018	SERC	C-1297	East Kentucky Power Cooperative	U.S.	472,551	472,551	-	-	228,763	228,763	-	-	243,788	243,788	-	-
2018	SERC	C-1298	East Mississippi Electric Power Association	U.S.	14,602	14,602	-	-	7,069	7,069	-	-	7,533	7,533	-	-
2018	SERC	C-1669	Electricities of North Carolina Inc	U.S.	400,777	400,777	-	-	194,017	194,017	-	-	206,760	206,760	-	-
2018	SERC	C-1300	EnergyUnited EMC	U.S.	90,090	90,090	-	-	43,613	43,613	-	-	46,477	46,477	-	-
2018	SERC	C-1301	Entergy	U.S.	4,051,752	4,051,752	-	-	1,961,464	1,961,464	-	-	2,090,288	2,090,288	-	-
2018	SERC	C-1302	Fayetteville (NC) Public Works Commission	U.S.	72,302	72,302	-	-	35,002	35,002	-	-	37,301	37,301	-	-
2018	SERC	C-1303	Florida Public Utilities (FL Panhandle Load)	U.S.	9,809	9,809	-	-	4,749	4,749	-	-	5,061	5,061	-	-

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Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	SERC	C-1304	French Broad EMC	U.S.	18,815	18,815	-	-	9,109	9,109	-	-	9,707	9,707	-	-
2018	SERC	C-1305	Georgia Power Company	U.S.	2,920,018	2,920,018	-	-	1,413,589	1,413,589	-	-	1,506,429	1,506,429	-	-
2018	SERC	C-1306	Georgia System Optns Corporation	U.S.	1,364,622	1,364,622	-	-	660,617	660,617	-	-	704,005	704,005	-	-
2018	SERC	C-1479	Greenwood (MS) Utilities Commission	U.S.	9,223	9,223	-	-	4,465	4,465	-	-	4,758	4,758	-	-
2018	SERC	C-1307	Greenwood (SC) Commissioners of Public Works	U.S.	10,869	10,869	-	-	5,262	5,262	-	-	5,607	5,607	-	-
2018	SERC	C-1308	Gulf Power Company	U.S.	388,382	388,382	-	-	188,017	188,017	-	-	200,365	200,365	-	-
2018	SERC	C-1586	Haywood EMC	U.S.	11,055	11,055	-	-	5,352	5,352	-	-	5,703	5,703	-	-
2018	SERC	C-1984	Hoosier Energy REC, Inc	U.S.	15,017	15,017	-	-	7,270	7,270	-	-	7,747	7,747	-	-
2018	SERC	C-1309	Illinois Municipal Electric Agency	U.S.	61,647	61,647	-	-	29,844	29,844	-	-	31,804	31,804	-	-
2018	SERC	C-1480	Itta Bena, MS	U.S.	491	491	-	-	238	238	-	-	253	253	-	-
2018	SERC	C-1587	Jefferson Davis Electric Cooperative, Inc.	U.S.	9,390	9,390	-	-	4,546	4,546	-	-	4,844	4,844	-	-
2018	SERC	C-1617	Kentucky Municipal Power	U.S.	23,430	23,430	-	-	11,343	11,343	-	-	12,087	12,087	-	-
2018	SERC	C-1481	Kosciusko, MS	U.S.	2,512	2,512	-	-	1,216	1,216	-	-	1,296	1,296	-	-
2018	SERC	C-1482	Leland, MS	U.S.	1,032	1,032	-	-	499	499	-	-	532	532	-	-
2018	SERC	C-1313	McCormick Commission of Public Works	U.S.	554	554	-	-	268	268	-	-	286	286	-	-
2018	SERC	C-1314	Mississippi Power Company	U.S.	342,124	342,124	-	-	165,623	165,623	-	-	176,501	176,501	-	-
2018	SERC	C-1630	Mt. Carmel Public Utility	U.S.	3,400	3,400	-	-	1,646	1,646	-	-	1,754	1,754	-	-
2018	SERC	C-1315	Municipal Electric Authority of Georgia	U.S.	374,910	374,910	-	-	181,495	181,495	-	-	193,415	193,415	-	-
2018	SERC	C-1316	N.C. Electric Membership Corp.	U.S.	447,438	447,438	-	-	216,606	216,606	-	-	230,832	230,832	-	-
2018	SERC	C-1588	Northeast Louisiana Power Cooperative, Inc.	U.S.	10,232	10,232	-	-	4,953	4,953	-	-	5,279	5,279	-	-
2018	SERC	C-1574	Northern Virginia Electric Cooperative	U.S.	183,340	183,340	-	-	88,755	88,755	-	-	94,585	94,585	-	-
2018	SERC	C-1319	Old Dominion Electric Cooperative	U.S.	169,698	169,698	-	-	82,151	82,151	-	-	87,547	87,547	-	-
2018	SERC	C-1618	Osceola (Arkansas) Municipal Light and Power	U.S.	5,127	5,127	-	-	2,482	2,482	-	-	2,645	2,645	-	-
2018	SERC	C-1320	Owensboro (KY) Municipal Utilities	U.S.	27,699	27,699	-	-	13,409	13,409	-	-	14,290	14,290	-	-
2018	SERC	C-1321	Piedmont EMC in Duke and Progress Areas	U.S.	18,354	18,354	-	-	8,885	8,885	-	-	9,469	9,469	-	-
2018	SERC	C-1323	Piedmont Municipal Power Agency (PMPA)	U.S.	81,602	81,602	-	-	39,504	39,504	-	-	42,098	42,098	-	-
2018	SERC	C-1589	Pointe Coupee Electric Memb. Corp.	U.S.	8,470	8,470	-	-	4,100	4,100	-	-	4,369	4,369	-	-
2018	SERC	C-1266	PowerSouth Energy	U.S.	301,230	301,230	-	-	145,826	145,826	-	-	155,404	155,404	-	-
2018	SERC	C-1330	Prairie Power, Inc.	U.S.	53,778	53,778	-	-	26,034	26,034	-	-	27,744	27,744	-	-
2018	SERC	C-1706	Duke Energy Progress	U.S.	1,558,998	1,558,998	-	-	754,715	754,715	-	-	804,283	804,283	-	-
2018	SERC	C-1325	Rutherford EMC	U.S.	46,595	46,595	-	-	22,557	22,557	-	-	24,038	24,038	-	-
2018	SERC	C-1631	Sam Rayburn G&T Electric Cooperative Inc.	U.S.	-	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1326	South Carolina Electric & Gas Company	U.S.	788,964	788,964	-	-	381,939	381,939	-	-	407,024	407,024	-	-
2018	SERC	C-1327	South Carolina Public Service Authority	U.S.	294,694	294,694	-	-	142,662	142,662	-	-	152,032	152,032	-	-
2018	SERC	C-1590	South Louisiana Electric Cooperative Association	U.S.	19,294	19,294	-	-	9,340	9,340	-	-	9,954	9,954	-	-
2018	SERC	C-1328	Cooperative Energy (Formerly SMEPA)	U.S.	336,837	336,837	-	-	163,064	163,064	-	-	173,773	173,773	-	-
2018	SERC	C-1329	Southern Illinois Power Cooperative	U.S.	52,763	52,763	-	-	25,543	25,543	-	-	27,220	27,220	-	-
2018	SERC	C-1591	Southwest Louisiana Electric Membership Corporation	U.S.	86,536	86,536	-	-	41,892	41,892	-	-	44,644	44,644	-	-
2018	SERC	C-1619	Southwestern Electric Cooperative, Inc.	U.S.	15,889	15,889	-	-	7,692	7,692	-	-	8,197	8,197	-	-
2018	SERC	C-1331	Tennessee Valley Authority	U.S.	5,412,585	5,412,585	-	-	2,620,247	2,620,247	-	-	2,792,338	2,792,338	-	-
2018	SERC	C-1632	Tex-La Electric Cooperative of Texas, Inc	U.S.	72,489	72,489	-	-	35,092	35,092	-	-	37,397	37,397	-	-
2018	SERC	C-1332	Tombigbee Electric Cooperative Inc.	U.S.	4,463	4,463	-	-	2,161	2,161	-	-	2,303	2,303	-	-
2018	SERC	C-1594	Town of Sharpsburg, N.C.	U.S.	629	629	-	-	304	304	-	-	324	324	-	-
2018	SERC	C-1595	Town of Stantonsburg, N.C. JRO	U.S.	1,912	1,912	-	-	926	926	-	-	986	986	-	-
2018	SERC	C-1333	Town of Waynesville NC	U.S.	2,965	2,965	-	-	1,435	1,435	-	-	1,530	1,530	-	-
2018	SERC	C-1334	Town of Winnsboro SC	U.S.	2,106	2,106	-	-	1,019	1,019	-	-	1,086	1,086	-	-
2018	SERC	C-1335	Town of Winterville NC	U.S.	1,846	1,846	-	-	894	894	-	-	952	952	-	-
2018	SERC	C-1597	Washington-St. Tammany Electric Cooperative, Inc.	U.S.	36,453	36,453	-	-	17,647	17,647	-	-	18,806	18,806	-	-
2018	SERC	C-1435	Arkansas Electric Cooperative Corporation	U.S.	364,814	364,814	-	-	176,607	176,607	-	-	188,207	188,207	-	-
2018	SERC	C-1557	City of Clarksdale, Mississippi	U.S.	4,638	4,638	-	-	2,245	2,245	-	-	2,392	2,392	-	-
2018	SERC	C-1708	City of Abbeville	U.S.	4,605	4,605	-	-	2,229	2,229	-	-	2,376	2,376	-	-
2018	SERC	C-1558	Hope Water & Light (HWL)	U.S.	10,337	10,337	-	-	5,004	5,004	-	-	5,333	5,333	-	-
2018	SERC	C-1559	City of Minden	U.S.	4,986	4,986	-	-	2,414	2,414	-	-	2,572	2,572	-	-
2018	SERC	C-1249	Cleco Power LLC	U.S.	386,533	386,533	-	-	187,122	187,122	-	-	199,411	199,411	-	-
2018	SERC	C-1648	Jonesboro City Water & Light	U.S.	48,338	48,338	-	-	23,400	23,400	-	-	24,937	24,937	-	-
2018	SERC	C-1471	Lafayette Utilities System	U.S.	69,510	69,510	-	-	33,650	33,650	-	-	35,860	35,860	-	-
2018	SERC	C-1253	Louisiana Energy & Power Authority (LEPA)	U.S.	32,737	32,737	-	-	15,848	15,848	-	-	16,889	16,889	-	-
2018	SERC	C-1443	Missouri Joint Municipal Electric Utility Commission	U.S.	69,668	69,668	-	-	33,726	33,726	-	-	35,941	35,941	-	-
2018	SERC	C-1639	OzMo Ozark Missouri, West Plains MO	U.S.	6,554	6,554	-	-	3,173	3,173	-	-	3,381	3,381	-	-
2018	SERC	C-1653	Poplar Bluff Municipal Utilities	U.S.	12,773	12,773	-	-	6,184	6,184	-	-	6,590	6,590	-	-
2018	SERC	C-1636	City of Prescott	U.S.	2,926	2,926	-	-	1,416	1,416	-	-	1,510	1,510	-	-
2018	SERC	C-1561	Public Service Commission of Yazoo City of Mississippi	U.S.	4,063	4,063	-	-	1,967	1,967	-	-	2,096	2,096	-	-
2018	SERC	C-1654	Sikeston Board of Municipal Utilities	U.S.	12,470	12,470	-	-	6,037	6,037	-	-	6,433	6,433	-	-
2018	SERC	C-1074	Alachua, City of	U.S.	4,552	4,552	-	-	2,204	2,204	-	-	2,348	2,348	-	-
2018	SERC	C-1075	Bartow, City of	U.S.	9,686	9,686	-	-	4,689	4,689	-	-	4,997	4,997	-	-
2018	SERC	C-1076	Chattahoochee, City of	U.S.	1,201	1,201	-	-	581	581	-	-	620	620	-	-
2018	SERC	C-1077	Florida Keys Electric Cooperative Assn	U.S.	24,414	24,414	-	-	11,819	11,819	-	-	12,595	12,595	-	-
2018	SERC	C-1078	Florida Power & Light Co.	U.S.	3,829,471	3,829,471	-	-	1,853,857	1,853,857	-	-	1,975,614	1,975,614	-	-
2018	SERC	C-1079	Florida Public Utilities Company	U.S.	11,578	11,578	-	-	5,605	5,605	-	-	5,973	5,973	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	SERC	C-1080	Gainesville Regional Utilities	U.S.	61,435	61,435	-	-	29,741	29,741	-	-	31,694	31,694	-	-
2018	SERC	C-1081	Homestead, City of	U.S.	17,632	17,632	-	-	8,536	8,536	-	-	9,097	9,097	-	-
2018	SERC	C-1082	JEA	U.S.	423,872	423,872	-	-	205,198	205,198	-	-	218,674	218,674	-	-
2018	SERC	C-1083	Lakeland Electric	U.S.	105,199	105,199	-	-	50,927	50,927	-	-	54,272	54,272	-	-
2018	SERC	C-1626	Lee County Electric Cooperative, Inc	U.S.	139,769	139,769	-	-	67,663	67,663	-	-	72,106	72,106	-	-
2018	SERC	C-1661	City of Lake Worth	U.S.	15,879	15,879	-	-	7,687	7,687	-	-	8,192	8,192	-	-
2018	SERC	C-1084	Mount Dora, City of	U.S.	3,086	3,086	-	-	1,494	1,494	-	-	1,592	1,592	-	-
2018	SERC	C-1085	New Smyrna Beach, Utilities Commission of	U.S.	14,655	14,655	-	-	7,095	7,095	-	-	7,561	7,561	-	-
2018	SERC	C-1086	Orlando Utilities Commission	U.S.	203,461	203,461	-	-	98,496	98,496	-	-	104,965	104,965	-	-
2018	SERC	C-1087	Duke Energy Florida	U.S.	1,404,868	1,404,868	-	-	680,101	680,101	-	-	724,768	724,768	-	-
2018	SERC	C-1088	Quincy, City of	U.S.	4,191	4,191	-	-	2,029	2,029	-	-	2,162	2,162	-	-
2018	SERC	C-1089	Reedy Creek Improvement District	U.S.	39,896	39,896	-	-	19,314	19,314	-	-	20,582	20,582	-	-
2018	SERC	C-1090	St. Cloud, City of (OUC)	U.S.	26,720	26,720	-	-	12,935	12,935	-	-	13,785	13,785	-	-
2018	SERC	C-1091	Tallahassee, City of	U.S.	93,290	93,290	-	-	45,162	45,162	-	-	48,128	48,128	-	-
2018	SERC	C-1092	Tampa Electric Company	U.S.	683,561	683,561	-	-	330,914	330,914	-	-	352,647	352,647	-	-
2018	SERC	C-1093	Wauchula, City of	U.S.	2,250	2,250	-	-	1,089	1,089	-	-	1,161	1,161	-	-
2018	SERC	C-1094	Williston, City of	U.S.	1,204	1,204	-	-	583	583	-	-	621	621	-	-
2018	SERC	C-1095	Winter Park, City of	U.S.	14,804	14,804	-	-	7,167	7,167	-	-	7,637	7,637	-	-
2018	SERC	C-1724	Moore Haven, City of	U.S.	529	529	-	-	256	256	-	-	273	273	-	-
2018	SERC	C-1072	Florida Municipal Power Agency	U.S.	202,677	202,677	-	-	98,116	98,116	-	-	104,560	104,560	-	-
2018	SERC	C-1073	Seminole Electric Cooperative	U.S.	496,585	496,585	-	-	240,398	240,398	-	-	256,187	256,187	-	-
TOTAL SERC					43,534,098	43,534,098	-	-	21,074,975	21,074,975	-	-	22,459,123	22,459,123	-	-
2018	Texas RE	C-1019	ERCOT	U.S.	19,399,029	19,399,029	-	-	6,054,901	6,054,901	-	-	13,344,128	13,344,128	-	-
TOTAL ERCOT					19,399,029	19,399,029	-	-	6,054,901	6,054,901	-	-	13,344,128	13,344,128	-	-
2018	WECC		Alberta Electric System Operator	Canada	1,791,438	-	1,791,438	-	730,335	-	730,335	-	1,061,104	-	1,061,104	-
2018	WECC		British Columbia Hydro & Power Authority	Canada	3,202,347	-	3,202,347	-	1,009,705	-	1,009,705	-	2,192,642	-	2,192,642	-
2018	WECC		Centro Nacional de Control de Energia	Mexico	712,382	-	-	712,382	224,615	-	224,615	-	487,767	-	-	487,767
2018	WECC		3 Phases Renewables	U.S.	185	185	-	-	63	63	-	-	122	122	-	-
2018	WECC		Aguila Irrigation District - APS	U.S.	1,567	1,567	-	-	534	534	-	-	1,033	1,033	-	-
2018	WECC		Aha Macav Power Service	U.S.	879	879	-	-	299	299	-	-	580	580	-	-
2018	WECC		Ajo Improvement District	U.S.	514	514	-	-	175	175	-	-	339	339	-	-
2018	WECC		Arizona Electric Power Cooperative, Inc	U.S.	170,338	170,338	-	-	58,023	58,023	-	-	112,315	112,315	-	-
2018	WECC		Arizona Public Service Company	U.S.	1,359,114	1,359,114	-	-	462,962	462,962	-	-	896,152	896,152	-	-
2018	WECC		Arkansas River Power Authority (ARPA)	U.S.	12,566	12,566	-	-	4,281	4,281	-	-	8,286	8,286	-	-
2018	WECC		Avangrid Renewables	U.S.	4,711	4,711	-	-	1,605	1,605	-	-	3,106	3,106	-	-
2018	WECC		Avista Corporation	U.S.	442,765	442,765	-	-	150,821	150,821	-	-	291,944	291,944	-	-
2018	WECC		Barrick Goldstrike Mines Inc.	U.S.	65,650	65,650	-	-	22,363	22,363	-	-	43,287	43,287	-	-
2018	WECC		Basin Electric Power Cooperative - CM	U.S.	98,702	98,702	-	-	33,621	33,621	-	-	65,081	65,081	-	-
2018	WECC		Basin Electric Power Cooperative - NW	U.S.	38,300	38,300	-	-	13,046	13,046	-	-	25,253	25,253	-	-
2018	WECC		Basin Electric Power Cooperative - UG	U.S.	6,997	6,997	-	-	2,384	2,384	-	-	4,614	4,614	-	-
2018	WECC		Beartooth Electric Cooperative	U.S.	3,659	3,659	-	-	1,246	1,246	-	-	2,412	2,412	-	-
2018	WECC		Big Horn County Electric Cooperative	U.S.	3,295	3,295	-	-	1,122	1,122	-	-	2,172	2,172	-	-
2018	WECC		Black Hills Energy	U.S.	99,889	99,889	-	-	34,026	34,026	-	-	65,863	65,863	-	-
2018	WECC		Black Hills Power/Cheyenne Light Fuel & Power	U.S.	210,090	210,090	-	-	71,564	71,564	-	-	138,526	138,526	-	-
2018	WECC		Black Hills State University South Dakota	U.S.	941	941	-	-	320	320	-	-	620	620	-	-
2018	WECC		Bonneville Power Administration	U.S.	9,386	9,386	-	-	3,197	3,197	-	-	6,189	6,189	-	-
2018	WECC		Bonneville Power Administration-Power Services	U.S.	297,152	297,152	-	-	101,220	101,220	-	-	195,932	195,932	-	-
2018	WECC		Bonneville Power Administration-Transmission	U.S.	2,604,319	2,604,319	-	-	887,122	887,122	-	-	1,717,197	1,717,197	-	-
2018	WECC		Buckeye Water Conservation and Drainage District - APS	U.S.	1,073	1,073	-	-	365	365	-	-	707	707	-	-
2018	WECC		Bureau of Reclamation (Desalter) - c/o DSW EMMO	U.S.	5	5	-	-	2	2	-	-	3	3	-	-
2018	WECC		Bureau of Reclamation (Wellfield)	U.S.	483	483	-	-	164	164	-	-	318	318	-	-
2018	WECC		Burlington	U.S.	1,467	1,467	-	-	500	500	-	-	967	967	-	-
2018	WECC		Caesars Entertainment LLC/North	U.S.	2,927	2,927	-	-	997	997	-	-	1,930	1,930	-	-
2018	WECC		Caesars Entertainment LLC/South	U.S.	22,536	22,536	-	-	7,677	7,677	-	-	14,860	14,860	-	-
2018	WECC		California Independent System Operator	U.S.	10,444,797	10,444,797	-	-	3,557,863	3,557,863	-	-	6,886,934	6,886,934	-	-
2018	WECC		Calpine Energy Solutions, LLC.	U.S.	63,003	63,003	-	-	21,461	21,461	-	-	41,542	41,542	-	-
2018	WECC		Central Arizona Water Conservation District - 1	U.S.	113,814	113,814	-	-	38,769	38,769	-	-	75,045	75,045	-	-
2018	WECC		City of Aztec Electric Dept	U.S.	1,699	1,699	-	-	579	579	-	-	1,121	1,121	-	-
2018	WECC		City of Fallon	U.S.	4,504	4,504	-	-	1,534	1,534	-	-	2,970	2,970	-	-
2018	WECC		City of Farmington	U.S.	47,035	47,035	-	-	16,022	16,022	-	-	31,013	31,013	-	-
2018	WECC		City of Gallup	U.S.	9,855	9,855	-	-	3,357	3,357	-	-	6,498	6,498	-	-
2018	WECC		City of Henderson	U.S.	1,917	1,917	-	-	653	653	-	-	1,264	1,264	-	-
2018	WECC		City of Las Vegas	U.S.	2,024	2,024	-	-	689	689	-	-	1,334	1,334	-	-
2018	WECC		City of Mesa	U.S.	12,605	12,605	-	-	4,294	4,294	-	-	8,311	8,311	-	-
2018	WECC		City of North Las Vegas	U.S.	1,014	1,014	-	-	345	345	-	-	669	669	-	-
2018	WECC		City of Page	U.S.	3,769	3,769	-	-	1,284	1,284	-	-	2,485	2,485	-	-
2018	WECC		City of Redding	U.S.	35,555	35,555	-	-	12,111	12,111	-	-	23,444	23,444	-	-

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Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	WECC		City of Roseville	U.S.	56,413	56,413	-	-	19,216	19,216	-	-	37,196	37,196	-	-
2018	WECC		City of Tacoma DBA Tacoma Power	U.S.	228,506	228,506	-	-	77,837	77,837	-	-	150,669	150,669	-	-
2018	WECC		City of Williams	U.S.	2,209	2,209	-	-	752	752	-	-	1,457	1,457	-	-
2018	WECC		Clark County Water Reclamation District	U.S.	3,767	3,767	-	-	1,283	1,283	-	-	2,484	2,484	-	-
2018	WECC		Colorado River Agency-Bureau of Indian Affairs	U.S.	1,162	1,162	-	-	396	396	-	-	766	766	-	-
2018	WECC		Colorado River Commission of Nevada	U.S.	17,959	17,959	-	-	6,118	6,118	-	-	11,842	11,842	-	-
2018	WECC		Colorado Springs Utilities	U.S.	221,985	221,985	-	-	75,616	75,616	-	-	146,369	146,369	-	-
2018	WECC		Colorado Springs Utilities	U.S.	3,198	3,198	-	-	1,089	1,089	-	-	2,108	2,108	-	-
2018	WECC		Constellation New Energy	U.S.	22,500	22,500	-	-	7,511	7,511	-	-	14,539	14,539	-	-
2018	WECC		Deseret Generation & Transmission Cooperative	U.S.	6,186	6,186	-	-	2,107	2,107	-	-	4,079	4,079	-	-
2018	WECC		Douglas Palisades / PUD No. 1 of DC	U.S.	901	901	-	-	307	307	-	-	594	594	-	-
2018	WECC		El Paso Electric Company	U.S.	404,609	404,609	-	-	137,824	137,824	-	-	266,785	266,785	-	-
2018	WECC		Electrical District #2	U.S.	9,516	9,516	-	-	3,242	3,242	-	-	6,275	6,275	-	-
2018	WECC		Electrical District #2 - Coolidge Generating Station	U.S.	437	437	-	-	149	149	-	-	288	288	-	-
2018	WECC		Electrical District No. 6 of Pinal County - APS	U.S.	49	49	-	-	17	17	-	-	32	32	-	-
2018	WECC		Electrical District No. 7 of Maricopa County - APS	U.S.	2,190	2,190	-	-	746	746	-	-	1,444	1,444	-	-
2018	WECC		Electrical District No. 8 of Maricopa County - APS	U.S.	17,535	17,535	-	-	5,973	5,973	-	-	11,562	11,562	-	-
2018	WECC		Francis E. Warren Air Force Base	U.S.	1,108	1,108	-	-	377	377	-	-	731	731	-	-
2018	WECC		Grand Valley Power	U.S.	11,775	11,775	-	-	4,011	4,011	-	-	7,764	7,764	-	-
2018	WECC		Harquahala Valley Power Districts - APS	U.S.	5,295	5,295	-	-	1,804	1,804	-	-	3,491	3,491	-	-
2018	WECC		Holy Cross Energy	U.S.	50,594	50,594	-	-	17,234	17,234	-	-	33,360	33,360	-	-
2018	WECC		Idaho Power Company	U.S.	746,060	746,060	-	-	254,134	254,134	-	-	491,926	491,926	-	-
2018	WECC		Imperial Irrigation District	U.S.	176,929	176,929	-	-	60,268	60,268	-	-	116,661	116,661	-	-
2018	WECC		Intermountain Rural Electric Association	U.S.	109,904	109,904	-	-	37,437	37,437	-	-	72,467	72,467	-	-
2018	WECC		Jicarilla Apache Nation Power Authority	U.S.	1,036	1,036	-	-	353	353	-	-	683	683	-	-
2018	WECC		Kaiser Aluminum Fabricated Products LLC	U.S.	14,616	14,616	-	-	4,979	4,979	-	-	9,637	9,637	-	-
2018	WECC		Kit Carson Electric Inc	U.S.	13,918	13,918	-	-	4,741	4,741	-	-	9,177	9,177	-	-
2018	WECC		Las Vegas Valley Water District	U.S.	5,137	5,137	-	-	1,750	1,750	-	-	3,387	3,387	-	-
2018	WECC		Little Colorado Water District	U.S.	26	26	-	-	9	9	-	-	17	17	-	-
2018	WECC		Los Angeles Department of Water and Power	U.S.	1,304,686	1,304,686	-	-	444,422	444,422	-	-	860,264	860,264	-	-
2018	WECC		Maricopa County Municipal Water Conservation Dist No. 1 - APS	U.S.	2,538	2,538	-	-	865	865	-	-	1,673	1,673	-	-
2018	WECC		McMullen Valley Water Conservation & Drainage District - APS	U.S.	6,505	6,505	-	-	2,216	2,216	-	-	4,289	4,289	-	-
2018	WECC		Merced Irrigation District	U.S.	24,653	24,653	-	-	8,398	8,398	-	-	16,255	16,255	-	-
2018	WECC		MGM Resorts International	U.S.	43,260	43,260	-	-	14,736	14,736	-	-	28,524	28,524	-	-
2018	WECC		Modesto Irrigation District	U.S.	118,574	118,574	-	-	40,390	40,390	-	-	78,183	78,183	-	-
2018	WECC		Montana-Dakota Utilities Co.	U.S.	1,001	1,001	-	-	341	341	-	-	660	660	-	-
2018	WECC		Mt. Wheeler Power	U.S.	26,631	26,631	-	-	9,071	9,071	-	-	17,559	17,559	-	-
2018	WECC		Municipal Energy Agency of Nebraska	U.S.	30,091	30,091	-	-	10,250	10,250	-	-	19,841	19,841	-	-
2018	WECC		Municipal Energy Agency of Nebraska - 1	U.S.	8,425	8,425	-	-	2,870	2,870	-	-	5,555	5,555	-	-
2018	WECC		Navajo Agricultural Products Industry (NAPI)	U.S.	242	242	-	-	82	82	-	-	160	160	-	-
2018	WECC		Navajo Tribal Utility Authority-Arizona	U.S.	2,721	2,721	-	-	927	927	-	-	1,794	1,794	-	-
2018	WECC		Navajo Tribal Utility Authority-Colorado	U.S.	14,805	14,805	-	-	5,043	5,043	-	-	9,762	9,762	-	-
2018	WECC		Navajo Tribal Utility Authority-New Mexico	U.S.	8,734	8,734	-	-	2,975	2,975	-	-	5,759	5,759	-	-
2018	WECC		Nebraska Public Power Marketing	U.S.	177	177	-	-	60	60	-	-	117	117	-	-
2018	WECC		Needles Public Utilities Authority	U.S.	1,913	1,913	-	-	652	652	-	-	1,261	1,261	-	-
2018	WECC		Nevada Power Company dba NV Energy	U.S.	1,480,961	1,480,961	-	-	504,467	504,467	-	-	976,494	976,494	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC	U.S.	13,684	13,684	-	-	4,661	4,661	-	-	9,023	9,023	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC - 1	U.S.	455,140	455,140	-	-	155,037	155,037	-	-	300,103	300,103	-	-
2018	WECC		Okanogan PUD	U.S.	29,391	29,391	-	-	10,011	10,011	-	-	19,379	19,379	-	-
2018	WECC		Overton Power District No. 5	U.S.	19,420	19,420	-	-	6,615	6,615	-	-	12,805	12,805	-	-
2018	WECC		PacifiCorp (EasternBalAuth)	U.S.	2,387,867	2,387,867	-	-	813,391	813,391	-	-	1,574,476	1,574,476	-	-
2018	WECC		PacifiCorp (IPC)	U.S.	94	94	-	-	32	32	-	-	62	62	-	-
2018	WECC		PacifiCorp (Portland)	U.S.	202	202	-	-	69	69	-	-	133	133	-	-
2018	WECC		PacifiCorp (WAPA-CO-MO)	U.S.	5,102	5,102	-	-	1,738	1,738	-	-	3,364	3,364	-	-
2018	WECC		PacifiCorp West (PACW)	U.S.	971,225	971,225	-	-	330,833	330,833	-	-	640,392	640,392	-	-
2018	WECC		Pend Oreille County PUD No. 1	U.S.	47,984	47,984	-	-	16,345	16,345	-	-	31,639	31,639	-	-
2018	WECC		Peppermill Hotel Casino	U.S.	1,967	1,967	-	-	670	670	-	-	1,297	1,297	-	-
2018	WECC		Platte River Power Authority	U.S.	153,867	153,867	-	-	52,413	52,413	-	-	101,455	101,455	-	-
2018	WECC		Portland General Electric Company	U.S.	834,859	834,859	-	-	284,382	284,382	-	-	550,477	550,477	-	-
2018	WECC		Public Service Company of Colorado (Xcel)	U.S.	1,468,839	1,468,839	-	-	500,338	500,338	-	-	968,501	968,501	-	-
2018	WECC		Public Service Company of Colorado (Xcel)-(WAPA-CO-MO)	U.S.	5,509	5,509	-	-	1,877	1,877	-	-	3,632	3,632	-	-
2018	WECC		Public Service Company of New Mexico	U.S.	439,456	439,456	-	-	149,694	149,694	-	-	289,762	289,762	-	-
2018	WECC		Public Utility District No. 1 of Chelan County	U.S.	82,872	82,872	-	-	28,229	28,229	-	-	54,643	54,643	-	-
2018	WECC		PUD No. 1 of Douglas County	U.S.	46,496	46,496	-	-	15,838	15,838	-	-	30,658	30,658	-	-
2018	WECC		PUD No. 2 of Grant County	U.S.	235,177	235,177	-	-	80,109	80,109	-	-	155,068	155,068	-	-
2018	WECC		PUD No. 2 of Grant County - 1	U.S.	4,353	4,353	-	-	1,483	1,483	-	-	2,870	2,870	-	-
2018	WECC		Puget Sound Energy, Inc.	U.S.	1,119,471	1,119,471	-	-	381,331	381,331	-	-	738,140	738,140	-	-
2018	WECC		Raton Public Service	U.S.	2,304	2,304	-	-	785	785	-	-	1,519	1,519	-	-
2018	WECC		Roosevelt Irrigation District - APS	U.S.	2,077	2,077	-	-	707	707	-	-	1,369	1,369	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	WECC		Sacramento Municipal Utility District	U.S.	528,243	528,243	-	-	179,938	179,938	-	-	348,305	348,305	-	-
2018	WECC		Salt River Project	U.S.	1,434,087	1,434,087	-	-	488,500	488,500	-	-	945,587	945,587	-	-
2018	WECC		Seattle City Light	U.S.	454,340	454,340	-	-	154,764	154,764	-	-	299,576	299,576	-	-
2018	WECC		Shell Energy North America	U.S.	8,007	8,007	-	-	2,728	2,728	-	-	5,280	5,280	-	-
2018	WECC		Silver State Energy Association	U.S.	31,701	31,701	-	-	10,799	10,799	-	-	20,903	20,903	-	-
2018	WECC		Southern Nevada Water Authority	U.S.	5,769	5,769	-	-	1,965	1,965	-	-	3,804	3,804	-	-
2018	WECC		Switch-North	U.S.	1,258	1,258	-	-	429	429	-	-	830	830	-	-
2018	WECC		Switch-South	U.S.	25,089	25,089	-	-	8,546	8,546	-	-	16,543	16,543	-	-
2018	WECC		The Incorporated County of Los Alamos	U.S.	28,517	28,517	-	-	9,714	9,714	-	-	18,803	18,803	-	-
2018	WECC		Tohono O'Odham Utility Authority	U.S.	2,915	2,915	-	-	993	993	-	-	1,922	1,922	-	-
2018	WECC		Tonopah Irrigation District - APS	U.S.	1,652	1,652	-	-	563	563	-	-	1,089	1,089	-	-
2018	WECC		Town of Center	U.S.	809	809	-	-	276	276	-	-	534	534	-	-
2018	WECC		Town of Fredonia	U.S.	529	529	-	-	180	180	-	-	349	349	-	-
2018	WECC		Town of Wickenburg	U.S.	1,251	1,251	-	-	426	426	-	-	825	825	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability	U.S.	404,620	404,620	-	-	137,828	137,828	-	-	266,792	266,792	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability - 1	U.S.	127,123	127,123	-	-	43,303	43,303	-	-	83,821	83,821	-	-
2018	WECC		Tri-State Generation & Transmission Association, Inc.	U.S.	129,831	129,831	-	-	44,225	44,225	-	-	85,606	85,606	-	-
2018	WECC		Truckee Donner Public Utility District	U.S.	7,465	7,465	-	-	2,543	2,543	-	-	4,922	4,922	-	-
2018	WECC		Tucson Electric Power Company	U.S.	691,820	691,820	-	-	235,658	235,658	-	-	456,162	456,162	-	-
2018	WECC		Turlock Irrigation District	U.S.	102,126	102,126	-	-	34,788	34,788	-	-	67,339	67,339	-	-
2018	WECC		U.S. Army Yuma Proving Ground	U.S.	942	942	-	-	321	321	-	-	621	621	-	-
2018	WECC		US Dept of Energy - Kirtland AFB	U.S.	20,194	20,194	-	-	6,879	6,879	-	-	13,315	13,315	-	-
2018	WECC		Western Area Power - Loveland, CO	U.S.	8,131	8,131	-	-	2,770	2,770	-	-	5,361	5,361	-	-
2018	WECC		Western Area Power - Loveland, CO - CM	U.S.	96,488	96,488	-	-	32,867	32,867	-	-	63,621	63,621	-	-
2018	WECC		Western Area Power Administration - CRSP	U.S.	97,471	97,471	-	-	33,202	33,202	-	-	64,269	64,269	-	-
2018	WECC		Western Area Power Administration-Desert Southwest Region	U.S.	79,329	79,329	-	-	27,022	27,022	-	-	52,307	52,307	-	-
2018	WECC		Western Area Power Administration-Sierra Nevada Region	U.S.	71,458	71,458	-	-	24,341	24,341	-	-	47,117	47,117	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	18,079	18,079	-	-	6,158	6,158	-	-	11,920	11,920	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	382	382	-	-	130	130	-	-	252	252	-	-
2018	WECC		Wynn Las Vegas	U.S.	8,327	8,327	-	-	2,836	2,836	-	-	5,490	5,490	-	-
2018	WECC		Wyoming Municipal Power Agency	U.S.	10,339	10,339	-	-	3,522	3,522	-	-	6,817	6,817	-	-
2018	WECC		Yampa Valley Electric Association	U.S.	26,629	26,629	-	-	9,071	9,071	-	-	17,558	17,558	-	-
TOTAL WECC					39,870,528.47	34,164,361	4,993,785	712,382	13,602,228	11,637,574	1,740,039	224,615	26,268,300	22,526,787	3,253,746	487,767
TOTAL ERO					188,723,535	170,657,889	17,353,264	712,382	72,011,373	65,130,829	6,655,929	224,615	116,712,162	105,527,060	10,697,335	487,767

Summary by Regional Entity																
2018	MRO				24,874,226	22,437,677	2,436,549	-	7,890,975	7,134,967	756,008	-	16,983,251	15,302,710	1,680,541	-
2018	NPCC				24,056,207	14,133,277	9,922,930	-	8,717,470	4,557,588	4,159,882	-	15,338,737	9,575,689	5,763,048	-
2018	RF				36,989,446	36,989,446	-	-	14,670,823	14,670,823	-	-	22,318,623	22,318,623	-	-
2018	SERC				43,534,098	43,534,098	-	-	21,074,975	21,074,975	-	-	22,459,123	22,459,123	-	-
2018	Texas RE				19,399,029	19,399,029	-	-	6,054,901	6,054,901	-	-	13,344,128	13,344,128	-	-
2018	WECC				39,870,528	34,164,361	4,993,785	712,382	13,602,228	11,637,574	1,740,039	224,615	26,268,300	22,526,787	3,253,746	487,767
Total					188,723,535	170,657,889	17,353,264	712,382	72,011,373	65,130,829	6,655,929	224,615	116,712,162	105,527,060	10,697,335	487,767

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	MRO	C-1217	Manitoba Hydro	Canada	349,831	-	349,831	-	342,651	-	342,651	-	-	-	7,180	-	7,180	-
2018	MRO	C-1235	SaskPower	Canada	406,177	-	406,177	-	397,841	-	397,841	-	-	-	8,336	-	8,336	-
2018	MRO	C-1707	AEP-VEMCO	U.S.	11,244	11,244	-	-	11,013	11,013	-	-	-	-	231	231	-	-
2018	MRO	C-1195	Alliant Energy (ALTE- WPL & ALTW IPL)	U.S.	471,100	471,100	-	-	461,432	461,432	-	-	-	-	9,669	9,669	-	-
2018	MRO	C-1246	American Electric Power Service Corporation	U.S.	611,689	611,689	-	-	599,135	599,135	-	-	-	-	12,554	12,554	-	-
2018	MRO	C-1196	Ames Municipal Electric System	U.S.	12,706	12,706	-	-	12,445	12,445	-	-	-	-	261	261	-	-
2018	MRO	C-1986	Arkansas Electric Cooperative Corporation (AECC)	U.S.	70,248	70,248	-	-	68,807	68,807	-	-	-	-	1,442	1,442	-	-
2018	MRO	C-1604	Atlantic Municipal Utilities (AMU)	U.S.	1,908	1,908	-	-	1,868	1,868	-	-	-	-	39	39	-	-
2018	MRO	C-1199	Basin Electric Power Cooperative (BEPCC)	U.S.	338,650	338,650	-	-	331,699	331,699	-	-	-	-	6,950	6,950	-	-
2018	MRO	C-1247	Board of Public Utilities (Kansas City, KS) (BPU)	U.S.	40,598	40,598	-	-	39,764	39,764	-	-	-	-	833	833	-	-
2018	MRO	C-1620	Board of Public Utilities City of McPherson, KS (MCPHER)	U.S.	17,324	17,324	-	-	16,968	16,968	-	-	-	-	356	356	-	-
2018	MRO	C-1647	Carthage Water and Light	U.S.	4,934	4,934	-	-	4,833	4,833	-	-	-	-	101	101	-	-
2018	MRO	C-1200	Cedar Falls Utilities (CFU)	U.S.	8,648	8,648	-	-	8,471	8,471	-	-	-	-	177	177	-	-
2018	MRO	C-1201	Central Iowa Power Cooperative (CIPCO)	U.S.	48,687	48,687	-	-	47,687	47,687	-	-	-	-	999	999	-	-
2018	MRO	C-1477	Central Minnesota Municipal Power Agency (CMMPA)	U.S.	6,329	6,329	-	-	6,200	6,200	-	-	-	-	130	130	-	-
2018	MRO	C-1469	Central Valley Electric Cooperative (CVEC)	U.S.	14,731	14,731	-	-	14,429	14,429	-	-	-	-	302	302	-	-
2018	MRO	C-1556	City of Bentonville (BENVILL)	U.S.	11,654	11,654	-	-	11,415	11,415	-	-	-	-	239	239	-	-
2018	MRO	C-1713	City of Bloomer (Bloomer Electric & Water Co.)	U.S.	954	954	-	-	934	934	-	-	-	-	20	20	-	-
2018	MRO	C-1703	City of Chanute (CHANUTEKS)	U.S.	8,292	8,292	-	-	8,122	8,122	-	-	-	-	170	170	-	-
2018	MRO	C-1203	City of Escanaba (EME)	U.S.	2,175	2,175	-	-	2,131	2,131	-	-	-	-	45	45	-	-
2018	MRO	C-1718	City of Guttenberg	U.S.	329	329	-	-	322	322	-	-	-	-	7	7	-	-
2018	MRO	C-1719	City of Kasota	U.S.	62	62	-	-	60	60	-	-	-	-	1	1	-	-
2018	MRO	C-1709	City of Nixa	U.S.	2,600	2,600	-	-	2,547	2,547	-	-	-	-	53	53	-	-
2018	MRO	C-1722	City of Spooner	U.S.	532	532	-	-	521	521	-	-	-	-	11	11	-	-
2018	MRO	C-1436	City Utilities of Springfield, MO (SPRM)	U.S.	52,991	52,991	-	-	51,903	51,903	-	-	-	-	1,088	1,088	-	-
2018	MRO	C-1204	Corn Belt Power Cooperative (CBPC)	U.S.	33,597	33,597	-	-	32,907	32,907	-	-	-	-	690	690	-	-
2018	MRO	C-1710	Dahlberg Electric Company	U.S.	1,925	1,925	-	-	1,885	1,885	-	-	-	-	40	40	-	-
2018	MRO	C-1207	Dairyland Power Cooperative (DPC)	U.S.	98,549	98,549	-	-	96,527	96,527	-	-	-	-	2,023	2,023	-	-
2018	MRO	C-1437	East Texas Electric Cooperative, Inc. (ETEC)	U.S.	15,904	15,904	-	-	15,578	15,578	-	-	-	-	326	326	-	-
2018	MRO	C-1716	Eldridge Electric and Water Utilities	U.S.	729	729	-	-	714	714	-	-	-	-	15	15	-	-
2018	MRO	C-1250	Empire District Electric Co.	U.S.	89,303	89,303	-	-	87,470	87,470	-	-	-	-	1,833	1,833	-	-
2018	MRO	C-1205	Falls City Water & Light Department	U.S.	994	994	-	-	973	973	-	-	-	-	20	20	-	-
2018	MRO	C-1470	Farmers Electric Cooperative, Inc. of New Mexico (FARMCOOP)	U.S.	5,356	5,356	-	-	5,246	5,246	-	-	-	-	110	110	-	-
2018	MRO	C-1206	Fremont Department of Utilities (City of)	U.S.	7,192	7,192	-	-	7,045	7,045	-	-	-	-	148	148	-	-
2018	MRO	C-1208	Geneseo Municipal Utilities	U.S.	1,101	1,101	-	-	1,078	1,078	-	-	-	-	23	23	-	-
2018	MRO	C-1438	Golden Spread Electric Cooperative, Inc (GSEC)	U.S.	92,056	92,056	-	-	90,167	90,167	-	-	-	-	1,889	1,889	-	-
2018	MRO	C-1209	Grand Island Utilities Department	U.S.	12,558	12,558	-	-	12,300	12,300	-	-	-	-	258	258	-	-
2018	MRO	C-1251	Grand River Dam Authority (GRDA)	U.S.	86,677	86,677	-	-	84,898	84,898	-	-	-	-	1,779	1,779	-	-
2018	MRO	C-1717	Great Lakes Utilities	U.S.	24,767	24,767	-	-	24,259	24,259	-	-	-	-	508	508	-	-
2018	MRO	C-1210	Great River Energy (GRE)	U.S.	221,078	221,078	-	-	216,540	216,540	-	-	-	-	4,537	4,537	-	-
2018	MRO	C-1606	Harlan Municipal Utilities	U.S.	292	292	-	-	286	286	-	-	-	-	6	6	-	-
2018	MRO	C-1211	Hastings Utilities (HAST)	U.S.	7,247	7,247	-	-	7,099	7,099	-	-	-	-	149	149	-	-
2018	MRO	C-1212	Heartland Consumers Power District (HCPD)	U.S.	7,461	7,461	-	-	7,308	7,308	-	-	-	-	153	153	-	-
2018	MRO	C-1213	Hutchinson Utilities Commission (HUCH)	U.S.	4,687	4,687	-	-	4,591	4,591	-	-	-	-	96	96	-	-
2018	MRO	C-1248	Independence Power & Light (Independence, MO) (INDN)	U.S.	17,794	17,794	-	-	17,428	17,428	-	-	-	-	365	365	-	-
2018	MRO	C-1252	Kansas City Power & Light (KCPL)	U.S.	262,093	262,093	-	-	256,714	256,714	-	-	-	-	5,379	5,379	-	-
2018	MRO	C-1439	Kansas Electric Power Cooperative (KEPC)	U.S.	35,946	35,946	-	-	35,208	35,208	-	-	-	-	738	738	-	-
2018	MRO	C-1440	Kansas Municipal Energy Agency (KMEA)	U.S.	26,026	26,026	-	-	25,492	25,492	-	-	-	-	534	534	-	-
2018	MRO	C-1637	Kansas Power Pool (KPP)	U.S.	14,303	14,303	-	-	14,009	14,009	-	-	-	-	294	294	-	-
2018	MRO	C-1598	KCPL - Greater Missouri Operations (KCPL-GMO)	U.S.	145,174	145,174	-	-	142,194	142,194	-	-	-	-	2,979	2,979	-	-
2018	MRO	C-1649	Kennett Board of Public Works	U.S.	2,324	2,324	-	-	2,276	2,276	-	-	-	-	48	48	-	-
2018	MRO	C-1472	Lea County Electric Cooperative (LCEC)	U.S.	20,665	20,665	-	-	20,241	20,241	-	-	-	-	424	424	-	-
2018	MRO	C-1215	Lincoln Electric System (LES)	U.S.	53,355	53,355	-	-	52,260	52,260	-	-	-	-	1,095	1,095	-	-
2018	MRO	C-1216	Madison, Gas and Electric (MGE)	U.S.	54,926	54,926	-	-	53,799	53,799	-	-	-	-	1,127	1,127	-	-
2018	MRO	C-1650	Malden Board of Public Works	U.S.	833	833	-	-	816	816	-	-	-	-	17	17	-	-
2018	MRO	C-1220	MidAmerican Energy Company (MEC)	U.S.	433,105	433,105	-	-	424,216	424,216	-	-	-	-	8,889	8,889	-	-
2018	MRO	C-1441	Midwest Energy, Inc (MIDW)	U.S.	29,574	29,574	-	-	28,967	28,967	-	-	-	-	607	607	-	-
2018	MRO	C-1224	Minnesota Municipal Power Agency (MMPA) Avant Energy Inc	U.S.	27,465	27,465	-	-	26,902	26,902	-	-	-	-	564	564	-	-
2018	MRO	C-1221	Minnesota Power (MP)	U.S.	205,966	205,966	-	-	201,739	201,739	-	-	-	-	4,227	4,227	-	-
2018	MRO	C-1222	Minnkota Power Cooperative, Inc. (MPC)	U.S.	64,608	64,608	-	-	63,282	63,282	-	-	-	-	1,326	1,326	-	-
2018	MRO	C-1987	Missouri Joint Municipal Electric Utility	U.S.	7,189	7,189	-	-	7,041	7,041	-	-	-	-	148	148	-	-
2018	MRO	C-1223	Missouri River Energy Services	U.S.	45,219	45,219	-	-	44,291	44,291	-	-	-	-	928	928	-	-
2018	MRO	C-1226	Montana-Dakota Utilities Co. (MDU)	U.S.	53,063	53,063	-	-	51,974	51,974	-	-	-	-	1,089	1,089	-	-
2018	MRO	C-1607	Montezuma Municipal Light & Power	U.S.	410	410	-	-	402	402	-	-	-	-	8	8	-	-
2018	MRO	C-1227	Municipal Energy Agency of Nebraska (MEAN)	U.S.	16,690	16,690	-	-	16,348	16,348	-	-	-	-	343	343	-	-
2018	MRO	C-1228	Muscataine Power and Water (MPW)	U.S.	14,484	14,484	-	-	14,187	14,187	-	-	-	-	297	297	-	-
2018	MRO	C-1229	Nebraska City Utilities	U.S.	2,188	2,188	-	-	2,143	2,143	-	-	-	-	45	45	-	-
2018	MRO	C-1230	Nebraska Public Power District (NPPD)	U.S.	215,739	215,739	-	-	211,311	211,311	-	-	-	-	4,428	4,428	-	-
2018	MRO	C-1711	North Central Power Company	U.S.	626	626	-	-	613	613	-	-	-	-	13	13	-	-
2018	MRO	C-1442	Northeast Texas Electric Cooperative, Inc. (NTEC)	U.S.	53,907	53,907	-	-	52,801	52,801	-	-	-	-	1,106	1,106	-	-
2018	MRO	C-1231	NorthWestern Energy (NWE)	U.S.	27,053	27,053	-	-	26,498	26,498	-	-	-	-	555	555	-	-
2018	MRO	C-1712	NorthWestern Wisconsin Electric Company	U.S.	3,104	3,104	-	-	3,040	3,040	-	-	-	-	64	64	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	MRO	C-1255	Oklahoma Gas and Electric Co. (OKGE)	U.S.	493,246	493,246	-	-	483,123	483,123	-	-	-	-	10,123	10,123	-	-
2018	MRO	C-1444	Oklahoma Municipal Power Authority (OMPA)	U.S.	47,240	47,240	-	-	46,270	46,270	-	-	-	-	970	970	-	-
2018	MRO	C-1232	Omaha Public Power District (OPPD)	U.S.	184,413	184,413	-	-	180,628	180,628	-	-	-	-	3,785	3,785	-	-
2018	MRO	C-1233	Otter Tail Power Company (OTP)	U.S.	82,539	82,539	-	-	80,845	80,845	-	-	-	-	1,694	1,694	-	-
2018	MRO	C-1651	Paragould Light, Water & Cable (PARAGOULD)	U.S.	9,952	9,952	-	-	9,748	9,748	-	-	-	-	204	204	-	-
2018	MRO	C-1725	Peoples Electric Cooperative (PEC)	U.S.	11,994	11,994	-	-	11,748	11,748	-	-	-	-	246	246	-	-
2018	MRO	C-1652	Piggott Municipal Light, Water & Sewer	U.S.	629	629	-	-	616	616	-	-	-	-	13	13	-	-
2018	MRO	C-1653	Poplar Bluff Municipal Utilities	U.S.	6,155	6,155	-	-	6,028	6,028	-	-	-	-	126	126	-	-
2018	MRO	C-1720	Resale Power Group of Iowa	U.S.	9,239	9,239	-	-	9,049	9,049	-	-	-	-	190	190	-	-
2018	MRO	C-1721	Rice Lake Utilities	U.S.	2,711	2,711	-	-	2,656	2,656	-	-	-	-	56	56	-	-
2018	MRO	C-1234	Rochester Public Utilities (RPU)	U.S.	54	54	-	-	52	52	-	-	-	-	1	1	-	-
2018	MRO	C-1473	Roosevelt County Electric Cooperative	U.S.	2,712	2,712	-	-	2,657	2,657	-	-	-	-	56	56	-	-
2018	MRO	C-1654	Sikeston Board of Municipal Utilities	U.S.	6,384	6,384	-	-	6,253	6,253	-	-	-	-	131	131	-	-
2018	MRO	C-1236	Southern Minnesota Municipal Power Agency (SMMPA)	U.S.	45,354	45,354	-	-	44,423	44,423	-	-	-	-	931	931	-	-
2018	MRO	C-1257	Southwestern Public Service Co. Xcel Energy (SPS)	U.S.	359,033	359,033	-	-	351,664	351,664	-	-	-	-	7,369	7,369	-	-
2018	MRO	C-1256	Sunflower Electric Cooperative (SECI)	U.S.	75,351	75,351	-	-	73,804	73,804	-	-	-	-	1,546	1,546	-	-
2018	MRO	C-1475	Tri County Electric Cooperative, Inc. of Oklahoma (TRICEC)	U.S.	6,151	6,151	-	-	6,024	6,024	-	-	-	-	126	126	-	-
2018	MRO	C-1665	Upper Peninsula Power Co (UPPC)	U.S.	11,195	11,195	-	-	10,966	10,966	-	-	-	-	230	230	-	-
2018	MRO	C-1714	Village of Caddott	U.S.	210	210	-	-	205	205	-	-	-	-	4	4	-	-
2018	MRO	C-1260	Westar Energy (WR)	U.S.	347,472	347,472	-	-	340,341	340,341	-	-	-	-	7,131	7,131	-	-
2018	MRO	C-1239	Western Area Power Administration Rocky Mountain Region (	U.S.	746	746	-	-	731	731	-	-	-	-	15	15	-	-
2018	MRO	C-1240	Western Area Power Administration Upper Great Plains (UM) (	U.S.	147,938	147,938	-	-	144,902	144,902	-	-	-	-	3,036	3,036	-	-
2018	MRO	C-1259	Western Farmers Electric Cooperative (WFEC)	U.S.	151,752	151,752	-	-	148,638	148,638	-	-	-	-	3,114	3,114	-	-
2018	MRO	C-1501	West Texas Municipal Power Agency (WTMPA)	U.S.	47,582	47,582	-	-	46,605	46,605	-	-	-	-	977	977	-	-
2018	MRO	C-1241	Willmar Municipal Utilities (WLMRWL)	U.S.	4,163	4,163	-	-	4,077	4,077	-	-	-	-	85	85	-	-
2018	MRO	C-1242	Wisconsin Public Power, Inc. (East and West regions) (WPPI)	U.S.	85,630	85,630	-	-	83,873	83,873	-	-	-	-	1,757	1,757	-	-
2018	MRO	C-1983	Wolverine Power Marketing Cooperative	U.S.	671	671	-	-	657	657	-	-	-	-	14	14	-	-
2018	MRO	C-1244	Xcel Energy Company Northern States Power (NSP)	U.S.	710,765	710,765	-	-	696,178	696,178	-	-	-	-	14,587	14,587	-	-
			TOTAL MRO		7,890,975	7,134,967	756,008	-	7,729,024	6,988,532	740,492	-	-	-	161,950	146,435	15,516	-
2018	NPCC	C-1336	New England	U.S.	1,977,380	1,977,380	-	-	1,936,797	1,936,797	-	-	-	-	40,583	40,583	-	-
2018	NPCC	C-1339	New York	U.S.	2,580,209	2,580,209	-	-	2,527,254	2,527,254	-	-	-	-	52,955	52,955	-	-
2018	NPCC	C-1337	Ontario	Canada	1,601,276	-	1,601,276	-	2,155,853	-	2,155,853	-	-	-	(554,577)	-	(554,577)	-
2018	NPCC		Quebec	Canada	2,213,431	-	2,213,431	-	2,712,130	-	2,712,130	-	-	-	(498,699)	-	(498,699)	-
2018		C-1341	Hydro Quebec	Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018		C-1572	Regie	Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1705	New Brunswick	Canada	164,031	-	164,031	-	220,814	-	220,814	-	-	-	(56,783)	-	(56,783)	-
2018	NPCC	C-1340	Nova Scotia	Canada	181,143	-	181,143	-	177,426	-	177,426	-	-	-	3,718	-	3,718	-
			TOTAL NPCC		8,717,470	4,557,588	4,159,882	-	9,730,274	4,464,051	5,266,223	-	-	-	(1,012,804)	93,538	(1,106,341)	-
2018	RF	C-1102	Cannelton Utilities	U.S.	243	243	-	-	238	238	-	-	-	-	5	5	-	-
2018	RF	C-1106	City of Crosswell	U.S.	643	643	-	-	630	630	-	-	-	-	13	13	-	-
2018	RF	C-1490	City of Lansing	U.S.	35,183	35,183	-	-	34,460	34,460	-	-	-	-	722	722	-	-
2018	RF	C-1120	Cloverland Electric Cooperative	U.S.	12,019	12,019	-	-	11,772	11,772	-	-	-	-	247	247	-	-
2018	RF	C-1122	CMS ERM Michigan LLC	U.S.	2,820	2,820	-	-	2,762	2,762	-	-	-	-	58	58	-	-
2018	RF	C-1124	Constellation New Energy (MECS-CONS)	U.S.	28,960	28,960	-	-	28,366	28,366	-	-	-	-	594	594	-	-
2018	RF	C-1123	Constellation New Energy (MECS-DET)	U.S.	33,604	33,604	-	-	32,914	32,914	-	-	-	-	690	690	-	-
2018	RF	C-1126	Consumers Energy Company	U.S.	545,925	545,925	-	-	534,720	534,720	-	-	-	-	11,204	11,204	-	-
2018	RF	C-1128	Detroit Edison Company	U.S.	746,048	746,048	-	-	730,736	730,736	-	-	-	-	15,312	15,312	-	-
2018	RF	C-1166	Duke Energy Indiana	U.S.	490,253	490,253	-	-	480,191	480,191	-	-	-	-	10,062	10,062	-	-
2018	RF	C-1135	Ferdinand Municipal Light & Water	U.S.	721	721	-	-	706	706	-	-	-	-	15	15	-	-
2018	RF	C-1646	FirstEnergy Solutions (MECS-CONS)	U.S.	14,299	14,299	-	-	14,005	14,005	-	-	-	-	293	293	-	-
2018	RF	C-1549	FirstEnergy Solutions (MECS-DET)	U.S.	1,542	1,542	-	-	1,511	1,511	-	-	-	-	32	32	-	-
2018	RF	C-1145	Hoosier Energy	U.S.	129,142	129,142	-	-	126,491	126,491	-	-	-	-	2,650	2,650	-	-
2018	RF	C-1148	Indiana Municipal Power Agency (DUKE CIN)	U.S.	51,100	51,100	-	-	50,051	50,051	-	-	-	-	1,049	1,049	-	-
2018	RF	C-1485	Indiana Municipal Power Agency (NIPSCO)	U.S.	7,100	7,100	-	-	6,954	6,954	-	-	-	-	146	146	-	-
2018	RF	C-1486	Indiana Municipal Power Agency (SIGE)	U.S.	9,753	9,753	-	-	9,552	9,552	-	-	-	-	200	200	-	-
2018	RF	C-1149	Indianapolis Power & Light Co.	U.S.	232,295	232,295	-	-	227,528	227,528	-	-	-	-	4,768	4,768	-	-
2018	RF	C-1666	Constellation New Energy (FKA Integrys Energy Services)	U.S.	4,940	4,940	-	-	4,838	4,838	-	-	-	-	101	101	-	-
2018	RF	C-1614	Just Energy (MECS-DET)	U.S.	125	125	-	-	122	122	-	-	-	-	3	3	-	-
2018	RF	C-1154	Michigan Public Power Agency	U.S.	62,223	62,223	-	-	60,946	60,946	-	-	-	-	1,277	1,277	-	-
2018	RF	C-1155	Michigan South Central Power Agency	U.S.	12,714	12,714	-	-	12,453	12,453	-	-	-	-	261	261	-	-
2018	RF	C-1158	MidAmerican Energy Company Retail	U.S.	66	66	-	-	65	65	-	-	-	-	1	1	-	-
2018	RF	C-1163	Northern Indiana Public Service Co.	U.S.	271,222	271,222	-	-	265,656	265,656	-	-	-	-	5,566	5,566	-	-
2018	RF	C-1164	Ontonagon County Rural Electrification Assoc.	U.S.	454	454	-	-	445	445	-	-	-	-	9	9	-	-
2018	RF	C-1265	PJM Interconnection, LLC	U.S.	11,054,416	11,054,416	-	-	10,827,540	10,827,540	-	-	-	-	226,875	226,875	-	-
2018	RF	C-1172	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solution	U.S.	5,167	5,167	-	-	5,061	5,061	-	-	-	-	106	106	-	-
2018	RF	C-1171	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solution	U.S.	9,898	9,898	-	-	9,695	9,695	-	-	-	-	203	203	-	-
2018	RF	C-1176	Direct Energy (fka:Strategic Energy,LLC) (MECS-CONS)	U.S.	863	863	-	-	845	845	-	-	-	-	18	18	-	-
2018	RF	C-1174	Direct Energy (fka:Strategic Energy,LLC) (MECS-DET)	U.S.	26,838	26,838	-	-	26,287	26,287	-	-	-	-	551	551	-	-
2018	RF	C-1581	Spartan Renewable Energy	U.S.	2,097	2,097	-	-	2,054	2,054	-	-	-	-	43	43	-	-
2018	RF	C-1985	Spartan Renewable Energy (MI UP)	U.S.	1,183	1,183	-	-	1,159	1,159	-	-	-	-	24	24	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	RF	C-1180	Thumb Electric Cooperative	U.S.	3,036	3,036	-	-	2,974	2,974	-	-	-	-	62	62	-	-
2018	RF	C-2027	Upper Michigan Energy Resources	U.S.	10,626	10,626	-	-	10,408	10,408	-	-	-	-	218	218	-	-
2018	RF	C-1181	Vectren Energy Delivery of IN	U.S.	84,997	84,997	-	-	83,253	83,253	-	-	-	-	1,744	1,744	-	-
2018	RF	C-1184	Wabash Valley Power Association Inc. (DUKE CIN)	U.S.	48,287	48,287	-	-	47,296	47,296	-	-	-	-	991	991	-	-
2018	RF	C-1488	Wabash Valley Power Association Inc.(NIPSCO)	U.S.	28,697	28,697	-	-	28,108	28,108	-	-	-	-	589	589	-	-
2018	RF	C-1185	Wisconsin Electric Power Co.	U.S.	449,751	449,751	-	-	440,521	440,521	-	-	-	-	9,230	9,230	-	-
2018	RF	C-1664	Wisconsin Public Service Co.	U.S.	186,428	186,428	-	-	182,602	182,602	-	-	-	-	3,826	3,826	-	-
2018	RF	C-1189	Wolverine Power Marketing Cooperative	U.S.	11,143	11,143	-	-	10,914	10,914	-	-	-	-	229	229	-	-
2018	RF	C-1191	Wolverine Power Supply Cooperative	U.S.	45,636	45,636	-	-	44,700	44,700	-	-	-	-	937	937	-	-
2018	RF	C-1190	Wolverine Power Marketing Cooperative(MECS-DET)	U.S.	8,367	8,367	-	-	8,195	8,195	-	-	-	-	172	172	-	-
TOTAL RELIABILITYFIRST					14,670,823	14,670,823	-	-	14,369,727	14,369,727	-	-	-	-	301,097	301,097	-	-
2018	SERC	C-1267	Alabama Municipal Electric Authority	U.S.	55,890	55,890	-	-	54,743	54,743	-	-	-	-	1,147	1,147	-	-
2018	SERC	C-1268	Alabama Power Company	U.S.	927,068	927,068	-	-	908,042	908,042	-	-	-	-	19,027	19,027	-	-
2018	SERC	C-1269	Ameren - Illinois	U.S.	694,194	694,194	-	-	679,946	679,946	-	-	-	-	14,247	14,247	-	-
2018	SERC	C-1271	Ameren - Missouri	U.S.	613,367	613,367	-	-	600,778	600,778	-	-	-	-	12,588	12,588	-	-
2018	SERC	C-1273	Associated Electric Cooperative Inc.	U.S.	336,839	336,839	-	-	329,926	329,926	-	-	-	-	6,913	6,913	-	-
2018	SERC	C-1582	Beauregard Electric Cooperative, Inc.	U.S.	20,164	20,164	-	-	19,750	19,750	-	-	-	-	414	414	-	-
2018	SERC	C-1462	Benton Utility District	U.S.	4,301	4,301	-	-	4,212	4,212	-	-	-	-	88	88	-	-
2018	SERC	C-1274	Big Rivers Electric Corporation	U.S.	62,032	62,032	-	-	60,759	60,759	-	-	-	-	1,273	1,273	-	-
2018	SERC	C-1275	Black Warrior EMC	U.S.	6,968	6,968	-	-	6,825	6,825	-	-	-	-	143	143	-	-
2018	SERC	C-1276	Blue Ridge EMC	U.S.	23,348	23,348	-	-	22,869	22,869	-	-	-	-	479	479	-	-
2018	SERC	C-1628	Brazos Electric Power Cooperative, Inc.	U.S.	8,236	8,236	-	-	8,067	8,067	-	-	-	-	169	169	-	-
2018	SERC	C-1463	Canton, MS	U.S.	2,051	2,051	-	-	2,009	2,009	-	-	-	-	42	42	-	-
2018	SERC	C-1277	Central Electric Power Cooperative Inc.	U.S.	289,508	289,508	-	-	283,566	283,566	-	-	-	-	5,942	5,942	-	-
2018	SERC	C-1667	Century Aluminum - Hawesville	U.S.	50,484	50,484	-	-	49,448	49,448	-	-	-	-	1,036	1,036	-	-
2018	SERC	C-1668	Century Aluminum - Sebree	U.S.	33,814	33,814	-	-	33,120	33,120	-	-	-	-	694	694	-	-
2018	SERC	C-1278	City of Blountstown FL	U.S.	553	553	-	-	541	541	-	-	-	-	11	11	-	-
2018	SERC	C-1279	City of Camden SC	U.S.	3,219	3,219	-	-	3,153	3,153	-	-	-	-	66	66	-	-
2018	SERC	C-1280	City of Collins MS	U.S.	749	749	-	-	734	734	-	-	-	-	15	15	-	-
2018	SERC	C-1281	City of Columbia MO	U.S.	19,777	19,777	-	-	19,371	19,371	-	-	-	-	406	406	-	-
2018	SERC	C-1282	City of Conway AR (Conway Corporation)	U.S.	16,584	16,584	-	-	16,244	16,244	-	-	-	-	340	340	-	-
2018	SERC	C-1284	City of Evergreen AL	U.S.	916	916	-	-	897	897	-	-	-	-	19	19	-	-
2018	SERC	C-1285	City of Hampton GA	U.S.	519	519	-	-	508	508	-	-	-	-	11	11	-	-
2018	SERC	C-1286	City of Hartford AL	U.S.	432	432	-	-	423	423	-	-	-	-	9	9	-	-
2018	SERC	C-1287	City of Henderson (KY) Municipal Power & Light	U.S.	9,947	9,947	-	-	9,742	9,742	-	-	-	-	204	204	-	-
2018	SERC	C-1288	City of North Little Rock AR (DENL)	U.S.	15,371	15,371	-	-	15,056	15,056	-	-	-	-	315	315	-	-
2018	SERC	C-1289	City of Orangeburg SC Department of Public Utilities	U.S.	13,404	13,404	-	-	13,129	13,129	-	-	-	-	275	275	-	-
2018	SERC	C-1290	City of Robertsdale AL	U.S.	1,423	1,423	-	-	1,394	1,394	-	-	-	-	29	29	-	-
2018	SERC	C-1291	City of Ruston LA (DERS)	U.S.	4,529	4,529	-	-	4,436	4,436	-	-	-	-	93	93	-	-
2018	SERC	C-1292	Seneca Light & Power	U.S.	2,670	2,670	-	-	2,615	2,615	-	-	-	-	55	55	-	-
2018	SERC	C-1115	City of Springfield (CWLP)	U.S.	28,488	28,488	-	-	27,904	27,904	-	-	-	-	585	585	-	-
2018	SERC	C-1465	City of Thayer, MO	U.S.	316	316	-	-	310	310	-	-	-	-	6	6	-	-
2018	SERC	C-1293	City of Troy AL	U.S.	6,780	6,780	-	-	6,641	6,641	-	-	-	-	139	139	-	-
2018	SERC	C-1294	City of West Memphis AR (West Memphis Utilities)	U.S.	6,335	6,335	-	-	6,205	6,205	-	-	-	-	130	130	-	-
2018	SERC	C-1583	Claiborne Electric Cooperative, Inc.	U.S.	11,021	11,021	-	-	10,795	10,795	-	-	-	-	226	226	-	-
2018	SERC	C-1584	Concordia Electric Cooperative, Inc.	U.S.	3,647	3,647	-	-	3,572	3,572	-	-	-	-	75	75	-	-
2018	SERC	C-1726	Cube Hydro Carolinas	U.S.	311	311	-	-	305	305	-	-	-	-	6	6	-	-
2018	SERC	C-1283	Dalton Utilities	U.S.	30,245	30,245	-	-	29,624	29,624	-	-	-	-	621	621	-	-
2018	SERC	C-1585	Dixie Electric Membership Corporation	U.S.	36,918	36,918	-	-	36,161	36,161	-	-	-	-	758	758	-	-
2018	SERC	C-1295	Dominion Virginia Power	U.S.	1,436,290	1,436,290	-	-	1,406,812	1,406,812	-	-	-	-	29,478	29,478	-	-
2018	SERC	C-1296	Duke Energy Carolinas, LLC	U.S.	1,408,871	1,408,871	-	-	1,379,956	1,379,956	-	-	-	-	28,915	28,915	-	-
2018	SERC	C-1466	Durant, MS	U.S.	411	411	-	-	403	403	-	-	-	-	8	8	-	-
2018	SERC	C-1478	LG&E and KU Services Co as agent for LG&E Co and KU Co	U.S.	565,398	565,398	-	-	553,795	553,795	-	-	-	-	11,604	11,604	-	-
2018	SERC	C-1297	East Kentucky Power Cooperative	U.S.	228,763	228,763	-	-	224,068	224,068	-	-	-	-	4,695	4,695	-	-
2018	SERC	C-1298	East Mississippi Electric Power Association	U.S.	7,069	7,069	-	-	6,924	6,924	-	-	-	-	145	145	-	-
2018	SERC	C-1669	Electricities of North Carolina Inc	U.S.	194,017	194,017	-	-	190,036	190,036	-	-	-	-	3,982	3,982	-	-
2018	SERC	C-1300	EnergyUnited EMC	U.S.	43,613	43,613	-	-	42,718	42,718	-	-	-	-	895	895	-	-
2018	SERC	C-1301	Entergy	U.S.	1,961,464	1,961,464	-	-	1,921,208	1,921,208	-	-	-	-	40,256	40,256	-	-
2018	SERC	C-1302	Fayetteville (NC) Public Works Commission	U.S.	35,002	35,002	-	-	34,283	34,283	-	-	-	-	718	718	-	-
2018	SERC	C-1303	Florida Public Utilities (FL Panhandle Load)	U.S.	4,749	4,749	-	-	4,651	4,651	-	-	-	-	97	97	-	-
2018	SERC	C-1304	French Broad EMC	U.S.	9,109	9,109	-	-	8,922	8,922	-	-	-	-	187	187	-	-
2018	SERC	C-1305	Georgia Power Company	U.S.	1,413,589	1,413,589	-	-	1,384,577	1,384,577	-	-	-	-	29,012	29,012	-	-
2018	SERC	C-1306	Georgia System Optns Corporation	U.S.	660,617	660,617	-	-	647,059	647,059	-	-	-	-	13,558	13,558	-	-
2018	SERC	C-1479	Greenwood (MS) Utilities Commission	U.S.	4,465	4,465	-	-	4,373	4,373	-	-	-	-	92	92	-	-
2018	SERC	C-1307	Greenwood (SC) Commissioners of Public Works	U.S.	5,262	5,262	-	-	5,154	5,154	-	-	-	-	108	108	-	-
2018	SERC	C-1308	Gulf Power Company	U.S.	188,017	188,017	-	-	184,158	184,158	-	-	-	-	3,859	3,859	-	-
2018	SERC	C-1586	Haywood EMC	U.S.	5,352	5,352	-	-	5,242	5,242	-	-	-	-	110	110	-	-
2018	SERC	C-1984	Hoosier Energy REC, Inc	U.S.	7,270	7,270	-	-	7,120	7,120	-	-	-	-	149	149	-	-
2018	SERC	C-1309	Illinois Municipal Electric Agency	U.S.	29,844	29,844	-	-	29,231	29,231	-	-	-	-	612	612	-	-
2018	SERC	C-1480	Itta Bena, MS	U.S.	238	238	-	-	233	233	-	-	-	-	5	5	-	-
2018	SERC	C-1587	Jefferson Davis Electric Cooperative, Inc.	U.S.	4,546	4,546	-	-	4,452	4,452	-	-	-	-	93	93	-	-
2018	SERC	C-1617	Kentucky Municipal Power	U.S.	11,343	11,343	-	-	11,									

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	SERC	C-1481	Kosciusko, MS	U.S.	1,216	1,216	-	-	1,191	1,191	-	-	-	-	25	25	-	-
2018	SERC	C-1482	Leland, MS	U.S.	499	499	-	-	489	489	-	-	-	-	10	10	-	-
2018	SERC	C-1313	McCormick Commission of Public Works	U.S.	268	268	-	-	263	263	-	-	-	-	6	6	-	-
2018	SERC	C-1314	Mississippi Power Company	U.S.	165,623	165,623	-	-	162,224	162,224	-	-	-	-	3,399	3,399	-	-
2018	SERC	C-1630	Mt. Carmel Public Utility	U.S.	1,646	1,646	-	-	1,612	1,612	-	-	-	-	34	34	-	-
2018	SERC	C-1315	Municipal Electric Authority of Georgia	U.S.	181,495	181,495	-	-	177,770	177,770	-	-	-	-	3,725	3,725	-	-
2018	SERC	C-1316	N.C. Electric Membership Corp.	U.S.	216,606	216,606	-	-	212,160	212,160	-	-	-	-	4,446	4,446	-	-
2018	SERC	C-1588	Northeast Louisiana Power Cooperative, Inc.	U.S.	4,953	4,953	-	-	4,852	4,852	-	-	-	-	102	102	-	-
2018	SERC	C-1574	Northern Virginia Electric Cooperative	U.S.	88,755	88,755	-	-	86,934	86,934	-	-	-	-	1,822	1,822	-	-
2018	SERC	C-1319	Old Dominion Electric Cooperative	U.S.	82,151	82,151	-	-	80,465	80,465	-	-	-	-	1,686	1,686	-	-
2018	SERC	C-1618	Osceola (Arkansas) Municipal Light and Power	U.S.	2,482	2,482	-	-	2,431	2,431	-	-	-	-	51	51	-	-
2018	SERC	C-1320	Owensboro (KY) Municipal Utilities	U.S.	13,409	13,409	-	-	13,134	13,134	-	-	-	-	275	275	-	-
2018	SERC	C-1321	Piedmont EMC in Duke and Progress Areas	U.S.	8,885	8,885	-	-	8,703	8,703	-	-	-	-	182	182	-	-
2018	SERC	C-1323	Piedmont Municipal Power Agency (PMPA)	U.S.	39,504	39,504	-	-	38,693	38,693	-	-	-	-	811	811	-	-
2018	SERC	C-1589	Pointe Coupee Electric Memb. Corp.	U.S.	4,100	4,100	-	-	4,016	4,016	-	-	-	-	84	84	-	-
2018	SERC	C-1266	PowerSouth Energy	U.S.	145,826	145,826	-	-	142,834	142,834	-	-	-	-	2,993	2,993	-	-
2018	SERC	C-1330	Prairie Power, Inc.	U.S.	26,034	26,034	-	-	25,500	25,500	-	-	-	-	534	534	-	-
2018	SERC	C-1706	Duke Energy Progress	U.S.	754,715	754,715	-	-	739,226	739,226	-	-	-	-	15,489	15,489	-	-
2018	SERC	C-1325	Rutherford EMC	U.S.	22,557	22,557	-	-	22,094	22,094	-	-	-	-	463	463	-	-
2018	SERC	C-1631	Sam Rayburn G&T Electric Cooperative Inc.	U.S.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1326	South Carolina Electric & Gas Company	U.S.	381,939	381,939	-	-	374,101	374,101	-	-	-	-	7,839	7,839	-	-
2018	SERC	C-1327	South Carolina Public Service Authority	U.S.	142,662	142,662	-	-	139,734	139,734	-	-	-	-	2,928	2,928	-	-
2018	SERC	C-1590	South Louisiana Electric Cooperative Association	U.S.	9,340	9,340	-	-	9,149	9,149	-	-	-	-	192	192	-	-
2018	SERC	C-1328	Cooperative Energy (formerly SMEPA)	U.S.	163,064	163,064	-	-	159,717	159,717	-	-	-	-	3,347	3,347	-	-
2018	SERC	C-1329	Southern Illinois Power Cooperative	U.S.	25,543	25,543	-	-	25,019	25,019	-	-	-	-	524	524	-	-
2018	SERC	C-1591	Southwest Louisiana Electric Membership Corporation	U.S.	41,892	41,892	-	-	41,033	41,033	-	-	-	-	860	860	-	-
2018	SERC	C-1619	Southwestern Electric Cooperative, Inc.	U.S.	7,692	7,692	-	-	7,534	7,534	-	-	-	-	158	158	-	-
2018	SERC	C-1331	Tennessee Valley Authority	U.S.	2,620,247	2,620,247	-	-	2,566,470	2,566,470	-	-	-	-	53,777	53,777	-	-
2018	SERC	C-1632	Tex-La Electric Cooperative of Texas, Inc	U.S.	35,092	35,092	-	-	34,372	34,372	-	-	-	-	720	720	-	-
2018	SERC	C-1332	Tombigbee Electric Cooperative Inc.	U.S.	2,161	2,161	-	-	2,116	2,116	-	-	-	-	44	44	-	-
2018	SERC	C-1594	Town of Sharpsburg, N.C.	U.S.	304	304	-	-	298	298	-	-	-	-	6	6	-	-
2018	SERC	C-1595	Town of Stantonburg, N.C. JRO	U.S.	926	926	-	-	907	907	-	-	-	-	19	19	-	-
2018	SERC	C-1333	Town of Waynesville NC	U.S.	1,435	1,435	-	-	1,406	1,406	-	-	-	-	29	29	-	-
2018	SERC	C-1334	Town of Winnsboro SC	U.S.	1,019	1,019	-	-	999	999	-	-	-	-	21	21	-	-
2018	SERC	C-1335	Town of Winterville NC	U.S.	894	894	-	-	875	875	-	-	-	-	18	18	-	-
2018	SERC	C-1597	Washington-St. Tammany Electric Cooperative, Inc.	U.S.	17,647	17,647	-	-	17,285	17,285	-	-	-	-	362	362	-	-
2018	SERC	C-1435	Arkansas Electric Cooperative Corporation	U.S.	176,607	176,607	-	-	172,983	172,983	-	-	-	-	3,625	3,625	-	-
2018	SERC	C-1557	City of Clarksdale, Mississippi	U.S.	2,245	2,245	-	-	2,199	2,199	-	-	-	-	46	46	-	-
2018	SERC	C-1708	City of Abbeville	U.S.	2,229	2,229	-	-	2,183	2,183	-	-	-	-	46	46	-	-
2018	SERC	C-1558	Hope Water & Light (HWL)	U.S.	5,004	5,004	-	-	4,902	4,902	-	-	-	-	103	103	-	-
2018	SERC	C-1559	City of Minden	U.S.	2,414	2,414	-	-	2,364	2,364	-	-	-	-	50	50	-	-
2018	SERC	C-1249	Cleco Power LLC	U.S.	187,122	187,122	-	-	183,281	183,281	-	-	-	-	3,840	3,840	-	-
2018	SERC	C-1648	Jonesboro City Water & Light	U.S.	23,400	23,400	-	-	22,920	22,920	-	-	-	-	480	480	-	-
2018	SERC	C-1471	Lafayette Utilities System	U.S.	33,650	33,650	-	-	32,959	32,959	-	-	-	-	691	691	-	-
2018	SERC	C-1253	Louisiana Energy & Power Authority (LEPA)	U.S.	15,848	15,848	-	-	15,523	15,523	-	-	-	-	325	325	-	-
2018	SERC	C-1443	Missouri Joint Municipal Electric Utility Commission	U.S.	33,726	33,726	-	-	33,034	33,034	-	-	-	-	692	692	-	-
2018	SERC	C-1639	OzMo Ozark Missouri, West Plains MO	U.S.	3,173	3,173	-	-	3,108	3,108	-	-	-	-	65	65	-	-
2018	SERC	C-1653	Poplar Bluff Municipal Utilities	U.S.	6,184	6,184	-	-	6,057	6,057	-	-	-	-	127	127	-	-
2018	SERC	C-1636	City of Prescott	U.S.	1,416	1,416	-	-	1,387	1,387	-	-	-	-	29	29	-	-
2018	SERC	C-1561	Public Service Commission of Yazoo City of Mississippi	U.S.	1,967	1,967	-	-	1,926	1,926	-	-	-	-	40	40	-	-
2018	SERC	C-1654	Sikeston Board of Municipal Utilities	U.S.	6,037	6,037	-	-	5,913	5,913	-	-	-	-	124	124	-	-
2018	SERC	C-1074	Alachua, City of	U.S.	2,204	2,204	-	-	2,158	2,158	-	-	-	-	45	45	-	-
2018	SERC	C-1075	Bartow, City of	U.S.	4,689	4,689	-	-	4,593	4,593	-	-	-	-	96	96	-	-
2018	SERC	C-1076	Chattahoochee, City of	U.S.	581	581	-	-	569	569	-	-	-	-	12	12	-	-
2018	SERC	C-1077	Florida Keys Electric Cooperative Assn	U.S.	11,819	11,819	-	-	11,576	11,576	-	-	-	-	243	243	-	-
2018	SERC	C-1078	Florida Power & Light Co.	U.S.	1,853,857	1,853,857	-	-	1,815,810	1,815,810	-	-	-	-	38,048	38,048	-	-
2018	SERC	C-1079	Florida Public Utilities Company	U.S.	5,605	5,605	-	-	5,490	5,490	-	-	-	-	115	115	-	-
2018	SERC	C-1080	Gainesville Regional Utilities	U.S.	29,741	29,741	-	-	29,131	29,131	-	-	-	-	610	610	-	-
2018	SERC	C-1081	Homestead, City of	U.S.	8,536	8,536	-	-	8,361	8,361	-	-	-	-	175	175	-	-
2018	SERC	C-1082	JEA	U.S.	205,198	205,198	-	-	200,986	200,986	-	-	-	-	4,211	4,211	-	-
2018	SERC	C-1083	Lakeland Electric	U.S.	50,927	50,927	-	-	49,882	49,882	-	-	-	-	1,045	1,045	-	-
2018	SERC	C-1626	Lee County Electric Cooperative, Inc	U.S.	67,663	67,663	-	-	66,274	66,274	-	-	-	-	1,389	1,389	-	-
2018	SERC	C-1661	City of Lake Worth	U.S.	7,687	7,687	-	-	7,529	7,529	-	-	-	-	158	158	-	-
2018	SERC	C-1084	Mount Dora, City of	U.S.	1,494	1,494	-	-	1,464	1,464	-	-	-	-	31	31	-	-
2018	SERC	C-1085	New Smyrna Beach, Utilities Commission of	U.S.	7,095	7,095	-	-	6,949	6,949	-	-	-	-	146	146	-	-
2018	SERC	C-1086	Orlando Utilities Commission	U.S.	98,496	98,496	-	-	96,474	96,474	-	-	-	-	2,021	2,021	-	-
2018	SERC	C-1087	Duke Energy Florida	U.S.	680,101	680,101	-	-	666,143	666,143	-	-	-	-	13,958	13,958	-	-
2018	SERC	C-1088	Quincy, City of	U.S.	2,029	2,029	-	-	1,987	1,987	-	-	-	-	42	42	-	-
2018	SERC	C-1089	Reedy Creek Improvement District	U.S.	19,314	19,314	-	-	18,917	18,917	-	-	-	-	396	396	-	-
2018	SERC	C-1090	St. Cloud, City of (OUC)	U.S.	12,935	12,935	-	-	12,670	12,670	-	-	-	-	265	265	-	-
2018	SERC	C-1091	Tallahassee, City of	U.S.	45,162	45,162	-	-	44,235	44,235	-	-	-	-	927	927	-	-
2018	SERC	C-1092	Tampa Electric Company	U.S.	330,914	330,914	-	-	324,122	324,122	-	-	-	-	6,792	6,792	-	-
2018	SERC	C-1093	Wauchula, City of	U.S.	1,089	1,089	-	-	1,067	1,067	-	-	-	-	22	22	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	SERC	C-1094	Williston, City of	U.S.	583	583	-	-	571	571	-	-	-	-	12	12	-	-
2018	SERC	C-1095	Winter Park, City of	U.S.	7,167	7,167	-	-	7,020	7,020	-	-	-	-	147	147	-	-
2018	SERC	C-1724	Moore Haven, City of	U.S.	256	256	-	-	251	251	-	-	-	-	5	5	-	-
2018	SERC	C-1072	Florida Municipal Power Agency	U.S.	98,116	98,116	-	-	96,103	96,103	-	-	-	-	2,014	2,014	-	-
2018	SERC	C-1073	Seminole Electric Cooperative	U.S.	240,398	240,398	-	-	235,464	235,464	-	-	-	-	4,934	4,934	-	-
TOTAL SERC					21,074,975	21,074,975	-	-	20,642,443	20,642,443	-	-	-	-	432,532	432,532	-	-
2018	Texas RE	C-1019	ERCOT	U.S.	6,054,901	6,054,901	-	-	5,930,633	5,930,633	-	-	-	-	124,268	124,268	-	-
TOTAL ERCOT					6,054,901	6,054,901	-	-	5,930,633	5,930,633	-	-	-	-	124,268	124,268	-	-
2018	WECC		Alberta Electric System Operator	Canada	730,335	-	730,335	-	1,001,555	-	1,001,555	-	-	-	(271,220)	-	(271,220)	-
2018	WECC		British Columbia Hydro & Power Authority	Canada	1,009,705	-	1,009,705	-	988,982	-	988,982	-	-	-	20,723	-	20,723	-
2018	WECC		Centro Nacional de Control de Energia	Mexico	224,615	-	-	224,615	220,005	-	-	220,005	-	-	4,610	-	-	4,610
2018	WECC		3 Phases Renewables	U.S.	63	63	-	-	62	62	-	-	-	-	1	1	-	-
2018	WECC		Agua Irrigation District - APS	U.S.	534	534	-	-	523	523	-	-	-	-	11	11	-	-
2018	WECC		Aha Macav Power Service	U.S.	299	299	-	-	293	293	-	-	-	-	6	6	-	-
2018	WECC		Ajo Improvement District	U.S.	175	175	-	-	172	172	-	-	-	-	4	4	-	-
2018	WECC		Arizona Electric Power Cooperative, Inc	U.S.	58,023	58,023	-	-	56,832	56,832	-	-	-	-	1,191	1,191	-	-
2018	WECC		Arizona Public Service Company	U.S.	462,962	462,962	-	-	453,460	453,460	-	-	-	-	9,502	9,502	-	-
2018	WECC		Arkansas River Power Authority (ARPA)	U.S.	4,281	4,281	-	-	4,193	4,193	-	-	-	-	88	88	-	-
2018	WECC		Avangrid Renewables	U.S.	1,605	1,605	-	-	1,572	1,572	-	-	-	-	33	33	-	-
2018	WECC		Avista Corporation	U.S.	150,821	150,821	-	-	147,726	147,726	-	-	-	-	3,095	3,095	-	-
2018	WECC		Barrick Goldstrike Mines Inc.	U.S.	22,363	22,363	-	-	21,904	21,904	-	-	-	-	459	459	-	-
2018	WECC		Basin Electric Power Cooperative - CM	U.S.	33,621	33,621	-	-	32,931	32,931	-	-	-	-	690	690	-	-
2018	WECC		Basin Electric Power Cooperative - NW	U.S.	13,046	13,046	-	-	12,778	12,778	-	-	-	-	268	268	-	-
2018	WECC		Basin Electric Power Cooperative - UG	U.S.	2,384	2,384	-	-	2,335	2,335	-	-	-	-	49	49	-	-
2018	WECC		Beartooth Electric Cooperative	U.S.	1,246	1,246	-	-	1,221	1,221	-	-	-	-	26	26	-	-
2018	WECC		Big Horn County Electric Cooperative	U.S.	1,122	1,122	-	-	1,099	1,099	-	-	-	-	23	23	-	-
2018	WECC		Black Hills Energy	U.S.	34,026	34,026	-	-	33,327	33,327	-	-	-	-	698	698	-	-
2018	WECC		Black Hills Power/Cheyenne Light Fuel & Power	U.S.	71,564	71,564	-	-	70,095	70,095	-	-	-	-	1,469	1,469	-	-
2018	WECC		Black Hills State University South Dakota	U.S.	320	320	-	-	314	314	-	-	-	-	7	7	-	-
2018	WECC		Bonneville Power Administration	U.S.	3,197	3,197	-	-	3,132	3,132	-	-	-	-	66	66	-	-
2018	WECC		Bonneville Power Administration-Power Services	U.S.	101,220	101,220	-	-	99,143	99,143	-	-	-	-	2,077	2,077	-	-
2018	WECC		Bonneville Power Administration-Transmission	U.S.	887,122	887,122	-	-	868,915	868,915	-	-	-	-	18,207	18,207	-	-
2018	WECC		Buckeye Water Conservation and Drainage District - APS	U.S.	365	365	-	-	358	358	-	-	-	-	7	7	-	-
2018	WECC		Bureau of Reclamation (Desalter) - c/o DSW EMMO	U.S.	2	2	-	-	2	2	-	-	-	-	0	0	-	-
2018	WECC		Bureau of Reclamation (Wellfield)	U.S.	164	164	-	-	161	161	-	-	-	-	3	3	-	-
2018	WECC		Burlington	U.S.	500	500	-	-	489	489	-	-	-	-	10	10	-	-
2018	WECC		Caesars Entertainment LLC/North	U.S.	997	997	-	-	977	977	-	-	-	-	20	20	-	-
2018	WECC		Caesars Entertainment LLC/South	U.S.	7,677	7,677	-	-	7,519	7,519	-	-	-	-	158	158	-	-
2018	WECC		California Independent System Operator	U.S.	3,557,863	3,557,863	-	-	3,484,843	3,484,843	-	-	-	-	73,020	73,020	-	-
2018	WECC		Calpine Energy Solutions, LLC.	U.S.	21,461	21,461	-	-	21,020	21,020	-	-	-	-	440	440	-	-
2018	WECC		Central Arizona Water Conservation District - 1	U.S.	38,769	38,769	-	-	37,973	37,973	-	-	-	-	796	796	-	-
2018	WECC		City of Aztec Electric Dept	U.S.	579	579	-	-	567	567	-	-	-	-	12	12	-	-
2018	WECC		City of Fallon	U.S.	1,534	1,534	-	-	1,503	1,503	-	-	-	-	31	31	-	-
2018	WECC		City of Farmington	U.S.	16,022	16,022	-	-	15,693	15,693	-	-	-	-	329	329	-	-
2018	WECC		City of Gallup	U.S.	3,357	3,357	-	-	3,288	3,288	-	-	-	-	69	69	-	-
2018	WECC		City of Henderson	U.S.	653	653	-	-	640	640	-	-	-	-	13	13	-	-
2018	WECC		City of Las Vegas	U.S.	689	689	-	-	675	675	-	-	-	-	14	14	-	-
2018	WECC		City of Mesa	U.S.	4,294	4,294	-	-	4,205	4,205	-	-	-	-	88	88	-	-
2018	WECC		City of North Las Vegas	U.S.	345	345	-	-	338	338	-	-	-	-	7	7	-	-
2018	WECC		City of Page	U.S.	1,284	1,284	-	-	1,257	1,257	-	-	-	-	26	26	-	-
2018	WECC		City of Redding	U.S.	12,111	12,111	-	-	11,863	11,863	-	-	-	-	249	249	-	-
2018	WECC		City of Roseville	U.S.	19,216	19,216	-	-	18,822	18,822	-	-	-	-	394	394	-	-
2018	WECC		City of Tacoma DBA Tacoma Power	U.S.	77,837	77,837	-	-	76,240	76,240	-	-	-	-	1,597	1,597	-	-
2018	WECC		City of Williams	U.S.	752	752	-	-	737	737	-	-	-	-	15	15	-	-
2018	WECC		Clark County Water Reclamation District	U.S.	1,283	1,283	-	-	1,257	1,257	-	-	-	-	26	26	-	-
2018	WECC		Colorado River Agency-Bureau of Indian Affairs	U.S.	396	396	-	-	388	388	-	-	-	-	8	8	-	-
2018	WECC		Colorado River Commission of Nevada	U.S.	6,118	6,118	-	-	5,992	5,992	-	-	-	-	126	126	-	-
2018	WECC		Colorado Springs Utilities	U.S.	75,616	75,616	-	-	74,064	74,064	-	-	-	-	1,552	1,552	-	-
2018	WECC		Colorado Springs Utilities	U.S.	1,089	1,089	-	-	1,067	1,067	-	-	-	-	22	22	-	-
2018	WECC		Constellation New Energy	U.S.	7,511	7,511	-	-	7,357	7,357	-	-	-	-	154	154	-	-
2018	WECC		Deseret Generation & Transmission Cooperative	U.S.	2,107	2,107	-	-	2,064	2,064	-	-	-	-	43	43	-	-
2018	WECC		Douglas Palisades / PUD No. 1 of DC	U.S.	307	307	-	-	301	301	-	-	-	-	6	6	-	-
2018	WECC		El Paso Electric Company	U.S.	137,824	137,824	-	-	134,995	134,995	-	-	-	-	2,829	2,829	-	-
2018	WECC		Electrical District #2	U.S.	3,242	3,242	-	-	3,175	3,175	-	-	-	-	67	67	-	-
2018	WECC		Electrical District #2 - Coolidge Generating Station	U.S.	149	149	-	-	146	146	-	-	-	-	3	3	-	-
2018	WECC		Electrical District No. 6 of Pinal County - APS	U.S.	17	17	-	-	16	16	-	-	-	-	0	0	-	-
2018	WECC		Electrical District No. 7 of Maricopa County - APS	U.S.	746	746	-	-	731	731	-	-	-	-	15	15	-	-
2018	WECC		Electrical District No. 8 of Maricopa County - APS	U.S.	5,973	5,973	-	-	5,850	5,850	-	-	-	-	123	123	-	-
2018	WECC		Francis E. Warren Air Force Base	U.S.	377	377	-	-	370	370	-	-	-	-	8	8	-	-
2018	WECC		Grand Valley Power	U.S.	4,011	4,011	-	-	3,929	3,929	-	-	-	-	82	82	-	-
2018	WECC		Harquahala Valley Power Districts - APS	U.S.	1,804	1,804	-	-	1,766	1,766	-	-	-	-	37	37	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	WECC		Holy Cross Energy	U.S.	17,234	17,234	-	-	16,880	16,880	-	-	-	-	354	354	-	-
2018	WECC		Idaho Power Company	U.S.	254,134	254,134	-	-	248,918	248,918	-	-	-	-	5,216	5,216	-	-
2018	WECC		Imperial Irrigation District	U.S.	60,268	60,268	-	-	59,031	59,031	-	-	-	-	1,237	1,237	-	-
2018	WECC		Intermountain Rural Electric Association	U.S.	37,437	37,437	-	-	36,669	36,669	-	-	-	-	768	768	-	-
2018	WECC		Jicarilla Apache Nation Power Authority	U.S.	353	353	-	-	346	346	-	-	-	-	7	7	-	-
2018	WECC		Kaiser Aluminum Fabricated Products LLC	U.S.	4,979	4,979	-	-	4,877	4,877	-	-	-	-	102	102	-	-
2018	WECC		Kit Carson Electric Inc	U.S.	4,741	4,741	-	-	4,644	4,644	-	-	-	-	97	97	-	-
2018	WECC		Las Vegas Valley Water District	U.S.	1,750	1,750	-	-	1,714	1,714	-	-	-	-	36	36	-	-
2018	WECC		Little Colorado Water District	U.S.	9	9	-	-	9	9	-	-	-	-	0	0	-	-
2018	WECC		Los Angeles Department of Water and Power	U.S.	444,422	444,422	-	-	435,300	435,300	-	-	-	-	9,121	9,121	-	-
2018	WECC		Maricopa County Municipal Water Conservation Dist No. 1 - AP	U.S.	865	865	-	-	847	847	-	-	-	-	18	18	-	-
2018	WECC		McMullen Valley Water Conservation & Drainage District - APS	U.S.	2,216	2,216	-	-	2,170	2,170	-	-	-	-	45	45	-	-
2018	WECC		Merced Irrigation District	U.S.	8,398	8,398	-	-	8,225	8,225	-	-	-	-	172	172	-	-
2018	WECC		MGM Resorts International	U.S.	14,736	14,736	-	-	14,434	14,434	-	-	-	-	302	302	-	-
2018	WECC		Modesto Irrigation District	U.S.	40,390	40,390	-	-	39,561	39,561	-	-	-	-	829	829	-	-
2018	WECC		Montana-Dakota Utilities Co.	U.S.	341	341	-	-	334	334	-	-	-	-	7	7	-	-
2018	WECC		Mt. Wheeler Power	U.S.	9,071	9,071	-	-	8,885	8,885	-	-	-	-	186	186	-	-
2018	WECC		Municipal Energy Agency of Nebraska	U.S.	10,250	10,250	-	-	10,040	10,040	-	-	-	-	210	210	-	-
2018	WECC		Municipal Energy Agency of Nebraska - 1	U.S.	2,870	2,870	-	-	2,811	2,811	-	-	-	-	59	59	-	-
2018	WECC		Navajo Agricultural Products Industry (NAPI)	U.S.	82	82	-	-	81	81	-	-	-	-	2	2	-	-
2018	WECC		Navajo Tribal Utility Authority-Arizona	U.S.	927	927	-	-	908	908	-	-	-	-	19	19	-	-
2018	WECC		Navajo Tribal Utility Authority-Colorado	U.S.	5,043	5,043	-	-	4,940	4,940	-	-	-	-	104	104	-	-
2018	WECC		Navajo Tribal Utility Authority-New Mexico	U.S.	2,975	2,975	-	-	2,914	2,914	-	-	-	-	61	61	-	-
2018	WECC		Nebraska Public Power Marketing	U.S.	60	60	-	-	59	59	-	-	-	-	1	1	-	-
2018	WECC		Needles Public Utilities Authority	U.S.	652	652	-	-	638	638	-	-	-	-	13	13	-	-
2018	WECC		Nevada Power Company dba NV Energy	U.S.	504,467	504,467	-	-	494,114	494,114	-	-	-	-	10,353	10,353	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC	U.S.	4,661	4,661	-	-	4,566	4,566	-	-	-	-	96	96	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC - 1	U.S.	155,037	155,037	-	-	151,855	151,855	-	-	-	-	3,182	3,182	-	-
2018	WECC		Okanogan PUD	U.S.	10,011	10,011	-	-	9,806	9,806	-	-	-	-	205	205	-	-
2018	WECC		Overton Power District No. 5	U.S.	6,615	6,615	-	-	6,479	6,479	-	-	-	-	136	136	-	-
2018	WECC		PacifiCorp (EasternBalAuth)	U.S.	813,391	813,391	-	-	796,697	796,697	-	-	-	-	16,694	16,694	-	-
2018	WECC		PacifiCorp (IPC)	U.S.	32	32	-	-	31	31	-	-	-	-	1	1	-	-
2018	WECC		PacifiCorp (Portland)	U.S.	69	69	-	-	67	67	-	-	-	-	1	1	-	-
2018	WECC		PacifiCorp (WAPA-CO-MO)	U.S.	1,738	1,738	-	-	1,702	1,702	-	-	-	-	36	36	-	-
2018	WECC		PacifiCorp West (PACW)	U.S.	330,833	330,833	-	-	324,043	324,043	-	-	-	-	6,790	6,790	-	-
2018	WECC		Pend Oreille County PUD No. 1	U.S.	16,345	16,345	-	-	16,010	16,010	-	-	-	-	335	335	-	-
2018	WECC		Peppermill Hotel Casino	U.S.	670	670	-	-	656	656	-	-	-	-	14	14	-	-
2018	WECC		Platte River Power Authority	U.S.	52,413	52,413	-	-	51,337	51,337	-	-	-	-	1,076	1,076	-	-
2018	WECC		Portland General Electric Company	U.S.	284,382	284,382	-	-	278,545	278,545	-	-	-	-	5,837	5,837	-	-
2018	WECC		Public Service Company of Colorado (Xcel)	U.S.	500,338	500,338	-	-	490,069	490,069	-	-	-	-	10,269	10,269	-	-
2018	WECC		Public Service Company of Colorado (Xcel)-(WAPA-CO-MO)	U.S.	1,877	1,877	-	-	1,838	1,838	-	-	-	-	39	39	-	-
2018	WECC		Public Service Company of New Mexico	U.S.	149,694	149,694	-	-	146,622	146,622	-	-	-	-	3,072	3,072	-	-
2018	WECC		Public Utility District No. 1 of Chelan County	U.S.	28,229	28,229	-	-	27,650	27,650	-	-	-	-	579	579	-	-
2018	WECC		PUD No. 1 of Douglas County	U.S.	15,838	15,838	-	-	15,513	15,513	-	-	-	-	325	325	-	-
2018	WECC		PUD No. 2 of Grant County	U.S.	80,109	80,109	-	-	78,465	78,465	-	-	-	-	1,644	1,644	-	-
2018	WECC		PUD No. 2 of Grant County - 1	U.S.	1,483	1,483	-	-	1,452	1,452	-	-	-	-	30	30	-	-
2018	WECC		Puget Sound Energy, Inc.	U.S.	381,331	381,331	-	-	373,505	373,505	-	-	-	-	7,826	7,826	-	-
2018	WECC		Raton Public Service	U.S.	785	785	-	-	769	769	-	-	-	-	16	16	-	-
2018	WECC		Roosevelt Irrigation District - APS	U.S.	707	707	-	-	693	693	-	-	-	-	15	15	-	-
2018	WECC		Sacramento Municipal Utility District	U.S.	179,938	179,938	-	-	176,245	176,245	-	-	-	-	3,693	3,693	-	-
2018	WECC		Salt River Project	U.S.	488,500	488,500	-	-	478,475	478,475	-	-	-	-	10,026	10,026	-	-
2018	WECC		Seattle City Light	U.S.	154,764	154,764	-	-	151,588	151,588	-	-	-	-	3,176	3,176	-	-
2018	WECC		Shell Energy North America	U.S.	2,728	2,728	-	-	2,672	2,672	-	-	-	-	56	56	-	-
2018	WECC		Silver State Energy Association	U.S.	10,799	10,799	-	-	10,577	10,577	-	-	-	-	222	222	-	-
2018	WECC		Southern Nevada Water Authority	U.S.	1,965	1,965	-	-	1,925	1,925	-	-	-	-	40	40	-	-
2018	WECC		Switch-North	U.S.	429	429	-	-	420	420	-	-	-	-	9	9	-	-
2018	WECC		Switch-South	U.S.	8,546	8,546	-	-	8,371	8,371	-	-	-	-	175	175	-	-
2018	WECC		The Incorporated County of Los Alamos	U.S.	9,714	9,714	-	-	9,515	9,515	-	-	-	-	199	199	-	-
2018	WECC		Tohono O'odham Utility Authority	U.S.	993	993	-	-	973	973	-	-	-	-	20	20	-	-
2018	WECC		Tonopah Irrigation District - APS	U.S.	563	563	-	-	551	551	-	-	-	-	12	12	-	-
2018	WECC		Town of Center	U.S.	276	276	-	-	270	270	-	-	-	-	6	6	-	-
2018	WECC		Town of Fredonia	U.S.	180	180	-	-	176	176	-	-	-	-	4	4	-	-
2018	WECC		Town of Wickenburg	U.S.	426	426	-	-	417	417	-	-	-	-	9	9	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability	U.S.	137,828	137,828	-	-	134,999	134,999	-	-	-	-	2,829	2,829	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability - 1	U.S.	43,303	43,303	-	-	42,414	42,414	-	-	-	-	889	889	-	-
2018	WECC		Tri-State Generation & Transmission Association, Inc.	U.S.	44,225	44,225	-	-	43,317	43,317	-	-	-	-	908	908	-	-
2018	WECC		Truckee Donner Public Utility District	U.S.	2,543	2,543	-	-	2,491	2,491	-	-	-	-	52	52	-	-
2018	WECC		Tucson Electric Power Company	U.S.	235,658	235,658	-	-	230,821	230,821	-	-	-	-	4,837	4,837	-	-
2018	WECC		Turlock Irrigation District	U.S.	34,788	34,788	-	-	34,074	34,074	-	-	-	-	714	714	-	-
2018	WECC		U.S. Army Yuma Proving Ground	U.S.	321	321	-	-	314	314	-	-	-	-	7	7	-	-
2018	WECC		US Dept of Energy - Kirtland AFB	U.S.	6,879	6,879	-	-	6,738	6,738	-	-	-	-	141	141	-	-
2018	WECC		Western Area Power - Loveland, CO	U.S.	2,770	2,770	-	-	2,713	2,713	-	-	-	-	57	57	-	-
2018	WECC		Western Area Power - Loveland, CO - CM	U.S.	32,867	32,867	-	-	32,193	32,193	-	-	-	-	675	675	-	-

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Mexico
2018	WECC		Western Area Power Administration - CRSP	U.S.	33,202	33,202	-	-	32,521	32,521	-	-	-	-	681	681	-	-
2018	WECC		Western Area Power Administration-Desert Southwest Region	U.S.	27,022	27,022	-	-	26,468	26,468	-	-	-	-	555	555	-	-
2018	WECC		Western Area Power Administration-Sierra Nevada Region	U.S.	24,341	24,341	-	-	23,841	23,841	-	-	-	-	500	500	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	6,158	6,158	-	-	6,032	6,032	-	-	-	-	126	126	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	130	130	-	-	127	127	-	-	-	-	3	3	-	-
2018	WECC		Wynn Las Vegas	U.S.	2,836	2,836	-	-	2,778	2,778	-	-	-	-	58	58	-	-
2018	WECC		Wyoming Municipal Power Agency	U.S.	3,522	3,522	-	-	3,450	3,450	-	-	-	-	72	72	-	-
2018	WECC		Yampa Valley Electric Association	U.S.	9,071	9,071	-	-	8,885	8,885	-	-	-	-	186	186	-	-
TOTAL WECC					13,602,228	11,637,574	1,740,039	224,615	13,609,272	11,398,730	1,990,537	220,005	-	-	(7,044)	238,844	(250,497)	4,610
TOTAL ERO					72,011,373	65,130,829	6,655,929	224,615	72,011,373	63,794,116	7,997,252	220,005	-	-	(0)	1,336,713	(1,341,323)	4,610

Summary by Regional Entity

2018	MRO				7,890,975	7,134,967	756,008	-	7,729,024	6,988,532	740,492	-	-	161,950	146,435	15,516	-	
2018	NPCC				8,717,470	4,557,588	4,159,882	-	9,730,274	4,464,051	5,266,223	-	-	(1,012,804)	93,538	(1,106,341)	-	
2018	RF				14,670,823	14,670,823	-	-	14,369,727	14,369,727	-	-	-	301,097	301,097	-	-	
2018	SERC				21,074,975	21,074,975	-	-	20,642,443	20,642,443	-	-	-	432,532	432,532	-	-	
2018	Texas RE				6,054,901	6,054,901	-	-	5,930,633	5,930,633	-	-	-	124,268	124,268	-	-	
2018	WECC				13,602,228	11,637,574	1,740,039	224,615	13,609,272	11,398,730	1,990,537	220,005	-	-	(7,044)	238,844	(250,497)	4,610
Total					72,011,373	65,130,829	6,655,929	224,615	72,011,373	63,794,116	7,997,252	220,005	-	-	(0)	1,336,713	(1,341,323)	4,610

Data Year	Regional Entity	NERC ID	Entity	Country	Total Regional Entity Assessments (Including WIRAB Assessments)				Regional Entity NEL Assessments				Penalty Sanctions - US Only		NPCC CORC Program			WECC Compliance Assessments (ex.AESO)				WIRAB Assessments			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	WECC		California Independent System Operator	U.S.	6,886,934	6,886,934	-	-	7,176,702	7,176,702	-	-	(839,207)	(839,207)	-	-	-	296,884	296,884	-	-	252,556	252,556	-	-
2018	WECC		Calpine Energy Solutions, LLC.	U.S.	41,542	41,542	-	-	43,290	43,290	-	-	(5,062)	(5,062)	-	-	-	1,791	1,791	-	-	1,523	1,523	-	-
2018	WECC		Central Arizona Water Conservation District - 1	U.S.	75,045	75,045	-	-	78,202	78,202	-	-	(9,145)	(9,145)	-	-	-	3,235	3,235	-	-	2,752	2,752	-	-
2018	WECC		City of Aztec Electric Dept	U.S.	1,121	1,121	-	-	1,168	1,168	-	-	(137)	(137)	-	-	-	48	48	-	-	41	41	-	-
2018	WECC		City of Fallon	U.S.	2,970	2,970	-	-	3,095	3,095	-	-	(362)	(362)	-	-	-	128	128	-	-	109	109	-	-
2018	WECC		City of Farmington	U.S.	31,013	31,013	-	-	32,318	32,318	-	-	(3,779)	(3,779)	-	-	-	1,337	1,337	-	-	1,137	1,137	-	-
2018	WECC		City of Gallup	U.S.	6,498	6,498	-	-	6,772	6,772	-	-	(792)	(792)	-	-	-	280	280	-	-	238	238	-	-
2018	WECC		City of Henderson	U.S.	1,264	1,264	-	-	1,317	1,317	-	-	(154)	(154)	-	-	-	54	54	-	-	46	46	-	-
2018	WECC		City of Las Vegas	U.S.	1,334	1,334	-	-	1,390	1,390	-	-	(163)	(163)	-	-	-	58	58	-	-	49	49	-	-
2018	WECC		City of Mesa	U.S.	8,311	8,311	-	-	8,661	8,661	-	-	(1,013)	(1,013)	-	-	-	358	358	-	-	305	305	-	-
2018	WECC		City of North Las Vegas	U.S.	669	669	-	-	697	697	-	-	(81)	(81)	-	-	-	29	29	-	-	25	25	-	-
2018	WECC		City of Page	U.S.	2,485	2,485	-	-	2,590	2,590	-	-	(303)	(303)	-	-	-	107	107	-	-	91	91	-	-
2018	WECC		City of Redding	U.S.	23,444	23,444	-	-	24,430	24,430	-	-	(2,857)	(2,857)	-	-	-	1,011	1,011	-	-	860	860	-	-
2018	WECC		City of Roseville	U.S.	37,196	37,196	-	-	38,762	38,762	-	-	(4,533)	(4,533)	-	-	-	1,603	1,603	-	-	1,364	1,364	-	-
2018	WECC		City of Tacoma DBA Tacoma Power	U.S.	150,669	150,669	-	-	157,008	157,008	-	-	(18,360)	(18,360)	-	-	-	6,495	6,495	-	-	5,525	5,525	-	-
2018	WECC		City of Williams	U.S.	1,457	1,457	-	-	1,518	1,518	-	-	(177)	(177)	-	-	-	63	63	-	-	53	53	-	-
2018	WECC		Clark County Water Reclamation District	U.S.	2,484	2,484	-	-	2,588	2,588	-	-	(303)	(303)	-	-	-	107	107	-	-	91	91	-	-
2018	WECC		Colorado River Agency-Bureau of Indian Affairs	U.S.	766	766	-	-	799	799	-	-	(93)	(93)	-	-	-	33	33	-	-	28	28	-	-
2018	WECC		Colorado River Commission of Nevada	U.S.	11,842	11,842	-	-	12,340	12,340	-	-	(1,443)	(1,443)	-	-	-	510	510	-	-	434	434	-	-
2018	WECC		Colorado Springs Utilities	U.S.	146,369	146,369	-	-	152,528	152,528	-	-	(17,836)	(17,836)	-	-	-	6,310	6,310	-	-	5,368	5,368	-	-
2018	WECC		Colorado Springs Utilities	U.S.	2,108	2,108	-	-	2,197	2,197	-	-	(257)	(257)	-	-	-	91	91	-	-	77	77	-	-
2018	WECC		Constellation New Energy	U.S.	14,539	14,539	-	-	15,151	15,151	-	-	(1,772)	(1,772)	-	-	-	627	627	-	-	533	533	-	-
2018	WECC		Deseret Generation & Transmission Cooperative	U.S.	4,079	4,079	-	-	4,250	4,250	-	-	(497)	(497)	-	-	-	176	176	-	-	150	150	-	-
2018	WECC		Douglas Palisades / PUD No. 1 of DC	U.S.	594	594	-	-	619	619	-	-	(72)	(72)	-	-	-	26	26	-	-	22	22	-	-
2018	WECC		El Paso Electric Company	U.S.	266,785	266,785	-	-	278,010	278,010	-	-	(32,509)	(32,509)	-	-	-	11,501	11,501	-	-	9,783	9,783	-	-
2018	WECC		Electrical District #2	U.S.	6,275	6,275	-	-	6,539	6,539	-	-	(765)	(765)	-	-	-	270	270	-	-	230	230	-	-
2018	WECC		Electrical District #2 - Coolidge Generating Station	U.S.	288	288	-	-	300	300	-	-	(35)	(35)	-	-	-	12	12	-	-	11	11	-	-
2018	WECC		Electrical District No. 6 of Pinal County - APS	U.S.	32	32	-	-	33	33	-	-	(4)	(4)	-	-	-	1	1	-	-	1	1	-	-
2018	WECC		Electrical District No. 7 of Maricopa County - APS	U.S.	1,444	1,444	-	-	1,505	1,505	-	-	(176)	(176)	-	-	-	62	62	-	-	53	53	-	-
2018	WECC		Electrical District No. 8 of Maricopa County - APS	U.S.	11,562	11,562	-	-	12,049	12,049	-	-	(1,409)	(1,409)	-	-	-	498	498	-	-	424	424	-	-
2018	WECC		Francis E. Warren Air Force Base	U.S.	731	731	-	-	761	761	-	-	(89)	(89)	-	-	-	31	31	-	-	27	27	-	-
2018	WECC		Grand Valley Power	U.S.	7,764	7,764	-	-	8,091	8,091	-	-	(946)	(946)	-	-	-	335	335	-	-	285	285	-	-
2018	WECC		Harquahala Valley Power Districts - APS	U.S.	3,491	3,491	-	-	3,638	3,638	-	-	(425)	(425)	-	-	-	150	150	-	-	128	128	-	-
2018	WECC		Holy Cross Energy	U.S.	33,360	33,360	-	-	34,764	34,764	-	-	(4,065)	(4,065)	-	-	-	1,438	1,438	-	-	1,223	1,223	-	-
2018	WECC		Idaho Power Company	U.S.	491,926	491,926	-	-	512,624	512,624	-	-	(59,944)	(59,944)	-	-	-	21,206	21,206	-	-	18,040	18,040	-	-
2018	WECC		Imperial Irrigation District	U.S.	116,661	116,661	-	-	121,569	121,569	-	-	(14,216)	(14,216)	-	-	-	5,029	5,029	-	-	4,278	4,278	-	-
2018	WECC		Interrmountain Rural Electric Association	U.S.	72,467	72,467	-	-	75,516	75,516	-	-	(8,830)	(8,830)	-	-	-	3,124	3,124	-	-	2,657	2,657	-	-
2018	WECC		Jicarilla Apache Nation Power Authority	U.S.	683	683	-	-	712	712	-	-	(83)	(83)	-	-	-	29	29	-	-	25	25	-	-
2018	WECC		Kaiser Aluminum Fabricated Products LLC	U.S.	9,637	9,637	-	-	10,043	10,043	-	-	(1,174)	(1,174)	-	-	-	415	415	-	-	353	353	-	-
2018	WECC		Kit Carson Electric Inc	U.S.	9,177	9,177	-	-	9,563	9,563	-	-	(1,118)	(1,118)	-	-	-	396	396	-	-	337	337	-	-
2018	WECC		Las Vegas Valley Water District	U.S.	3,387	3,387	-	-	3,530	3,530	-	-	(413)	(413)	-	-	-	146	146	-	-	124	124	-	-
2018	WECC		Little Colorado Water District	U.S.	17	17	-	-	18	18	-	-	(2)	(2)	-	-	-	1	1	-	-	1	1	-	-
2018	WECC		Los Angeles Department of Water and Power	U.S.	860,264	860,264	-	-	896,460	896,460	-	-	(104,827)	(104,827)	-	-	-	37,085	37,085	-	-	31,547	31,547	-	-
2018	WECC		Maricopa County Municipal Water Conservation Dist No. 1 - APS	U.S.	1,673	1,673	-	-	1,744	1,744	-	-	(204)	(204)	-	-	-	72	72	-	-	61	61	-	-
2018	WECC		McMullen Valley Water Conservation & Drainage District - APS	U.S.	4,289	4,289	-	-	4,470	4,470	-	-	(523)	(523)	-	-	-	185	185	-	-	157	157	-	-
2018	WECC		Merced Irrigation District	U.S.	16,255	16,255	-	-	16,939	16,939	-	-	(1,981)	(1,981)	-	-	-	701	701	-	-	596	596	-	-
2018	WECC		MGM Resorts International	U.S.	28,524	28,524	-	-	29,725	29,725	-	-	(3,476)	(3,476)	-	-	-	1,230	1,230	-	-	1,046	1,046	-	-
2018	WECC		Modesto Irrigation District	U.S.	78,183	78,183	-	-	81,473	81,473	-	-	(9,527)	(9,527)	-	-	-	3,370	3,370	-	-	2,867	2,867	-	-
2018	WECC		Montana-Dakota Utilities Co.	U.S.	660	660	-	-	688	688	-	-	(80)	(80)	-	-	-	28	28	-	-	24	24	-	-
2018	WECC		Mt. Wheeler Power	U.S.	17,559	17,559	-	-	18,298	18,298	-	-	(2,140)	(2,140)	-	-	-	757	757	-	-	644	644	-	-
2018	WECC		Municipal Energy Agency of Nebraska	U.S.	19,841	19,841	-	-	20,676	20,676	-	-	(2,418)	(2,418)	-	-	-	855	855	-	-	728	728	-	-
2018	WECC		Municipal Energy Agency of Nebraska - 1	U.S.	5,555	5,555	-	-	5,789	5,789	-	-	(677)	(677)	-	-	-	239	239	-	-	204	204	-	-
2018	WECC		Navajo Agricultural Products Industry (NAPI)	U.S.	160	160	-	-	166	166	-	-	(19)	(19)	-	-	-	7	7	-	-	6	6	-	-
2018	WECC		Navajo Tribal Utility Authority-Arizona	U.S.	1,794	1,794	-	-	1,870	1,870	-	-	(219)	(219)	-	-	-	77	77	-	-	66	66	-	-
2018	WECC		Navajo Tribal Utility Authority-Colorado	U.S.	9,762	9,762	-	-	10,173	10,173	-	-	(1,190)	(1,190)	-	-	-	421							

2018 NEL Calculations and Allocations to Load Serving Entities (or Designee) for the 2020 NERC and RE Assessments

Data Year	Regional Entity	NERC ID	Entity	Country	Total Regional Entity Assessments (Including WIRAB Assessments)				Regional Entity NEL Assessments				Penalty Sanctions - US Only		NPCC CORC Program			WECC Compliance Assessments (ex.AESO)				WIRAB Assessments			
					Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	WECC		Salt River Project	U.S.	945,587	945,587	-	-	985,373	985,373	-	-	(115,224)	(115,224)	-	-	-	40,763	40,763	-	-	34,676	34,676	-	-
2018	WECC		Seattle City Light	U.S.	299,576	299,576	-	-	312,180	312,180	-	-	(36,505)	(36,505)	-	-	-	12,914	12,914	-	-	10,986	10,986	-	-
2018	WECC		Shell Energy North America	U.S.	5,280	5,280	-	-	5,502	5,502	-	-	(643)	(643)	-	-	-	228	228	-	-	194	194	-	-
2018	WECC		Silver State Energy Association	U.S.	20,903	20,903	-	-	21,782	21,782	-	-	(2,547)	(2,547)	-	-	-	901	901	-	-	767	767	-	-
2018	WECC		Southern Nevada Water Authority	U.S.	3,804	3,804	-	-	3,964	3,964	-	-	(464)	(464)	-	-	-	164	164	-	-	140	140	-	-
2018	WECC		Switch-North	U.S.	830	830	-	-	865	865	-	-	(101)	(101)	-	-	-	36	36	-	-	30	30	-	-
2018	WECC		Switch-South	U.S.	16,543	16,543	-	-	17,239	17,239	-	-	(2,016)	(2,016)	-	-	-	713	713	-	-	607	607	-	-
2018	WECC		The Incorporated County of Los Alamos	U.S.	18,803	18,803	-	-	19,594	19,594	-	-	(2,291)	(2,291)	-	-	-	811	811	-	-	690	690	-	-
2018	WECC		Tohono O'odham Utility Authority	U.S.	1,922	1,922	-	-	2,003	2,003	-	-	(234)	(234)	-	-	-	83	83	-	-	70	70	-	-
2018	WECC		Tonopah Irrigation District - APS	U.S.	1,089	1,089	-	-	1,135	1,135	-	-	(133)	(133)	-	-	-	47	47	-	-	40	40	-	-
2018	WECC		Town of Center	U.S.	534	534	-	-	556	556	-	-	(65)	(65)	-	-	-	23	23	-	-	20	20	-	-
2018	WECC		Town of Fredonia	U.S.	349	349	-	-	363	363	-	-	(42)	(42)	-	-	-	15	15	-	-	13	13	-	-
2018	WECC		Town of Wickenburg	U.S.	825	825	-	-	860	860	-	-	(101)	(101)	-	-	-	36	36	-	-	30	30	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability	U.S.	266,792	266,792	-	-	278,018	278,018	-	-	(32,510)	(32,510)	-	-	-	11,501	11,501	-	-	9,784	9,784	-	-
2018	WECC		Tri-State Generation & Transmission Assoc. Inc - Reliability - 1	U.S.	83,821	83,821	-	-	87,347	87,347	-	-	(10,214)	(10,214)	-	-	-	3,613	3,613	-	-	3,074	3,074	-	-
2018	WECC		Tri-State Generation & Transmission Association, Inc.	U.S.	85,606	85,606	-	-	89,208	89,208	-	-	(10,432)	(10,432)	-	-	-	3,690	3,690	-	-	3,139	3,139	-	-
2018	WECC		Truckee Donner Public Utility District	U.S.	4,922	4,922	-	-	5,130	5,130	-	-	(600)	(600)	-	-	-	212	212	-	-	181	181	-	-
2018	WECC		Tucson Electric Power Company	U.S.	456,162	456,162	-	-	475,355	475,355	-	-	(55,586)	(55,586)	-	-	-	19,664	19,664	-	-	16,728	16,728	-	-
2018	WECC		Turlock Irrigation District	U.S.	67,339	67,339	-	-	70,172	70,172	-	-	(8,206)	(8,206)	-	-	-	2,903	2,903	-	-	2,469	2,469	-	-
2018	WECC		U.S. Army Yuma Proving Ground	U.S.	621	621	-	-	647	647	-	-	(76)	(76)	-	-	-	27	27	-	-	23	23	-	-
2018	WECC		US Dept of Energy - Kirtland AFB	U.S.	13,315	13,315	-	-	13,875	13,875	-	-	(1,623)	(1,623)	-	-	-	574	574	-	-	488	488	-	-
2018	WECC		Western Area Power - Loveland, CO	U.S.	5,361	5,361	-	-	5,587	5,587	-	-	(653)	(653)	-	-	-	231	231	-	-	197	197	-	-
2018	WECC		Western Area Power - Loveland, CO - CM	U.S.	63,621	63,621	-	-	66,298	66,298	-	-	(7,752)	(7,752)	-	-	-	2,743	2,743	-	-	2,333	2,333	-	-
2018	WECC		Western Area Power Administration - CRSP	U.S.	64,269	64,269	-	-	66,973	66,973	-	-	(7,832)	(7,832)	-	-	-	2,771	2,771	-	-	2,357	2,357	-	-
2018	WECC		Western Area Power Administration-Desert Southwest Region	U.S.	52,307	52,307	-	-	54,508	54,508	-	-	(6,374)	(6,374)	-	-	-	2,255	2,255	-	-	1,918	1,918	-	-
2018	WECC		Western Area Power Administration-Sierra Nevada Region	U.S.	47,117	47,117	-	-	49,099	49,099	-	-	(5,741)	(5,741)	-	-	-	2,031	2,031	-	-	1,728	1,728	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	11,920	11,920	-	-	12,422	12,422	-	-	(1,453)	(1,453)	-	-	-	514	514	-	-	437	437	-	-
2018	WECC		Western Area Power Administration-Upper Great Plains Region	U.S.	252	252	-	-	262	262	-	-	(31)	(31)	-	-	-	11	11	-	-	9	9	-	-
2018	WECC		Wynn Las Vegas	U.S.	5,490	5,490	-	-	5,721	5,721	-	-	(669)	(669)	-	-	-	237	237	-	-	201	201	-	-
2018	WECC		Wyoming Municipal Power Agency	U.S.	6,817	6,817	-	-	7,104	7,104	-	-	(831)	(831)	-	-	-	294	294	-	-	250	250	-	-
2018	WECC		Yampa Valley Electric Association	U.S.	17,558	17,558	-	-	18,297	18,297	-	-	(2,140)	(2,140)	-	-	-	757	757	-	-	644	644	-	-
TOTAL WECC					26,268,300	22,526,787	3,253,746	487,767	28,027,000	23,474,600	4,099,320	453,080	(2,745,000)	(2,745,000)	-	-	-	(0)	971,091	(989,834)	18,743	986,300	826,096	144,259	15,944
TOTAL ERO					116,712,162	105,527,060	10,697,335	487,767	112,921,587	103,249,668	9,218,840	453,080	(6,300,345)	(6,300,345)	9,104,620	6,780,550	2,324,070	(0)	971,091	(989,834)	18,743	986,300	826,096	144,259	15,944
Summary by Regional Entity																									
2018	MRO				16,983,251	15,302,710	1,680,541	-	17,540,969	15,860,428	1,680,541	-	(557,718)	(557,718)	-	-	-	-	-	-	-	-	-	-	-
2018	NPCC				15,338,737	9,575,689	5,763,048	-	6,354,117	2,915,139	3,438,978	-	(120,000)	(120,000)	9,104,620	6,780,550	2,324,070	-	-	-	-	-	-	-	-
2018	RF				22,318,623	22,318,623	-	-	22,586,250	22,586,250	-	-	(267,627)	(267,627)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC				22,459,123	22,459,123	-	-	24,359,123	24,359,123	-	-	(1,900,000)	(1,900,000)	-	-	-	-	-	-	-	-	-	-	-
2018	Texas RE				13,344,128	13,344,128	-	-	14,054,128	14,054,128	-	-	(710,000)	(710,000)	-	-	-	-	-	-	-	-	-	-	-
2018	WECC				26,268,300	22,526,787	3,253,746	487,767	28,027,000	23,474,600	4,099,320	453,080	(2,745,000)	(2,745,000)	-	-	-	(0)	971,091	(989,834)	18,743	986,300	826,096	144,259	15,944
Total					116,712,162	105,527,060	10,697,335	487,767	112,921,587	103,249,668	9,218,840	453,080	(6,300,345)	(6,300,345)	9,104,620	6,780,550	2,324,070	(0)	971,091	(989,834)	18,743	986,300	826,096	144,259	15,944

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 3

MIDWEST RELIABILITY ORGANIZATION

PROPOSED 2020 BUSINESS PLAN AND BUDGET



Midwest Reliability Organization 2020 Business Plan and Budget

Approved by MRO Board of Directors

Date: June 20, 2019

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Introduction

The following table summarizes the 2020 Midwest Reliability Organization (MRO) budget.

TOTAL RESOURCES (in whole dollars)				
	2020 Budget	U.S.	Canada	Mexico
Statutory FTEs	63.00			
Non-statutory FTEs				
Total FTEs	63.00			
Statutory Expenses	\$ 17,305,969			
Non-Statutory Expenses	\$ -			
Total Expenses	\$ 17,305,969			
Statutory Inc(Dec) in Fixed Assets	\$ 235,000			
Non-Statutory Inc(Dec) in Fixed Assets	\$ -			
Total Inc(Dec) in Fixed Assets	\$ 235,000			
Assessment Stabilization Adjustment				
Non-Statutory Stabilization Adjustment				
Total Assessment Stabilization Adjustment	\$ -			
Total Statutory Funding Requirement	\$ 17,540,969			
Total Non-Statutory Funding Requirement	\$ -			
Total Funding Requirement	\$ 17,540,969			
Statutory Funding Assessments	\$ 16,983,251	\$ 15,302,710	\$ 1,680,541	-
Non-Statutory Fees				
NEL	492,730,106	445,523,290	47,206,816	-
NEL%	100.00%	90.42%	9.58%	0.00%

Table 1. MRO 2020 Budget

Organizational Overview

MRO is a Delaware nonprofit¹ corporation that is a cross-border Regional Entity² operating under a delegation agreement (Delegation Agreement) with the North American Electric Reliability Corporation (NERC)³ and in accordance with the MRO Bylaws. The MRO Region

¹ MRO is tax exempt under Internal Revenue Service Section 501(c)(3) and under applicable State of Minnesota provisions.

² 16 U.S.C. § 824o(a)(7)

³ The Commission certified NERC as the electric reliability organization (“ERO”) in accordance with Section 215 of the Federal Power Act on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61, 062 (2006) (“ERO Certification Order”), *order on reh’g and compliance*, 117 FERC ¶ 61, 126 (2006), *aff’d sub nom. Alcoa Inc. v. FERC*, 564 F.3d 342 (D.C. Cir. 2009).

covers central North America and includes all or portions of 16 states within the United States,⁴ and the Canadian provinces of Saskatchewan and Manitoba. MRO's Delegation Agreement was approved by the Federal Energy Regulatory Commission (FERC)⁵ pursuant to FERC's authority under the Federal Power Act (FPA)⁶ and is effective through December 31, 2020.

MRO's vision is:

"A highly reliable and secure North American bulk power system."

MRO's mission is:

"To identify, prioritize and assure effective and efficient mitigation of risks to the reliability and security of the North American bulk power system by promoting Highly Effective Reliability Organizations™ (HEROs)."

MRO's vision and mission align with, and support, the Electric Reliability Organization (ERO) Enterprise's⁷ vision and mission.⁸

Further, MRO supports the ERO Enterprise Long-Term Strategy⁹ and the ERO Enterprise Operating Plan.¹⁰ In addition, working closely with registered entities and subject matter experts in the MRO Region, MRO continually identifies and assesses risks to reliability of the regional bulk power system. Region-specific activities to support the ERO Enterprise direction and address regional risks are reflected in MRO's Strategic Plan, Operating Objectives and Supporting Activities (MRO Strategic Plan).¹¹

⁴ The MRO Region covers the states of Iowa, Kansas, Nebraska, Minnesota, North Dakota, and Oklahoma; and portions of Arkansas, Illinois, Louisiana, Michigan, Missouri, Montana, New Mexico, South Dakota, Texas, and Wisconsin.

⁵ *Order Conditionally Approving Revised Pro Forma Delegation Agreement and Revised Delegation Agreements with Regional Entities*, 153 FERC ¶61,135 (November 2015); *Letter Order Accepting Compliance Filing* (March 2016); *Order Granting Approvals in Connection with the Dissolution of Southwest Power Pool Regional Entity*, 163 FERC ¶61,094 (May 2018); *Letter Order Transfer of Registered Entities and Revised Regional Delegation Agreements* (December 2018).

⁶ 16 U.S.C. 824 o (e)(4)

⁷ The ERO Enterprise refers to NERC and the Regional Entities collectively.

⁸ MRO expands upon the ERO Enterprise mission statement *"To assure the effective and efficient reduction of risks to the reliability and security of the grid"* adding the concepts of identifying and prioritizing mitigation of risks and to include the High Reliability Organization (HRO) theory and principles, which MRO brands as "HERO." Although this is not explicitly included in the ERO Enterprise mission statement, NERC also promotes the HRO theory.

⁹ ERO Enterprise Long-Term Strategy as approved by the NERC Board of Trustees November 9, 2017.

¹⁰ ERO Enterprise Operating Plan as approved by the NERC Board of Trustees November 9, 2017. The ERO Enterprise Operating Plan, guided by the long-term strategy, identifies the ERO Enterprise's vision, mission, core principals, and goals, and provides a list of key contributing activities by the combined ERO Enterprise, NERC, and the Regional Entities as applicable to inform a rolling three-year operational planning horizon. The operating plan is reviewed biennially, in the same year the Reliability Issues Steering Committee (RISC) reviews and updates its report, and is updated as needed.

¹¹ The MRO Strategic Plan, Operating Objectives and Supporting Activities (approved March 2019) align with and support the ERO Enterprise Operating Plan and absent any unforeseen reliability issues or changes in priorities, are projected to remain relatively stable from year to year and are used for the purposes of projecting budget requirements.

In the MRO Strategic Plan, MRO adopted the ERO Enterprise Core Principles¹² to guide its conduct and behaviors. These principles incorporate the MRO themes of clarity, assurance, and results.

MRO Core Principles

We are accountable for results, providing clarity and assurance of procedures, processes and controls to improve the reliability of the bulk power system. The following core principles guide our conduct and behavior:

- **Accountability**
 - *Maintain the public trust in fulfilling responsibilities and use our funding wisely.*
 - *Act in a timely manner on the basis of facts to address issues related to events, emerging reliability risks, the needs of stakeholders, and the public interest.*
- **Independence**
 - *Be impartial, objective, fair, and intellectually honest.*
 - *Ensure governance practices that provide both regulatory independence and inclusion of stakeholder expertise to address reliability and security matters.*
- **Inclusiveness and Transparency**
 - *Create opportunities for stakeholder engagement.*
 - *Consider and balance the diverse interests of all stakeholders, including costs imposed to the consumer.*
 - *Leverage industry expertise and avoid unnecessary duplication.*
- **Innovation**
 - *Assess emerging risks and adapt to change.*
 - *Encourage new ideas and prioritize efforts that contribute to improving productivity and reliable operations.*
- **Excellence**
 - *Strive for operational excellence by being rigorous, accurate, and exacting.*
 - *Promote the active participation of the best technical experts.*
 - *Make informed decisions regarding efficient use and allocation of resources.*
- **Integrity**
 - *Maintain the highest levels of ethical conduct.*
 - *Maintain respectful relationships.*
 - *Protect the security of confidential information.*

Membership and Governance

MRO membership¹³ consists of members and adjunct members. Adjunct members are entities that are not eligible to belong to an industry sector but have a material interest in reliability issues in the MRO Region. As of April 2019, MRO had 93 members, 7 of which are non-voting adjunct members. Each voting member organization belongs to one of seven industry sectors:

- Canadian Utility
- Cooperative
- Federal Power Marketing Agency
- Generator and Power Marketer

¹² MRO made three additions in keeping with the ERO Enterprise Core Principles: 1) the addition of accountability for clarity, assurance, and results; 2) an addition to articulate using funding wisely; and 3) a description of how to strive for operational excellence.

¹³ Membership is voluntary and provides members with voting rights. There is no fee for membership.

- Investor Owned Utility
- Municipal Utility
- Transmission System Operator

Members are encouraged to participate in MRO organizational groups.

MRO's Board of Directors is a combination of independent and stakeholder directors. In 2020, the MRO Board will consist of 17 stakeholder directors elected by members from the 7 industry sectors, plus 4 independent directors and 2 regional directors elected by all members. Pursuant to MRO's Bylaws, no two industry sectors can control a vote. In addition, the board has adopted procedures to ensure it carries out its responsibilities free of conflicts of interest.

The board's duties include, but are not limited to, the following:

- Govern the corporation and oversee all of its activities
- Establish and oversee all organizational groups
- Oversee accomplishment of all functions set forth in any delegation or other agreement with NERC or any governmental entity related to development, monitoring, and enforcement of Reliability Standards and related matters
- Approve, revise, and enforce member data and information requirements and related confidentiality requirements
- Establish and approve an annual budget
- Represent MRO in legal and regulatory proceedings
- Hire the President and CEO
- Establish board committees as necessary

The board has three committees:

- Finance and Audit Committee (FAC)
- Governance and Personnel Committee (GPC)
- Organizational Group Oversight Committee (OGOC)

The board has established three advisory councils comprised of stakeholder members:

- Compliance Monitoring and Enforcement Program Advisory Council (CMEPAC)
- Reliability Advisory Council (RAC)
- Security Advisory Council (SAC)

Each advisory council may have subgroups that it oversees. All organizational group charters are published on MRO's website. Board-approved *Policy and Procedure 3: Establishment, Responsibilities, and Procedures of Organizational Groups and MRO Representation on NERC Committees* sets out the processes for the organizational groups and MRO NERC Representatives.

Business Plan and Budget Development

Each year, MRO prepares an annual Business Plan and Budget for the following calendar year. The Business Plan and Budget takes into account the ERO Enterprise Long-Term Strategy, the ERO Enterprise Operating Plan, and the MRO Strategic Plan. MRO staff develops the Business Plan and Budget with board and stakeholder input. The Business Plan and Budget process is a coordinated effort with NERC and the other Regional Entities.

Beginning with the 2020 Business Plan and Budget (2020 BP&B), NERC and the Regional Entities are implementing format revisions to the Statement of Activities report. These revisions

are intended to ensure that NERC and the Regional Entities report information consistently from new accounting standards (e.g., leasing standards and right-of-use assets), provide enhanced transparency of financing activity (e.g., debt borrowing, leased-financed asset purchases, and principal payments), and streamline sections of the report related to non-cash expenses (primarily depreciation and amortization). The goal of the new format is to improve the effectiveness of the report to the reader and to provide a total budget amount that more closely reflects the amount of annual revenues required from assessments and other funding sources. One of the format revisions is that the Statement of Activities will no longer show an expense item for depreciation and an equal and offsetting credit for depreciation in fixed asset activity (that resulted in depreciation having no impact on funding requirements or actual results).

In the 2020 BP&B document, the 2019 budget has been restated to reflect the new Statement of Activities reporting format when comparing 2020 to 2019 to show the year-over-year budget changes on a comparable basis. As such, in the total entity and departmental Statement of Activities, the depreciation expense has been removed from the 2019 operating expense budget and projection, and an equal credit of depreciation expense has been removed from the 2019 fixed asset activity budget and projection.

The draft Business Plan and Budget is reviewed by the MRO FAC and the board, and is subsequently posted for stakeholder comment. After consideration of stakeholder comments, but prior to obtaining final approval from its board of directors, MRO seeks NERC input. The MRO Board considers the final version of the Business Plan and Budget at its June meeting, and upon approval, staff submits it to NERC for approval by NERC's Board of Trustees. Upon approval of NERC's Business Plan and Budget and the Regional Entities' Business Plans and Budgets, a filing is submitted to FERC for approval, which is obtained in October or November of the year preceding the budget year.

Financial Policies and Controls

An independent auditing firm annually audits MRO's financial statements. The FAC Charter states: The FAC "evaluates the performance of the external auditor and, if so determined, recommends to the board the reappointment of the external auditor or steps to replace the external auditor." Once hired, the independent auditor communicates directly with the FAC Chair and committee regarding audit matters. The FAC and MRO staff perform an annual review of the auditing firm's performance.

MRO's Purchase Requisition Policy and Contract Management Procedure govern the procurement of goods and services in excess of \$500. These protocols require that a purchase order be approved by MRO's Vice President Finance and Administration and the departmental director or vice president for all purchases in excess of \$500. Additionally, purchases in excess of \$10,000 must be approved by MRO's President and CEO.

MRO's Expense Statement Guidelines provide guidance on reasonable, reimbursable travel expenses. Expenses are reviewed for proper documentation and reasonableness by the employee's supervisor, the Accounting Specialist, and MRO's Vice President Finance and Administration.

MRO utilizes a system to track and report time by program area, project, and registered entity, when applicable. This system is also used to report and approve expenses.

In addition to its operating expenses, MRO's budget includes a cash reserve as specified in *Policy and Procedure 13: Reserves Policy*. (Note: this policy and procedure is a revision of our

former policy and is pending approval by the MRO Board. References to the document will be as proposed.)

Pursuant to the NERC ROP Section 1107.4, MRO is requesting an exception to NERC ROP 1107.2: *All funds from financial Penalties assessed in the United States received by the entity initiating the compliance monitoring and enforcement process shall be applied as a general offset to the entity's budget requirements for the subsequent fiscal year, if received by July 1, or for the second subsequent fiscal year, if received on or after July 1.*

MRO proposes to revise its reserve policy to include an assessment stabilization reserve to mitigate year-to-year variations in assessments, which can result from a variety of factors, such as application of penalty funds collected, surplus funds available from a prior period, a need to replenish the targeted operating reserve, or significant but relatively short-term operating or capital spending needs.

MRO states that the goal of its reserves is to meet unplanned, short-term financial needs resulting from changes in the level of expenditures that would adversely affect the company's total annual operating budget during the budget year, where the total budget reflects prudent fiscal discipline and good stewardship of resources. In addition, MRO may propose to set aside funds in a separate reserve account to be released in future periods to mitigate year-to-year variations in assessments.

The revised reserve policy would provide MRO the flexibility to address both the budget and assessments appropriately. The revised policy also provides flexibility to address unique situations with review and approval of the MRO Board. There would be an analysis performed during each budget review period. Except as otherwise approved by the MRO Board, reserve funds may not be used for any purpose inconsistent with this policy.

Accounting and Recordkeeping

MRO uses Generally Accepted Accounting Principles (GAAP) to budget, and uses a Chart of Accounts based on NERC's System of Accounts, as required in the Delegation Agreement. Additionally, MRO maintains an accounting manual to provide instructions to accounting staff on accounting transactions and functions. MRO maintains its books on an accrual basis with monthly closings, recognizing revenues when earned and expenses when incurred. The majority of MRO expenses are labor and benefit costs. General and Administrative costs are allocated to each MRO program area based on the number of full-time equivalents (FTEs) in each program area.

Organizational Structure and Staffing

MRO has four statutory departments, each of which is dedicated to one or more statutory function or program area, and five general and administrative departments. Costs are tracked both by department and in the MRO Chart of Accounts. MRO employees track the time spent working in each program area, and labor costs are charged to the appropriate program area.

Statutory Departments

- The Compliance Monitoring Department encompasses MRO's oversight activities (including the development of Compliance Oversight Plans (COPs) and conducting oversight activities, such as audits, spot checks, and self-certifications). This department is managed by a director who reports to the Senior Vice President and Chief Operating Officer.

- MRO's Risk Assessment and Mitigation (RAM) team is responsible for providing an independent review of all identified potential noncompliances in the MRO Region. RAM assesses the risk that potential noncompliances pose to the Bulk Electric System and ensures that mitigation activities not only address the immediate issue, but also prevent recurrence. In performing these tasks, RAM works closely with the entity's subject matter experts. In addition, RAM performs Inherent Risk Assessments (IRAs) that quantify the potential risks to the reliability and security of the bulk power system and documents the relevant requirements for individual entities based on that risk. This assessment is the foundation for the COPs. The RAM Department is managed by a director who reports to the Senior Vice President and Chief Operating Officer.
- The Enforcement Department is responsible for the disposition and enforcement of noncompliance with Reliability Standards and is managed by a director who reports to the Vice President and General Counsel. This director also serves as Deputy General Counsel.
- The Reliability Assessment & Performance Analysis (RAPA) Department is responsible for reliability assessments, performance analysis, event analysis, and situational awareness. This department is managed by a director who reports to the Senior Vice President and Chief Operating Officer.

General and Administrative Departments

- The Information Technology (IT) Department is responsible for providing a secure network infrastructure and information technology systems that support the users. Systems include IT, cyber, infrastructure and physical security. This department reports to a director who reports to the President and CEO.
- The Legal Department is led by the Vice President General Counsel, Corporate Secretary and Director of External Affairs who serves as the corporate secretary, leads MRO's communication efforts and external affairs function and, along with the Deputy General Counsel, provides legal advice to MRO.
- The Human Resource Department performs all employee-related functions, including recruitment, retention, and talent management. This is a new department; the function was previously administered within Finance and Administration. This department includes a director who reports to the Vice President and General Counsel.
- The Finance and Administration Department performs accounting, finance, budget, event planning, facilities management, and treasury functions and reports to the Vice President Finance and Administration. The Vice President Finance and Administration is also the Chief Compliance Officer.
- The General and Administrative Department reports to MRO's President and CEO and performs normal administrative functions for the President and CEO and the Vice President and General Counsel.

Compensation Process and Standards of Conduct, Confidentiality, and Conflict of Interest Policies

MRO bases employee compensation on certain pay principles. The current compensation structure uses a six-tiered structure with each tier divided into four scales reflecting experience and degree of knowledge, skills and abilities. MRO periodically engages a third party compensation expert to review this structure.

Each MRO employee is required to annually sign a Standards of Conduct, Confidentiality and Conflict of Interest form, attesting that he or she has read and understood these policies and will always act in MRO's interests and avoid conduct that may compromise his or her MRO responsibilities. MRO employees are prohibited from having a financial interest in any registered

entity and must avoid any financial ownership interests that will or might compromise their responsibilities to MRO.

2020 Strategic Priorities

The MRO President and CEO has established three strategic priorities for MRO staff in 2020:

- Integrate entities that transitioned from Southwest Power Pool Regional Entity into MRO¹⁴
- Execute our delegated functions with a high degree of accuracy; and
- Align our efforts with others across the ERO Enterprise

Integrate entities that transitioned from Southwest Power Pool Regional Entity into MRO.

Integration of these registered entities follows existing MRO practices and principles. MRO staff will continue working to ensure that all registered entities have the opportunity to consider membership in the region, get to know MRO staff, participate on organizational groups and the board, and share their expertise with MRO staff and other stakeholders in the Region.

Execute our delegated functions with a high degree of accuracy. MRO will continue to identify, prioritize, and ensure effective and efficient mitigation of risks to the reliability and security of the North American bulk power system across the expanded footprint. MRO must continue to execute its delegated functions with a high degree of accuracy pursuant to its principles for all MRO registered entities, including CMEP activities, event analysis, performance analysis, and reliability assessments.

Align our efforts with others across the ERO Enterprise. MRO is aligned with the ERO Enterprise and will continue to provide support to the ERO Enterprise goals. To that end, MRO supports the ERO Enterprise Long-Term Strategy and the ERO Enterprise Operating Plan. This is reflected in the MRO Strategic Plan that was approved by the MRO Board in March 2019. The ERO Enterprise Long-Term Strategy identifies six focus areas that guide MRO's 2020 activities:

1. Achieving and Maintaining Risk-Based Operations;
2. Being More Effective and Efficient;
3. Identifying and Assessing Emerging Risks;
4. Promote Leading Security Practices, Information Sharing and Analysis, and Resilience;
5. Knowledge Transfer and Effective Communications; and
6. Strengthening Engagement across North America.

2020 Key Strategic Goals and Supporting Activities

MRO's 2020 BP&B and MRO's Strategic Plan reflect NERC and the Regional Entities' collaborative development of the ERO Enterprise Long-Term Strategy and the ERO Enterprise Operating Plan. The ERO Enterprise Long-Term Strategy looks ahead five to seven years to examine how changes in the industry and reliability ecosystem will affect how the ERO Enterprise achieves its vision and mission in the future. The ERO Enterprise Operating Plan is guided by the long-term strategy and identifies the ERO Enterprise's vision, mission, core principles, and goals, and provides a list of key contributing activities to be performed by NERC

¹⁴ This includes entities that were previously registered in the SPP RE Region as well as any other newly registered entity in the MRO Region.

or the Regional Entities, as applicable, to inform a rolling three-year operational planning horizon.¹⁵

In February 2019, the NERC Board of Trustees approved ERO 2019 Work Plan Priorities, which modestly revised the goals listed in the ERO Enterprise Operating Plan and described 2019 Key Objectives. MRO's business and strategic planning process incorporates the revised ERO Enterprise Operating Plan goals, the 2019 Key Objectives identified by NERC, and Key MRO Objectives and Supporting Activities that were developed to support NERC's objectives.

Goal 1: Maintain Risk-Responsive Reliability Standards

Key 2019 Objectives

1. Complete phase I of the Operating & Planning (O&P) Standards Efficiency Review and seek FERC approval for sought-after retirements. Launch phase II of the O&P Standards Efficiency Review.
2. Initiate CIP Standards Efficiency Review and establish a process and timeline.
3. Complete Supply Chain efforts:
 - a. Complete the final report and gain board acceptance.
 - b. Develop a plan to realize the recommendations in the report.
 - c. Begin plan implementation.
 - d. Develop a plan to evaluate the effectiveness of the supply chain standard.

Key MRO Objectives and Supporting Activities

1. Work to improve the alignment of the CIP Reliability Standards and security.
2. Support NERC's evaluation of supply chain risks and mitigation strategies.

Goal 2: Strengthen Objective, Risk-Informed Entity Registration, Compliance Monitoring, Mitigation, and Enforcement

Key 2019 Objectives

1. Complete registration and certification of the new Western Reliability Coordinators on time, consistent with dissolution of Peak Reliability.
2. Review effectiveness of the Compliance Guidance program and develop a plan to enhance it; evaluate opportunities to expand industry-led development of guidance to other program areas.
3. Provide training and education on control evaluations to industry with supporting guidance to the Regional Entities for consistent implementation in audits.
4. Improve alignment in processes across Regional Entities and, when appropriate, memorialize the aligned processes into Align project design.

Key MRO Objectives and Supporting Activities

1. Develop Compliance Oversight Plans (COPs) for MRO registered entities through a process that is aligned with the ERO and considers inherent risk, entity performance, and effectiveness of entity internal controls.
2. Decrease processing time for noncompliance.

¹⁵ The operating plan is reviewed biennially and updated as needed.

3. Participate and provide input into the development and deployment of the ERO Enterprise Align project (formerly known as CMEP Tool Project) to align processes across the ERO Enterprise (2019-2020).
4. Support NERC as the current CEA for SPP RTO as well as the transition of the CEA responsibilities to MRO (2019-2020).

Goal 3: Reduce Known Reliability Risks

Key 2019 Objectives

1. For five priority risk areas: a) protection system misoperations, b) performance of inverters and associated control systems during frequency and voltage perturbations (PRC-024), c) planning and operating a bulk power system with increased dependency on natural gas, d) compromised situational awareness from the loss of Energy Management Systems, and e) distributed energy resources:
 - a. Identify the extent of bulk power system reliability risks from loss of situation awareness and distributed energy resources
 - b. Develop and begin to execute strategy to mitigate the risks from protection system misoperations, performance of inverters, and planning and operating a bulk power system with increased dependency on natural gas:
 - Identification of and syndication of best practices
 - New Reliability Guidelines and other tools
 - Enhancements to existing Reliability Standards
2. Finalize business case and begin implementation of new SAFNR Tool.

Key MRO Objectives and Supporting Activities

1. Effectively utilize MRO's advisory councils to support mitigation and outreach strategies for addressing identified risks.
2. Leverage MRO's EMS and protection system expertise to support ERO Enterprise efforts in addressing risks related to situational awareness, misoperations, and EMS failures, and to enhance developmental opportunities for staff.

Goal 4: Identify and Assess Emerging Reliability Risks

Key 2019 Objectives

1. Develop and implement a plan to expand the consistent use of probabilistic-based assessment processes for reliability assessments with common tools and practices.
2. Expand the 2020 Long-Term Reliability Assessment to include considerations of energy assurance risks.
3. Scope out options and determine if work should be undertaken on the use of reserve margin targets given a) changing levels of resource "firmness," b) uncertainty around actual loads due to DER expansion, and c) recent experiences at managing tight reserve margins without incident (e.g., summer 2018 ERCOT).

Key MRO Objectives and Supporting Activities

1. Work with NERC, the MRO advisory councils, and the Regional Entities to assess bulk power system reliability and identify trends or leading indicators of potential new or emerging reliability risks.
2. Translate NERC reliability assessments to the impact on the MRO Region.
3. Seek and engage risk experts both inside and outside industry to better identify and educate MRO staff, organizational groups, and the MRO Board of Directors on unique, new, or emerging risks that may affect the region.

Goal 5: Identify and Reduce Cyber and Physical Security Risks

Key 2019 Objectives

1. Information sharing:
 - a. Enhance data collection capabilities (membership, technology improvements, range of collected data).
 - b. Establish two-way sharing of machine-readable cyber indicators through the Cyber Automated Information Sharing System.
 - c. Implement E-ISAC Watch 24 hours/5 days per week by executing hiring plan (4 watch officers, 4 cyber analysts, 1 threat and countermeasures analyst), recognizing the need for some flexibility to address changing needs.
2. Analysis: Increase the identification of indicators of compromise.
3. Engagement:
 - a. Expand the Industry Engagement Program (IEP) and host a minimum of six IEP sessions covering each Regional Entity footprint.
 - b. Execute Canadian Engagement Strategy, including meetings with each interconnected province and gain Canadian support for the 2020 Business Plan and Budget.
 - c. Develop plans to address key findings for E-ISAC identified in the 2018 biennial Effectiveness Survey.
 - d. Design and execute GridEx V with expanded participation with special focus on cross-sector interdependencies and international collaboration.

Key MRO Objective and Supporting Activities

1. Work with NERC, the MRO Security Advisory Council, and the Regional Entities to assess bulk power system security and identify potential or emerging cyber and physical security risks.
2. Improve regional coordination and information sharing regarding security threats by increasing engagement with E-ISAC and government agencies such as Department of Homeland Security (DHS), Royal Canadian Mounted Police (RCMP) and Federal Bureau of Investigation (FBI).
3. Actively participate in grid security exercises such as GridEx and in security programs, such as CRISP.
4. Continue to be responsive to state public utility requests for cyber security information.

Goal 6: Improve ERO Enterprise Efficiency and Effectiveness

Key 2019 Objectives

1. NERC-based initiatives:
 - a. Develop and implement meeting and travel policy to support NERC stakeholder groups.
 - b. Finish the 2019 year at or below budget and maintain at least \$3.0M in operating reserves.
 - c. Develop plans to address key findings from the 2018 biennial Effectiveness Survey.
 - d. Work with the Members Executive Committee to develop metrics measuring the effectiveness of the E-ISAC.
2. ERO-Enterprise “coordination” initiatives:
 - a. Meet all milestones associated with Align project development.

- b. Evaluate opportunities to “centralize” and/or “standardize” processes (e.g., Consolidated Hearing Body).
 - c. Develop and implement meeting and travel policy for ERO Enterprise working groups.
3. Stakeholder engagement: In concert with stakeholder committees (MRC, technical committees), develop and implement plan to reconceive and transform technical committees to a lower cost model that preserves/improves effectiveness of stakeholder engagement.

Key MRO Objectives and Supporting Activities

1. Work with the MRO Board’s Organizational Group Oversight Committee to:
 - a. Fully implement MRO’s advisory council structure (2019).
 - b. Identify and reduce duplication of efforts across the region and ERO Enterprise.
 - c. Periodically assess areas for greater efficiency in the facilitation and coordination of MRO’s organizational groups.
2. Support ERO’s efforts to evaluate opportunities for resource sharing and/or joint purchasing agreements across the ERO.
3. Enhance succession planning for executive positions (2019).
4. Foster greater intentionality regarding ERO Enterprise and/or NERC work.

2020 Overview of Cost Impacts

In February 2018, the NERC Board of Trustees approved the dissolution of SPP RE and the transfer of 100 SPP RE registered entities to MRO, which was completed on July 1, 2018. The 2018 Business Plan & Budget did not include costs related to this substantial transition. These costs were tracked separately and totaled \$2.2M. Significant efficiency gains have been recognized with the substantial regional combination of MRO and SPP RE, and cost savings have been realized from the total combined budgets of SPP RE and MRO and the NEL assessments charged to load-serving entities. MRO’s 2019 Business Plan & Budget was under development in 2018 during the early stages of the regional combination, and was approved by the MRO Board of Directors prior to completion of the transition. MRO’s leadership team now has a much better understanding of the resources and outreach required to conduct work in a much larger footprint. The 2020 BP&B is MRO’s first “normalized” plan since the transition, and incorporates more informed decisions on the necessary staffing, as well as increased registered entity outreach and engagement. Efficiency gains and cost savings in both budget and assessment dollars continue to be recognized in the 2020 BP&B.

The 2020 budget reflects an increase of \$1.6 million (9.8 percent) over the 2019 budget. Both the 2019 and 2020 MRO budgets are less than the 2018 combined budgets of SPP RE and MRO before the integration. MRO’s 2019 budget recognized a savings of \$4.8 million (23 percent), and the 2020 budget reflects a savings of \$3.2 million (16 percent) when compared with the combined 2018 budgets. The 2020 NEL rate remains lower than the original 2018 NEL rate before the integration. The NEL rate in 2019 experienced a net integrated savings of 19% and the 2020 NEL rate reflects a net integrated savings of 10% when compared to the combined 2018 budgets.

Other significant statutory expense changes (including capital expenditures) in MRO’s 2020 budget compared to its 2019 budget include:

- **Increase in FTEs.** MRO staff increases have been held to a minimum since the transition, and a re-evaluation of required resources occurred in early 2019. The resource assessment determined a need for four additional FTEs given work related to

the expanded footprint. Two of the FTEs will require technical industry expertise and two are administrative support staff. The total FTEs reflected in the 2020 budget is 63, which is 14 fewer than the 77 FTEs reflected in the combined 2018 budgets of SPP RE and MRO.

- **Increase in Contractor Support.** The majority of MRO's IT costs are in consultants and contracts. These costs consist of IT network essentials, such as switches, routers, access points, etc. These devices are connected to form a data communication network that is managed by MRO's IT staff with the support of external technical and professional IT resources. MRO relies on this network to access, share, and store information. Handling the inflow and outflow of information requires that the network be evaluated for capacity and security; expanding the IT network ensures that data flow and storage on and through the system is sufficient.
- **Increase in Meetings and Travel.** MRO staff plans to host one off-site workshop that is more accessible for the registered entities in the southern portion of MRO's region. Additionally, MRO's advisory councils will sponsor, and MRO will host, educational events to support mitigation and outreach strategies for addressing identified risks. Advisory council participation will include meetings and travel.
- **Increase in Operating Expenses.** Total Operating Expenses are increasing due to independent director compensation and additional HR and legal services.

Other Non-Operating Expenses

None

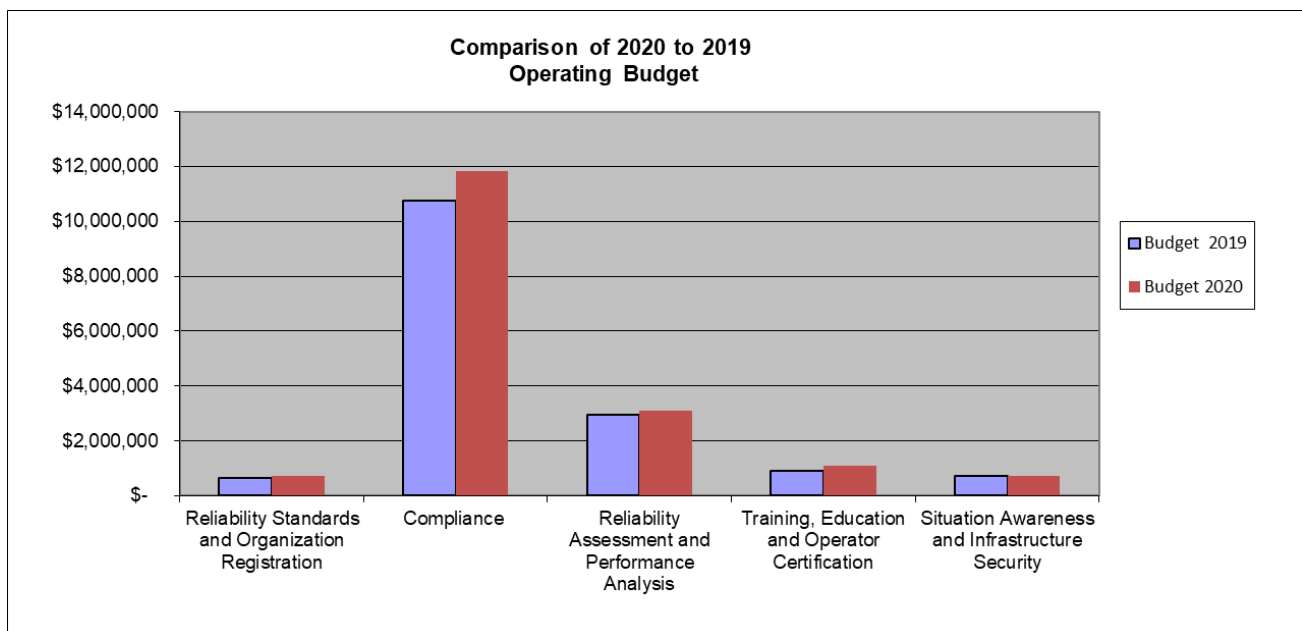
Comparison of 2019 and 2020 Statutory Budgets

The following table and figure summarize and illustrate the MRO budget by program area.

Base Operating Budget	Budget 2019	Projection 2019	Budget 2020	Variance	
				2020 Budget v 2019 Budget	Variance %
Reliability Standards	657,230	657,230	736,148	78,918	12.0%
Compliance Enforcement and Organization Registration	10,763,709	10,763,709	11,847,844	1,084,136	10.1%
Reliability Assessments and Performance Analysis	2,955,071	2,955,071	3,113,418	158,347	5.4%
Training, Education and Operator Certification	897,792	897,792	1,106,166	208,373	23.2%
Total Situation Awareness and Infrastructure Security	706,551	706,551	737,393	30,842	4.4%
Total	15,980,354	15,980,354	17,540,969	1,560,615	9.8%

This table does not include an allocation of operating reserve requirements among the program areas. It combines Compliance Monitoring, Risk Assessment and Mitigation, and Enforcement.

Table 2. Budget by Program Area



This graphical representation does not include an allocation of operating reserve requirements among the program areas.

Figure 1. Budget by Program Area Chart

The following table displays total FTEs by program area.

Total FTEs by Program Area	Budget 2019	Projection 2019	Direct FTEs 2020 Budget	Shared FTEs 2019 Budget ¹	Total FTEs 2020 Budget	Variance from 2019 Budget
STATUTORY						
Operational Programs						
Reliability Standards and Organization and Certification	1.88	1.88	2.08		2.08	0.20
Compliance	16.72	16.72	15.33		15.33	(1.39)
Compliance Risk Assessment and Mitigation	12.62	12.62	15.75		15.75	3.13
Compliance Enforcement	3.01	3.01	2.55		2.55	(0.46)
Training and Education	2.58	2.58	2.97		2.97	0.39
Reliability Assessment and Performance Analysis	8.33	8.33	8.38		8.38	0.05
Situation Awareness and Infrastructure Security	2.64	2.64	2.08		2.08	(0.56)
Total FTEs Operational Programs	47.78	47.78	49.14	-	49.14	1.36
Administrative Programs						
Technical Committees and Member Forums	-	-	-		-	-
General and Administrative	2.84	2.84	2.62		2.62	(0.22)
Legal and Regulatory	0.86	0.86	2.07		2.07	1.21
Information Technology	3.97	3.97	4.44		4.44	0.47
Human Resources	-	-	1.35		1.35	1.35
Finance and Accounting	3.55	3.55	3.38		3.38	(0.17)
Total FTEs Administrative Programs	11.22	11.22	13.86	-	13.86	2.64
Total FTEs	59.00	59.00	63.00	-	63.00	4.00

¹A shared FTE is defined as an employee who performs both Statutory and Non-Statutory functions.

Table 3. Total FTEs by Program Area

For an explanation of the variances, refer to the Resource Requirements section in each program area in Section A.

2019 Budget and Projection and 2020 Budget Comparisons

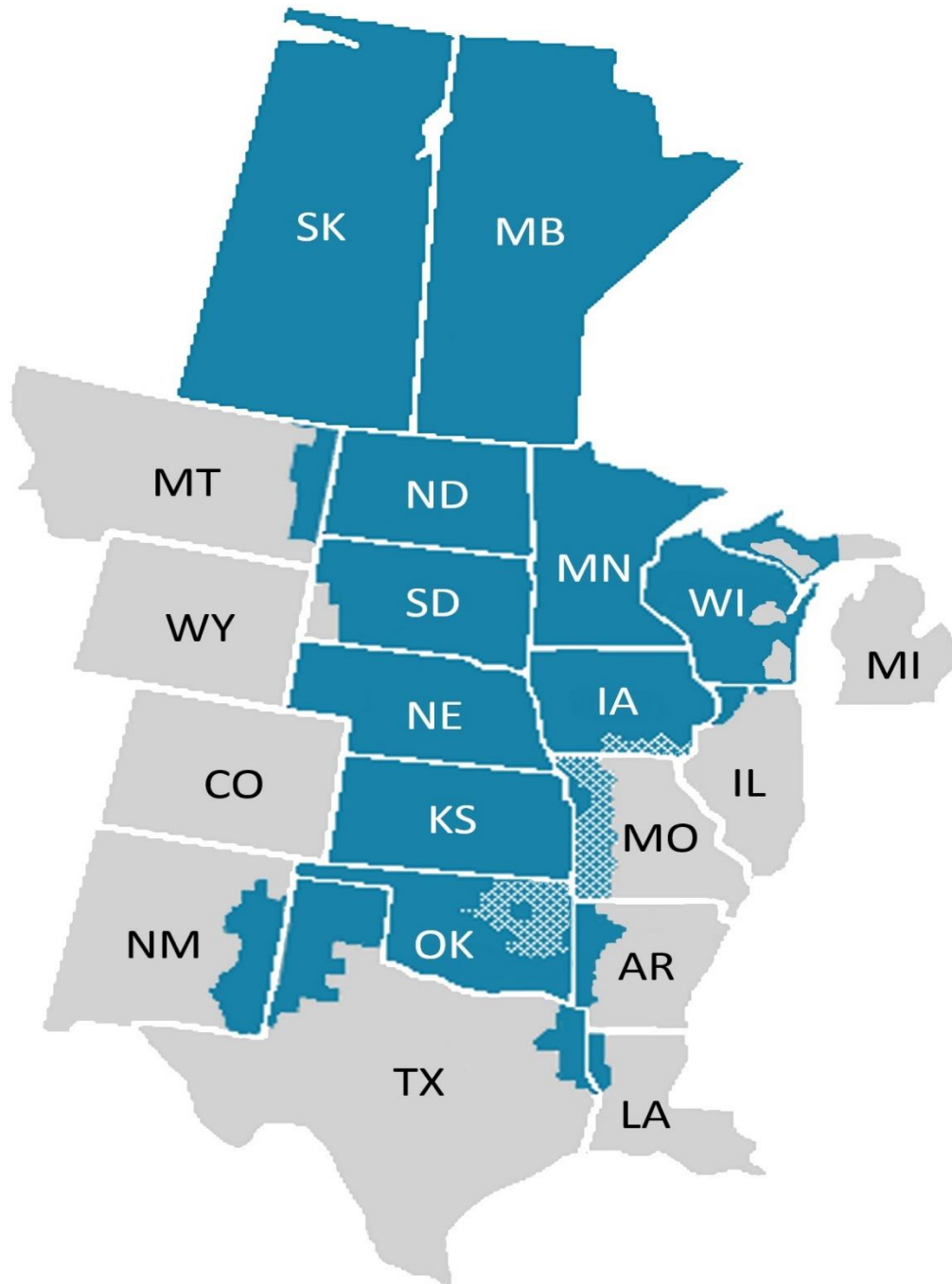
The following table lists the 2019 budget and projection compared to the 2020 budget.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
STATUTORY					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 15,471,669	\$ 15,471,669	\$ -	\$ 16,983,251	\$ 1,511,582
Assessment Stabilization Reserves	59,253	59,253	-	557,718	498,465
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshop Fees & Miscellaneous	-	-	-	-	-
Interest & Investment Income	-	-	-	-	-
Total Funding (A)	\$ 15,530,922	\$ 15,530,922	\$ -	\$ 17,540,969	\$ 2,010,047
Expenses					
Personnel Expenses					
Salaries	\$ 8,386,511	\$ 8,386,511	-	\$ 9,334,262	\$ 947,751
Payroll Taxes	539,356	539,356	-	586,604	47,248
Benefits	928,884	928,884	-	1,061,581	132,697
Retirement Costs	1,714,916	1,714,916	-	1,500,244	(214,672)
Total Personnel Expenses	\$ 11,569,667	\$ 11,569,667	\$ -	\$ 12,482,691	\$ 913,024
Meeting Expenses					
Meetings & Conference Calls	\$ 145,850	\$ 145,850	\$ -	\$ 175,900	\$ 30,050
Travel	905,314	905,314	-	1,108,732	203,418
Total Meeting Expenses	\$ 1,051,164	\$ 1,051,164	\$ -	\$ 1,284,632	\$ 233,468
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 1,100,010	\$ 1,100,010	\$ -	\$ 1,306,319	\$ 206,309
Office Rent	743,500	743,500	-	774,000	30,500
Office Costs	858,013	858,013	-	930,327	72,314
Professional Services	413,000	413,000	-	528,000	115,000
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 3,114,523	\$ 3,114,523	\$ -	\$ 3,538,646	\$ 424,123
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ -	\$ -	-	\$ -	-
Total Expenses (B)	\$ 15,735,354	\$ 15,735,354	\$ -	\$ 17,305,969	\$ 1,570,615
Change in Net Assets (=A - B)	\$ (204,432)	\$ (204,432)	\$ -	\$ 235,000	\$ 439,432
Fixed Asset Additions, excluding Right of Use Assets (C)	245,000	245,000		235,000	(10,000)
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 15,980,354	\$ 15,980,354	\$ -	\$ 17,540,969	\$ 1,560,615
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ (449,432)	\$ (449,432)	-	\$ -	\$ 449,432
FTEs	59.00	59.00	-	63.00	4.00

Table 4. 2019 Budget and Projection and 2020 Comparisons

Section A – Statutory Programs

2020 Business Plan and Budget



Section A – Statutory Programs

Reliability Standards, Organization Registration and Certification Program

The following table shows funding sources and related expenses for the Reliability Standards, Organization Registration and Certification Program.

Reliability Standards Program (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	1.88	2.08	0.20
Direct Expenses	\$ 459,992	\$ 484,696	\$ 24,704
Indirect Expenses	\$ 187,598	\$ 241,505	\$ 53,907
Other Non-Operating Expenses	\$ -	\$ -	\$ -
Inc(Dec) in Fixed Assets	\$ 9,640	\$ 9,947	\$ 307
Total Funding Requirement	\$ 657,230	\$ 736,148	\$ 78,917

Table A-1. Reliability Standards Budget

Reliability Standards

Program Scope and Functional Description

MRO Reliability Standards personnel support NERC's stakeholder-driven processes to develop and maintain risk-responsive Reliability Standards by providing feedback into the NERC process, conducting outreach during standards development, and providing clarity to industry on enforceable standards and requirements. MRO's Compliance Monitoring and Enforcement Program Advisory Council (CMEPAC) and its subgroups develop Standard Application Guides (SAGs), comment on NERC Standard Authorization Requests (SARs), and participate in standards development.

Organization Registration and Certification

Program Scope and Functional Description

This department appropriately registers owners, operators, and users of the bulk power system subject to compliance with NERC Reliability Standards. The Certification Department ensures that organizations that apply for registration or are registered to perform the Reliability Coordinator, Balancing Authority, and Transmission Operator reliability functions meet or exceed minimum criteria demonstrating their capability to perform their incumbent tasks.

MRO will perform registration and certification activities for approximately 200 registered entities in the MRO Region. The number of certifications is expected to remain stable. MRO typically plans for 1.5 certifications per year and has budgeted for 2 in 2020.

This department supports ERO Enterprise efforts related to the ERO Enterprise Operating Plan **Goal 1: Maintain Risk-Responsive Reliability Standards:**

Goal 1 Description: Reliability Standards establish threshold requirements for ensuring the Bulk Electric System (BES) is planned, operated, maintained, and secured to minimize risks of cascading failures, avoid damage to major equipment, or limit interruptions of the BPS. Reliability Standards are clear,

timely, effective in mitigating risks to reliability, and consider cost-effectiveness/impact.

Key MRO Objectives and Supporting Activities

1. Work to improve the alignment of the CIP Reliability Standards and security.
2. Support NERC's evaluation of supply chain risks and mitigation strategies.

Impact on Resource Needs

Workload and travel for Reliability Standards will stabilize as staff conducts the supporting activities for Goal 1. Member travel will increase due to the development of standard application guidance for industry.

Impact on Resource Needs

Workload for Organizational Registration and Certification is expected to stabilize in 2020 following the additional work in 2018 and 2019 related to the integration of the SPP RE registered entities. Although no requests have been received, MRO is planning on performing two certifications in 2020.

Reliability Standards, Organization Registration and Certification Program Resource Requirements

Overall Budget Change 2019-2020 (Increase \$78.9K, 12.0%)

Overall, the workload in these areas is expected to stabilize in 2020. The MRO Standards Committee was sunset in 2019, which reduces member travel reimbursement costs for committee meetings. Subject Matter Expert Teams that develop standard application guidance are now supported by the CMEPAC.

Registration and Certification's workload will stabilize with the anticipation of two certification reviews in 2020.

The budget for this function has increased in 2020. The budget for this function had received increases in prior years to meet demands for NERC-led Review Panels and the development of a new registration tool.

Personnel Expenses (Increase \$35K, 9.2%)

The average salary increase was budgeted at 3 percent. However, MRO aligned certain salaries and MRO's incentive program to compete with market increases.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

The savings and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting Expenses (Decrease \$11K, 16.0%)

There is an overall meeting expenses reduction due to less travel for the MRO Standards Committee that was sunset.

Indirect Expenses (Increase \$53.9K, 28.7%)

There is an overall increase in administrative services which are allocated to the operational programs based on the FTEs. Therefore, the increase is reflective of higher indirect costs and higher FTEs.

Reliability Standards, Organization Registration and Certification Budget Detail

The following table shows funding sources and related expenses for the Reliability Standards, Organization Registration, and Certification Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital 2019 Budget & Projection, and 2020 Budget					
STATUTORY					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 654,899	\$ 654,899		\$ 712,541	\$ 57,642
Assessment Stabilization Reserves	2,331	2,331		23,607	21,276
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ 657,230	\$ 657,230		\$ 736,148	\$ 78,918
Expenses					
Personnel Expenses					
Salaries	\$ 275,583	\$ 275,583	\$ -	\$ 306,795	\$ 31,212
Payroll Taxes	17,361	17,361	-	18,021	660
Benefits	29,628	29,628	-	35,471	5,843
Retirement Costs	61,782	61,782	-	59,260	(2,522)
Total Personnel Expenses	\$ 384,354	\$ 384,354	\$ -	\$ 419,547	\$ 35,193
Meeting Expenses					
Meetings	\$ 1,400	\$ 1,400	\$ -	\$ 1,400	\$ -
Travel	68,300	68,300	-	57,166	(11,134)
Total Meeting Expenses	\$ 69,700	\$ 69,700	\$ -	\$ 58,566	\$ (11,134)
Operating Expenses					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ -	\$ -
Office Rent	-	-	-	-	-
Office Costs	5,938	5,938	-	6,583	645
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 5,938	\$ 5,938	\$ -	\$ 6,583	\$ 645
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ 187,598	\$ 187,598	\$ -	\$ 241,505	\$ 53,907
Total Expenses (B)	\$ 647,590	\$ 647,590	\$ -	\$ 726,201	\$ 78,611
Change in Net Assets (=A - B)	\$ 9,640	\$ 9,640	\$ -	\$ 9,947	\$ 307
Fixed Asset Additions, excluding Right of Use Assets (C)	9,640	9,640	-	9,947	307
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 657,230	\$ 657,230	\$ -	\$ 736,148	\$ 78,918
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	
FTEs	1.88	1.88	-	2.08	0.20

Table A-2. Reliability Standards, Organization Registration and Certification Budget Detail

Compliance Monitoring and Enforcement Program

The following table lists the budget for the Compliance Monitoring and Enforcement Program (CMEP).

Compliance Monitoring and Enforcement Program (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	32.35	33.63	1.28
Direct Expenses	\$ 7,369,740	\$ 7,782,298	\$ 412,559
Indirect Expenses	\$ 3,228,089	\$ 3,904,719	\$ 676,630
Other Non-Operating Expenses	\$ -	\$ -	\$ -
Inc(Dec) in Fixed Assets	\$ 165,880	\$ 160,827	\$ (5,053)
Total Funding Requirement	\$ 10,763,709	\$ 11,847,844	\$ 1,084,137

Table A-3. Compliance Monitoring and Enforcement Program Budget

Program Scope and Functional Description

MRO's CMEP work is performed by three departments: Compliance Monitoring, Risk Assessment and Mitigation (RAM), and Enforcement, creating an effective "check and balance" for making decisions about noncompliance and enforcement. MRO's RAM Department develops Inherent Risk Assessments (IRAs) for registered entities; Compliance Monitoring uses the IRA along with entity performance, internal controls, and other qualitative assessments to develop Compliance Oversight Plans and conduct compliance monitoring for registered entities. In addition, RAM conducts risk assessments for registered entity noncompliances and violations, and evaluates and monitors mitigation efforts. Enforcement processes noncompliances and violations using risk-based disposition methods.

MRO staff will perform CMEP activities for approximately 200 registered entities in 2020. The Compliance Monitoring Department will conduct approximately 25 audits in 2020. MRO will also contribute to audits, as needed, for entities that participate in coordinated oversight where MRO is the Affected Regional Entity. The Enforcement Department will review registered entity participation in the Self-Logging Program and will encourage increased participation in the program throughout the region.

MRO's Compliance Monitoring, RAM, and Enforcement Departments support ERO Enterprise efforts to appropriately monitor and enforce compliance as outlined in the ERO Enterprise Operating Plan Goals 1-4.

Goal 1: Maintain Risk-Responsive Reliability Standards:

Reliability Standards establish threshold requirements for ensuring the Bulk Electric System (BES) is planned, operated, maintained, and secured to minimize risks of cascading failures, avoid damage to major equipment, or limit interruptions of the BPS. Reliability Standards are clear, timely, effective in mitigating risks to reliability, and consider cost-effectiveness/impact.

Key MRO Objectives and Supporting Activities

- Work to improve the alignment of the CIP Reliability Standards and security
- Support NERC's evaluation of supply chain risks and mitigation strategies

Goal 2: Strengthen Objective, Risk-Informed Entity Registration, Compliance Monitoring, Mitigation, and Enforcement:

The ERO Enterprise is a strong enforcement authority that is objective, fair, and promotes a culture of reliability excellence through risk-informed compliance monitoring, mitigation, enforcement, and registration.

Key MRO Objectives and Supporting Activities

1. Develop Compliance Oversight Plans (COPs) for MRO registered entities through a process that is aligned with the ERO and considers inherent risk, entity performance, and effectiveness of entity internal controls.
2. Decrease processing time for noncompliance.
3. Participate and provide input into the development and deployment of the ERO Enterprise Align project (formerly known as CMEP Tool Project) to align processes across the ERO Enterprise (2019-2020).
4. Support NERC as the current CEA for SPP RTO as well as the transition of the CEA responsibilities to MRO (2019-2020).

Goal 3: Reduce Known Reliability Risks

The ERO Enterprise recognizes significant known risks to reliability, assures those reliability risks are reduced, and promotes a culture of reliability excellence.

Key MRO Objectives and Supporting Activities

1. Effectively utilize MRO's advisory councils to support mitigation and outreach strategies for addressing identified risks.
2. Leverage MRO's EMS and protection system expertise to support ERO Enterprise efforts in addressing risks related to situational awareness, misoperations, and EMS failures, and to enhance developmental opportunities for staff.

Goal 4: Identify and Assess Emerging Reliability Risks

The ERO Enterprise identifies, objectively assesses, and prioritizes emerging risks to reliability to inform stakeholders and enable effective actions to reduce these risks to reliability.

Key MRO Objectives and Supporting Activities

1. Work with NERC, the MRO advisory councils, and the Regional Entities to assess bulk power system reliability and identify trends or leading indicators of potential new or emerging reliability risks.
2. Translate NERC reliability assessments to the impact on the MRO Region.
3. Seek and engage risk experts both inside and outside industry to better identify and educate MRO staff, organizational groups, and the MRO Board of Directors on unique, new, or emerging risks that may affect the region.

Impact on Resource Needs

Staffing for these departments will increase by 1.28 FTEs in 2020 to accommodate work related to the continued integration of registered entities and implementation of new Reliability Standards, as well as administrative support. The CMEP departments will dedicate resources to support the development and implementation of the ERO Enterprise Align Project, a shared technology platform to provide consistency and alignment of CMEP processes across NERC and the Regional Entities.

Compliance Monitoring and Enforcement Program Resource Requirements

Overall Budget Change 2019-2020 (Increase \$1.1M, 10.1%)

The budget increase for 2020 is largely due to adding staff to accommodate work from the significant regional expansion in 2018. FTEs will be added to enhance compliance oversight plans for all entities and to conduct compliance oversight in the expanded footprint.

Personnel Expenses (Increase \$211K, 3.3%)

The average salary increase was budgeted at 3 percent. However, MRO aligned certain salaries and MRO's incentive program to compete with market increases.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

The savings and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting and Travel Expenses (Increase \$119K, 40.8%)

There is an overall travel expense increase for both staff travel and member reimbursement, which reflects travel dollars for staff participation on ERO working groups and the Align project, and member travel for council face-to-face meetings.

Consultant and Contracts (Increase \$80K, 16%)

Reflects the additional costs for the newly negotiated webCDMS contract for 2020.

Indirect Expenses (Increase \$676.6K, 21.0%)

There is an overall increase in administrative services which are allocated to the operational programs based on the FTEs. Therefore, the increase is reflective of higher indirect costs and higher FTEs.

Compliance Monitoring and Enforcement Program Budget Detail

The following table shows funding sources and related expenses for the Compliance Monitoring and Enforcement Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
COMPLIANCE MONITORING AND ENFORCEMENT PROGRAM					
	2019	2019	Variance	2020	Variance
	Budget	Projection	2019 Projection	Budget	2020 Budget
			v 2019 Budget		v 2019 Budget
			Over(Under)		Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 10,723,591	\$ 10,723,591		\$ 11,466,158	\$ 742,567
Assessment Stabilization Reserves	40,118	40,118		381,686	341,568
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ 10,763,709	\$ 10,763,709	\$ -	\$ 11,847,844	\$ 1,084,136
Expenses					
Personnel Expenses					
Salaries	\$ 4,696,697	\$ 4,696,697	\$ -	\$ 4,934,233	\$ 237,536
Payroll Taxes	309,054	309,054	-	329,276	20,222
Benefits	504,160	504,160	-	574,079	69,919
Retirement Costs	895,415	895,415	-	779,300	(116,115)
Total Personnel Expenses	\$ 6,405,326	\$ 6,405,326	\$ -	\$ 6,616,888	\$ 211,562
Meeting Expenses					
Meetings	\$ 7,500	\$ 7,500	\$ -	\$ 9,500	\$ 2,000
Travel	284,314	284,314	-	401,366	117,052
Total Meeting Expenses	\$ 291,814	\$ 291,814	\$ -	\$ 410,866	\$ 119,052
Operating Expenses					
Consultants & Contracts	\$ 503,000	\$ 503,000	\$ -	\$ 583,394	\$ 80,394
Office Rent	-	-	-	-	-
Office Costs	169,600	169,600	-	171,150	1,550
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 672,600	\$ 672,600	\$ -	\$ 754,544	\$ 81,944
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ 3,228,089	\$ 3,228,089	\$ -	\$ 3,904,719	\$ 676,630
Total Expenses (B)	\$ 10,597,828	\$ 10,597,828	\$ -	\$ 11,687,017	\$ 1,089,188
Change in Net Assets (=A - B)	\$ 165,880	\$ 165,880	\$ -	\$ 160,827	\$ (5,053)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 165,880	165,880	-	160,827	(5,053)
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 10,763,709	\$ 10,763,709	\$ -	\$ 11,847,844	\$ 1,084,136
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	32.35	32.35	-	33.63	1.28

Table A-4. Compliance Monitoring and Enforcement Budget Detail

Reliability Assessment and Performance Analysis Program

The following table lists the budget for the Reliability Assessment and Performance Analysis (RAPA) program.

Reliability Assessments and Performance Analysis (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	8.33	8.38	0.05
Direct Expenses	\$ 2,081,137	\$ 2,100,356	\$ 19,219
Indirect Expenses	\$ 831,220	\$ 972,987	\$ 141,766
Other Non-Operating Expenses	\$ -	\$ -	\$ -
Inc(Dec) in Fixed Assets	\$ 42,713	\$ 40,075	\$ (2,638)
Total Funding Requirement	\$ 2,955,071	\$ 3,113,418	\$ 158,346

Table A-5. Reliability Assessment and Performance Analysis (RAPA) Budget

Program Scope and Functional Description

MRO's Reliability Assessment and Performance Analysis (RAPA) Department performs Reliability Assessments, System Analysis, Performance Analysis, and Event Analysis.¹⁶ The Reliability Assessment and System Analysis (RASA) activities focus on the ERO's statutory responsibility to conduct assessments of the reliability and adequacy of the BES. Performance Analysis and Event Analysis carry out the ERO's statutory responsibility to perform assessments (detailed analysis of significant events and longer-term broad performance assessments) of the reliability and adequacy of the BES, including identifying potential issues of concern relating to system, equipment, and entity, that may indicate the need to develop and implement targeted interventions. This team participates in the Eastern Interconnection Reliability Assessment Group, reviews performance of protection systems based on events and misoperations, facilitates data collection and the development of power flow and dynamics simulation models for the Eastern Interconnection, reviews periodic data submissions (TADS, GADS, MIDAS and DADS), supports the MRO Reliability Advisory Council, and supports ERO Enterprise RAPA activities.

MRO's RAPA Department supports ERO Enterprise efforts to identify, provide insight into, and develop guidance for potential reliability risks to the BES as outlined in the ERO Enterprise Operating Plan Goals 3 and 4.

Goal 3: Reduce Known Reliability Risks

The ERO Enterprise recognizes significant known risks to reliability, assures those reliability risks are reduced, and promotes a culture of reliability excellence

¹⁶ MRO budgets these activities in one cost center. NERC divides these activities between two departments: Reliability Assessment and System Analysis, and Reliability Risk Management, which conducts Performance Analysis, Event Analysis, and Situational Awareness. Situational Awareness is budgeted through a separate cost center in MRO's budget.

Key MRO Objectives and Supporting Activities

1. Effectively utilize MRO's advisory councils to support mitigation and outreach strategies for addressing identified risks.
2. Leverage MRO's EMS and protection system expertise to support ERO Enterprise efforts in addressing risks related to situational awareness, misoperations, and EMS failures, and to enhance developmental opportunities for staff.

Goal 4: Identify and Assess Emerging Reliability Risks

The ERO Enterprise identifies, objectively assesses, and prioritizes emerging risks to reliability to inform stakeholders and enable effective actions to reduce these risks to reliability.

Key MRO Objectives and Supporting Activities

1. Work with NERC, the MRO advisory councils, and the Regional Entities to assess bulk power system reliability and identify trends or leading indicators of potential new or emerging reliability risks.
2. Translate NERC reliability assessments to the impact on the MRO Region.
3. Seek and engage risk experts both inside and outside industry to better identify and educate MRO staff, organizational groups, and the MRO Board of Directors on unique, new, or emerging risks that may affect the region.

Impact on Resource Needs

Staffing levels will continue to be evaluated in 2020 based on workload. Outreach in this area will increase due to the expanded region and outreach efforts. RAPA will dedicate resources to support the development and implementation of the Align project.

Reliability Assessment and Performance Analysis Resource Requirements

Overall Budget Change 2019-2020 (Increase \$158.3K, 5.4%)

The budget increase for 2020 is due to staff and member travel. Increased participation of staff and members of MRO councils on NERC committees and ERO-wide projects is expected.

Personnel Expenses (Decrease \$62.4K, 3.5%)

The average salary increase was budgeted at 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by organizational leadership changes.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease -41.7 percent.)

Meeting Expenses (Increase \$67.1K, 31.8%)

There is an overall meeting and travel expenses increase due to additional council face-to-face meetings.

Office Costs (Increase \$14.5K, 87.9%)

Reflects additional staff and encouraging more industry training.

Indirect Expenses (Increase \$141.8K, 17.1%)

There is an overall increase in administrative services which are allocated to the operational programs based on the FTEs.

Reliability Assessment and Performance Analysis Budget Detail

The following table lists funding sources and related expenses for the Reliability Assessment and Performance Analysis Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
RELIABILITY ASSESSMENT and PERFORMANCE ANALYSIS					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 2,944,741	\$ 2,944,741		\$ 3,018,309	\$ 73,568
Assessment Stabilization Reserves	10,330	10,330		95,109	84,779
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ 2,955,071	\$ 2,955,071		\$ 3,113,418	\$ 158,347
Expenses					
Personnel Expenses					
Salaries	\$ 1,252,798	\$ 1,252,798	\$ -	\$ 1,272,880	\$ 20,082
Payroll Taxes	83,361	83,361	-	82,405	(956)
Benefits	133,407	133,407	-	140,066	6,659
Retirement Costs	302,771	302,771	-	214,605	(88,166)
Total Personnel Expenses	\$ 1,772,337	\$ 1,772,337	\$ -	\$ 1,709,956	\$ (62,381)
Meeting Expenses					
Meetings	\$ 7,500	\$ 7,500	\$ -	\$ 11,000	\$ 3,500
Travel	203,400	203,400	-	267,000	63,600
Total Meeting Expenses	\$ 210,900	\$ 210,900	\$ -	\$ 278,000	\$ 67,100
Operating Expenses					
Consultants & Contracts	\$ 81,400	\$ 81,400	\$ -	\$ 81,400	\$ -
Office Rent	-	-	-	-	-
Office Costs	16,500	16,500	-	31,000	14,500
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 97,900	\$ 97,900	\$ -	\$ 112,400	\$ 14,500
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ 831,220	\$ 831,220	\$ -	\$ 972,987	\$ 141,766
Total Expenses (B)	\$ 2,912,358	\$ 2,912,358	\$ -	\$ 3,073,343	\$ 160,985
Change in Net Assets (=A - B)	\$ 42,713	\$ 42,713	\$ -	\$ 40,075	\$ (2,638)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 42,713	\$ 42,713	-	\$ 40,075	(2,638)
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 2,955,071	\$ 2,955,071	\$ -	\$ 3,113,418	\$ 158,347
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	
FTEs	8.33	8.33	-	8.38	0.05

Table A-6. Reliability Assessment and Performance Analysis Budget Detail

Training and Education Program

The following table summarizes the budget for the Training and Education program.

Training and Education (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	2.58	2.97	0.39
Direct Expenses	\$ 627,114	\$ 747,121	\$ 120,007
Indirect Expenses	\$ 257,449	\$ 344,841	\$ 87,393
Other Non-Operating Expenses	\$ -	\$ -	\$ -
Inc(Dec) in Fixed Assets	\$ 13,229	\$ 14,203	\$ 974
Total Funding Requirement	\$ 897,793	\$ 1,106,166	\$ 208,373

Table A-7. Training and Education Budget

Program Scope and Functional Description

MRO is committed to its mission “to identify, prioritize and assure effective and efficient mitigation of risks to the reliability and security of the North American bulk power system by promoting Highly Effective Reliability Organizations (HEROs).” One way MRO does this is by providing training and education to industry on the implementation of the CMEP, the application of Reliability Standards, reviewing reliability assessments, performing quality event analysis, identifying lessons learned from event analysis, and other related information to system reliability, security, and compliance. The Training and Education program provides outreach to MRO registered entities through MRO’s newsletter and other publications, workshops, webinars and conferences, as well as presentation opportunities at other industry events. The emphasis on Critical Infrastructure Protection and security over the last several years will continue in 2020. MRO and its advisory councils continually seek additional outreach opportunities.

MRO’s Training and Education program supports ERO Enterprise efforts to keep entity personnel trained and industry participants informed, in support of ERO Enterprise Operating Plan Goals 3, 4, and 5.

Goal 3: Reduce Known Reliability Risks

The ERO Enterprise recognizes significant known risks to reliability, assures those reliability risks are reduced, and promotes a culture of reliability excellence

Key MRO Objectives and Supporting Activities

1. Effectively utilize MRO’s advisory councils to support mitigation and outreach strategies for addressing identified risks.
2. Leverage MRO’s EMS and protection system expertise to support ERO Enterprise efforts in addressing risks related to situational awareness, misoperations, and EMS failures, and to enhance developmental opportunities for staff.

Goal 4: Identify and Assess Emerging Reliability Risks

The ERO Enterprise identifies, objectively assesses, and prioritizes emerging risks to reliability to inform stakeholders and enable effective actions to reduce these risks to reliability.

Key MRO Objectives and Supporting Activities

1. Work with NERC, the MRO advisory councils, and the Regional Entities to assess bulk power system reliability and identify trends or leading indicators of potential new or emerging reliability risks.
2. Translate NERC reliability assessments to the impact on the MRO Region.
3. Seek and engage risk experts both inside and outside industry to better identify and educate MRO staff, organizational groups, and the MRO Board of Directors on unique, new, or emerging risks that may affect the region.

Goal 5: Identify and Reduce Cyber and Physical Security Risks

The ERO Enterprise identifies and evaluates cyber and physical security risks to the BPS and assures those risks are reduced through active stakeholder engagement and information sharing of current threats and vulnerabilities, security workshops, and development of good industry practice guides. The ERO Enterprise supports the Electricity Information Sharing and Analysis Center (E-ISAC), the Cybersecurity Risk Information Sharing Program (CRISP), technical protective programs, and physical and cybersecurity preparedness exercises, and engages with government partners to de-classify sensitive security information needed to protect BPS devices and assets. The ERO Enterprise works with stakeholders to develop and share information to foster BPS resiliency in connection with both traditional and emerging risks.

Key MRO Objective and Supporting Activities

1. Work with NERC, the MRO Security Advisory Council, and the Regional Entities to assess bulk power system security and identify potential or emerging cyber and physical security risks.
2. Improve regional coordination and information sharing regarding security threats by increasing engagement with E-ISAC and government agencies such as DHS, RCMP and FBI.
3. Actively participate in grid security exercises such as GridEx and in security programs, such as CRISP.
4. Continue to be responsive to state public utility requests for cyber security information.

Impact on Resource Needs

Staffing for this program will increase by 0.39 FTE. Additional training, education, and outreach will be necessary to support the expanded footprint, resulting in an increase in travel and meeting expenses. Additionally, outreach will be necessary to obtain input into the SER and standards development projects.

Training and Education Resource Requirements

Overall Budget Change 2019-2020 (Increase \$208.4K, 23.2%)

Personnel Expenses (Increase \$96.0K, 19.5%)

The average salary increase was budgeted at 3 percent. However, MRO aligned certain salaries and MRO's incentive program to compete with market increases. Salaries were further impacted by organizational leadership changes.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

The savings and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment

was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting Expenses (Increase \$24K, 17.7%)

Additional costs related to the workshops, however, the same number to be offered in 2020 as 2019.

Operating Expenses

There are no office costs in this program because they are budgeted and recorded to the programs where the majority of that staff person's time is spent.

Indirect Expenses (Increase \$87.4K, 33.9%)

There is an overall increase in administrative services which are allocated to the operational programs based on the FTEs.

Training and Education Budget Detail

The following table shows funding sources and related expenses for the Training and Education Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
TRAINING and EDUCATION					
	2019	2019	Variance	2020	Variance
	Budget	Projection	2019 Projection	Budget	2020 Budget
			v 2019 Budget		v 2019 Budget
			Over(Under)		Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 894,593	\$ 894,593		\$ 1,072,457	\$ 177,865
Assessment Stabilization Reserves	3,200	3,200		33,708	30,509
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ 897,792	\$ 897,792		\$ 1,106,166	\$ 208,373
Expenses					
Personnel Expenses					
Salaries	\$ 357,617	\$ 357,617	\$ -	\$ 453,752	\$ 96,135
Payroll Taxes	22,481	22,481	-	22,296	(185)
Benefits	40,358	40,358	-	42,122	1,764
Retirement Costs	71,058	71,058	-	69,351	(1,707)
Total Personnel Expenses	\$ 491,514	\$ 491,514	\$ -	\$ 587,521	\$ 96,007
Meeting Expenses					
Meetings	\$ 66,000	\$ 66,000	\$ -	\$ 90,000	\$ 24,000
Travel	69,600	69,600	-	69,600	-
Total Meeting Expenses	\$ 135,600	\$ 135,600	\$ -	\$ 159,600	\$ 24,000
Operating Expenses					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ -	\$ -
Office Rent	-	-	-	-	-
Office Costs	-	-	-	-	-
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ 257,449	\$ 257,449	\$ -	\$ 344,841	\$ 87,393
Total Expenses (B)	\$ 884,563	\$ 884,563	\$ -	\$ 1,091,962	\$ 207,400
Change in Net Assets (=A - B)	\$ 13,229	\$ 13,229	\$ -	\$ 14,203	\$ 974
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 13,229	13,229	-	14,203	974
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 897,792	\$ 897,792	\$ -	\$ 1,106,166	\$ 208,373
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	2.58	2.58	-	2.97	0.39

Table A-8. Training and Education Budget Detail

Situation Awareness and Infrastructure Security Program

The following table lists the budget for Situation Awareness and Infrastructure Security.

Situation Awareness and Infrastructure Security (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	2.64	2.08	(0.56)
Direct Expenses	\$ 429,578	\$ 485,941	\$ 56,363
Indirect Expenses	\$ 263,436	\$ 241,505	\$ (21,931)
Other Non-Operating Expenses	\$ -	\$ -	\$ -
Inc(Dec) in Fixed Assets	\$ 13,537	\$ 9,947	\$ (3,590)
Total Funding Requirement	\$ 706,551	\$ 737,393	\$ 30,842

Table A-9. Situation Awareness and Infrastructure Security Budget

Program Scope and Functional Description

MRO, through the regional Reliability Coordinators and other available tools, monitors present conditions on the BES and provides leadership coordination, technical expertise, and assistance to industry in responding to events as necessary.

This program supports the ERO Enterprise vision of a reliable and secure bulk power system and efforts to communicate risks to reliability as outlined in the ERO Enterprise Operating Plan Goals 1, 3, and 5.

Goal 1: Maintain Risk-Responsive Reliability Standards:

Reliability Standards establish threshold requirements for ensuring the Bulk Electric System (BES) is planned, operated, maintained, and secured to minimize risks of cascading failures, avoid damage to major equipment, or limit interruptions of the BPS. Reliability Standards are clear, timely, effective in mitigating risks to reliability, and consider cost-effectiveness/impact.

Key MRO Objectives and Supporting Activities

1. Work to improve the alignment of the CIP Reliability Standards and security.
2. Support NERC's evaluation of supply chain risks and mitigation strategies.

Goal 3: Reduce Known Reliability Risks

The ERO Enterprise recognizes significant known risks to reliability, assures those reliability risks are reduced, and promotes a culture of reliability excellence

Key MRO Objectives and Supporting Activities

1. Effectively utilize MRO's advisory councils to support mitigation and outreach strategies for addressing identified risks.
2. Leverage MRO's EMS and protection system expertise to support ERO Enterprise efforts in addressing risks related to situational awareness, misoperations, and EMS failures, and to enhance developmental opportunities for staff.

Goal 5: Identify and Reduce Cyber and Physical Security Risks

The ERO Enterprise identifies and evaluates cyber and physical security risks to the BPS and assures those risks are reduced through active stakeholder engagement and information sharing of current threats and vulnerabilities, security workshops, and development of good industry practice guides. The ERO Enterprise supports the Electricity Information Sharing and Analysis Center (E-ISAC), the Cybersecurity Risk Information Sharing Program (CRISP), technical protective programs, and physical and cybersecurity preparedness exercises, and engages with government partners to de-classify sensitive security information needed to protect BPS devices and assets. The ERO Enterprise works with stakeholders to develop and share information to foster BPS resiliency in connection with both traditional and emerging risks.

Key MRO Objective and Supporting Activities

1. Work with NERC, the MRO Security Advisory Council, and the Regional Entities to assess bulk power system security and identify potential or emerging cyber and physical security risks.
2. Improve regional coordination and information sharing regarding security threats by increasing engagement with E-ISAC and government agencies such as DHS, RCMP and FBI.
3. Actively participate in grid security exercises such as GridEx and in security programs, such as CRISP.
4. Continue to be responsive to state public utility requests for cyber security information.

Impact on Resource Needs

In support of the ERO Enterprise Goal 3, the Situational Awareness program will work with stakeholders to identify significant known risks to reliability, mitigate those risks, and promote a culture of reliability excellence. The workload in this area is expected to increase as MRO addresses risks in the expanded footprint.

In support of ERO Enterprise Goal 5, this program has maintained its FTEs for non-CMEP activities related to infrastructure security. These activities require one subject matter expert FTE and one administrative support FTE for cyber and physical infrastructure security.

Situation Awareness and Infrastructure Security Resource Requirements**Overall Budget Change 2019-2020 (Increase \$30.8K, 4.4%)**

The budget for this area will increase to realign and dedicate MRO staffing to the non-CMEP activities that support infrastructure security.

Personnel Expenses (Increase \$28.8K, 8.2%)

The average salary increase was budgeted at an increase of 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by organizational leadership changes.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was

due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting Expenses (Increase \$27.6K, 42.5%)

There is an overall increase in meeting and travel expenses due to additional council face-to-face meetings.

Indirect Expenses (Decrease \$21.9K, 8.3%)

There is an overall decrease in administrative services which are allocated to the operational programs based on the FTEs, because the FTEs in this program decreased.

Situation Awareness and Infrastructure Security Budget Detail

The following table shows funding sources and related expenses for the Situation Awareness and Infrastructure Security Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
SITUATION AWARENESS and INFRASTRUCTURE SECURITY					
	2019	2019	Variance	2020	Variance
	Budget	Projection	2019 Projection	Budget	2020 Budget
			v 2019 Budget		v 2019 Budget
			Over(Under)		Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ 703,278	\$ 703,278	\$ -	\$ 713,786	\$ 10,509
Assessment Stabilization Reserves	3,274	3,274	-	23,607	20,333
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ 706,551	\$ 706,551	\$ -	\$ 737,393	\$ 30,842
Expenses					
Personnel Expenses					
Salaries	\$ 230,429	\$ 230,429	\$ -	\$ 283,299	\$ 52,870
Payroll Taxes	15,160	15,160	-	17,712	2,552
Benefits	41,640	41,640	-	35,471	(6,169)
Retirement Costs	63,200	63,200	-	42,759	(20,441)
Total Personnel Expenses	\$ 350,428	\$ 350,428	\$ -	\$ 379,241	\$ 28,813
Meeting Expenses					
Meetings	\$ 1,450	\$ 1,450	\$ -	\$ 2,000	\$ 550
Travel	63,400	63,400	-	90,400	27,000
Total Meeting Expenses	\$ 64,850	\$ 64,850	\$ -	\$ 92,400	\$ 27,550
Operating Expenses					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ -	\$ -
Office Rent	-	-	-	-	-
Office Costs	14,300	14,300	-	14,300	-
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 14,300	\$ 14,300	\$ -	\$ 14,300	\$ -
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ 263,436	\$ 263,436	\$ -	\$ 241,505	\$ (21,931)
Total Expenses (B)	\$ 693,014	\$ 693,014	\$ -	\$ 727,446	\$ 34,432
Change in Net Assets (=A - B)	\$ 13,537	\$ 13,537	\$ -	\$ 9,947	\$ (3,590)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 13,537	\$ 13,537	\$ -	\$ 9,947	\$ (3,590)
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 706,551	\$ 706,551	\$ -	\$ 737,393	\$ 30,842
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	2.64	2.64	-	2.08	(0.56)

Table A-10. Situation Awareness and Infrastructure Security Budget Detail

Administrative Services

The following table outlines the budget for Administrative Services.

Administrative Services (in whole dollars)						
	Direct Expenses and Fixed Assets			FTEs		
	2019 Budget	2020 Budget	Increase (Decrease)	2019 Budget	2020 Budget	Increase (Decrease)
General and Administrative	\$1,075,707	\$1,009,431	-\$66,276	2.84	2.62	(0.22)
Legal and Regulatory	\$650,890	\$925,510	\$274,620	0.86	2.07	1.21
Information Technology	\$1,495,582	\$1,784,365	\$288,783	3.97	4.44	0.47
Human Resources	\$0	\$433,001	\$433,001	0.00	1.35	1.35
Finance and Accounting	\$1,790,613	\$1,788,250	-\$2,363	3.55	3.38	(0.17)
Total Administrative Services	\$5,012,792	\$5,940,557	\$927,765	11.22	13.86	2.64

Table A-11. Administrative Services Budget

Program Scope and Functional Description

MRO's Administrative Services area is the business and administrative functions of the organization, including legal and regulatory, information technology, human resources, finance and accounting, and general expenses. Costs incurred for these services are allocated as an indirect expense across MRO's other program areas.

MRO's Administrative Services supports ERO Enterprise efforts to be effective and efficient as outlined in the ERO Enterprise Operating Plan **Goal 6: Improve ERO Enterprise Efficiency and Effectiveness:**

Goal 6 Description: *The ERO Enterprise embraces transparency, collaboration, consistency, quality, efficiency, and timeliness of results and operates as a coordinated and collaborative enterprise.*

Key MRO Objectives and Supporting Activities

1. Work with the MRO Board's Organizational Group Oversight Committee to:
 - a. Fully implement MRO's advisory council structure (2019).
 - b. Identify and reduce duplication of efforts across the region and ERO Enterprise.
 - c. Periodically assess areas for greater efficiency in the facilitation and coordination of MRO's organizational groups.
2. Support ERO's efforts to evaluate opportunities for resource sharing and/or joint purchasing agreements across the ERO.
3. Enhance succession planning for executive positions (2019).
4. Foster greater intentionality regarding ERO Enterprise and/or NERC work.

Methodology for Allocation of Administrative Services Expenses to Programs

All expenses for the Administrative Services programs, referred to as indirect expenses, are allocated to the delegated program areas based on their respective number of FTEs. This allocation provides improved financial perspective for the delegated functions.

Funding Sources

The expenses related to the indirect program areas are being allocated entirely to the direct programs; therefore, the indirect program areas have no ERO assessment revenue.

General and Administrative

The following table lists the General and Administrative budget.

General and Administrative (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	2.84	2.62	(0.22)
Total Direct Expenses	\$ 1,075,707	\$ 1,009,431	\$ (66,276)
Inc(Dec) in Fixed Assets	\$ -	\$ -	\$ -
Working Capital Requirement	\$ (449,432)	\$ -	\$ 449,432

Table A-12. General and Administrative Budget

Program Scope and Functional Description

The General and Administrative Department is led by MRO's President and CEO. The department ensures that there is adequate attention to the execution of MRO's strategic priorities and the day-to-day management of the corporation, including facilities and maintenance, board governance, policies and procedures to maintain and enhance operation of the corporation, proper record-keeping, and related responsibilities under applicable regulations, as well as MRO's Delegation Agreement.

General and Administrative Services Resource Requirements**Overall Budget Change 2019-2020 (Decrease \$66.3K, 6.2%)****Personnel Expenses (Decrease \$87.7K, 11.4%)**

The average salary increase was budgeted at 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by the organizational leadership changes. There was an FTE reduction of 0.22.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting Expenses (Increase \$11.4K, 4.9%)

There is an increase in overall meeting and travel expenses due to the additional council face-to-face meetings.

Operating Expenses (Increase \$10K, 13.2%)

There is an increase for media training.

General and Administrative Budget Detail

The following table shows funding sources and related expenses for the General and Administrative Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
GENERAL and ADMINISTRATIVE					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ (449,432)	\$ (449,432)	\$ -	\$ -	\$ 449,432
Assessment Stabilization Reserves	-	-	-	-	-
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ (449,432)	\$ (449,432)	\$ -	\$ -	\$ 449,432
Expenses					
Personnel Expenses					
Salaries	\$ 582,342	\$ 582,342	\$ -	\$ 532,287	\$ (50,055)
Payroll Taxes	26,054	26,054	-	21,762	(4,292)
Benefits	45,483	45,483	-	44,339	(1,144)
Retirement Costs	115,028	115,028	-	82,843	(32,185)
Total Personnel Expenses	\$ 768,907	\$ 768,907	\$ -	\$ 681,231	\$ (87,676)
Meeting Expenses					
Meetings	\$ 60,000	\$ 60,000	\$ -	\$ 60,000	\$ -
Travel	171,300	171,300	-	182,700	11,400
Total Meeting Expenses	\$ 231,300	\$ 231,300	\$ -	\$ 242,700	\$ 11,400
Operating Expenses					
Consultants & Contracts	\$ 32,000	\$ 32,000	\$ -	\$ 32,000	\$ -
Office Rent	-	-	-	-	-
Office Costs	43,500	43,500	-	53,500	10,000
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 75,500	\$ 75,500	\$ -	\$ 85,500	\$ 10,000
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ (1,075,707)	\$ (1,075,707)	\$ -	\$ (1,009,431)	\$ 66,276
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A - B)	\$ (449,432)	\$ (449,432)	\$ -	\$ -	\$ 449,432
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ (449,432)	\$ (449,432)	\$ -	\$ -	\$ 449,432
FTEs	2.84	2.84	-	2.62	(0.22)

Table A-13. General and Administrative Budget Detail

Legal and Regulatory

The following table lists the Legal and Regulatory budget.

Legal and Regulatory (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	0.86	2.07	1.21
Total Direct Expenses	\$ 650,890	\$ 925,510	\$ 274,620
Inc(Dec) in Fixed Assets	\$ -	\$ -	\$ -
Working Capital Requirement	\$ -	\$ -	\$ -

Table A-14. Legal and Regulatory Budget

Program Scope and Functional Description

MRO has a Vice President and General Counsel and a Deputy General Counsel to provide advice to the board, the President and CEO, and staff on legal and regulatory matters affecting MRO. Both of these individuals have additional responsibilities outside the legal and regulatory function. MRO may use external specialized legal resources on an as-needed basis, such as for corporate matters, employee benefit plan issues, and significant policy or regulatory matters. The Deputy General Counsel also serves as the Director of Enforcement.

Legal and Regulatory Resource Requirements

Overall Budget Change 2019-2020 (Increase \$274.6K, 42.2%)

The increase in this indirect program area funds additional Professional Services related to independent board member fees and outside legal services.

Personnel Expenses (Increase \$172.1K, 62.7%)

The average salary increase was budgeted at 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by organizational leadership changes. There was also an FTE increase of 1.21. The Deputy General Counsel, who also serves as Director of Enforcement, will spend some time in Legal. There will also be some administrative support spending time in this department.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Office Costs (Increase \$8.6K, 189.4%)

This increase is due to the filing and registration fees moving from Finance to Legal. This increase is offset by a decrease in the other program area.

Professional Fees (Increase \$94.0K, 26.6%)

Outside legal costs increased \$50K (100 percent) based on trending of recent years' actuals. Independent Trustee fees increased \$44K (16.0 percent) based on projected fee increases.

Legal and Regulatory Budget Detail

The following table shows funding sources and related expenses for the Legal and Regulatory Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
LEGAL and REGULATORY					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserves	-	-	-	-	-
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ -	\$ -	\$ -	\$ -	\$ -
Expenses					
Personnel Expenses					
Salaries	\$ 211,570	\$ 211,570	\$ -	\$ 334,870	\$ 123,300
Payroll Taxes	9,820	9,820	-	17,818	7,998
Benefits	13,773	13,773	-	33,311	19,538
Retirement Costs	39,202	39,202	-	60,417	21,215
Total Personnel Expenses	\$ 274,365	\$ 274,365	\$ -	\$ 446,416	\$ 172,051
Meeting Expenses					
Meetings	\$ -	\$ -	\$ -	\$ -	\$ -
Travel	19,000	19,000	-	19,000	-
Total Meeting Expenses	\$ 19,000	\$ 19,000	\$ -	\$ 19,000	\$ -
Operating Expenses					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ -	\$ -
Office Rent	-	-	-	-	-
Office Costs	4,525	4,525	-	13,094	8,569
Professional Services	353,000	353,000	-	447,000	94,000
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 357,525	\$ 357,525	\$ -	\$ 460,094	\$ 102,569
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ (650,890)	\$ (650,890)	\$ -	\$ (925,510)	\$ (274,620)
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A - B)	\$ -	\$ -	\$ -	\$ -	\$ -
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	0.86	0.86	-	2.07	1.21

Table A-15. Legal and Regulatory Budget Detail

Information Technology

The following table lists the Information Technology budget.

Information Technology (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	3.97	4.44	0.47
Total Direct Expenses	\$ 1,495,582	\$ 1,784,365	\$ 288,783
Inc(Dec) in Fixed Assets	\$ -	\$ -	\$ -
Working Capital Requirement	\$ -	\$ -	\$ -

Table A-16. Information Technology Budget

Program Scope and Functional Description

MRO's Information Technology program responds to business needs by providing the technology and communications tools for staff to perform Regional Entity functions.

In addition to contributing to the ERO Enterprise Operating Plan Goal 6 as part of MRO's Administrative services, this program has specific areas of support related to ERO Enterprise vision of a highly reliable and secure North American bulk power system and efforts to communicate risks to reliability as outlined in the ERO Enterprise Operating Plan Goals 2 and 5.

Goal 2: Strengthen Objective, Risk-Informed Entity Registration, Compliance Monitoring, Mitigation, and Enforcement:

As part of the ERO Enterprise, MRO is a strong enforcement authority that is objective, fair, and promotes a culture of reliability excellence through risk-informed compliance monitoring, mitigation, enforcement, and registration.

Key MRO Objectives and Supporting Activities

1. Develop Compliance Oversight Plans (COPs) for MRO registered entities through a process that is aligned with the ERO and considers inherent risk, entity performance, and effectiveness of entity internal controls.
2. Decrease processing time for noncompliance.
3. Participate and provide input into the development and deployment of the ERO Enterprise Align project (formerly known as CMEP Tool Project) to align processes across the ERO Enterprise (2019-2020).
4. Support NERC as the current CEA for SPP RTO as well as the transition of the CEA responsibilities to MRO (2019-2020).

Goal 5: Identify and Reduce Cyber and Physical Security Risks

As part of the ERO Enterprise, MRO identifies and evaluates cyber and physical security risks to the BPS and assures those risks are reduced through active stakeholder engagement and information sharing of current threats and vulnerabilities, security workshops, and development of good industry practice guides. The ERO Enterprise supports the Electricity Information Sharing and Analysis Center (E-ISAC), the Cybersecurity Risk Information Sharing Program

(CRISP), technical protective programs, and physical and cybersecurity preparedness exercises, and engages with government partners to de-classify sensitive security information needed to protect BPS devices and assets. The ERO Enterprise works with stakeholders to develop and share information to foster BPS resiliency in connection with both traditional and emerging risks.

Key MRO Objective and Supporting Activities

1. Work with NERC, the MRO Security Advisory Council, and the Regional Entities to assess bulk power system security and identify potential or emerging cyber and physical security risks.
2. Improve regional coordination and information sharing regarding security threats by increasing engagement with E-ISAC and government agencies such as DHS, RCMP and FBI.
3. Actively participate in grid security exercises such as GridEx and in security programs, such as CRISP.
4. Continue to be responsive to state public utility requests for cyber security information.

Information Technology Resource Requirements

Overall Budget Change 2019-2020 (Increase \$288.8K, 19.3%)

The increase in the indirect programs is largely due to an increase in Consultants and Contracts, and Office Costs.

Personnel Expenses (Increase \$195.8K, 37.6%)

The average salary increase was budgeted at 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by the organizational leadership changes. There was also an FTE increase of 0.47.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Consultants and Contracts (Increase \$122.2K, 31.3%)

This increase reflects increased reliance on external IT professional resources.

Information Technology Budget Detail

The following table shows funding sources and related expenses for the Information Technology Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital 2019 Budget & Projection, and 2020 Budget					
INFORMATION TECHNOLOGY					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserves	-	-	-	-	-
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ -	\$ -	\$ -	\$ -	\$ -
Expenses					
Personnel Expenses					
Salaries	\$ 359,608	\$ 359,608	\$ -	\$ 530,912	\$ 171,304
Payroll Taxes	28,021	28,021	-	37,021	9,000
Benefits	63,581	63,581	-	75,718	12,137
Retirement Costs	68,772	68,772	-	72,089	3,317
Total Personnel Expenses	\$ 519,982	\$ 519,982	\$ -	\$ 715,740	\$ 195,758
Meeting Expenses					
Meetings	\$ -	\$ -	\$ -	\$ -	\$ -
Travel	10,000	10,000	-	10,000	-
Total Meeting Expenses	\$ 10,000	\$ 10,000	\$ -	\$ 10,000	\$ -
Operating Expenses					
Consultants & Contracts	\$ 391,200	\$ 391,200	\$ -	\$ 513,475	\$ 122,275
Office Rent	-	-	-	-	-
Office Costs	329,400	329,400	-	335,150	5,750
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 720,600	\$ 720,600	\$ -	\$ 848,625	\$ 128,025
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	(1,250,582)	\$ (1,250,582)	\$ -	\$ (1,574,365)	\$ (323,783)
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A - B)	\$ -	\$ -	\$ -	\$ -	\$ -
Fixed Asset Additions, excluding Right of Use Assets	\$ 245,000	\$ 245,000	-	\$ 210,000	\$ (35,000)
Allocation of Fixed Assets	\$ (245,000)	\$ (245,000)	-	\$ (210,000)	\$ 35,000
Inc(Dec) in Fixed Assets (C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	3.97	3.97	-	4.44	0.47

Table A-17. Information Technology Budget Detail

Human Resources

The following table lists the Human Resources budget.

Human Resources (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	-	1.35	1.35
Total Direct Expenses	\$ -	\$ 433,001	\$ 433,001
Inc(Dec) in Fixed Assets	\$ -	\$ -	\$ -
Working Capital Requirement	\$ -	\$ -	\$ -

Table A-18. Human Resources Budget

Program Scope and Functional Description

Human Resources

The Human Resources function designs, plans, and implements Human Resource policies and procedures in adherence with applicable federal and state laws. This function also organizes the recruitment and retention efforts of the organization and coordinates onboarding, training, professional development, and best practice employee retention initiatives.

MRO has developed a culture and talent management program that features in-depth communication and training. New hire training initiatives and employee collaborations are planned to create opportunities for peer-to-peer internal mentorship and team building. The program also facilitates MRO's enterprise-wide corporate compliance and ethics program. MRO reviewed and enhanced its employee engagement and culture enrichment activities in an effort to positively impact both the onboarding experience of new employees, as well as the overall corporate culture to be an "employer of choice," and therefore support attraction and retention of qualified staff.

Human Resources Resource Requirements

Overall Budget Change 2019-2020 (Increase \$433.0K, 100%)

The human resource function has been segregated from Finance and Accounting. This new function is a 100 percent increase from 2019.

Personnel Expense (Increase \$262K, 100%)

The increase in this areas results from moving the Human Resource function from Finance and Accounting to its own separate function. This increase is offset by a decrease in Finance and Accounting.

Operating Expense (Increase \$169.5K, 100%)

The increase in this areas results from moving the Human Resource function from Finance and Accounting to its own separate function. This increase is offset by a decrease in Finance and Accounting.

Human Resources Budget Detail

The following table shows funding sources and related expenses for the Human Resources Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital					
2019 Budget & Projection, and 2020 Budget					
HUMAN RESOURCES					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserves				-	-
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ -	\$ -	\$ -	\$ -	\$ -
Expenses					
Personnel Expenses					
Salaries	\$ -	\$ -	\$ -	\$ 196,884	\$ 196,884
Payroll Taxes	-	-	-	12,483	12,483
Benefits	-	-	-	23,022	23,022
Retirement Costs	-	-	-	29,612	29,612
Total Personnel Expenses	\$ -	\$ -	\$ -	\$ 262,001	\$ 262,001
Meeting Expenses					
Meetings	\$ -	\$ -	\$ -	-	-
Travel	-	-	-	1,500	1,500
Total Meeting Expenses	\$ -	\$ -	\$ -	\$ 1,500	\$ 1,500
Operating Expenses					
Consultants & Contracts	\$ -	\$ -	\$ -	\$ 47,000	\$ 47,000
Office Rent	-	-	-	-	-
Office Costs	-	-	-	102,500	102,500
Professional Services	-	-	-	20,000	20,000
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ -	\$ -	\$ -	\$ 169,500	\$ 169,500
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ -	\$ -	\$ -	\$ (433,001)	\$ (433,001)
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A - B)	\$ -	\$ -	\$ -	\$ -	\$ -
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ -	-	-	-	-
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	-	-		1.35	1.35

Table A-19. Human Resources Budget Detail

Finance and Accounting

The following table lists the Finance and Accounting budget.

Finance and Accounting (in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	3.55	3.38	(0.17)
Total Direct Expenses	\$ 1,790,613	\$ 1,788,250	\$ (2,363)
Inc(Dec) in Fixed Assets	\$ -	\$ -	\$ -
Working Capital Requirement	\$ -	\$ -	\$ -

Table A-20. Finance and Accounting Budget

Program Scope and Functional Description

Finance and Accounting

The Finance and Accounting function directs the overall financial planning and accounting practices of the organization, oversees treasury, accounting, budget, tax, and audit activities, as well as the financial and accounting system controls and standards. The Finance and Accounting function also administers employee benefit plans, including the 401(k) and Retiree Medical Trust, and reports the overall outcome of MRO's annual activities to the MRO Board. This function also coordinates all MRO internal and external meetings, workshops, and events. Office Rent expenses for MRO are budgeted and recorded in Finance and Accounting.

Finance and Accounting Resource Requirements

Overall Budget Change 2019-2020 (Decrease \$2.4K, 0.13%)

The overall costs in the Finance and Accounting area have been reduced by the separation of the Human Resource function into its own functional area.

Personnel Expenses (Increase \$61.7K, 10.2%)

The average salary increase was budgeted at 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by organizational leadership changes. There was also an FTE reduction of 0.17.

Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.

Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums. (Decrease 41.7 percent.)

Meeting Expenses (Decrease \$6.0K, 33.3%)

The decrease in this areas results from moving the Human Resource function from Finance and Accounting to its own separate function. This decrease is offset by an increase in the other functional area.

Operating Expenses (Decrease \$83.1K, 7.1%)

The decrease in this area results from moving the Human Resource function from Finance and Accounting to its own separate function. This decrease is offset by an increase in the other functional area.

Finance and Accounting Budget Detail

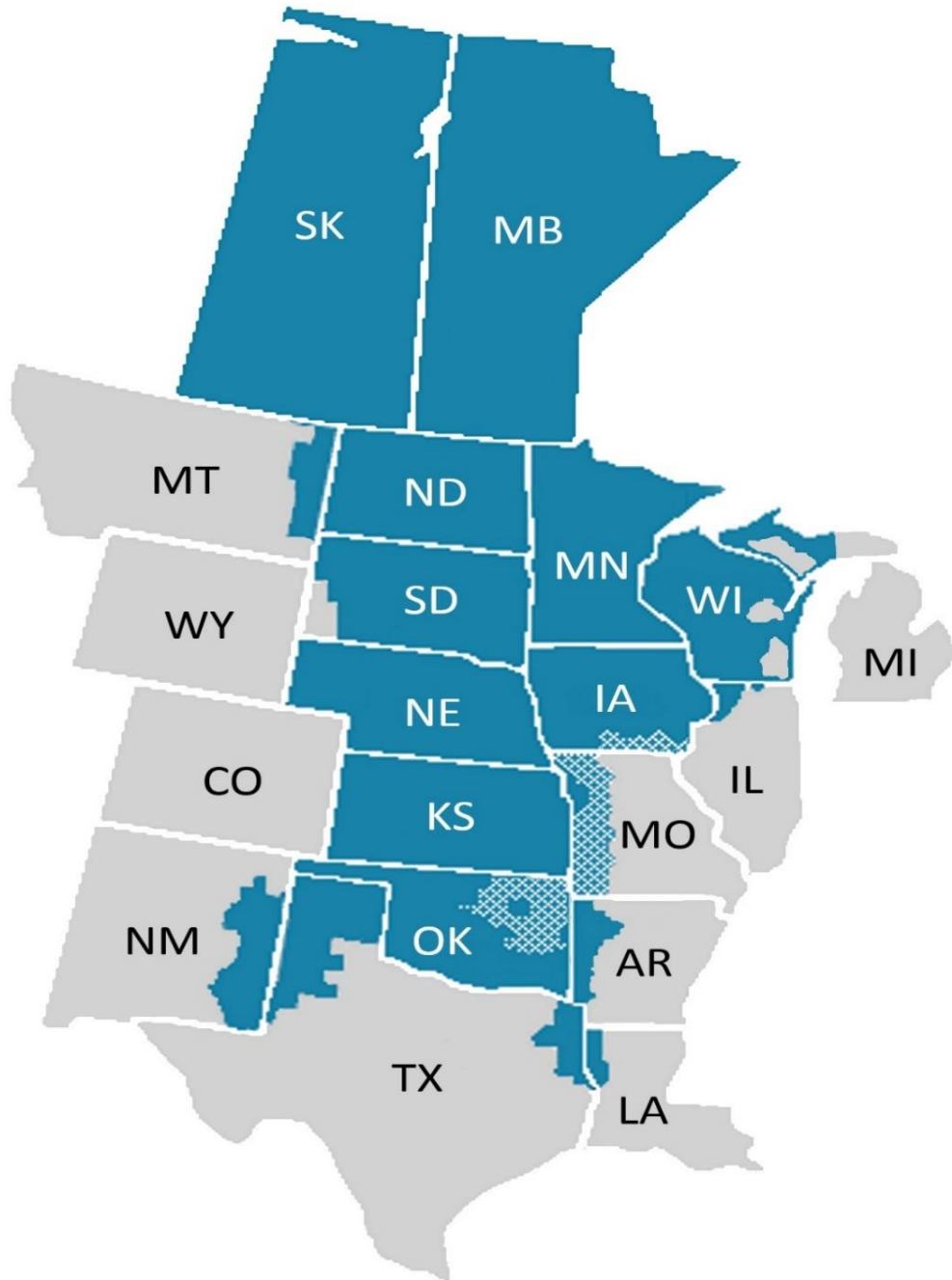
The following table shows funding sources and related expenses for the Finance and Accounting Program.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital 2019 Budget & Projection, and 2020 Budget					
FINANCE and ACCOUNTING					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Assessment Stabilization Reserves	-	-	-	-	-
Membership Dues	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Total Funding (A)	\$ -	\$ -	\$ -	\$ -	\$ -
Expenses					
Personnel Expenses					
Salaries	\$ 419,867	\$ 419,867	\$ -	\$ 488,350	\$ 68,483
Payroll Taxes	28,044	28,044	-	27,810	(234)
Benefits	56,854	56,854	-	57,982	1,128
Retirement Costs	97,688	97,688	-	90,008	(7,680)
Total Personnel Expenses	\$ 602,453	\$ 602,453	\$ -	\$ 664,150	\$ 61,697
Meeting Expenses					
Meetings	\$ 2,000	\$ 2,000	\$ -	\$ 2,000	\$ -
Travel	16,000	16,000	-	10,000	(6,000)
Total Meeting Expenses	\$ 18,000	\$ 18,000	\$ -	\$ 12,000	\$ (6,000)
Operating Expenses					
Consultants & Contracts	\$ 92,410	\$ 92,410	\$ -	\$ 49,050	\$ (43,360)
Office Rent	743,500	743,500	-	774,000	30,500
Office Costs	274,250	274,250	-	203,050	(71,200)
Professional Services	60,000	60,000	-	61,000	1,000
Miscellaneous	-	-	-	-	-
Total Operating Expenses	\$ 1,170,160	\$ 1,170,160	\$ -	\$ 1,087,100	\$ (83,060)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Indirect Expenses	\$ (1,790,613)	\$ (1,790,613)	\$ -	\$ (1,763,250)	\$ 27,363
Total Expenses (B)	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Net Assets (=A - B)	\$ -	\$ -	\$ -	\$ -	\$ -
Fixed Asset Additions, excluding Right of Use Assets	\$ -	\$ -	\$ -	25,000	25,000
Allocation of Fixed Assets	\$ -	\$ -	-	(25,000)	(25,000)
Inc(Dec) in Fixed Assets (C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	\$ -	\$ -
FTEs	3.55	3.55	-	3.38	(0.17)

Table A-21. Finance and Accounting Budget Detail

Section B – Supplemental Financial Information

2020 Business Plan and Budget



Section B – Supplemental Financial Information

Reserve Balance

Table B-1 analyzes the reserve for 2019 through 2020.

Reserve Analysis 2019-2020		
STATUTORY		
Beginning Working Capital (Deficit), December 31, 2018	4,730,716	
Plus: Penalty Sanctions Non-current ¹	712,417	} Projected Annual Cashflow
Plus: 2019 MRO Assessment	15,471,669	
Less: 2019 Projected expenses & capital expenditures	(15,980,354)	Operation Expenses
Projected Reserve (Deficit), December 31, 2019²	4,934,448	
Targeted 30 day Operating Reserve, December 31, 2020 (($\$17,540,969 / 365$ days) X 30 days)	1,441,723	To cover contingencies
Less: Projected Reserve, December 31, 2019	(4,934,448)	
Projected Reserve	(3,492,725)	Projected Assessment Stabilization Reserves
2020 Expenses and Capital Expenditures	17,540,969	
2020 MRO Assessment (9.8% Increase over 2019)	16,983,251	
Adjustment from reserves to achieve targeted MRO Assessment	557,718	Assessment Stabilization Adjustment
Projected Reserve (Deficit), December 31, 2020	2,935,007	Assessment Stabilization Reserves

¹ Represents collections on or prior to June 30, 2019. See page 54 for full disclosure.

² MRO's projected reserve December 31, 2019 assumes that there will not be a material difference budgeted versus actual/projected results from 2019.

Table B-1. Reserve Analysis 2019 - 2020

Explanation of Changes in Reserve Policy from Prior Years

In 2019, MRO received excess assessment dollars and penalties from the SPP RE transition that could be used to stabilize future MRO budget assessments. In the past, penalties have been a very small fraction of the surplus dollars used to reduce assessments, while MRO's working capital caused a more significant difference in assessments from year-to-year. MRO staff discussed assessment stabilization with NERC and other Regional Entities and the application of excess assessments to future years to stabilize the budget and assessments. MRO determined it must revise its current process to reset the targeted operating reserves and apply an assessment stabilization adjustment to the proposed budget year's assessments.

Pursuant to the NERC ROP Section 1107.4, MRO is requesting an exception to NERC ROP 1107.2: *All funds from financial Penalties assessed in the United States received by the entity initiating the compliance monitoring and enforcement process shall be applied as a general offset to the entity's budget requirements for the subsequent fiscal year, if received by July 1, or for the second subsequent fiscal year, if received on or after July 1.*

MRO proposes to revise its reserve policy to include an assessment stabilization reserve.

The proposed revised Policy and Procedure 13 would determine the targeted operating reserve requirement based on the additional cash-on-hand necessary to meet unplanned, short-term financial needs resulting from changes in the level of expenditures that would adversely affect the company's total annual operating budget during the budget year. The revised policy would combine penalties received and surplus working capital. MRO staff may propose to set aside these funds in a separate reserve account to be released in future periods to mitigate year-to-year variations in assessments.

Breakdown by Statement of Activity Sections

Table B-2 lists all penalties, including date received and amount, received prior to June 30, 2018.

Penalty Sanctions Received On or Prior to June 30, 2019	Date Received	Amount Received
	Jul-18	\$ 144,000
	Jul-18	29,000
	Aug-18	10,000
	Oct-18	402,764
	Oct-18	31,371
	Feb-19	95,282

Total Penalties Received	\$ 712,417
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Table B-2. Penalty Sanctions Received

Penalty Sanctions

All penalties received after July 1, 2018, and prior to June 30, 2019, are listed above, including the amount and date received.

Pursuant to the NERC ROP Section 1107.4, MRO is requesting an exception to NERC ROP 1107.2: *All funds from financial Penalties assessed in the United States received by the entity initiating the compliance monitoring and enforcement process shall be applied as a general offset to the entity's budget requirements for the subsequent fiscal year, if received by July 1, or for the second subsequent fiscal year, if received on or after July 1.*

Allocation Method: Penalty sanctions received have been combined with surplus working capital (if any). MRO staff may set aside these funds in a separate reserve account to be released in future budget periods to mitigate year-to-year variations in budget assessments.

Table B-3 lists the budget for Supplemental Funding.

Outside Funding Breakdown By Program (Excluding Penalty Sanction)	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget
Compliance Monitoring, Enforcement & Org. Registration				
Other	\$ -	\$ -	\$ -	\$ -
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Reliability Assessment and Performance Analysis				
Other		-		
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Training and Education				
Testing Fees and Certificate Renewals	\$ -	\$ -	\$ -	-
CEH Fees	-	-	-	-
Workshops	-	-	-	-
Other		-		
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Situation Awareness and Infrastructure Security				
FIST Royalties	\$ -	\$ -	\$ -	\$ -
TSIN Fees				
Other		-		
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
General and Administrative				
Interest Income	\$ -	\$ -	\$ -	\$ -
Other				
Total	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Total Outside Funding	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>

Table B-3. Supplemental Funding

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

MRO does not earn interest income. The general banking account offsets the bank charges with any earned interest.

Table B-4 summarizes Personnel Expenses.

Personnel Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Total Salaries	\$ 8,386,511	\$ 8,386,511	\$ 9,334,262	\$ 947,751	11.3%
Total Payroll Taxes	539,356	539,356	586,604	47,248	8.8%
Total Benefits	928,884	928,884	1,061,581	132,697	14.3%
Total Retirement	1,714,916	1,714,916	1,500,244	(214,672)	-12.5%
Total Personnel Costs	\$ 11,569,667	\$ 11,569,667	\$ 12,482,691	\$ 913,024	7.9%
FTEs	59.00	59.00	63.00	4.00	6.8%
Cost per FTE					
Salaries	\$ 142,144	\$ 142,144	\$ 148,163	6,019	4.2%
Payroll Taxes	9,142	9,142	9,311	170	1.9%
Benefits	15,744	15,744	16,850	1,107	7.0%
Retirement	29,066	29,066	23,813	(5,253)	-18.1%
Total Cost per FTE	\$ 196,096	\$ 196,096	\$ 198,138	\$ 2,042	1.0%

Table B-4. Personnel Expenses

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

Personnel Expenses (Increase \$913K, 7.9%)

The following assumptions were used to determine the 2020 MRO budget:

- Total personnel expenses were increased to include the addition of 4 FTEs to support the expanded region.
- The average salary increase is 3 percent. However, MRO aligned some salaries and the incentive program to compete with market. Salaries were further impacted by organizational leadership changes.
- Benefits were based on actual 2019 medical and dental program premium rates, increased by 6 percent.
- Saving and retirement costs decreased from the 2019 budgeted amounts, reflecting the 2018 end-of-year actuarial assessment of MRO's Retiree Medical Plan. The 2018 adjustment was due to a significant decrease in the cost of healthcare, specifically Medicare supplemental premiums.

Table B-5 lists the budget for Meeting Expenses.

Meeting Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Meeting Expenses	\$ 145,850	\$ 145,850	\$ 175,900	\$ 30,050	20.6%
Travel	905,314	\$ 905,314	1,108,732	203,418	22.5%
Total Meeting Expenses	\$ 1,051,164	\$ 1,051,164	\$ 1,284,632	\$ 233,468	22.2%

Table B-5. Meeting Expenses

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

Meeting Expenses (Increase \$30K, 20.6%)

Budgeted meeting expenses increased to include additional meetings and outreach efforts for the expanded region. MRO's organizational group structure was reorganized to include advisory councils that sponsor outreach and engagement efforts that support mitigation and outreach strategies for addressing identified risks.

Travel Expenses (Increase \$203.4K, 22.5%)

There is an overall travel expense increase for both staff travel and member reimbursement reflective of the additional working group trips and the additional council face-to-face meetings. There are also travel dollars for the Align project and training of staff.

Table B-6 lists the budget for Consultants and Contracts.

Consultants	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Consultants					
Reliability Standards and Organization Registration and Certification Compliance	\$ -	\$ -	\$ -	\$ -	
Reliability Assessment and Performance Analysis (Alert) Event Analysis	403,000	403,000	403,000	-	0%
Training and Education	-	-	-	-	
Situation Awareness and Infrastructure Security Committee and Member Forums	-	-	-	-	
General and Administrative	32,000	32,000	32,000	-	0%
Legal and Regulatory	-	-	-	-	
Information Technology	191,000	191,000	286,200	95,200	50%
Human Resources	-	-	-	-	
Accounting and Finance	22,000	22,000	15,000	(7,000)	-32%
Consultants Total	\$ 648,000	\$ 648,000	\$ 736,200	\$ 88,200	14%
Contracts					
Contracts					
Reliability Standards and Organization Registration and Certification Compliance	\$ -	\$ -	\$ -	\$ -	
Reliability Assessment and Performance Analysis	100,000	100,000	180,394	80,394	80%
Event Analysis	81,400	81,400	81,400	-	0%
Training and Education	-	-	-	-	
Situation Awareness and Infrastructure Security Committee and Member Forums	-	-	-	-	
General and Administrative	-	-	-	-	
Legal and Regulatory	-	-	-	-	
Information Technology	200,200	200,200	227,275	27,075	14%
Human Resources	-	-	47,000	47,000	100%
Accounting and Finance	70,410	70,410	34,050	(36,360)	-52%
Contracts Total	\$ 452,010	\$ 452,010	\$ 570,119	\$ 118,109	26%

Table B-6. Consultants and Contracts

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

Contracts for Compliance Monitoring (Increase \$80K, 80%)

The \$80k increase is for expanded use of webCDMS based on a greater number of entities in the MRO Region.

IT Consultants and Contracts (Increase \$122K, 31.2%)

Consultants & Contracts consist of the management and maintenance of the MRO communication network. Greater use of the network requires continued maintenance for optimal performance of MRO's IT network and utilizes both internal staff and external technical support.

Human Resource Contracts (Increase \$47K, 100%)

The increase in HR contracts results from moving the Human Resource function from Finance and Accounting to its own separate function. This increase is offset by a decrease in Finance and Accounting. HR maintains the need for outside resources to support an expanded workforce. MRO also anticipates continued use of external consulting for staff recruitment and compensation and benefit studies.

Accounting and Finance Consultants and Contracts (Decrease \$43.4K, 46.9%)

The decrease in Accounting and Finance results from moving the Human Resource function from Finance and Accounting to its own separate function. This decrease is offset by an increase in HR.

Table B-7 lists the budget for Office Rent.

Office Rent	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Office Rent	\$ 724,000	\$ 724,000	\$ 750,000	\$ 26,000	3.6%
Utilities	7,500	7,500	9,000	1,500	20.0%
Maintenance	12,000	12,000	15,000	3,000	25.0%
Total Office Rent	\$ 743,500	\$ 743,500	\$ 774,000	\$ 30,500	4.10%

Table B-7. Office Rent

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

There are no significant variances.

Table B-8 lists the budget for Office Costs.

Office Costs	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Phone Service					
Data Circuit (qmoe)	\$ 60,000	\$ 60,000	\$ 60,000	\$ -	0.00%
Webex	11,000	11,000	19,200	8,200	74.55%
Voice Circuits	18,000	18,000	18,000	-	0.00%
Business Cable	2,500	2,500	3,250	750	30.00%
Disaster Recovery Site	19,000	19,000	-	(19,000)	-100.00%
Internet/Cell	56,288	56,288	62,532	6,244	11.09%
Office Supplies	50,000	50,000	50,000	-	0.00%
Employee Member Events	36,000	36,000	38,000	2,000	5.56%
Employee Related Expense (Drug Testing, Finder Fees Etc)	35,000	35,000	35,000	-	0.00%
Computer Supplies and Maintenance	163,500	163,500	166,500	3,000	1.83%
Publications & Subscriptions	6,675	6,675	10,500	3,825	57.30%
Professional Dues	18,800	18,800	22,095	3,295	17.53%
Postage	6,200	6,200	6,200	-	0.00%
Temporary Services	-	-	-	-	-
Finance-Filing/Reg Fees	6,000	6,000	6,000	-	0.00%
Equipment Repair/Service Contracts	27,700	27,700	38,000	10,300	37.18%
Bank Charges	27,000	27,000	15,000	(12,000)	-44.44%
Presentation & Publicity & Supplies Promotional	15,000	15,000	15,000	-	0.00%
Departmental Functional Training	209,350	209,350	275,050	65,700	31.38%
Insurance Expense	90,000	90,000	90,000	-	0.00%
Total Office Costs	\$ 858,013	\$ 858,013	\$ 930,327	\$ 72,314	8.43%

Table B-8. Office Costs

Explanation of Significant Variances – 2020 Budget versus 2019 Budget (Increase \$72K, 8.4%)

Office costs have increased largely due to the addition of FTEs. Savings in bank charges and costs for the Disaster Recovery Site will partially offset the increase in departmental training.

Insurance expenses are anticipated to remain flat. A thorough evaluation of insurance coverages was conducted in 2019. It is expected that these costs will remain consistent with prior years' coverage.

Table B-9 lists the budget for Professional Services.

Professional Services	Budget 2019	Projection 2019	Budget 2020	Variance	
				2020 Budget v 2019 Budget	Variance %
Independent Trustee Fees	\$ 276,000	\$ 276,000	\$ 320,000	\$ 44,000	15.94%
Independent Trustee Travel Reimbursement	27,000	27,000	27,000	-	0.00%
Outside Legal	50,000	137,500	120,000	70,000	140.00%
Accounting and Auditing Fees	32,500	32,500	33,000	500	1.54%
Actuarial Fees	27,500	27,500	28,000	500	1.82%
Total Services	\$ 413,000	\$ 500,500	\$ 528,000	\$ 115,000	27.85%

Table B-9. Professional Services

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

Professional Services (Increase \$115K, 27.8%)

In 2020, professional services increase to accommodate Independent Director compensation changes and additional legal services.

Table B-10 lists the budget for Miscellaneous.

Miscellaneous Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
	\$ -	\$ -	\$ -	\$ -	-
					-
					-
Total Miscellaneous Expenses	\$ -	\$ -	\$ -	\$ -	0.00%

Table B-10. Miscellaneous

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

MRO has not budgeted any Miscellaneous Expenses in 2019 or 2020.

Table B-11 lists the budget for other Non-Operating Expenses.

Other Non-Operating Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Interest Expense	\$ -	\$ -	\$ -	\$ -	
Line of Credit Payment					
Office Relocation	-	-	-	-	
Total Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	0.00%

Table B-11. Other Non-Operating Expenses

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

MRO has not budgeted any Non-Operating Expenses in 2019 or 2020.

Table B-12 lists the budget for Fixed Assets.

Fixed Assets	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Computer Equipment	245,000	245,000	210,000	(35,000)	-14.3%
Capitalized Software	-	-	-	-	
Furniture and Equipment	-	-	-	-	
Leasehold Improvements	-	-	25,000	25,000	
Total Change in Fixed Assets	\$ 245,000	\$ 245,000	\$ 235,000	\$ (10,000)	-4.1%

Table B-12. Fixed Assets

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

There are no significant variances.

Table B-13 compares the 2020 budget with projections for 2021-2022.

Statement of Activities, Fixed Assets Expenditures and Change in Working Capital 2021 and 2022 Projections								
	2020 Budget	2021 Projection	\$ Change 20 v 21	% Change 20 v 21	2022 Projection	\$ Change 21 v 22	% Change 21 v 22	
Funding								
ERO Funding								
NERC Assessments	\$ 16,983,251	\$ 17,492,749	\$ 509,498	3.00%	\$ 18,017,531	\$ 524,782	3.00%	
Assessment Stabilization Reserves	557,718	574,450	16,732	3.00%	591,683	17,233	3.00%	
Membership Dues	-	-	-	-	-	-	-	
Testing Fees	-	-	-	-	-	-	-	
Services & Software	-	-	-	-	-	-	-	
Workshop Fees & Miscellaneous	-	-	-	-	-	-	-	
Interest & Investment Income	-	-	-	-	-	-	-	
Total Funding (A)	\$ 17,540,969	\$ 18,067,198	\$ 526,229	3.0%	\$ 18,609,214	\$ 542,016	3.0%	
Expenses								
Personnel Expenses								
Salaries	\$ 9,334,262	\$ 9,614,290	\$ 280,028	3.0%	\$ 9,902,719	\$ 288,429	3.0%	
Payroll Taxes	586,604	604,202	17,598	3.0%	622,328	18,126	3.0%	
Benefits	1,061,581	1,093,428	31,847	3.0%	1,126,231	32,803	3.0%	
Retirement Costs	1,500,244	1,545,251	45,007	3.0%	1,591,609	46,358	3.0%	
Total Personnel Expenses	\$ 12,482,691	\$ 12,857,172	\$ 374,481	3.0%	\$ 13,242,887	\$ 385,715	3.0%	
Meeting Expenses								
Meetings & Conference Calls	\$ 175,900	\$ 181,177	\$ 5,277	3.0%	\$ 186,612	\$ 5,435	3.0%	
Travel	1,108,732	1,141,994	33,262	3.0%	1,176,254	34,260	3.0%	
Total Meeting Expenses	\$ 1,284,632	\$ 1,323,171	\$ 38,539	3.0%	\$ 1,362,866	\$ 39,695	3.0%	
Operating Expenses, excluding Depreciation								
Consultants & Contracts	\$ 1,306,319	\$ 1,345,509	\$ 39,190	3.0%	\$ 1,385,874	\$ 40,365	3.0%	
Office Rent	774,000	797,220	23,220	3.0%	821,137	23,917	3.0%	
Office Costs	930,327	958,237	27,910	3.0%	986,984	28,747	3.0%	
Professional Services	528,000	543,840	15,840	3.0%	560,155	16,315	3.0%	
Miscellaneous	-	-	-	-	-	-	-	
Total Operating Expenses	\$ 3,538,646	\$ 3,644,805	\$ 106,159	3.0%	\$ 3,754,150	\$ 109,344	3.0%	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	-	\$ -	\$ -	-	
Indirect Expenses	\$ -	\$ -	\$ -	-	\$ -	\$ -	-	
Total Expenses (B)	\$ 17,305,969	\$ 17,825,148	\$ 519,179	3.0%	\$ 18,359,903	\$ 534,754	3.0%	
Change in Net Assets (=A - B)	\$ 235,000	\$ 242,050	\$ 7,050	3.0%	\$ 249,312	\$ 7,261	3.0%	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 235,000	\$ 242,050	\$ 7,050	3.0%	\$ 249,312	\$ 7,262	3.0%	
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions =B + C)	\$ 17,540,969	\$ 18,067,198	\$ 526,229	3.0%	\$ 18,609,214	\$ 542,016	3.0%	
TOTAL CHANGE IN RESERVES (=A-B-C)	\$ -	\$ -	\$ -	-	\$ -	\$ -	-	
FTEs	63.00	63.00	-	-	63.00	-	-	

Table B-13. Budget 2020 Compared with 2021-2022 Projections

Explanation of 2020, 2021, 2022 Projections

At this time, MRO does not anticipate significant changes in program areas for the next three years.

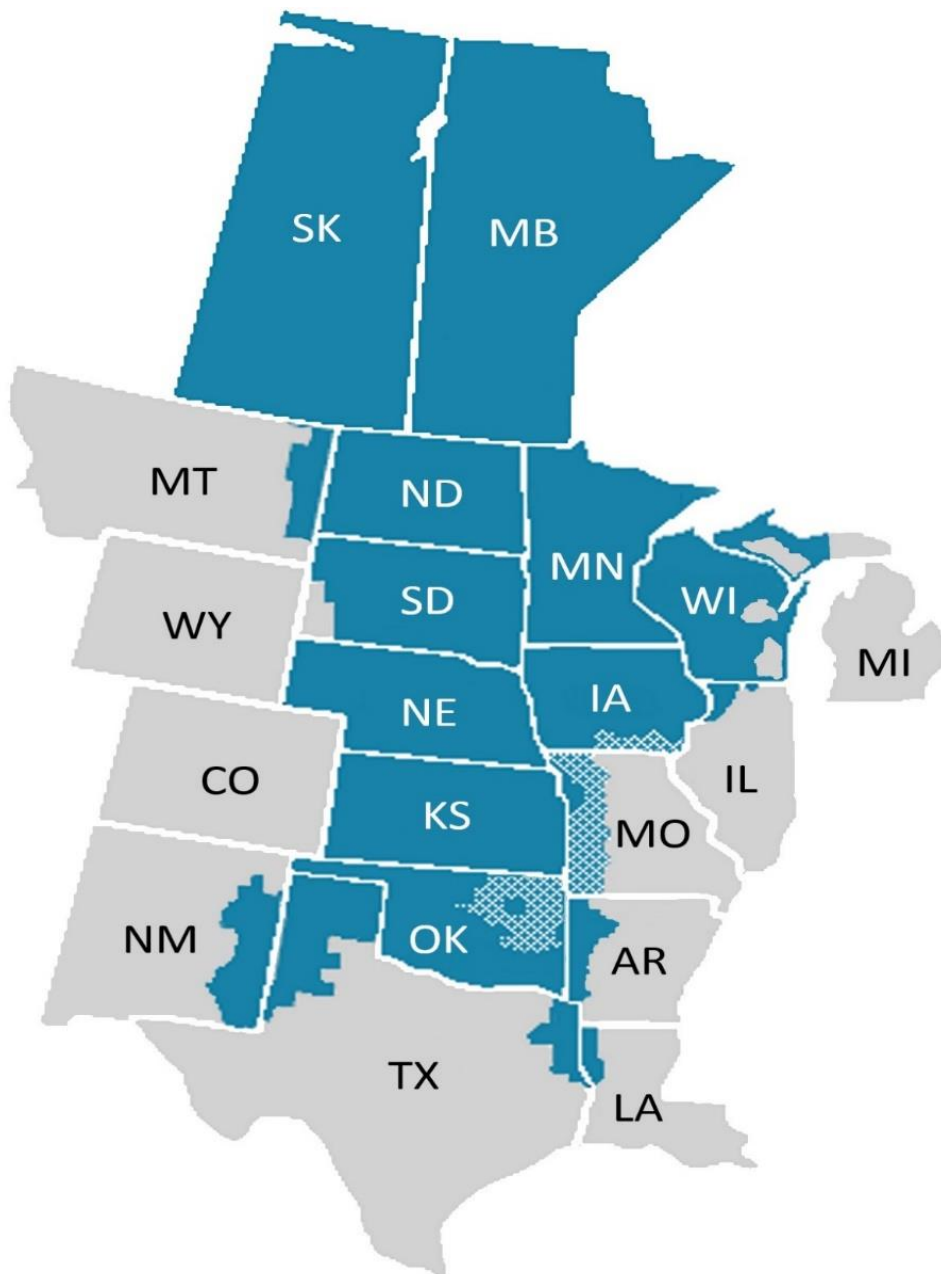
- FTEs remain flat
- Three percent escalation rate applied to expense categories
- Total budget increase of \$526K in 2021
- Total budget increase of \$542K in 2022
- Zero penalties budgeted

Section C – Non-Statutory Activities

2020 Business Plan and Budget

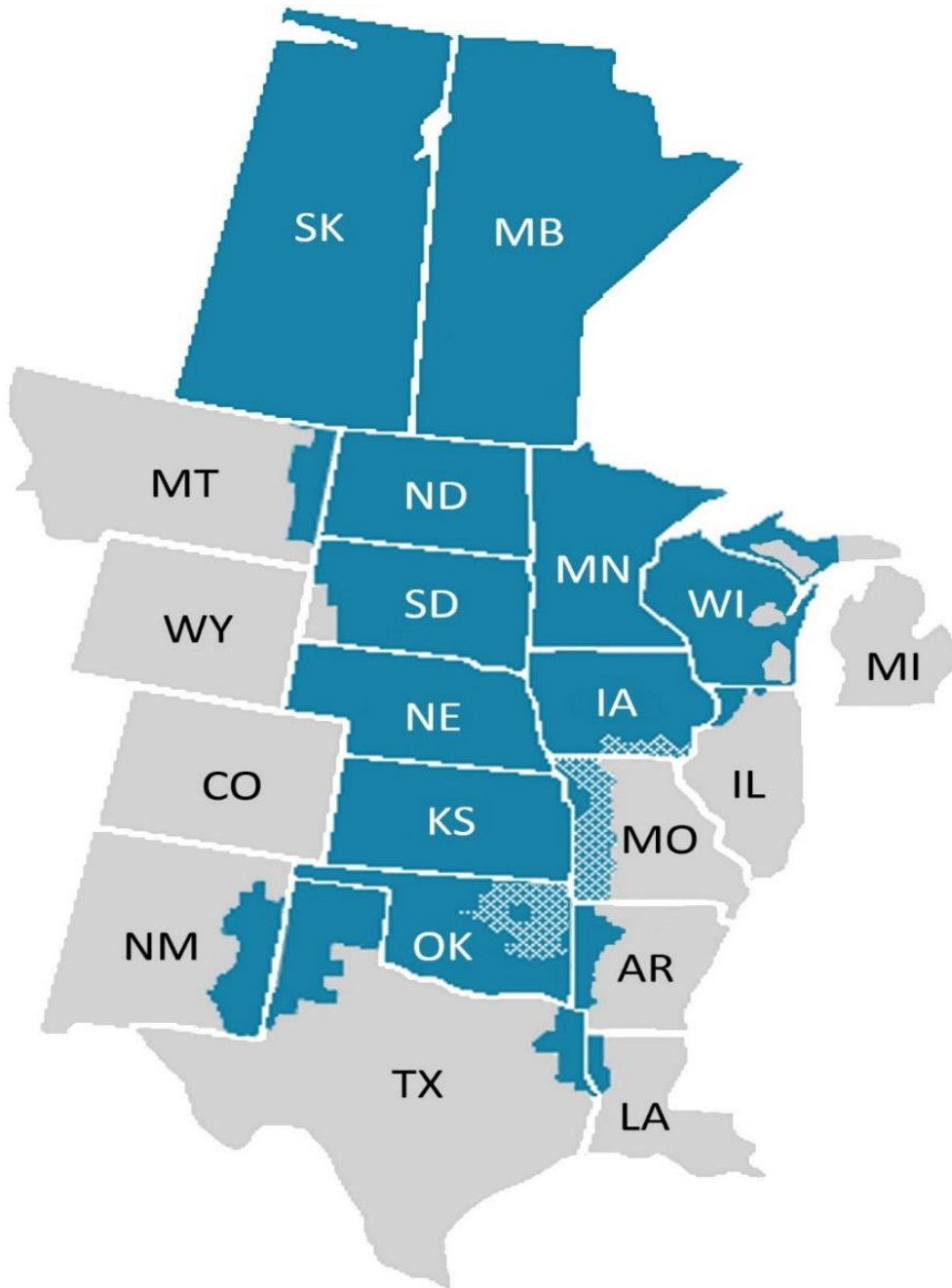
Section C – Non-Statutory Activities

2020 Non-Statutory Business Plan and Budget
MRO has no non-statutory activities.



Section D – Additional Consolidated Financial Statements

2020 Business Plan and Budget



Section D – Additional Consolidated Financial Statements

2020 Consolidated Statement of Activities by Program, Statutory and Non-Statutory

Statement of Activities and Capital Expenditures by Program 2020 Business Plan and Budget	Total	Statutory Total	Non-Statutory Total	Functions in Delegation Agreement										
				Statutory Total	Reliability Standards and Organization Registration and Certification (Section 300 & 500)	Compliance (Section 400)	Reliability Assessment and Performance Analysis (Section 800)	Training and Education (Section 6008900)	Situation Awareness and Infrastructure Security (Section 1000)	Committee and Member Forums	General and Administrative	Legal and Regulatory	Information Technology	Human Resources	Accounting and Finance
Funding														
ERO Funding														
NERC Assessments	16,983,251	16,983,251	-	16,983,251	712,541	11,466,158	3,018,309	1,072,457	713,786					
Assessment Stabilization Adjustment	557,718	557,718	-	557,718	23,607	381,686	95,109	33,708	23,607					
Membership Dues	-	-	-	-	-	-	-	-	-					
Testing Fees	-	-	-	-	-	-	-	-	-					
Services & Software	-	-	-	-	-	-	-	-	-					
Workshops & Miscellaneous Revenue	-	-	-	-	-	-	-	-	-					
Interest & Investment Income	-	-	-	-	-	-	-	-	-					
Total Funding (A)	17,540,969	17,540,969	-	17,540,969	736,148	11,847,844	3,113,418	1,106,166	737,393	-	-	-	-	-
Expenses														
Personnel Expenses														
Salaries	9,334,262	9,334,262	-	9,334,262	306,795	4,934,233	1,272,880	453,752	283,299	-	532,287	334,870	530,912	196,884
Payroll Taxes	586,604	586,604	-	586,604	18,021	329,276	82,405	22,296	17,712	-	21,762	17,818	37,021	12,483
Benefits	1,061,581	1,061,581	-	1,061,581	35,471	574,079	140,066	42,122	35,471	-	44,339	33,311	75,718	23,022
Retirement Costs	1,500,244	1,500,244	-	1,500,244	59,260	779,300	214,605	69,351	42,739	-	82,843	60,417	72,089	29,612
Total Personnel Expenses	12,482,691	12,482,691	-	12,482,691	419,547	6,616,888	1,709,956	587,521	379,241	-	681,231	446,416	715,740	262,001
Meeting Expenses														
Meetings	175,900	175,900	-	175,900	1,400	9,500	11,000	90,000	2,000	-	60,000	-	-	-
Travel	1,108,732	1,108,732	-	1,108,732	57,166	401,366	267,000	69,600	90,400	-	182,700	19,000	10,000	1,500
Total Meeting Expenses	1,284,632	1,284,632	-	1,284,632	58,566	410,866	278,000	159,600	92,400	-	242,700	19,000	10,000	1,500
Operating Expenses														
Consultants & Contracts	1,306,319	1,306,319	-	1,306,319	-	583,394	81,400	-	-	-	32,000	-	513,475	47,000
Office Rent	774,000	774,000	-	774,000	-	-	-	-	-	-	-	-	-	774,000
Office Costs	930,327	930,327	-	930,327	6,583	171,150	31,000	-	14,300	-	53,500	13,094	335,150	102,500
Professional Services	528,000	528,000	-	528,000	-	-	-	-	-	-	-	447,000	-	20,000
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	-	-	61,000
Total Operating Expenses	3,538,646	3,538,646	-	3,538,646	6,583	754,544	112,400	-	14,300	-	85,500	460,094	848,625	169,500
Total Direct Expenses	17,305,969	17,305,969	-	17,305,969	484,696	7,782,298	2,100,356	747,121	485,941	-	1,009,431	925,510	1,574,365	433,001
Indirect Expenses	-	-	-	-	241,505	3,904,719	972,987	344,841	241,505	-	(1,009,431)	(925,510)	(1,574,365)	(433,001)
Other Non-Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Expenses (B)	17,305,969	17,305,969	-	17,305,969	726,201	11,687,017	3,073,343	1,091,962	727,446	-	-	-	-	-
Change in Net Assets	235,000	235,000	-	235,000	9,947	160,827	40,075	14,203	9,947	-	-	-	-	-
Fixed Assets														
Computer & Software CapEx	210,000	210,000	-	210,000	-	-	-	-	-	-	-	210,000	-	-
Furniture & Fixtures CapEx	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equipment CapEx	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leasehold Improvements	25,000	25,000	-	25,000	-	-	-	-	-	-	-	-	-	25,000
Allocation of Fixed Assets	0	0	-	0	9,947	160,827	40,075	14,203	9,947	-	-	(210,000)	-	(25,000)
Ind(Dec) In Fixed Assets (C)	235,000	235,000	-	235,000	9,947	160,827	40,075	14,203	9,947	-	-	-	-	-
TOTAL BUDGET (Total Expenses plus Fixed Asset Additions +B + C)	17,540,969	17,540,969	-	17,540,969	736,148	11,847,844	3,113,418	1,106,166	737,393	-	-	-	-	-
TOTAL CHANGE IN WORKING CAPITAL (+A-B-C)	-	-	-	(0)	(0)	(0)	-	-	(0)	-	-	-	-	-
FTEs	63.00	63.00	-	63.00	2.08	33.63	8.38	2.97	2.08	-	2.62	2.07	4.44	1.35
Indirect Costs Allocation	-	-	-	-	241,505	3,904,719	972,987	344,841	241,505	-	(1,009,431)	(925,510)	(1,574,365)	(433,001)
Allocation of Fixed Assets	-	-	-	-	557,718	23,607	381,686	95,109	33,708	-	-	-	210,000	25,000
Reserves Allocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest Income Allocation	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Non-Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table D-1. Consolidated Statement of Activities by Program, Statutory and Non-Statutory

Statement of Financial Position

The following table provides MRO Statement of Financial Position as of these dates:

- As of December 31, 2018, per audit
- As of December 31, 2019, projected
- As of December 31, 2020, as budgeted

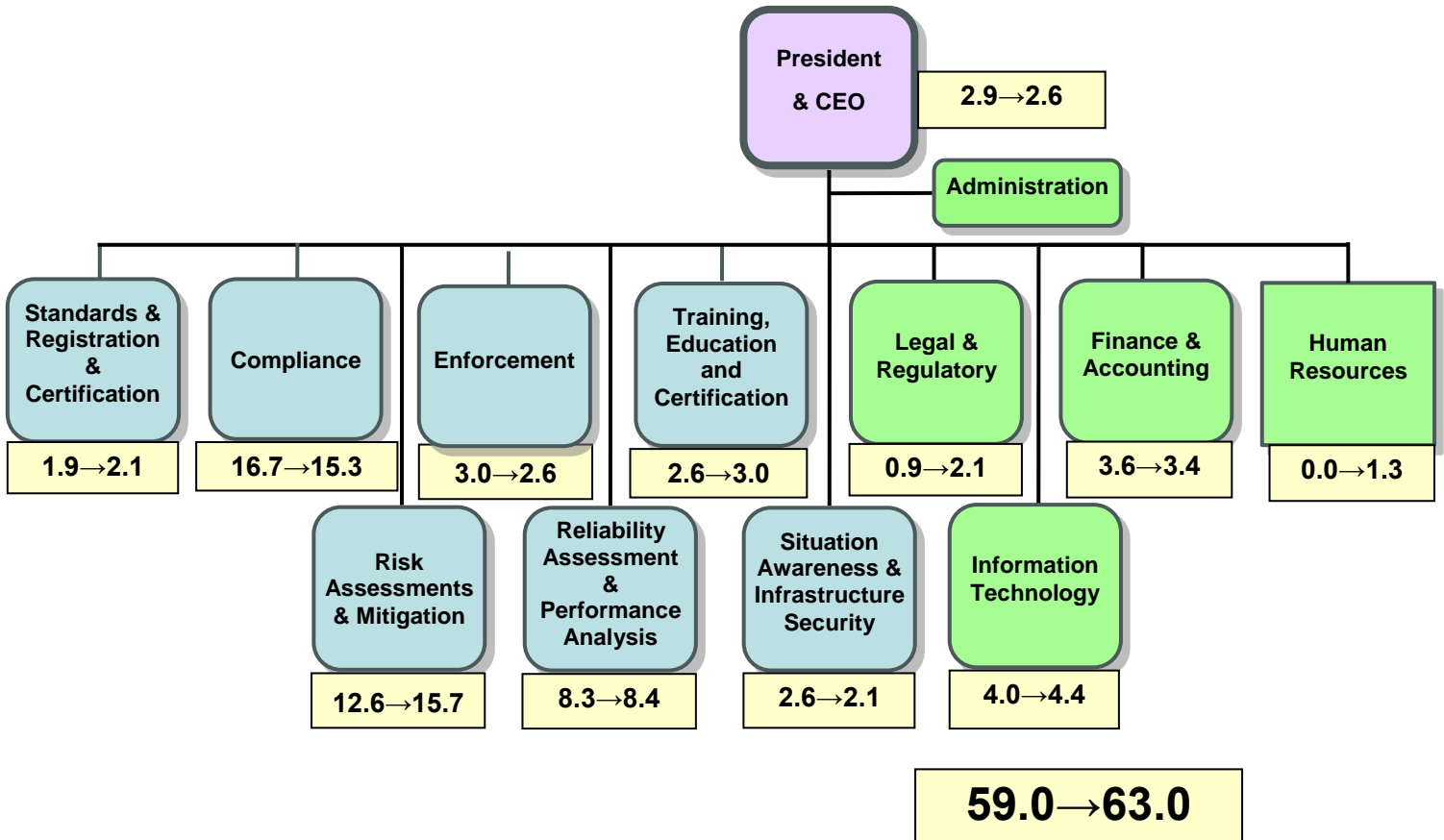
Statement of Financial Position 2018 Audited, 2019 Projection, and 2020 Budget			
STATUTORY			
	(Per Audit) 31-Dec-18	Projected 31-Dec-19	Budget 31-Dec-20
ASSETS			
Cash	6,557,354	6,286,349	6,941,251
Restricted Cash	60,754	-	-
Other Receivables	-	-	-
Prepaid expenses and other current assets	167,671	170,000	180,000
Security deposit	39,858	39,858	39,858
Restricted Cash - non-current	619,359	-	-
Property and equipment and capitalized software	1,535,134	1,154,134	811,134
Total Assets	8,980,130	7,650,341	7,972,243
LIABILITIES AND NET ASSETS			
Liabilities			
Accounts payable and accrued expenses	2,055,063	1,500,000	1,100,000
Postretirement medical benefit obligation	463,404	555,196	705,196
Deferred assessments - non-current	619,359	-	-
Deferred rent - non-current	544,488	501,761	446,917
Total Liabilities	3,682,314	2,556,957	2,252,113
Net Assets - unrestricted	5,297,816	5,093,384	5,720,130
Total Liabilities and Net Assets	8,980,130	7,650,341	7,972,243

Table D-2. Statement of Financial Position, Three-Year Comparison

Appendix A Organization Chart

The MRO Organization Chart is shown below.

**2019 to 2020 Full Time Equivalent (FTE)
Comparison Organization Chart**



FTE Trend from 2017 to 2021

2017	2018	2019	2020 Estimate	2021 Estimate
43.0	45.0	59.0	63.0	63.0

Figure 2. Organization Chart

Appendix B

Acronyms

This section lists acronyms used in this document.

Acronym	Definition
BA	Balancing Authority
BES	Bulk Electric System
BPS	Bulk Power System
CAISS	Cyber Automated Information System Specialist
CHIRP	Cyber Hygiene and Internet Risk Program
CEA	Compliance Enforcement Authority
CIP	Critical Infrastructure Protection
CMEP	Compliance Monitoring and Enforcement Program
CMEPAC	Compliance Monitoring and Enforcement Program Advisory Council
COP	Compliance Oversight Plan
C-QA	CMEP Quality Assurance Program
CRISP	Cybersecurity Risk Information Sharing Program
DADS	Demand Response Availability Data System
DER	Distributed Energy Resources
DHS	Department of Homeland Security
EEA	Energy Emergency Alert
E-ISAC	Electricity Information Sharing and Analysis Center
EMS	Energy Management System
ERAG	Eastern Interconnection Reliability Assessment Group
ERCOT	Electric Reliability Council of Texas
ERO	Electric Reliability Organization
FAC	Finance and Audit Committee
FBI	Federal Bureau of Investigation
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FTE	Full-Time Equivalent
GAAP	Generally Accepted Accounting Principles
GADS	Generating Availability Data System
GPC	Governance & Personnel Committee
HERO	Highly Effective Reliability Organization
HRO	Highly Reliable Organization

IEP	Industry Engagement Program
IRA	Inherent Risk Assessment
IT	Information Technology
MIDAS	Misoperation Information Data Analysis System
MRC	Member Representatives Committee
MRO	Midwest Reliability Organization
NEL	Net-Energy-for-Load
NERC	North American Electric Reliability Corporation
NSRF	NERC Standards Review Forum
OEA	Open Enforcement Action
OGOC	Organizational Group Oversight Committee
RAC	Reliability Advisory Council
RAM	Risk Assessment and Mitigation
RAPA	Reliability Assessment and Performance Analysis
RASA	Risk Assessment and System Analysis
RCMP	Royal Canadian Mounted Police
RE	Regional Entity
REMG	Regional Entity Management Group
RISC	Reliability Issues Steering Committee
RRA	Regional Risk Assessment
SAC	Security Advisory Council
SAFNR	Situational Awareness for FERC, NERC, and the Regional Entities
SAG	Standard Application Guide
SAR	Standard Authorization Request
SER	Standards Efficiency Review
SPP RE	Southwest Power Pool Regional Entity
TADS	Transmission Availability Data System
TOP	Transmission Operator

Appendix C

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**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 3

NORTHEAST POWER COORDINATING COUNCIL, INC.

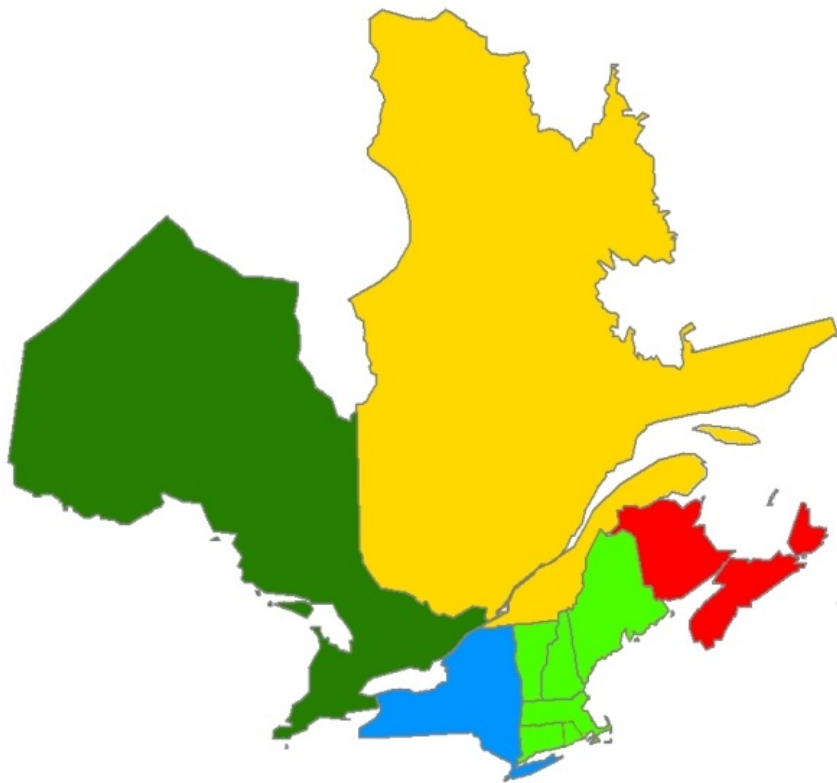
PROPOSED 2020 BUSINESS PLAN AND BUDGET



NORTHEAST POWER COORDINATING COUNCIL, INC.
1040 AVE. OF THE AMERICAS, NEW YORK, NY 10018 (212) 840-1070 FAX (212) 302-2782

Northeast Power Coordinating Council, Inc. (NPCC)

2020 Business Plan and Budget



**Approved by the
NPCC Board of Directors
at its June 26, 2019 Meeting and
Submitted to NERC June 26, 2019**

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Introduction

Total NPCC Resources				
(in whole dollars)				
	2020 Budget	U.S.	Canada	Mexico
Regional Entity Division FTEs	41.09			
Criteria Services Division FTEs	2.16			
Total FTEs	43.25			
Regional Entity Division Expenses	\$16,431,647			
Criteria Services Division Expenses	\$1,118,668			
Total Expenses	\$17,550,315			
Regional Entity Division Inc(Dec) in Fixed Assets	\$170,000			
Criteria Services Division Inc(Dec) in Fixed Assets	\$30,000			
Total Inc(Dec) in Fixed Assets	\$200,000			
Regional Entity Division Working Capital Requirement**	(\$1,019,611)			
Criteria Services Division Working Capital Requirement***	(\$79,265)			
Total Working Capital Requirement	(\$1,098,876)			
Total Regional Entity Division Funding Requirement	\$15,582,037			
Total Criteria Services Division Funding Requirement	\$1,069,402			
Total Funding Requirement	\$16,651,439			
Regional Entity Division Assessments	\$15,338,737	\$9,575,689	\$5,763,048	
Regional Entity Division Assessments Percentage	100%	62%	38%	
Criteria Services Division Membership Fees	\$1,065,202	\$488,693	\$576,509	
Total NPCC Assessments & Membership Fees	\$16,403,939	\$10,064,382	\$6,339,557	
NEL	620,311,000	284,586,000	335,725,000	
NEL %	100%	46%	54%	

** Refer to Table B-1 on page 58 in Section B.

*** Refer to the Reserve Analysis on page 75 in Section C.

2020 Overview of Total NPCC Resource Requirements

Due to the international nature of NPCC, the total resource requirements including both Regional Entity division and Criteria Services division are identified above. The individual divisional explanations are contained in subsequent sections.

NPCC proposes to increase its total operating budget and assessments by 2.1% comprising a Regional Entity increase of 2.2% and a Criteria Services division increase of 0.6%. Additional 2020 succession implementation costs will be funded through existing Business Continuity Reserves, having no impact on assessments, and are excluded from the operating budget increase calculation. The proposed 2020 funding requirements will be satisfied by a Regional Entity division assessment of \$15,338,737 and Criteria Services division membership fees of \$1,065,202, for a total of \$16,403,939. The total NPCC assessments and fees represent an increase of 2.1% compared to the 2019 total assessments and fees of \$16,062,277. NPCC believes that the Region remains an effective provider of Regional Entity and Criteria Services division functions. NPCC's corporate culture centers on consistent delivery of excellent results at a cost that is considerate of the longstanding tradition in the Northeast of affordable and reliable electricity.

Organizational Overview

Northeast Power Coordinating Council, Inc. (NPCC) is a 501(c)(6) not-for-profit corporation in the state of New York responsible for promoting and improving the reliability of the international, interconnected bulk power systems in Northeastern North America through (i) the development of Regional Reliability Standards and compliance assessment and enforcement of

continent-wide and Regional Reliability Standards, coordination of system planning, design and operations, and assessment of reliability (collectively, Regional Entity activities), and (ii) the establishment of Regionally-specific criteria, and monitoring and enforcement of compliance with such criteria (collectively, Criteria Services activities). NPCC provides the functions and services for Northeastern North America of a cross-border Regional Entity through a Regional Entity division, as well as Regionally-specific Criteria Services for Northeastern North America through a Criteria Services division. NPCC's website is www.npcc.org.

The NPCC Region covers nearly 1.2 million square miles and is populated by more than 56 million people. NPCC U.S. includes the six New England states and the state of New York. NPCC Canada includes the provinces of Ontario, Québec and the Maritime provinces of New Brunswick and Nova Scotia. In total, from a net energy for load perspective, NPCC is approximately 46% U.S. and 54% Canadian. With regard to Canada, approximately 70% of Canadian net energy for load is within the NPCC Region.

Effective January 1, 2016, NPCC executed an Amended and Restated Regional Delegation Agreement with the North American Electric Reliability Corporation (NERC) that delegates to NPCC certain responsibilities and authorities of a cross-border Regional Entity as defined by *Section 215* of the Federal Power Act in the U.S. In addition, NPCC has executed Memoranda of Understanding or Agreements with Canadian provincial regulatory and/or governmental authorities in Ontario, Québec, New Brunswick and Nova Scotia.

It is imperative that NPCC maintain its ability to carry out delegated authorities and responsibilities. NPCC has a 2020 targeted staffing level of 43.25 power industry professionals and support personnel. Details of the 2020 business plans and budget for each program area are included in Section A for the Regional Entity division. The 2020 Regional Entity division schedules are shown in Section B. Section C details the 2020 Criteria Services division business plan and budget.

Membership and Governance

NPCC monitors approximately 215 registered entities and some 448 functions in the Region for compliance with mandatory Reliability Standards. NPCC currently has approximately 80 members. There are two categories of membership, General and Full. The two categories distinguish between Regional Entity delegated services that are provided in support of the U.S. FERC and Canadian provincial MOUs or Agreements with regulatory and/or governmental authorities, and Criteria Services which FERC references as U.S. non-delegated activities.

General Membership is voluntary and is open to any person or entity, including any entity participating in the Registered Ballot Body of the Electric Reliability Organization (ERO) that has an interest in the reliable operation of the Northeastern North American bulk power system. General Members which are also registered entities within the NPCC Region are subject to compliance with Reliability Standards, consistent with their registration, and also receive additional services from the Regional Entity division of NPCC.

Full Membership is available to Members which are already General Members and participate in electricity markets in the Northeast. Independent system operators (ISOs), Regional transmission organizations (RTOs), Transcos and other organizations or entities that perform the Balancing Authority function operating in Northeastern North America are expected to be Full Members of NPCC. The New York State Reliability Council and any other sub-regional reliability councils which may be formed are also expected to be Full Members. Full Members

are subject to compliance with Regionally-specific more stringent reliability criteria for their generation and transmission facilities on which faults or disturbances can have a significant adverse impact outside of the local area and which are identified utilizing a reliability impact-based methodology, in addition to Reliability Standards, and receive additional services from the Criteria Services division of NPCC, which is not funded through the ERO.

Under the Criteria Services division, NPCC will seek out and evaluate for membership, entities involved in emerging technologies to assure that those entities that have an impact on Bulk Electric System reliability are included in appropriate NPCC activities.

Since January 1, 2012 NPCC is governed by a Board of Directors consisting of seven stakeholder voting sectors consisting of a maximum of two directors per sector, an independent sector consisting of two independent directors, an independent Board Chair with voting rights to preclude board deadlocks, and the President and CEO. Within NPCC, no two sectors can control and no one sector can block action. The voting sectors on the NPCC Board of Directors include:

- Sector 1) Transmission Owners
- Sector 2) Reliability Coordinators
- Sector 3) Transmission Dependent Utilities, Distribution Companies, Load Serving Entities
- Sector 4) Generator Owners
- Sector 5) Marketers, Brokers and Aggregators
- Sector 6) Regulators
- Sector 7) Sub-Regional Reliability Councils, Customers, other Regional Entities and Interested Entities
- Sector 8) Independent

A Finance and Audit Committee (FAC), a Pension Committee (PC), a Corporate Governance and Nominating Committee (CGNC), and a Management Development and Compensation Committee (MDCC) advise the Board on finance, governance, compensation and human resource matters consistent with their approved charters. The Board endorses a non-employee, Certified Public Accountant for election by the NPCC Members as Treasurer of the corporation. The Treasurer chairs the FAC and works with the Chief Operating Officer who provides oversight of the finances of the corporation. The Treasurer reports to the Board on the corporation's financial position, on FAC activities, on tax code requirements, and on independent annual audit results and accounting practices.

The Regional Standards Committee (RSC), the Compliance Committee (CC), the Reliability Coordinating Committee (RCC), and the Public Information Committee, consistent with their approved scopes, are responsible for various reliability issues. The RSC, CC and RCC also provide technical policy recommendations to the Board. All General and Full Members are eligible for representation on the technical committees.

Industry technical experts from within the membership provide valuable input to the Board through various working groups and task forces as well as the committees. The *Amended and Restated Bylaws* establish NPCC's independence from users, owners and operators of the bulk power system through the enhanced governance structure while providing fair stakeholder representation in the election of the Board of Directors and officers. The members, from each of the seven stakeholder voting sectors, vote to elect directors in their respective sector. The *Amended and Restated Bylaws* establish criteria for board service for both stakeholder and independent directors. Independent Directors are drawn from diverse backgrounds and possess a

broad range of industry expertise, perspectives, experiences, skill sets and knowledge to contribute to the effective functioning of a hybrid board structure.

Compliance and enforcement activities are carried out by the NPCC compliance staff and are independent of all users, owners and operators of the international bulk electric system. Compliance activities are governed in the United States by the *Amended and Restated Regional Delegation Agreement* between NERC and NPCC, delegating portions of NERC's authority as the ERO to NPCC. NPCC compliance activities in Canada are governed by individual provincial Memorandum of Understanding (MOU) or Agreements with each province providing the unique parameters for compliance and enforcement activities for each of the provinces. An MOU between the Independent Electricity System Operator in Ontario (IESO), NERC and NPCC establishes roles and responsibilities with regard to that province. NPCC, NERC and the New Brunswick Energy and Utilities Board are parties to a MOU that sets forth reliability activities for New Brunswick. The Régie de l'énergie, NERC and NPCC executed an Agreement regarding the implementation of the Québec reliability standards compliance monitoring and enforcement program. NPCC, NERC and Nova Scotia executed a MOU that sets forth the mutual understanding of the parties in relation to the approval and implementation of NERC Reliability Standards and NPCC Regional reliability criteria for the province of Nova Scotia.

International Foundation

The Regional Entity functions and services differ according to particular regulatory backstop:

a) U.S. Foundation

The Federal Energy Regulatory Commission (FERC) certified NERC as the Electric Reliability Organization (ERO) on July 20, 2006. The ERO is responsible for developing and enforcing reliability standards within the United States. In executing part of its responsibilities, NERC delegates authority to the Regional Entities to perform certain functions through delegation agreements. Ensuring the reliability of the bulk power system in the State of New York and the six New England States was delegated from NERC to NPCC through the *Amended and Restated Regional Delegation Agreement*.

b) Ontario

On February 5, 2010, NERC, NPCC and the IESO amended and restated their earlier MOU, dated November 29, 2006, setting forth their mutual understanding as regards NERC's and NPCC's status in Ontario with respect to standard and criteria development, compliance enforcement, and other related matters. The IESO, whose statutory responsibilities include making and enforcing reliability standards, and making and enforcing Ontario market rules that govern the IESO-controlled grid and the wholesale electricity market, was established April 1, 1999 as the Independent Electricity Market Operator in Ontario under the *Electricity Act, 1998* (Ontario). The IESO is subject to the regulatory oversight of the Ontario Energy Board (OEB).

Among other things, the MOU recognizes that NERC and NPCC are standards authorities under the *Electricity Act, 1998* (Ontario). Additionally, under the authority of that same legislation, and as memorialized in the MOU, the NERC reliability standards and NPCC reliability criteria have effect in Ontario. However, a 2008 amendment to the *Electricity Act, 1998* (Ontario) allows the OEB to review these standards and criteria and issue orders preventing their implementation and remanding them back to NERC and NPCC.

The IESO is subject to compliance monitoring and enforcement by NPCC. The IESO is also subject to compliance monitoring and enforcement of the Ontario market rules by the IESO's

Market Assessment and Compliance Division (MACD) that operates at arm's length from the IESO's business units. The MOU notes that where MACD, NERC, and NPCC engage in investigations pursuant to their respective mandates regarding compliance, MACD can request to take the lead. Moreover, of the three, MACD is the only entity that can assess financial penalties for any Ontario market participant's or the IESO's non-compliance with Ontario market rules, which includes non-compliance with NERC standards and NPCC criteria.

The MOU provides for a peer review process to promote the common compliance and enforcement objectives of NERC/NPCC and MACD. From the perspective of NPCC and NERC, this process, in part, is meant to assure registered entities outside of Ontario that the MACD program is rigorous, thorough and reliable.

The IESO is subject to NPCC assessments of compliance, including audits, as well as NPCC remedial action directives to correct non-compliance. In the event that the IESO disagrees with NPCC's finding of a violation or associated assessment of sanctions in connection with standards and criteria, the IESO has a right to a compliance hearing with NPCC.

c) Québec

The Régie de l'énergie, NERC and NPCC are parties to the May 8, 2009 *Agreement on the Development of Electric Power Transmission Reliability Standards and of Procedures and a Program for the Monitoring of the Application of These Standards for Québec* (the 2009 Agreement). Under the terms of the 2009 Agreement, the Régie de l'énergie, which is charged with ensuring the reliability of the electric transmission in Québec, retained NPCC and NERC as experts to develop reliability standards and monitoring program procedures for the Province.

The Régie de l'énergie, NERC and NPCC are parties to the September 24, 2014 *Agreement on the Implementation of the Québec Reliability Standards Compliance Monitoring and Enforcement Program* (the 2014 Agreement). Through the 2014 Agreement, the Régie de l'énergie retains the services of NPCC to monitor and assess the compliance of registered entities in Québec with the reliability standards adopted by the Régie with respect to electric power transmission in Québec.

On April 1, 2015, the Québec Reliability Standards Compliance Monitoring and Enforcement Program ("QCMEP"), which was developed jointly by the Régie de l'énergie, NPCC and NERC, came into effect. Together, the 2014 Agreement and the QCMEP detail the procedures and program for monitoring and enforcing mandatory electric power transmission reliability standards in Québec.

The Régie de l'énergie is a public body established by the *Act respecting the Régie de l'énergie* (the Act). Pursuant to its authority under the Act, the Régie de l'énergie, through a series of decisions in 2007, designated Hydro-Québec Contrôle des mouvements d'énergie (HQCMÉ), a division of Hydro-Québec TransÉnergie, as the Reliability Coordinator for Québec. In accordance with its mandate and as recognized in the 2009 Agreement, it is this entity that is responsible for the filing with the Régie de l'énergie for approval of reliability standards in Québec. HQCMÉ has filed for the approval of certain reliability standards and the Régie de l'énergie has made certain reliability standards mandatory in Québec and is continuing proceedings to make additional reliability standards mandatory in Québec.

NPCC also conducts reliability assurance activities within Québec, including but not limited to events analysis, Reliability Assessment and Performance Analysis and compliance investigations, consistent with the NPCC *Amended and Restated Bylaws*.

d) New Brunswick

On October 1, 2013, the Electricity Act (NB) and implementing regulations (together, “NB Electricity Act”) amended how Reliability Standards are approved, monitored, and enforced in the province of New Brunswick. The NB Electricity Act designates NPCC as a compliance body and NERC as a standards body within the meaning of the NB Electricity Act. The New Brunswick Energy and Utilities Board (NBEUB) is an independent, quasi-judicial board that is responsible for regulating New Brunswick’s electricity sector under the NB Electricity Act. The NBEUB has the responsibility to adopt and enforce reliability standards in New Brunswick.

As contemplated in the NB Electricity Act, NPCC and the NBEUB entered into a Service Contract dated August 10, 2016, whereby NPCC provides CMEP and other services for the NBEUB. Additionally, the NBEUB, NPCC, and NERC entered into a Memorandum of Understanding on August 10, 2016, which describes the roles and responsibilities of the three entities and facilitates data sharing. These two documents, along with the NB Electricity Act are the governing documents with respect to conducting CMEP and other reliability related activities in New Brunswick.

With respect to the approval of reliability standards, the NB Electricity Act provides that all of the NERC Reliability Standards that were effective in New Brunswick prior to October 1, 2013 continue to be effective in New Brunswick after October 1, 2013. Additionally, the NB Power is required to file for approval, modification, or retirement of NERC Reliability Standards 60 days after a NERC Reliability Standard is approved, modified, or retired by the FERC. The NBEUB rules on the filed Reliability Standard after considering (a) the potential impact on the reliability of the bulk power system, (b) the potential cost and benefits (c) the public interest, and (d) any other factors that the NBEUB considers relevant. The Electricity Act requires the NBEUB to notify NPCC and NERC of an application by NB Power with respect to reliability standards and provide for a 60 day comment period. The NBEUB is required to approve the reliability standards if there are not substantive modifications proposed from the FERC approved NERC Reliability Standard and there were no substantive comments filed. Amendments to the reliability standard to make them compatible with New Brunswick or Canadian law are considered non-substantive. The approval of reliability standards may be subject to a hearing for several reasons, including substantive comments from NPCC or NERC.

With respect to the monitoring and enforcement of the Reliability Standards in New Brunswick, the NB Electricity Act provides for NPCC to identify entities that must register with the NBEUB in the New Brunswick specific registry. Additionally, NPCC may carry out the compliance monitoring and assessment for the NBEUB and assist and advise the enforcement for the NBEUB, including financial penalties. NPCC is also permitted to carry out or exercise any power in the implementing regulations that is specific to the NBEUB, as provided for in the Service Contract. Additionally, NPCC has the powers of an inspector, which permits NPCC to audit and spot check entities within New Brunswick.

e) Nova Scotia

Nova Scotia Power Incorporated (NSPI), NPCC and NERC are parties to a May 11, 2010 Memorandum of Understanding regarding the approval and implementation of mandatory NERC reliability standards and NPCC Regional reliability criteria. Pursuant to the MOU’s terms,

NERC and NPCC filed standards and criteria with the Nova Scotia Utility and Review Board (NSUARB) for approval on June 30, 2010 and June 29, 2010, respectively. A decision from the NSUARB on both NERC and NPCC filings was rendered on July 20, 2011. Hence, the standards and criteria are mandatory in Nova Scotia and NSPI will be subject to the NERC compliance monitoring and enforcement program, as implemented by NPCC.

NPCC will conduct compliance and enforcement activities with respect to the standards and forward any non-compliance information and recommendations to the NSUARB. The NSUARB maintains the final authority with respect to enforcement in Nova Scotia and based on the recommendations from NPCC, may determine whether a violation has occurred and, if so, what remedial measures or non-monetary penalties should be imposed.

2020 Key Goals and Key Deliverables

NERC and the Regional Entities collaborated in the development of a common operating model with complementary roles and responsibilities, an ERO Enterprise Long-term Strategy and an ERO Enterprise Operating Plan. Links to these documents, which incorporated risks identified by the Reliability Issues Steering Committee, are included in the NERC 2020 Business Plan and Budget and may be referenced by the users of this document.

NPCC activities that support ERO Enterprise Goals are detailed in each of the following program area sections. For example, key goals and deliverables within the Reliability Standards program area include supporting the development of risk-responsive Reliability Standards as well as facilitating a Distributed Energy Resources (DER) Forum. Within the Compliance Monitoring and Enforcement and Organization Registration and Certification program, in addition to conducting objective, risk-informed compliance monitoring, enforcement and entity registration activities, this area will be addressing increased enforcement activities and implementing the ERO Enterprise CMEP IT tool (Align). The Reliability Assessment and Performance Analysis program will be focusing on reduction of known risks to reliability and the identification and assessment of emerging reliability risks, such as changing resource composition. In the Situation Awareness and Infrastructure Security area there is an increasing focus on the identification and reduction of cyber and physical security risks through expanded outreach. In an order to achieve these goals and expanded efforts, while minimizing increases in budget, significant reprioritization within the business plan and reallocation of resources were required.

Regional Entity Division Functional Scope

NPCC's Regional Entity division functions in support of the ERO include:

- Active participation in the development of North American Reliability Standards for the bulk electric system, and as needed development of Reliability Standards applicable within the NPCC cross-border Regional Entity.
- Monitoring and enforcement of approved Reliability Standards, including the registration of responsible entities, and as needed certification of such entities.
- Assessment of the present and future reliability of the bulk power system.
- Operational coordination and situation awareness support.
- Event analysis and identifying lessons learned to improve reliability.
- Effective training and education of reliability personnel.
- Promoting the protection of critical bulk electric infrastructure.

In recognition of the delegated compliance role of Regional Entities as an important means to enhancing reliability, NPCC has designated a significant percentage of its staff resources to

compliance monitoring and enforcement. NPCC, in conjunction with NERC and the other Regional Entities, has developed and deployed an ERO Enterprise-wide Compliance Monitoring and Enforcement IT tool (Align) for gathering data, analysis, and tracking of compliance information to carry out these responsibilities in a consistent and cost effective manner.

NPCC has organized the remaining staff into program areas consistent with EAct 2005 to address the other functions listed above. These experts in operations, planning and reliability analysis assist registered entities in assessing and improving reliability. It is in support of these areas that NPCC engages the majority of industry experts on its technical committees.

2020 Overview of Regional Entity Division Cost Impacts

The proposed Regional Entity division assessment of \$15,338,737, to support the Regional Entity division operating budget of \$16,601,647, is an increase of 2.2% compared to the 2019 assessment of \$15,003,411.

2019 Projections

Current year projections are taken into consideration in development of the budget. Expenses are currently projected to be on budget in all areas or slightly under budget. 2019 Projections reflect expectations based on the first quarter variance report. It is anticipated that projections could change throughout 2019 and would be reflected in each subsequent quarter's variance report.

Statement of Activities Format

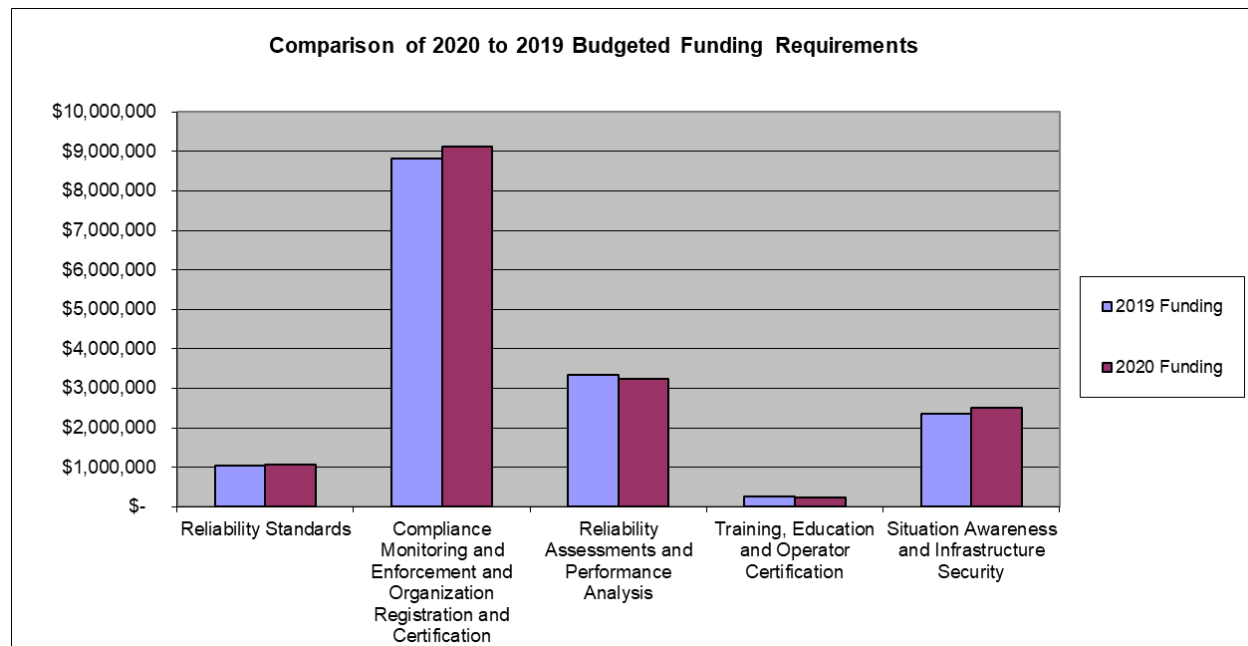
Beginning with the 2020 Business Plan & Budget (BP&B), NERC and the Regions are implementing format revisions to the Statement of Activities report. These revisions are intended to ensure that NERC and the Regions report information consistently from new accounting standards (e.g., leasing standards and right-of-use assets), provide enhanced transparency of financing activity (e.g., debt borrowing, leased-financed asset purchases, and principal payments), and streamline sections of the report related to non-cash expenses (primarily depreciation and amortization). The goal of the new format is to improve the effectiveness of the report to the reader and to provide a total budget amount that more closely reflects the amount of annual revenues required from assessments and other funding sources. One of the format revisions is that the Statements of Activities will no longer show an expense item for depreciation and an equal and offsetting credit for depreciation in fixed asset activity (which resulted in depreciation having no impact on funding requirements or actual results).

In the 2020 BP&B document, the 2019 budget has been restated to reflect the new statement of activities reporting format when comparing 2020 to 2019 to show the year-over-year budget changes on a comparable basis. As such, in the total entity and departmental Statements of Activities, depreciation expense has been removed from the 2019 operating expense budgets and projections, and an equal credit of depreciation expense has been removed from the 2019 fixed asset activity budgets and projections.

Summary by Program

Program	Budget 2019	Projection 2019	Budget 2020	Variance	
				2020 Budget v 2019 Budget	Variance %
Reliability Standards	\$ 1,035,390	\$ 1,035,390	\$ 1,071,015	\$ 35,625	3.4%
Compliance Monitoring and Enforcement and Organization Registration and Certification	\$ 8,816,687	\$ 8,671,687	\$ 9,109,633	\$ 292,946	3.3%
Reliability Assessments and Performance Analysis	\$ 3,332,686	\$ 3,332,686	\$ 3,231,169	\$ (101,517)	-3.0%
Training, Education and Operator Certification	\$ 252,443	\$ 252,443	\$ 239,412	\$ (13,031)	-5.2%
Situation Awareness and Infrastructure Security	\$ 2,366,685	\$ 2,366,685	\$ 2,505,877	\$ 139,192	5.9%
Total	\$ 15,803,891	\$ 15,658,891	\$ 16,157,107	\$ 353,216	2.2%

This chart does not include allocation of working capital requirements among the Program Areas.



This chart does not include allocation of working capital requirements among the Program Areas.

Personnel Analysis

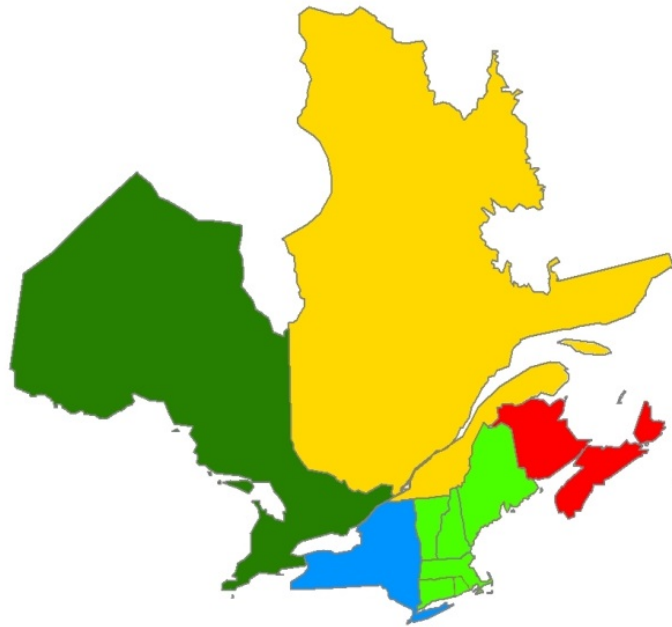
Total FTE's by Program Area	Budget 2019	Projection 2019	Direct FTEs 2020 Budget	Shared FTEs ¹ 2020 Budget	Total FTEs 2020 Budget	Change from 2019 Budget
REGIONAL ENTITY DIVISION						
Operational Programs						
Reliability Standards	1.93	1.93	1.00	0.93	1.93	0.00
Compliance Monitoring and Enforcement and Organization Registration and Certification	17.00	17.00	18.00	0.00	18.00	1.00
Training, Education, and Operator Certification	0.10	0.10	0.10	0.00	0.10	0.00
Reliability Assessment and Performance Analysis	5.83	5.83	4.50	0.93	5.43	-0.40
Situation Awareness and Infrastructure Security	5.00	5.00	5.40	0.00	5.40	0.40
Total FTEs Operational Programs	29.86	29.86	29.00	1.86	30.86	1.00
Administrative Programs						
Technical Committees and Member Forums	0.50	0.50	0.50	0.00	0.50	0.00
General and Administrative	2.50	2.50	2.50	0.23	2.73	0.23
Information Technology	2.00	2.00	2.00	0.00	2.00	0.00
Legal and Regulatory	1.00	1.00	2.00	0.00	2.00	1.00
Human Resources	1.00	1.00	1.00	0.00	1.00	0.00
Accounting and Finance	2.00	2.00	2.00	0.00	2.00	0.00
Total FTEs Administrative Programs	9.00	9.00	10.00	0.23	10.23	1.23
Total FTEs	38.86	38.86	39.00	2.09	41.09	2.23

¹A shared FTE is defined as an employee who performs both Regional Entity and Criteria Services division functions.

2019 Budget and Projection and 2020 Budget Comparisons

Statement of Activities and Capital Expenditures 2019 Budget & Projection, and 2020 Budget						
REGIONAL ENTITY DIVISION						
	2019 Budget	2019 Projection	Variance ⁽²⁾ 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)	
Funding						
ERO Funding						
ERO Assessments	\$ 15,003,411	\$ 15,003,411	\$ -	\$ 15,338,737	\$ 335,326	
Penalty Sanctions ⁽¹⁾	-	-	-	120,000	120,000	
Total ERO Funding	\$ 15,003,411	\$ 15,003,411	\$ -	\$ 15,458,737	\$ 455,326	
Membership Dues	-	-	-	-	-	
Testing Fees	-	-	-	-	-	
Services & Software	-	-	-	-	-	
Workshops & Misc Revenue	67,500	67,500	-	67,500	-	
Interest & Investment Income	-	-	-	55,800	55,800	
Total Funding (A)	\$ 15,070,911	\$ 15,070,911	\$ -	\$ 15,582,037	\$ 511,126	
Expenses						
Personnel Expenses						
Salaries	\$ 7,332,280	\$ 7,216,280	\$ (116,000)	\$ 7,704,262	\$ 371,982	
Payroll Taxes	449,994	444,994	(5,000)	479,019	29,026	
Benefits	1,613,078	1,585,078	(28,000)	1,943,385	330,306	
Retirement Costs	853,511	837,511	(16,000)	882,950	29,440	
Total Personnel Expenses	\$ 10,248,862	\$ 10,083,862	\$ (165,000)	\$ 11,009,617	\$ 760,754	
Meeting Expenses						
Meetings & Conference Calls	\$ 370,750	\$ 406,750	\$ -	\$ 397,750	\$ (9,000)	
Travel	845,900	845,900	-	845,900	-	
Total Meeting Expenses	\$ 1,252,650	\$ 1,252,650	\$ -	\$ 1,243,650	\$ (9,000)	
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ 2,022,150	\$ 2,002,150	\$ (20,000)	\$ 2,071,150	\$ 49,000	
Office Rent	820,700	820,700	-	832,700	12,000	
Office Costs	676,347	676,347	-	685,981	9,634	
Professional Services	978,000	978,000	-	947,000	(31,000)	
Computer & Equipment Leases	-	-	-	-	-	
Miscellaneous	51,000	51,000	-	51,000	-	
Total Operating Expenses, excluding Depreciation	\$ 4,548,197	\$ 4,528,197	\$ (20,000)	\$ 4,587,831	\$ 39,634	
Total Direct Expenses	\$ 16,049,709	\$ 15,864,709	\$ (185,000)	\$ 16,841,098	\$ 791,388	
Indirect Expenses	\$ (415,818)	\$ (415,818)	\$ -	\$ (409,450)	\$ 6,368	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Expenses (B)	\$ 15,633,891	\$ 15,448,891	\$ (185,000)	\$ 16,431,647	\$ 797,756	
Change in Net Assets (=A-B)	\$ (562,980)	\$ (377,980)	\$ 185,000	\$ (849,611)	\$ (286,630)	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 170,000	\$ 170,000	\$ -	\$ 170,000	\$ -	
TOTAL BUDGET (=B+C)	\$ 15,803,891	\$ 15,618,891	\$ (185,000)	\$ 16,601,647	\$ 797,756	
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (732,980)	\$ (547,980)	\$ 185,000	\$ (1,019,611)	\$ (286,630)	
(1)	\$120,000 of penalty sanctions collected to date and prior to June 30, 2019.					
(2)	2019 Projections reflect expectations based on the first quarter statement of activities. It is anticipated that projections could change throughout 2019 and would be reflected in each subsequent quarter's statement of activities.					

Section A – Regional Entity Division 2020 Business Plan and Budget



Section A — 2020 Regional Entity Division Business Plan and Budget

Reliability Standards Program

Reliability Standards Program Resources			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	1.93	1.93	0.00
Direct Expenses	\$665,870	\$693,683	\$27,813
Indirect Expenses	\$375,014	\$366,700	(\$8,314)
Other Non-Operating Expenses	\$0	\$0	\$0
Fixed Asset Additions	(\$5,494)	\$10,632	\$16,126
Total Funding Requirement	\$1,035,390	\$1,071,015	\$35,625

Program Scope and Functional Description

The NPCC Reliability Standards Program Area operates in accordance with NPCC’s filed and approved Regional Delegation Agreement and NERC Rules of Procedure Section 300. The program supports the ERO Standards Program Area roles and responsibilities, the ERO Enterprise Operating Plan, the ERO Enterprise Long-Term Strategy and aligns with NPCC Board of Director goals and strategies. NPCC’s Reliability Standards Program Area provides an efficient and effective mechanism for stakeholders to provide input and facilitate the development of, and improvement to, NERC and Regional reliability standards which are clear, responsive to reliability and security risks, practical to implement, “results based”, and are cost effective. The primary objectives of NPCC’s Reliability Standards Program Area is to support the development of ERO standards and Regional variances which establish “results-based” requirements for addressing reliability risks with due consideration given to cost effectiveness. NPCC supports the ERO efforts to develop reliability standards in a timely and efficient manner and which are also responsive to FERC Directives and industry risk. NERC and Regional reliability standards must ensure the bulk electric system is planned, operated, and maintained in a manner that minimizes risks of cascading failures, system separation, and instability, and also avoids damage to major equipment, is responsive to risks, or limits interruptions of bulk power supply.

At the Regional level, the standards program area develops, and maintains NPCC Regional Reliability Standards, and ERO Standards Variances for the northeast as required. The NPCC Reliability Standards Program Area also provides oversight to ensure that NPCC’s Regional Reliability Criteria contained in the form of Directories, are developed, approved, and maintained as necessary to implement, to augment, or to facilitate compliance with NERC Reliability Standards. NPCC’s reliability criteria are not reliability standards but are mandatory and subject to enforcement as outlined in the NPCC *Amended and Restated Bylaws* and various ISO tariffs, and individual interconnection agreements, as well as other executed contractual agreements. Regional Reliability Criteria may also address issues not within NERC’s statutory jurisdiction for Reliability Standards, such as resource adequacy, and conform to requirements in Section 313 of the NERC Rules of Procedure.

In addition, the NPCC Reliability Standards Program Area has initiated a Distributed Energy Resources (DER) Forum. As conventional fossil fuel units and nuclear retirements are increasingly being replaced by DER on the transmission system and with grid edge DER on the

distribution system, the reliable operation of the BES as defined in the legislation could be impacted. The control systems of DER introduce new capabilities that could enhance reliability and understanding interoperability issues between transmission and distribution systems will become increasingly important. NPCC is engaged in a number of areas to ensure reliable integration into the BES and opportunities to provide industry guidance for interconnecting DER.

2020 Key Assumptions

- The number of continent-wide Reliability Standards development projects is expected to remain relatively stable, except as required to address any new FERC directives to create or modify Reliability Standards, or industry submittals of standard authorization requests.
- Continent-wide Reliability Standards projects will consist primarily of acting on recommendations of the various phases of the Standards Efficiency Review project, conducting periodic reviews on existing Reliability Standards to improve their content and quality, responding to identified risks to reliability (including those that may be identified through the implementation of risk-based Compliance Monitoring and Enforcement), and addressing FERC directives that may arise. This activity will require the allocation of technical resources from several internal NERC departments (e.g., Reliability Assessment and Performance Analysis (RAPA), Reliability Risk Management, Compliance Analysis and Certification, and Compliance Assurance) and support from across the ERO Enterprise.
- During the periodic review of NERC Reliability Standards, NPCC's Regional Reliability Standard for Underfrequency Load Shedding (UFLS) will be reviewed for potential incorporation as variances or as improvements to the continent-wide requirements. Regional and NERC Reliability Standards development processes may require further modification to efficiently accomplish this task. NPCC will work with NERC and other Regional Entities as necessary on projects where there is a Regional Reliability Standard/variance.
- NPCC's Regional Reliability Standards development activity is expected to remain at a stable level, driven by requests that the Regional Entity may receive or reliability issues that are identified and not under consideration by NERC. Creation of Variances to NERC Reliability Standards to address reliability concerns or to recognize the unique topology and reliability considerations of the Northeast (i.e. Québec's recognition of an asynchronous interconnection within NPCC's footprint) will be performed as necessary.
- The number of NERC and Regional standards interpretations is expected to remain low. Compliance Implementation Guidance documents, which provide approaches to being compliant with NERC Reliability Standards may be developed using NPCC's open process and other industry vetting practices. These guidance documents are currently being developed by industry and the Standard Drafting Teams and the number of requests may increase. The NPCC Reliability Standards program area will assist and facilitate support of these activities.
- Consistent with the NERC Rules of Procedure Sections 312 and 313, as continent wide standards continue to evolve, NPCC Regional Standards and Criteria will need to be continually reviewed to ensure they augment but do not add redundancy to the ERO standards.

2020 Goals and Key Deliverables

- Participate in the annual development and revision of the NERC’s three year Reliability Standards Development Plan (RSDP) through review, commenting, and other RSC activities.
- Participate in the NERC Standards Committee, as a representative of the NERC Regional Entities and NPCC Regional stakeholders to advance strategic initiatives, to measure the effectiveness and quality of standards, support ERO efforts to address outstanding FERC Directives, and provide input in the prioritization of standards development projects.
- Support further development of cost effectiveness principles processes and pilots. Continue to provide insights to NERC, based on NPCC experiences, regarding strategy for developing cost effectiveness analysis for standards and identify opportunities to identify cost of risk mitigation for the draft standards.
- Participate in the NERC Standards Efficiency Review Project future phases and resulting activities.
- Participate in the development of ERO Reliability Standards specified in NERC’s three-year Reliability Standards Development Plan with the emphasis placed on reducing the amount of new FERC Directives issues by closer coordination with the Commission staff.
- Conduct thorough reviews of all NERC standards under development or revision by leveraging existing NPCC Task Forces and subject matter experts and coordinate NPCC comments for Northeastern North America.
- Participate in the Enhanced Periodic Review Standing Team’s grading efforts and coordinate and represent the Regional and interregional input.
- Assist NERC’s review of all industry “Requests for Interpretations” of NERC Reliability Standards.
- NPCC staff and Regional drafting team volunteers will participate in the drafting of ERO standards and provide support for development of improvements to standards. Those chosen to participate in drafting of standards will provide a point of contact for the NPCC Regional input to the standard being developed.
- NPCC and its members will review and coordinate comments on FERC staff informal assessments of the ERO Enterprise as appropriate.
- Participate in pre-ballot reviews of ERO standards and coordinate the development of consensus recommendations of the NPCC Members to the NERC Standards Drafting Team (SDT) and provide a list of any unaddressed issues to allow the Members to cast a ballot based on regional concerns to enhance the efficiency of the ERO standards development projects.
- Review and identify issues and concerns raised in FERC NOPRs and NOIs for any and all standards related issues as appropriate.
- Educate and notify stakeholders and regulators about issues related to standards development through various means such as webinars and workshops.
- Provide outreach to industry trade groups such as the North American Generator Forum and North American Transmission Forum when requested.
- Monitor the NERC Reliability Issues Steering Committee (RISC) activities as they identify emerging risks and develop recommended actions to mitigate such risks. Provide a Regional point of contact for all potential reliability related risks and gaps within the Northeast or as noted by NPCC’s stakeholders.
- Participate in and provide support to critical standards projects, such as CIP Supply Chain, Facility Ratings (IROL and SOL development), Geomagnetic Disturbances, High

Altitude Electromagnetic Pulse (HEMP), changes to standards driven by inverter based DERs, etc.

- Identify opportunities and initiate Regional Variances to the NERC Reliability Standards as soon as possible, allowing incorporation into the continent wide standard during the development process.
- Conduct reviews of Regional Standards as necessitated by the revision and approval of any associated Continent-wide NERC reliability standards or further reliability related need.
- Conduct the development of any Québec Interconnection-Wide variances to NERC continent-wide standards using the NPCC Reliability Standards Development Process.
- Identify potential reliability benefits and impacts to the BES as a result of DER penetration.
- Conduct ongoing DER Forum activities to solicit and identify both opportunities and challenges to enhancing reliability through education, promotion of awareness and developing guidance, particularly for interconnection of utility scale DER on the Distribution System.
- Identify opportunities to improve resilience of the BES.
- Identify and coordinate reliability related issues with local governmental authorities where jurisdictional issues may exist.
- Ensure the topics addressed by the Reliability Standards align with changing industry and reliability objectives.
- Participate in reliability metrics developmental activities to identify potential measures for benchmarking of reliability and standards to determine if an adequate level of reliability is being achieved through the Enhanced Periodic Review Standing Review Team activities.
- Identify opportunities and processes for cost-effectiveness analysis activities to determine the need to revise a standard during the Periodic Review or Standards Grading efforts.
- Identify any emerging interconnection-wide reliability issues which may need standards solutions and forward to the NERC Reliability Issues Steering Committee for their consideration.
- Identify opportunities to increase reliability or mitigate emerging risk through the revision of standards and their associated requirements.
- Identify any North American Electric Standards Review Board (NAESB) activities which may impact ERO standards.
- Identify potential market related issues for Regional Standards through NPCC RSC coordination and reviews.
- Participate in NPCC Compliance and Standards Workshops and any NERC workshops and webinars to promote industry awareness.

Based on the portion of professional/technical staff time and other resources devoted to Reliability Standards development, NPCC estimates that it will expend approximately 7% of its resources on this activity.

Resource Requirements

- No significant changes.

Reliability Standards Program

Funding sources and related expenses for the Reliability Standards section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures 2019 Budget & Projection, and 2020 Budget						
Reliability Standards						
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)	
Funding						
ERO Funding						
ERO Assessments	\$ 1,035,390	\$ 1,035,390	\$ -	\$ 1,063,510	\$ 28,120	
Penalty Sanctions	-	-	-	7,505	7,505	
Total ERO Funding	\$ 1,035,390	\$ 1,035,390	\$ -	\$ 1,071,015	\$ 35,625	
Membership Dues	-	-	-	-	-	
Testing Fees	-	-	-	-	-	
Services & Software	-	-	-	-	-	
Workshops & Misc Revenue	-	-	-	-	-	
Interest & Investment Income	-	-	-	-	-	
Total Funding (A)	\$ 1,035,390	\$ 1,035,390	\$ -	\$ 1,071,015	\$ 35,625	
Expenses						
Personnel Expenses						
Salaries	\$ 382,872	\$ 382,872	\$ -	\$ 400,744	\$ 17,872	
Payroll Taxes	22,735	22,735	-	23,034	298	
Benefits	106,764	106,764	-	110,172	3,408	
Retirement Costs	41,599	41,599	-	43,833	2,234	
Total Personnel Expenses	\$ 553,970	\$ 553,970	\$ -	\$ 577,783	\$ 23,813	
Meeting Expenses						
Meetings & Conference Calls	\$ 7,000	\$ 7,000	\$ -	\$ 5,000	\$ (2,000)	
Travel	94,900	94,900	-	90,900	(4,000)	
Total Meeting Expenses	\$ 101,900	\$ 101,900	\$ -	\$ 95,900	\$ (6,000)	
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ 10,000	\$ 10,000	\$ -	\$ 20,000	\$ 10,000	
Office Rent	-	-	-	-	-	
Office Costs	-	-	-	-	-	
Professional Services	-	-	-	-	-	
Computer & Equipment Leases	-	-	-	-	-	
Miscellaneous	-	-	-	-	-	
Total Operating Expenses, excluding Depreciation	\$ 10,000	\$ 10,000	\$ -	\$ 20,000	\$ 10,000	
Total Direct Expenses	\$ 665,870	\$ 665,870	\$ -	\$ 693,683	\$ 27,813	
Indirect Expenses	\$ 375,014	\$ 375,014	\$ -	\$ 366,700	\$ (8,313)	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Expenses (B)	\$ 1,040,884	\$ 1,040,884	\$ -	\$ 1,060,383	\$ 19,499	
Change in Net Assets (=A-B)	\$ (5,494)	\$ (5,494)	\$ -	\$ 10,632	\$ 16,126	
Fixed Asset Additions, excluding Right of Use Assets (C)	(5,494)	(5,494)	-	10,632	16,126	
TOTAL BUDGET (=B+C)	\$ 1,035,390	\$ 1,035,390	\$ -	\$ 1,071,015	\$ 35,625	
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (0)	\$ (0)	\$ -	\$ 0	\$ 0	

Compliance Monitoring and Enforcement and Organization Registration and Certification Program

Compliance Monitoring and Enforcement and Organization Registration and Certification Program Resources			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	17.00	18.00	1.00
Direct Expenses	\$5,561,849	\$5,590,473	\$28,624
Indirect Expenses	\$3,303,230	\$3,420,003	\$116,772
Other Non-Operating Expenses	\$0	\$0	\$0
Fixed Asset Additions	(\$48,392)	\$99,157	\$147,550
Total Funding Requirement	\$8,816,687	\$9,109,633	\$292,946

Program Scope and Functional Description

The NPCC Compliance Monitoring and Enforcement and Organization Registration and Certification Program (CORC) Program Area operates in accordance with NPCC's filed and approved Regional Delegation Agreement, the NERC Rules of Procedure, and individual Canadian Provincial MOUs and/or Agreements. The program supports Compliance Enforcement (Section 400) and Organization Registration and Certification (Section 500), the ERO Enterprise Operating Plan, the ERO Enterprise Long-Term Strategy, and aligns with NPCC Board of Director goals and strategies.

The CORC Program Area scope covers:

- 1) The identification, registration and certification of those entities responsible for meeting the NERC Reliability Standards and any approved Regional Standards;
- 2) The implementation of the risk-based NERC Compliance Monitoring and Enforcement Program (CMEP) IT Tool (Align) in the United States, including the compliance monitoring, assessment and enforcement of NERC Reliability Standards and Regional Reliability Standards;
- 3) In accordance with the relevant memorandums of understanding (MOU's), the implementation of the risk-based NERC CMEP in Ontario and Nova Scotia, including the assessment and enforcement of NERC Reliability Standards and Regional Reliability Standards effective in those jurisdictions,
- 4) The implementation of the Québec Reliability Standards Compliance Monitoring and Enforcement Program (QCMEP), including the compliance monitoring, assessment and enforcement of NERC Reliability Standards and Regional Reliability Standards effective in Quebec, and
- 5) The implementation of the New Brunswick Compliance Monitoring and Enforcement Program (NBCMEP) in New Brunswick, including the compliance monitoring, assessment and enforcement recommendations of the NERC Reliability Standards and Regional Reliability Standards effective in New Brunswick.

Through the CORC Program Area, NPCC strives to be a strong enforcement authority that is objective, fair, and promotes a culture of reliability excellence through risk-informed compliance monitoring, mitigation, enforcement, and registration. To accomplish this goal, CORC is

divided into three sub-program areas: Compliance Fundamentals; Compliance Audits and Investigations; and Compliance Mitigation and Enforcement.

Compliance Fundamentals

The Compliance Fundamentals sub-program area is responsible for registration and certification activities and for general compliance activities that span across the other three sub-program areas. The Compliance Fundamentals sub-program area:

- Identifies and registers the BES owners, operators, and users that are required to comply with the NERC and Regional Reliability Standards,
- Conducts Certifications in accordance with the NERC ROP,
- Leads the development of the annual implementation plans (ERO Enterprise, NPCC, Quebec, New Brunswick),
- Implements the ERO Enterprise CMEP IT tool (Align),
- Responds to any Complaints submitted to NPCC,
- Maintains any NPCC specific compliance tools or programs needed, and;
- Conducts outreach, training, and education to support the implementation of Reliability Standards.
- Conducts Inherent Risk Assessments (IRA) on registered entities,
- Conducts Internal Controls Evaluations (ICE) on volunteering registered entities,
- Assists with the development of the annual CMEP implementation plans, and;
- Provides the basis for each registered entity's Compliance Oversight Plan.

Compliance Audits and Investigations

The Compliance Audits and Investigations sub-program area is responsible for conducting all compliance monitoring activities. The Compliance Audits and Investigations sub-program area is focused on the most significant risks to the BPS. The Compliance Audits and Investigations sub-program area:

- Conducts NPCC compliance monitoring activities, including audits, spot checks, and guided self-certifications,
- Incorporates the results of the IRA and ICE into its compliance monitoring process,
- Issues reports, including audit reports, spot check reports, guided self-certification reports, and;
- Implements and maintains the Critical Infrastructure Protection (CIP) Standards Technical Feasibility Exceptions process.

Compliance Mitigation and Enforcement

The Compliance Mitigation and Enforcement sub-program area is responsible for undertaking enforcement activities in accordance with risk-based approaches and conducting technical assessments of registered entities' plans and activities to mitigate noncompliance. Depending on the jurisdiction, enforcement either makes official recommendations to the appropriate regulatory authority or assists and coordinates with NERC to make such official recommendations. The Compliance Mitigation and Enforcement sub-program area:

- Determines the relevant facts and circumstances necessary to understand each noncompliance,
- Evaluates and assigns a risk level to each noncompliance,
- Evaluates and approves the mitigation activities or Mitigation Plan for each noncompliance,
- Assesses the relevant compliance history for each noncompliance,
- Determines the disposition method for each noncompliance,

- Calculates penalty sanctions in consistent fashion, and
- Evaluates registered entities for the self-logging program.

2020 Key Assumptions and Cost Impacts

2019	Projected 2020
5 On-Site Audits	8 On-Site O&P Audits
8 On-Site CIP Audits	10 On-Site CIP Audits
28 Off-Site Audits	40 Off-Site O&P Audits
24 Off-Site CIP Audits	25 Off-Site CIP Audits
15 Spot Checks	10 Spot Checks
18 Guided self-certifications	40 Self-certifications
33 Inherent Risk Assessments	50 Inherent Risk Assessments
4 On-site O&P Internal Control Evaluations	7 On-site O&P Internal Control Evaluations
5 On-site CIP Internal Control Evaluations	10 On-Site CIP Internal Control Evaluations
216 Violations (Estimated)	225 Violations (Estimated)
Settlements Covering 50 Violations	Settlements Covering 80 Violations
0 Hearings (Unbudgeted)	1 Hearings (Unbudgeted)
1 CI (Estimated)	1 CI (Estimated)
3 Entity Certifications	2 Entity Certifications

- Compliance Monitoring activities are projected to increase in 2020 from 2019 and will be cost effectively addressed with the addition of one FTE on the compliance staff, which is offset by a decrease in contract audit costs.
- The 2020 Business Plan projects increases in Enforcement Processing activities over the 2019 Budget. It is expected that the increase in violation processing will continue in 2021. This is partly due to the increase in the number of cyber systems that are in scope for compliance in most jurisdictions.
- One Compliance Investigation is projected for 2020. Compliance Investigations are manpower intensive for NPCC staff (requiring allocation of more resources and potentially higher than normal costs).

2020 Goals and Key Deliverables

- Conduct scheduled compliance monitoring and enforcement activities pursuant to the 2020 Implementation Plans.
- Continue applying risk-based approaches for CMEP, registration, and certification activities.
- Identify potential issues related to NERC Reliability Standards as a result of compliance monitoring, enforcement and event analysis activities.
- Continue to implement compliance responsibilities in Canada based on the unique regulatory structure specific to each provincial and/or governmental jurisdiction.
- Evaluate monitoring, violation processing, risk-assessment, registration and certification program for sufficiency and effectiveness. Modify as needed.
- Collaborate within the ERO Enterprise to develop and implement a common and consistent CMEP IT tool (Align) for compliance processes, information systems, and methods among Regions.

- Provide education and outreach to the registered entities on all CMEP, registration, and certification topics, including the development and implementation of the ERO Enterprise Registration and CMEP software reporting systems and tools.
- Conduct two in-person Compliance Workshops.
- Develop annual reports for QCMEP/CMEP activity in Québec and New Brunswick.
- Develop and/or provide input on 2020 CMEP Implementation Plans (ERO Enterprise, NPCC, Québec, New Brunswick).
- Attend training necessary and/or beneficial to performing Registration, Certification, Entity Risk Assessment, Monitoring, and Enforcement activities.
- Assure that NPCC staff is appropriately trained to conduct Certification and Auditing activities.
- Provide detailed responses to oversight activity performed by NERC, FERC, and other relevant authorities.
- Continue to perform and update IRAs for registered entities.
- Continue to perform an ICE for registered entities that volunteer for such an assessment.
- Continue to assess internal controls during monitoring engagements
- Conduct 2020 Compliance Engagement Schedule based on risk to the BPS and number of registered entities and promote the ERO Risk-Based Approach initiatives by:
 - Utilizing the Audit Checklist and Auditor’s Handbook for all on-site and off-site audits.
 - Preparing an updated Inherent Risk Assessment as necessary for all scheduled engagements and performing an Internal Controls Evaluation for all entities that volunteer.
- Continue to perform comprehensive enforcement investigations to determine the relevant facts and circumstances necessary to understand each noncompliance, assess the risk, and evaluate the mitigation activities or Mitigation Plan for each noncompliance. Determine the disposition method in accordance with established risk-based approaches (i.e. Compliance Exceptions, FFTs, Simplified Identification Correction Method (Québec), Settlements, etc.)
- Evaluate the mitigation activities or Mitigation Plan for each noncompliance, track the progress and verify the completion of each Mitigation Plan.
- As necessary, represent NPCC during any enforcement hearings before the NPCC Hearing Body, the NERC Hearing Body, the Régie, or the NBEUB.
- Evaluate registered entities for the self-logging program.
- Analyze noncompliance trends and associated risks in order to develop guidance to registered entities in support of a culture of reliability.
- Perform outreach (webinars, workshops) to educate entities on noncompliance root causes and on techniques for noncompliance assessment and communication associated with self-reporting to NPCC; including the provision of guidance on the development of mitigation activities that will prevent recurrence.
- Assess evolving cyber security risks for opportunities to develop internal control flow diagrams in order to provide entity guidance

Based on the portion of professional/technical staff time and other resources devoted to Compliance monitoring and enforcement and organizational registration and certification, NPCC estimates that it will expend 56% of its resources on this activity.

Resource Requirements**Personnel**

- One additional FTE to increase in-house expertise rather than utilizing contractor labor. The increase in personnel expenses will be offset by a decrease in Consultants and Contracts.

Fixed Assets

- No new functionality is planned for the Compliance Issues Tracking System and CMEP Data Administration Application at this time based on the planned implementation of the ERO Enterprise CMEP IT Tool (Align).

Compliance Monitoring and Enforcement and Organization Registration and Certification Program

Funding sources and related expenses for the compliance enforcement and organization registration and certification section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures						
2019 Budget & Projection, and 2020 Budget						
Compliance Monitoring and Enforcement and Organization Registration and Certification						
				Variance		Variance
	2019	2019	2019 Projection	2019 Projection	2020	2020 Budget
	Budget	Projection	Over(Under)	v 2019 Budget	Budget	v 2019 Budget
						Over(Under)
Funding						
ERO Funding						
ERO Assessments	\$ 8,183,815	\$ 8,183,815	\$ -	\$ 9,034,625	\$ 850,810	
Penalty Sanctions	-	-	-	69,994	69,994	
Total ERO Funding	\$ 8,183,815	\$ 8,183,815	\$ -	\$ 9,104,618	\$ 920,803	
Membership Dues	-	-	-	-	-	
Testing Fees	-	-	-	-	-	
Services & Software	-	-	-	-	-	
Workshops & Misc Revenue	-	-	-	-	-	
Interest & Investment Income	-	-	-	-	-	
Total Funding (A)	\$ 8,183,815	\$ 8,183,815	\$ -	\$ 9,104,618	\$ 920,803	
Expenses						
Personnel Expenses						
Salaries	\$ 2,815,882	\$ 2,720,882	\$ (95,000)	\$ 2,928,438	\$ 112,557	
Payroll Taxes	191,849	188,849	(3,000)	202,717	10,867	
Benefits	585,543	572,543	(13,000)	732,104	146,561	
Retirement Costs	301,025	287,025	(14,000)	314,664	13,638	
Total Personnel Expenses	\$ 3,894,299	\$ 3,769,299	\$ (125,000)	\$ 4,177,923	\$ 283,624	
Meeting Expenses						
Meetings & Conference Calls	\$ 15,000	\$ 15,000	\$ -	\$ 15,000	\$ -	
Travel	295,400	295,400	-	300,400	5,000	
Total Meeting Expenses	\$ 310,400	\$ 310,400	\$ -	\$ 315,400	\$ 5,000	
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ 1,357,150	\$ 1,337,150	\$ (20,000)	\$ 1,097,150	\$ (260,000)	
Office Rent	-	-	-	-	-	
Office Costs	-	-	-	-	-	
Professional Services	-	-	-	-	-	
Computer & Equipment Leases	-	-	-	-	-	
Miscellaneous	-	-	-	-	-	
Total Operating Expenses, excluding Depreciation	\$ 1,357,150	\$ 1,337,150	\$ (20,000)	\$ 1,097,150	\$ (260,000)	
Total Direct Expenses	\$ 5,561,849	\$ 5,416,849	\$ (145,000)	\$ 5,590,473	\$ 28,624	
Indirect Expenses	\$ 3,303,230	\$ 3,303,230	\$ -	\$ 3,420,003	\$ 116,772	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Expenses (B)	\$ 8,865,080	\$ 8,720,080	\$ (145,000)	\$ 9,010,476	\$ 145,396	
Change in Net Assets (=A-B)	\$ (681,264)	\$ (536,264)	\$ 145,000	\$ 94,142	\$ 775,407	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ (48,392)	\$ (48,392)	\$ -	\$ 99,157	\$ 147,550	
TOTAL BUDGET (=B+C)	\$ 8,816,687	\$ 8,671,687	\$ (145,000)	\$ 9,109,633	\$ 292,946	
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (632,872)	\$ (487,872)	\$ 145,000	\$ (5,015)	\$ 627,857	

Reliability Assessment and Performance Analysis Program

Reliability Assessment and Performance Analysis Program Resources			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	5.83	5.43	-0.40
Direct Expenses	\$2,216,468	\$2,169,556	(\$46,912)
Indirect Expenses	\$1,132,814	\$1,031,701	(\$101,113)
Other Non-Operating Expenses	\$0	\$0	\$0
Fixed Asset Additions	(\$16,596)	\$29,913	\$46,508
Total Funding Requirement	\$3,332,686	\$3,231,169	(\$101,517)

Program Scope and Functional Description

NPCC, through its top technical committee, the Reliability Coordinating Committee (RCC), integrates the deliverables of its Task Forces' and Working Groups' Reliability Assessment and Performance Analysis (RAPA) related activities.

Seasonal assessments of the overall NPCC resource adequacy are performed and possible actions to mitigate any potential problems are identified. NPCC reviews operations and disturbances both internal and external to the Region in order to identify any lessons to be learned and recommends any necessary follow-up actions.

If appropriate, enhancements to Regional Standards or NPCC's more stringent, Regionally-specific reliability criteria requirements are also recommended. NPCC promotes and conducts both inter-Area and inter-Regional studies to enhance reliability and operational effectiveness and provides a forum for the discussion and coordination of operating issues within the NPCC Region and with other Regions.

2020 Key Focus Areas

In collaboration with NERC, Key Focus Area activities for 2020 include:

- Integration of RAPA information systems for assessments and associated data requirements, including expanded and enhanced enterprise-wide data collection and analysis systems and capabilities for performance analyses, with a focus on independent and technically sound reliability assessments supporting delivery of high quality reports.
- Development of assessment and performance analysis techniques as well as resource capabilities and tools, including probabilistic and scenario evaluations, which address the impacts of new technologies, changing resource or demand resource composition, and environmental related regulations or legislation.
- Support ERO activities to identify key reliability risks and appropriate projects designed to enhance reliability and/or mitigate risks.
- Providing technical resources to support NERC special reliability assessments which focus on specific reliability risk areas in geographic areas with specific identified reliability concerns.
- Advancing analytical capabilities for identifying and determining reliability risks and conducting associated related reliability assessments.

Eastern Interconnection Reliability Assessment Group (ERAG)

The primary function of the Eastern Interconnection Reliability Assessment Group (ERAG) is to support reliability of the bulk-power system in the Eastern Interconnection through periodic reviews of generation and transmission expansion. These assessments are conducted by the ERAG Committee. These assessment-related activities support ERO Goal 3: “*Reduction of Known Risks to Reliability*” and 4 “*Identification and Assessment of Emerging Reliability Risks.*”

NPCC RAPA staff participates with the ERAG Committee as one of the four Eastern Interconnection Regional Entities, and acts as the liaison between the ERAG MMWG and the NPCC SS-37 Working Group.

ERAG Committee Activities 2020 Goals and Deliverables

- Transition the steady state and dynamic simulation base case data compilation and development work from ERAG to the Eastern Interconnection Planning Collaborative (EIPC).
- Support EIPC designation and certification as the Eastern Interconnection MOD-032, Requirement R4 Designee.
- During a transition period oversee the steady state and dynamic simulation base case data compilation and development.
- Oversee the ERAG assessment plan and coordinate assessment efforts with NERC Assessment Program staff. Determine the targeted ERAG assessment topic for 2020. Determine the method of assessment: analytical study, research effort, peer review.
- Make appropriate revisions, as necessary, to the ERAG Strategic Direction (i.e. anticipated new developments in MMWG process and system assessments).
- Develop and approve the ERAG activity budgets.

Multi-Regional Modeling Working Group 2020 Goals and Deliverables

- During a transition period of the Eastern Interconnection base case development MOD-032-1, Requirement 4 Designee period from ERAG to EIPC facilitate the completion of the steady state and dynamic simulation base case data compilation and development for the 2020 series of cases.
- Check and confirm that the dynamic model data passes all applicable checks and acceptance criteria.
- Incorporate dispatch information into the future and seasonal MMWG base cases so that the dispatches are more closely aligned with economic dispatch practices.
- Continue to improve the representations of the governor-turbine plant control models.
- Apply MMWG base case non-disclosure agreement process so that MMWG cases continue to have sufficient protections in place for use and transmittal of confidential data and information.

ERAG System Assessments 2020 Goals and Deliverables

- Determine an appropriate topic of focus for the 2020 ERAG Assessment. In recent years, ERAG has conducted peer reviews on select topics in lieu of conducting assessments. Conduct the 2020 ERAG Assessment and prepare any associated documentation.
- Coordinate Assessment efforts with the NERC Reliability Assessment and System Analysis (RASA) Program staff to incorporate any risk-based or other approaches to supplement NERC Assessments.

Bulk Electric System Notification and Exception (BESnet) application and Exception Request (ERs)

NPCC supports maintenance of the BESnet application and the processing of the Regional BES Exception Requests (ERs), including periodic certifications that the basis for an Element being included or excluded in the BES through the Exception remains valid. No NPCC Exception Requests are due for recertification in 2020. Analysis of an Exception Request from a New Brunswick entity may extend into 2020.

2020 NERC Activities

NPCC will provide the Regional perspective with appropriate NPCC RAPA staff participation on selective NERC Technical Committees and key related NERC Subcommittees, Task Forces and Working Groups, including:

- Event Analysis Subcommittee (EAS)
- Inverter-Based Resource Performance Task Force (IRPTF)
- Performance Analysis Subcommittee (PAS)
 - Demand Response Availability Data System Working Group (DADSWG)
 - Battery Availability Data System Working Group (BADSWG)
 - Generating Availability Data System Working Group (GADSWG)
 - Misoperation Information Data Analysis System (MIDASWG)
 - Transmission Availability Data System Working Group (TADSWG)
- Reliability Assessment Subcommittee (RAS)
 - Probabilistic Assessment Working Group (PAWG)
- System Analysis and Modeling Subcommittee (SAMS)
 - Load Modeling Task Force (LMTF)
 - Power Plant Model Verification Task Force (PPMVTF)
 - Node Breaker Modeling Group (NBMG)
- System Protection and Control Subcommittee (SPCS)
- Synchronized Measurement Subcommittee (SMS)
- System Planning Impacts from Distributed Energy Resources Working Group (SPIDERWG)
- Battery and Storage Task Force (BASTF)

ERO – Executive Management Group (EMG) 2020 Activities

Provide analytic support for the ERO-EMG:

- Operations Leadership Team;
- Bulk Electric System Exception Process Working Group, under Organization Registration and Certification Group (ORCG);
- ERO-RAPA Group; and,
- Other activities as directed by the ERO-Executive Management Group.

2020 Goals and Key Deliverables

NPCC Task Force activities support ERO Goal No. 3 “*Identification and Assessment of Significant Risks to Reliability*” and ERO Goal No. 4 “*Identification and Assessment of Emerging Risks to Reliability.*”

Task Force on Coordination of Planning

The primary mission of the NPCC Task Force on Coordination of Planning (TFCP) is to promote reliability through the coordination of NPCC Area and NERC planning processes and activities.

TFCP Reliability Assessment and Performance Analysis 2020 Goals and Deliverables

- Coordinate NPCC responses to the approved NERC Essential Reliability Services Working Group recommendations with the Task Force on Coordination of Operation and the Task Force on System Studies to ensure that the recommendations are addressed.
- Coordinate the development of additional NPCC Criteria as necessary and track any new and developing Regional NPCC Standards through the NPCC Regional Standards Committee.
- Monitor industry practices and make recommendations to the NPCC Regional Standards Committee regarding related NERC Standards.
- Oversee the NPCC Directory No. 1 Implementation Plan (Dated: September 30, 2015).
- Oversee the activities of the NPCC CP-8 Working Group.
- Evaluate and recommend RCC approval of NPCC Area Transmission Reviews.
- Evaluate and recommend RCC approval of NPCC Area Reviews of Resource Adequacy.
- Coordinate, monitor, review, and make recommendations on the retirement of existing in-service and/or implementation of proposed or modified Special Protection Systems Remedial Action Schemes.
- Coordinate the NPCC transition from SPS to RAS in accordance with PRC-012-2.
- Lead the NPCC Task Forces in conducting the review of the reliability and cost benefit of Directory No. 1, Design and Operation of the BPS.
- Support related reliability activities, including consideration of any requests for sub-regional assessments.
- Keep informed on studies and developments in neighboring systems which might impact NPCC reliability.
- Review Events Analysis Lessons Learned using the Events Analysis discussion/review template.

Task Force on System Studies

The primary mission of the NPCC Task Force on System Studies (TFSS) is to provide active overall coordination of system studies of the reliability of the interconnected bulk power systems and for the review of related NPCC documents.

TFSS Reliability Assessment and Performance Analysis 2020 Goals and Deliverables

- Review and recommend approval of Area Transmission Reviews.
- Review and classify new and modified Remedial Action Schemes.
- Review and Implement the NPCC A-10 Criteria.
- Perform annual review and update of the Major Project List.
- Participate in the development and submission of NPCC comments/inputs into the development of regional and/or continent-wide reliability standards that address the NERC Reliability Standards.
- Provide support and technical input, for Task Force related Bulk Electric System risks as identified by the NERC Reliability Issues Steering Committee.
- Review existing NPCC Regional Criteria and procedures for validation of data used in power flow and dynamic simulations; propose changes to provide for adequate data validation.

- Perform investigation of Distributed Energy Resources modeling practices.
- Annually develop a library of power flow base cases and associated dynamic cases.
- Enable the annual review of the NPCC event replication procedure and ensure the preparedness of the NPCC Planning Coordinators to develop base cases for a required investigation of a major system event in or affecting NPCC and support the performance of event replication by benchmarking simulations against actual system performance.
- Work with software vendors and NERC to enhance the capability for dynamic simulations.
- Continue to investigate the use of dynamic load models for transient stability studies.
- Investigate the use of load monitoring equipment to aid in the benchmarking of dynamic load models used in transient stability studies.

Task Force on System Protection

The primary purpose of the NPCC Task Force on System Protection (TFSP) is to promote the reliable and efficient operation of the interconnected bulk power systems in Northeastern North America through the establishment of directories, criteria, guidelines, and procedures and coordination of design, relative to NPCC protection systems.

TFSP Reliability Assessment and Performance Analysis 2020 Goals and Deliverables

- Assess proposed protection systems and Special Protection Systems/Remedial Action Schemes.
- Participate and/or serve as lead Task Force in the implementation of applicable Regional NERC Reliability Standards.
- Review and respond to Questions, Requests for Interpretations and/or Clarifications related to bulk power system protection requirements in NPCC Directories and Criteria.
- Participate in the ongoing development and submission of NPCC inputs/comments into the development of related NERC Reliability Standards.
- Monitor the NPCC metric on protection system Misoperation Risk Index Score calculations.
- Review mitigations and/or progress reports for Bulk Power System Risk Reduction Implementation.
- Provide support and technical input for related protection system risks as identified by the NERC Reliability Issues Steering Committee.
- Conduct review/development of related NPCC Directories.
- Consistent with the TFSP's scope, conduct joint meeting with other Regions to share best practices and experiences.
- Review ongoing changes to the North American Reliability Corporation Critical Infrastructure Protection Standards and evaluate impacts to Registered Entities Protection Systems, SCADA, and Monitoring Systems.

Task Force on Coordination of Operation

The NPCC Task Force on Coordination of Operation (TFCO) primarily facilitates the coordination of operations among the NPCC Reliability Coordinator areas and adjacent NERC Regions to enhance the reliability of the bulk power system.

TFCO Reliability Assessment and Performance Analysis 2020 Goals and Deliverables

- Prepare and conduct the spring and autumn NPCC System Operator Seminars.
- Develop and securely disseminate the annual compilation of "Facilities for Notification."

- Support and take part in the biennial, continent-wide Grid Security Exercise, including a review of the associated reports and Lessons Learned.
- Complete a triennial review of the individual RC Areas' restoration plans.
- Support an annual enhanced, wide area restoration drill among the Reliability Coordinator areas of NPCC and their neighboring Reliability Coordinators, incorporating the annual review of the NPCC regional restoration plan.
- Conduct pre-seasonal NPCC Reliability Assessments.
- Conduct reviews of applicable NPCC Directories, Criteria, Guides and Procedures in accordance with their applicable review dates.
- Coordinate system awareness among NPCC Reliability Coordinators through periodic conference calls.
- Monitor the trends and impacts of the changing resource mix and the effects of the proliferation of the new resources on real-time operations, as well as behavior during and impacts on recovery and restoration plans.
- Provide assistance to the NERC Event Analysis Process and evaluate the operational applicability of the identified Lessons Learned.
- Review a biennial summary of operating tool failures and lessons learned for the preceding study period.
- Review and analyze the performance of Simultaneous Activation of Reserve (SAR) implementation following an event to enhance the process.

NPCC Regulatory/Governmental Affairs Advisory Group

The NPCC Governmental/Regulatory Affairs Advisory Group provides a forum where industry and governmental and/or regulatory representatives can exchange views and strive to develop consensus policy recommendations on reliability issues specific to the NPCC Region (Northeastern United States and Eastern Canada) and share actionable information among NPCC, NERC and other related governmental and/or regulatory agencies related to Regional reliability matters.

The Regulatory/Governmental Affairs Advisory Group activities indicated below are done in support of ERO Goal No. 3 "*Reduction of Known Risks to Reliability*" and ERO Goal No. 4 "*Identification and Assessment of Emerging Risks to Reliability*."

NPCC Regulatory/Governmental Affairs Advisory Group 2020 Goals and Deliverables

- Continued outreach to NPCC's state electricity and environmental regulators stressing the importance of understanding and considering reliability impacts during the development of State/Provincial initiatives (such as the identified Essential Reliability Services, Distributed Energy Resource integration).
- Focus on initiatives concerning regional planning, distributed energy resource requirements, the timing of new generation resources and transmission infrastructure projects.

Based on the portion of professional/technical staff time and other resources devoted to Reliability Assessment and Performance Analysis, NPCC estimates that it will expend 20% of its resources on these activities.

Resource Requirements**Personnel**

- Decrease of 0.40 FTE represents reallocation of staff to situation awareness to address shift in focus areas.

Consultants and Contracts

- Increase in consultants and contracts expense is associated with increase in inherent risk and emerging risk reliability assessments.

Reliability Assessment and Performance Analysis Program

Funding sources and related expenses for the Reliability Assessment and Performance Analysis section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures						
2019 Budget & Projection, and 2020 Budget						
Reliability Assessment and Performance Analysis						
		2019	2019	Variance	2020	Variance
		Budget	Projection	2019 Projection	Budget	2020 Budget
				v 2019 Budget		v 2019 Budget
				Over(Under)		Over(Under)
Funding						
ERO Funding						
	ERO Assessments	\$ 3,332,686	\$ 3,332,686	\$ -	\$ 3,210,055	\$ (122,632)
	Penalty Sanctions	-	-	-	21,115	21,115
	Total ERO Funding	\$ 3,332,686	\$ 3,332,686	\$ -	\$ 3,231,169	\$ (101,517)
	Membership Dues	-	-	-	-	-
	Testing Fees	-	-	-	-	-
	Services & Software	-	-	-	-	-
	Workshops & Misc Revenue	-	-	-	-	-
	Interest & Investment Income	-	-	-	-	-
	Total Funding (A)	\$ 3,332,686	\$ 3,332,686	\$ -	\$ 3,231,169	\$ (101,517)
Expenses						
Personnel Expenses						
	Salaries	\$ 1,135,264	\$ 1,135,264	\$ -	\$ 1,006,128	\$ (129,136)
	Payroll Taxes	69,027	69,027	-	64,023	(5,004)
	Benefits	219,655	219,655	-	218,787	(868)
	Retirement Costs	123,322	123,322	-	109,418	(13,904)
	Total Personnel Expenses	\$ 1,547,268	\$ 1,547,268	\$ -	\$ 1,398,356	\$ (148,912)
Meeting Expenses						
	Meetings & Conference Calls	\$ 23,000	\$ 23,000	\$ -	\$ 22,000	\$ (1,000)
	Travel	216,200	216,200	-	216,200	-
	Total Meeting Expenses	\$ 239,200	\$ 239,200	\$ -	\$ 238,200	\$ (1,000)
Operating Expenses, excluding Depreciation						
	Consultants & Contracts	\$ 430,000	\$ 430,000	\$ -	\$ 533,000	\$ 103,000
	Office Rent	-	-	-	-	-
	Office Costs	-	-	-	-	-
	Professional Services	-	-	-	-	-
	Computer & Equipment Leases	-	-	-	-	-
	Miscellaneous	-	-	-	-	-
	Total Operating Expenses, excluding Depreciation	\$ 430,000	\$ 430,000	\$ -	\$ 533,000	\$ 103,000
	Total Direct Expenses	\$ 2,216,468	\$ 2,216,468	\$ -	\$ 2,169,556	\$ (46,912)
	Indirect Expenses	\$ 1,132,814	\$ 1,132,814	\$ -	\$ 1,031,701	\$ (101,113)
	Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
	Total Expenses (B)	\$ 3,349,282	\$ 3,349,282	\$ -	\$ 3,201,257	\$ (148,025)
	Change in Net Assets (=A-B)	\$ (16,596)	\$ (16,596)	\$ -	\$ 29,913	\$ 46,508
	Fixed Asset Additions, excluding Right of Use Assets (C)	\$ (16,596)	\$ (16,596)	\$ -	\$ 29,913	\$ 46,508
	TOTAL BUDGET (=B+C)	\$ 3,332,686	\$ 3,332,686	\$ -	\$ 3,231,169	\$ (101,517)
	TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (0)	\$ (0)	\$ -	\$ 0	\$ 0

Training, Education, and Operator Certification Program

Training, Education, and Operator Certification Program Resources			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	0.10	0.10	0.00
Direct Expenses	\$233,297	\$219,862	(\$13,435)
Indirect Expenses	\$19,431	\$19,000	(\$431)
Other Non-Operating Expenses	\$0	\$0	\$0
Inc(Dec) in Fixed Assets	(\$285)	\$551	\$836
Total Funding Requirement	\$252,443	\$239,412	(\$13,031)

Program Scope and Functional Description

The NPCC Training, Education, and Operator Certification program supports NERC Rules of Procedure Section 900. The program provides education and training necessary to understand and operate the bulk electric system. The target audience of the program is bulk power system operating personnel - including system operations personnel, operations support personnel (engineering and information technology), supervisors and managers, and training personnel. NPCC staff training and development is incorporated within each respective program area.

Training Program Background and Description

This NPCC Program establishes and coordinates training for system operators relating to inter-Reliability Coordinator area matters, criteria, terminology, standards and operating procedures and instructions. It includes development and execution of training seminars, held twice yearly, at which:

- potential operational problems for the coming season are discussed,
- physical layouts and electrical characteristics of the NPCC and PJM Areas are discussed,
- application of NPCC Directory and NERC Standard requirements pertinent to operation are discussed,
- major industry issues that are important for system operators are discussed,
- significant disturbances are reviewed for lessons learned; and
- table-top drills and communication and coordination exercises are conducted.

The seminars promote camaraderie and better communication among system operators from the NPCC and PJM Reliability Coordinator (RC) Areas and the Nova Scotia Balancing Authority (BA) area. PJM RC has significant interaction with the NPCC RCs and system operators from PJM have been regular participants at past seminars. Examples of specific topics addressed at recent seminars include: 1) additions and impacts to operations of renewable resources, 2) the development of conditions and violations related to major system Blackouts, 3) human performance related to system operations, 4) cybersecurity threats and system operator concerns, 5) system restoration approaches and tie-ins to neighboring systems and 6) application of NPCC Simultaneous Activation of Reserve. Usually, control center visits are included as part of the seminar activities.

This Program also provides for:

- sharing of RC/BA existing training program and system simulator area content;
- verification and sharing of training methods;
- evaluation of training and simulator aids as they become available;
- opportunities to consolidate training among the NPCC RCs and BAs, which includes opportunities to share training material and training sessions; and
- exchange of information on internal methods of system operator training.

The training activities indicated below are done in support of ERO Goals No. 3 “*Reduction of Known Reliability Risks*” and No. 6 “*Effective and Efficient Operation*”. Related contributing activities to these goals include “Working with industry forums, expand communication and encourage sharing of good industry practices for increasing Human Performance (HP) effectiveness”, “Acquire, engage, develop, and retain highly qualified talent with requisite technical expertise to execute the ERO Enterprise’s statutory functions” and “Strengthen coordination among NERC, Regional Entities with cross-border footprints, and North American stakeholders in support of ERO Enterprise reliability and security priorities.”

Funding Drivers and Reliability Benefits

- System operators participating in the Seminars: 1) share their approaches to addressing operational problems and learn about the characteristics of neighboring systems; 2) gain exposure to NPCC issues and current industry operational topics; 3) review recent NPCC and PJM major external disturbances; 4) review key operational related content in NPCC Directories and NERC Standards; and 5) participate in hands-on “table top exercises” pertaining to system operational practices. PJM system operators and trainers are also invited to participate and normally attend and participate in these seminars;
- Seminar attendees also receive Continuing Education Hours (CEHs) (normally 3 CEHs) and operator trainers from each RC / BA area can utilize the seminar content by including it in their internal training programs to provide CEHs to all system operators; The seminars help to improve system operational coordination through better contact among system operators at other Reliability Coordinator Areas.
- Continually review and revise the curriculum of the training seminars to better emphasize NERC Standard requirements related to system operation, NPCC wide-area operations and Regionally-specific criteria and procedures.
- Enhance system operator awareness and knowledge of the standards, criteria and procedures that are applied in real time operation;
- Provide more sharing of training approaches, exchange of information on internal methods of system operator selection, training material and training sessions;
- Enhance efficiency and cost savings in the training programs in the NPCC RC/BA areas;
- Provide a forum among NPCC RC/BA areas for sharing of approaches to meet the requirements of the NERC PER and COM standards;
- NPCC will conduct two Standards and Compliance workshops in 2020, for NPCC Stakeholders, for the express purpose of providing the most current and applicable information related to the development of NERC and Regional Reliability Standards and the implementation of the Compliance Monitoring and Enforcement Program (CMEP).

2020 Key Assumptions

In addition to the Spring and Fall Standards and Compliance workshops, NPCC regularly conducts System Operators seminars, specifically designed with table top exercises, targeted breakout classroom sessions and presentations on current industry related activities, to provide for the most efficient exchange of information between the NPCC and Areas' training staff, NPCC Compliance and Standards staff and the NPCC Stakeholders. Presentations in the past have been conducted by FERC, NERC and Stakeholder representatives in addition to NPCC and Areas' training staff members. To supplement these seminars and workshops, NPCC may develop webinars that will focus on specific topics pertinent to developments related to system operations, compliance program implementation, standards development or technical issues.

The System Operator seminars involve system operators' participants from the NPCC RC/BA Areas and PJM, and are held in early May and early November.

Training, Education and Operator Certification 2020 Goals and Deliverables

- Prepare and conduct the 2020 Spring and Fall NPCC System Operator Seminars.
- Continue collaboration and sharing of the intended RC/BA approaches, experiences and materials to task identification and training development
- As needed, enhance the NPCC repository of training resources and learning verification activities addressing fundamental power system topics, training methods and operation procedure training exercises, which may be shared as elements of operator training in compliance with NERC Standards PER-003-1 "*Operating Personnel Credentials*" and PER-005-2 "*Operations Personnel Training*."
- Develop on-line operational training webinars that focus on specific topics pertinent to compliance program implementation, standards development or technical issues.
- Conduct Spring and Fall 2020 Standards and Compliance workshops addressing the development of NERC and Regional Reliability Standards and the implementation of the Compliance Monitoring and Enforcement Program (CMEP).

Based on the portion of professional/technical staff time and other resources devoted to training, education, and operator certification, NPCC estimates that it will expend 2% of its resources on this activity.

Resource Requirements

- No significant changes.

Training, Education, and Operator Certification Program

Funding sources and related expenses for the training, education, and operator certification section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures						
2019 Budget & Projection, and 2020 Budget						
Training, Education, and Operator Certification						
	2019	2019	Variance	2020	Variance	
	Budget	Projection	2019 Projection	Budget	2020 Budget	
			v 2019 Budget		v 2019 Budget	
			Over(Under)		Over(Under)	
Funding						
ERO Funding						
ERO Assessments	\$ 184,943	\$ 184,943	\$ -	\$ 171,524	\$ (13,420)	
Penalty Sanctions	-	-	-	389	389	
Total ERO Funding	\$ 184,943	\$ 184,943	\$ -	\$ 171,912	\$ (13,031)	
Membership Dues	-	-	-	-	-	
Testing Fees	-	-	-	-	-	
Services & Software	-	-	-	-	-	
Workshops & Misc Revenue	67,500	67,500	-	67,500	-	
Interest & Investment Income	-	-	-	-	-	
Total Funding (A)	\$ 252,443	\$ 252,443	\$ -	\$ 239,412	\$ (13,031)	
Expenses						
Personnel Expenses						
Salaries	\$ 18,600	\$ 18,600	\$ -	\$ 11,793	\$ (6,807)	
Payroll Taxes	1,513	1,513	-	939	(575)	
Benefits	6,805	6,805	-	5,652	(1,153)	
Retirement Costs	2,379	2,379	-	1,478	(900)	
Total Personnel Expenses	\$ 29,297	\$ 29,297	\$ -	\$ 19,862	\$ (9,435)	
Meeting Expenses						
Meetings & Conference Calls	\$ 189,000	\$ 189,000	\$ -	\$ 185,000	\$ (4,000)	
Travel	15,000	15,000	-	15,000	-	
Total Meeting Expenses	\$ 204,000	\$ 204,000	\$ -	\$ 200,000	\$ (4,000)	
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ -	\$ -	\$ -	\$ -	\$ -	
Office Rent	-	-	-	-	-	
Office Costs	-	-	-	-	-	
Professional Services	-	-	-	-	-	
Computer & Equipment Leases	-	-	-	-	-	
Miscellaneous	-	-	-	-	-	
Total Operating Expenses, excluding Depreciation	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Direct Expenses	\$ 233,297	\$ 233,297	\$ -	\$ 219,862	\$ (13,435)	
Indirect Expenses	\$ 19,431	\$ 19,431	\$ -	\$ 19,000	\$ (431)	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Expenses (B)	\$ 252,728	\$ 252,728	\$ -	\$ 238,862	\$ (13,866)	
Change in Net Assets (=A-B)	\$ (285)	\$ (285)	\$ -	\$ 551	\$ 836	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ (285)	\$ (285)	\$ -	\$ 551	\$ 836	
TOTAL BUDGET (=B+C)	\$ 252,443	\$ 252,443	\$ -	\$ 239,412	\$ (13,031)	
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (0)	\$ (0)	\$ -	\$ 0	\$ 0	

Situation Awareness and Infrastructure Security Program

Situation Awareness and Infrastructure Security Program Resources			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	5.00	5.40	0.40
Direct Expenses	\$1,409,379	\$1,450,129	\$40,750
Indirect Expenses	\$971,538	\$1,026,001	\$54,463
Other Non-Operating Expenses	\$0	\$0	\$0
Fixed Asset Additions	(\$14,233)	\$29,747	\$43,980
Total Funding Requirement	\$2,366,685	\$2,505,877	\$139,193

Program Scope and Functional Description

The Situation Awareness and Infrastructure Security Program is the combination of near real-time awareness of conditions on the bulk power system with the programs necessary to increase the physical and cyber security of the electricity infrastructure, including the operation and maintenance of tools and other support services for the benefit of Reliability Coordinators and the system operators within the registered entities. Maintaining the real-time awareness of conditions on the interconnected bulk power systems by the NPCC Reliability Coordinator is critical to maintaining reliable operation within NPCC, including the communication of information concerning system conditions and abnormal events among the neighboring system operators responsible for the reliable operation of the bulk power systems. When an event does occur, it is critical to provide a forum for active coordination of reliability and operation among the NPCC Reliability Coordinator areas and neighboring NERC Regions and to use an event as a learning opportunity to enhance the reliability of the interconnected bulk power system through the lessons learned, which can be gleaned from such an event.

These Situation Awareness and Infrastructure Security activities indicated below are done in support of ERO Goal No. 3 “*Reduction of Known Risks to Reliability*” and ERO Goal No. 5 – “*Identification and Reduction of Cyber and Physical Security Risks.*” Related contributing activities to Goal 3 include “Analyzing system performance, events, and relationships among data sources to identify risks and mitigation strategies and provide recommendations and lessons learned, including those that are lower impact, to discover potential reliability trends early in their lifecycles” and “Promoting the use of NERC cause codes to establish a common understanding of HP triggers, collect and evaluate trends in data, and develop metrics as needed.” Contributing activities to Goal 5 include “Working closely with industry, NERC’s Critical Infrastructure Protection Committee (CIPC), governmental agencies, the national labs, industry forums, trade associations and other stakeholders, promote leading security practices, information sharing and analysis, and resilience.”

Event Analysis Program Description

NERC, Regions and the industry analyze events, identify the lessons to be learned, and conduct a formal cause code analysis.

The Event Analysis Program recognizes that many events which occur on the bulk power system beyond those identified through NERC Reliability Standard EOP-004-4, “Event Reporting,” can have varying levels of significance to the electric system, providing otherwise unrealized lessons

to be learned from these events and the trending of such events to identify possible reliability concerns. By implementing a “bottom-up” approach to an event review within the framework of the NERC Event Analysis Program, consistency, comparability, flexibility, quality and timeliness in the event analysis process will be promoted by NPCC, the registered entities and NERC in a collaborative initiative.

Upon the identification of an event, the goal of the Event Analysis Program is to:

- identify what transpired;
- categorize the event within the NERC Event Analysis Program;
- establish the sequence of events;
- understand the essential root causes of the event;
- identify recommendations or corrective actions; and,
- develop and disseminate to the industry lessons to be learned, so that the operational reliability of the bulk power system can be further enhanced.

In assessing any system event, it is recognized that, if the timely dissemination of lessons learned from an event is to be realized, any potential compliance implications associated with an event must be addressed and dismissed. Throughout an event analysis effort, to make this process successful and complete, and to solidify the “bottom-up” approach, registered entities are encouraged to establish a liaison between the event analysis and compliance functions internal to the registered entity during the event analysis process. This serves to facilitate the development of a registered entity compliance self-assessment report, which is accomplished by performing a sufficiency review of the reliability standards deemed applicable to the event, assisting in the self-reporting of possible violations should any be discovered.

To complete this voluntary effort, the entity, the Region and NERC staff will collaborate to assess the NERC Brief Report or Event Analysis Report and perform a formal cause code analysis, identifying a root cause and publish any pertinent lessons learned gathered from the event.

The adoption by NERC of the Event Analysis Program brings clarity and certainty about what system events are relevant to analyze and to what level of detail, targeting potential risks to the reliability of the bulk power system for a more detailed and in-depth analysis. Consistent with risk-based approach, only concise and succinct reviews are desired for more minor events. ERO EAP delineates the expectations, roles and responsibilities of the registered entities, NPCC and NERC in a uniform review of system events by the industry and promotes a timely development and dissemination of valuable lessons learned to the industry. The identification and tracking of emerging common risks through the assessment of events will further distinguish trends, which may be of concern to reliability. By rigorously pursuing analysis of the lesser events on the system, learning from these events and developing recommendations, risk of larger events can be mitigated.

NPCC staff works step-by-step with the registered entity throughout the total event analysis process, permitting the entity to assume the primary role in the development of the initial event analysis, lessons learned, which may benefit the industry, along with assisting and overseeing the Standards sufficiency review and cause coding process for trending and reporting. NPCC staff, throughout the process, guides, supports and stands as an advocate of the registered entity as they continue to develop an improved culture of reliability and compliance.

2020 Key Assumptions

- The monitoring of Lessons Learned will continue to be a major focus of NERC and NPCC in 2020, including:
 - continued reporting, for applicable qualifying events in the voluntary Event Analysis Program, of more detailed information on station equipment failure, per recommendation of the AC Substation Equipment Task Force, to solicit and collect this data, to aid in future analysis of station equipment failures and to identify trends that may be a threat to the reliability of the Bulk Electric System,
 - Introduction of a new EAP categories, implemented to capture the effect of “non-consequential” loss of inverter type resources and similarly DC ties between two separate asynchronous systems,
 - continued utilization of a revised Category 1h - EMS/Loss of monitoring or control at a Control Center events Brief Report template and Addendum, developed with the input of the EMS Working Group to ensure continuation of analysis of such events to improve information collection related to such events and associated analysis, taking into account the modifications to the mandatory EOP-004-4 reporting requirements thresholds.
- NERC will post updates to the Critical Infrastructure Protection Standards to address the outstanding FERC Directives and the remaining industry concerns that were not satisfactorily responded to by the version 5 Transition Advisory Group, including:
 - The new CIP-008 reporting requirements
 - The supply chain standards, which become mandatory July 2020
 - CIP modification SDT effort on virtualization
 - Updates to CIP-002 and CIP-003
- TFIST will address cloud computing initiatives, through technical consensus comments and ballot recommendations, specifically on the topics of:
 - Cloud computing work on BES Cyber Systems Information updates to CIP-004 and CIP-011
 - Continued evaluation of coordination between CIP standards and Federal Risk and Authorization Management Program (FedRAMP) - an assessment and authorization process which U.S. federal agencies have been directed by the Office of Management and Budget to ensure security is in place when accessing cloud computing products and services
- Resource allocation to this program area will support expanded Events Analysis activities; coordination with NERC’s evolving E-ISAC capabilities; and physical and cyber security outreach efforts.

Situation Awareness 2020 Goals and Deliverables

- NPCC will provide the Regional perspective and support through NPCC Event Analysis staff participation on selective NERC Technical Committees and key related NERC Subcommittees, Task Forces and Working Groups, including the Event Analysis Subcommittee, the ERO – Event Analysis/Situational Awareness Group; and utilization of The Event Analysis Management System (TEAMS).
- Work directly with applicable NPCC Task Forces and Working Groups to provide an in-depth assessment of Lessons Learned unique to the NPCC Members and NPCC Criteria.
- Promote NPCC’s Event Analysis group’s process for sharing and dissemination of the detailed Event Analysis Report information among industry participants (Registered Entities).
- Incorporate the Lessons Learned from participation in the GridEx V wide-area exercise.

- Monitor the operational status of the bulk power system and coordinate normal and pre-emergency communication, awareness and assistance in addition to the same during an emergency among the Reliability Coordinators within NPCC. Notify the Reliability Coordinators of significant bulk power system events that have occurred in one Reliability Coordinator Area, and which have the potential to impact reliability in other NPCC Reliability Coordinator Areas or Regions external to NPCC. These events include contingencies on the bulk power system, potential shortfalls of operating reserve, operating problems, potential security threats and potential threats or disruptions to the cyber systems.
- Conduct a daily conference call to serve as a complement to the NPCC Emergency Preparedness Conference Call. The participants of the call are the Reliability Coordinators within NPCC and its neighboring RCs, the Midcontinent ISO and PJM. The conference call is implemented through a bridge, the initiation of the call quickly ringing all pre-selected telephones simultaneously. The goal of the call is to alert all Reliability Coordinators of emerging problems. If no system difficulties are anticipated for the day, no unnecessary information is to be discussed. Subjects for discussion are limited to credible events which could impact the ability of an entity to serve its load and meet its operating reserve obligations or would impose a burden to the interconnection, including the following: Projected Load; Adverse Weather; Operating Reserve; Generation; Transmission; and Sabotage. If conditions worsen in the course of the day, the NPCC Emergency Preparedness Conference Call will be implemented.
- Monthly test of the satellite telephone network, to ensure the capability for continued voice communications among NPCC and its Reliability Coordinators. This back-up communications system will function in the event of a collapse of the Public Switched Telephone Network, permitting continued cross-border voice communications among the Canadian Reliability Coordinators of NPCC, the Reliability Coordinators in the United States as well as NPCC Situation Awareness staff.
- Coordination and communication with the NERC Bulk Power System Awareness group in preparation for and during ongoing significant events in the NPCC's footprint and participation in the ERO Enterprise-wide Situation Awareness activities. Monitor the status of the bulk power system through the NERC Situational Awareness-FERC, NERC, Regions version 3 (SAFNRv3) tool, a near real-time operating display for the United States portion of the Reliability Coordinators footprints of North America, an enhanced visualization tool, providing more timely and accurate assessments of current conditions affecting the BPS, thus enabling NERC's and Regions' obligation to maintain situational awareness and facilitation of timely communications and collaboration with key stakeholders .

Infrastructure Security Objectives

NPCC's critical infrastructure security objectives are defined within the scope of the NPCC Task Force on Infrastructure Security & Technology, and include, but are not limited to:

- Providing a forum for NPCC review of proposed and posted documents from the NERC Critical Infrastructure Protection Committee; and,
- Representing and advocating NPCC's position in the activities of NERC groups involved in the development and/or implementation of physical and cyber security.

NPCC's physical and cyber security outreach efforts, will supplement infrastructure security objectives and support the ERO Enterprise contributing activity of "Working closely with industry, NERC's Critical Infrastructure Protection Committee (CIPC), governmental agencies, the national labs, industry forums, trade associations and other stakeholders, promote leading

security practices, information sharing and analysis, and resilience.” NPCC’s Physical Security Working Group – an NPCC group of physical security experts formed to discuss, in a secure environment, emerging threats, trends and new security technologies and strategies utilized by NPCC registered entities for the protection of their facilities in the physical arena. The Working Group is tasked with developing approaches to physical security that will enhance the reliability and resiliency of the BPS and further address any physical security issues that could challenge efficient operation of the BPS, including pertinent items identified in the biennial RISC report, under Physical and Cyber Security Vulnerabilities. The Group will function as a clearinghouse for intelligence information received from Federal, State and Local partners and will disseminate such information received to NPCC registered entities. In addition, the Working Group shall develop, review, and provide regional input on various industry physical security initiatives, working groups, and task forces, as appropriate.

NPCC’s 2020 infrastructure security goals and objectives, support ERO Goal No. 5 – *“Identification and Reduction of Cyber and Physical Risks.”* Related contributing activities to this Goal include “Expand the use, availability, and value of physical security and cybersecurity threat and vulnerability information sharing, including cross sector communications, and analytics” and “Leverage engagement with registered entities to encourage effective security practices and controls.”

Infrastructure Security 2020 Goals and Deliverables

- Monitor the reliable implementation of the Cyber Security Standards.
- Monitor the Homeland Security Information Network, E- ISAC, NERC Alerts and Canadian Information Sharing and share information with the NPCC CO-8 Working Group, NPCC PSWG and NPCC members’ cyber security experts.
- Review and submit comments on NERC proposed Reliability Standards, modified Reliability Standards, proposed Guidelines and modified Guidelines related to Infrastructure Security and Technology.
- Keep current on all governmental agencies regarding applicable security recommendations and requirements, and other applicable security and reliability recommendations and keep the RCC and its committees appropriately informed, e.g. Sector Specific Plan.
- Conduct an annual review of cross border emergency telecommunications to verify each Area can communicate with each other.
- Provide support and technical input for Task Force related Bulk Electric System risks as identified by the NERC Reliability Issues Steering Committee. TFIST and PSWG will conduct a thorough review, provide comments as necessary and act on posted materials as directed and applicable.
- Support the NERC CIPC Grid Exercise Working Group in GridEx VI planning and simulation.
- Review infrastructure security & technologies and provide recommendations to enhance physical and cyber security in compliance with NERC guidelines/standards.
- Provide recommendations to enhance physical and cyber security, in compliance with NERC standards, based on assessments of available and emerging infrastructure security technologies, methodologies, and best practices.
- Sponsor periodic workshop presentations to address timely issues and update NPCC Members associated with infrastructure security and technology.
- Provide education, awareness, and support for Cross Sector coordination in Entity agreements and response plans with focus upon Telecommunications, Water and Natural Gas, including monitoring and sharing with the E-ISAC.

Related System Operations Security 2020 Goals and Deliverables

NPCC's system operations security objectives are defined within the scope of the NPCC Task Force on Coordination of Operation and include, but are not limited to:

- Coordinating inter-Regional pre-emergency actions in the event of a threat to the security of the Northeastern North American bulk power supply system; and,
- Assisting in the development of real time operating tools ensuring cyber security concerns are addressed.

Based on the portion of professional/technical staff time and other resources devoted to situation awareness and infrastructure security, NPCC estimates that it will expend 15% of its resources on this activity.

Resource Requirements**Personnel**

- Increase of 0.40 FTE represents reallocation of staff to address shift in focus areas.

Situation Awareness and Infrastructure Security Program

Funding sources and related expenses for the situation awareness and infrastructure security section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures						
2019 Budget & Projection, and 2020 Budget						
Situation Awareness and Infrastructure Security						
		2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding						
ERO Funding						
	ERO Assessments	\$ 2,366,685	\$ 2,366,685	\$ -	\$ 2,484,879	\$ 118,195
	Penalty Sanctions	-	-	-	20,998	20,998
	Total ERO Funding	\$ 2,366,685	\$ 2,366,685	\$ -	\$ 2,505,877	\$ 139,193
	Membership Dues	-	-	-	-	-
	Testing Fees	-	-	-	-	-
	Services & Software	-	-	-	-	-
	Workshops & Misc Revenue	-	-	-	-	-
	Interest & Investment Income	-	-	-	-	-
	Total Funding (A)	\$ 2,366,685	\$ 2,366,685	\$ -	\$ 2,505,877	\$ 139,193
Expenses						
Personnel Expenses						
	Salaries	\$ 832,408	\$ 832,408	\$ -	\$ 924,110	\$ 91,702
	Payroll Taxes	57,432	57,432	-	61,713	4,281
	Benefits	201,196	201,196	-	202,020	824
	Retirement Costs	89,043	89,043	-	99,986	10,943
	Total Personnel Expenses	\$ 1,180,079	\$ 1,180,079	\$ -	\$ 1,287,829	\$ 107,750
	Meeting Expenses					
	Meetings & Conference Calls	\$ 10,000	\$ 10,000	\$ -	\$ 8,000	\$ (2,000)
	Travel	89,300	89,300	-	94,300	5,000
	Total Meeting Expenses	\$ 99,300	\$ 99,300	\$ -	\$ 102,300	\$ 3,000
	Operating Expenses, excluding Depreciation					
	Consultants & Contracts	\$ 130,000	\$ 130,000	\$ -	\$ 60,000	\$ (70,000)
	Office Rent	-	-	-	-	-
	Office Costs	-	-	-	-	-
	Professional Services	-	-	-	-	-
	Computer & Equipment Leases	-	-	-	-	-
	Miscellaneous	-	-	-	-	-
	Total Operating Expenses, excluding Depreciation	\$ 130,000	\$ 130,000	\$ -	\$ 60,000	\$ (70,000)
	Total Direct Expenses	\$ 1,409,379	\$ 1,409,379	\$ -	\$ 1,450,129	\$ 40,750
	Indirect Expenses	\$ 971,538	\$ 971,538	\$ -	\$ 1,026,001	\$ 54,463
	Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
	Total Expenses (B)	\$ 2,380,918	\$ 2,380,918	\$ -	\$ 2,476,130	\$ 95,212
	Change in Net Assets (=A-B)	\$ (14,233)	\$ (14,233)	\$ -	\$ 29,747	\$ 43,980
	Total Funding (A) Requirement	\$ 2,395,151	\$ 2,395,151	\$ -	\$ 2,446,383	\$ 51,232
	Fixed Asset Additions					
	Computer & Software CapEx	-	-	-	-	-
	Furniture & Fixtures CapEx	-	-	-	-	-
	Equipment CapEx	-	-	-	-	-
	Leasehold Improvements	-	-	-	-	-
	Allocation of Fixed Assets	(14,233)	(14,233)	-	29,747	43,980
	Fixed Asset Additions, excluding Right of Use Assets (C)	(14,233)	(14,233)	-	29,747	43,980
	TOTAL BUDGET (=B+C)	2,366,685	2,366,685	-	2,505,877	139,193
	TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (0)	\$ (0)	\$ -	\$ 0	\$ 0

Administrative Services

Administrative Services Program Resources						
(in whole dollars)						
	Direct Expenses			FTEs		
	2019 Budget	2020 Budget	Increase (Decrease)	2019 Budget	2020 Budget	Increase (Decrease)
Technical Committees and Members Forum	\$74,483	\$75,793	\$1,310	0.50	0.50	0.00
General and Administrative ²	\$3,391,903	\$3,874,453	\$482,550	2.50	2.73	0.23
Legal and Regulatory	\$612,934	\$761,007	\$148,073	1.00	2.00	1.00
Information Technology	\$1,083,781	\$1,144,119	\$60,339	2.00	2.00	0.00
Human Resources	\$156,946	\$158,731	\$1,785	1.00	1.00	0.00
Finance and Accounting	\$642,798	\$703,291	\$60,493	2.00	2.00	0.00
Total Administrative Services¹	\$5,962,845	\$6,717,395	\$754,550	9.00	10.23	1.23

¹ NPCC's 2020 Administrative Services Direct Expenses and Fixed Assets total \$6,717,395, of which \$409,450 is allocated to NPCC's Criteria Services division, which is a non-statutory function. As a result of the allocation to the Criteria Services division, the Administrative Expenditures included in the 2020 statutory budget are \$6,307,945 which is an increase of \$760,918 from the 2019 budget of \$5,547,027.

² Succession implementation costs of \$444,540 included in General and Administrative Direct Expenses will be funded from Board approved Business Continuity Reserves and will not impact assessments.

Program Scope and Functional Description

Administrative services support the previously identified five program areas of: reliability standards; compliance monitoring and enforcement and organization registration and certification; training, education, and operator certification; reliability assessment and performance analysis; and situation awareness and infrastructure security. Administrative services consist of: technical committees and members' forums; general and administrative; legal and regulatory; information technology; human resources; and finance and accounting.

Methodology for Allocation of Administrative Services Expenses to Programs

NPCC total overhead expenses, such as office rent and office costs, will be charged to the Administrative Services Programs and then reallocated proportionately based on FTE to the programs through Indirect Expenses.

Administrative Services

Funding sources and related expenses for the Administrative Services section of the 2020 business plan are shown in the table below. Explanations of variances by expense category are included with the Supplemental Tables found in Section B.

Statement of Activities and Capital Expenditures						
2019 Budget & Projection, and 2020 Budget						
ADMINISTRATIVE SERVICES						
	2019	2019	Variance	2020	Variance	
	Budget	Projection	2019 Projection	Budget	2020 Budget	
			v 2019 Budget		v 2019 Budget	
			Over(Under)		Over(Under)	
Funding						
ERO Funding						
ERO Assessments	\$ (100,108)	\$ (100,108)	\$ -	\$ (625,856)	\$ (525,748)	
Penalty Sanctions	-	-	-	-	-	
Total ERO Funding	\$ (100,108)	\$ (100,108)	\$ -	\$ (625,856)	\$ (525,748)	
Membership Dues	-	-	-	-	-	
Testing Fees	-	-	-	-	-	
Services & Software	-	-	-	-	-	
Workshops & Misc Revenue	-	-	-	-	-	
Interest & Investment Income	-	-	-	55,800	55,800	
Total Funding (A)	\$ (100,108)	\$ (100,108)	\$ -	\$ (570,056)	\$ (469,948)	
Expenses						
Personnel Expenses						
Salaries	\$ 2,147,254	\$ 2,126,254	\$ (21,000)	\$ 2,433,049	\$ 285,794	
Payroll Taxes	107,437	105,437	(2,000)	126,595	19,158	
Benefits	493,115	478,115	(15,000)	674,649	181,534	
Retirement Costs	296,142	294,142	(2,000)	313,571	17,429	
Total Personnel Expenses	\$ 3,043,948	\$ 3,003,948	\$ (40,000)	\$ 3,547,864	\$ 503,916	
Meeting Expenses						
Meetings & Conference Calls	\$ 162,750	\$ 162,750	\$ -	\$ 162,750	\$ -	
Travel	135,100	135,100	-	129,100	(6,000)	
Total Meeting Expenses	\$ 297,850	\$ 297,850	\$ -	\$ 291,850	\$ (6,000)	
Operating Expenses, excluding Depreciation						
Consultants & Contracts	\$ 95,000	\$ 95,000	\$ -	\$ 361,000	\$ 266,000	
Office Rent	820,700	820,700	-	832,700	12,000	
Office Costs	676,347	676,347	-	685,981	9,634	
Professional Services	978,000	978,000	-	947,000	(31,000)	
Computer & Equipment Leases	-	-	-	-	-	
Miscellaneous	51,000	51,000	-	51,000	-	
Total Operating Expenses, excluding Depreciation	\$ 2,621,047	\$ 2,621,047	\$ -	\$ 2,877,681	\$ 256,634	
Total Direct Expenses	\$ 5,962,845	\$ 5,922,845	\$ (40,000)	\$ 6,717,395	\$ 754,550	
Indirect Expenses	\$ (5,962,845)	\$ (5,922,845)	\$ 40,000	\$ (6,272,855)	\$ (310,010)	
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Expenses (B)	\$ -	\$ -	\$ (0)	\$ 444,540	\$ 444,540	
Change in Net Assets (=A-B)	\$ (100,108)	\$ (100,108)	\$ 0	\$ (1,014,596)	\$ (914,488)	
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ -	\$ -	\$ -	\$ -	\$ (255,000)	
TOTAL BUDGET (=B+C)	\$ -	\$ -	\$ (0)	\$ 444,540	\$ 189,540	
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (100,108)	\$ (100,108)	\$ 0	\$ (1,014,596)	\$ (659,488)	

Technical Committees and Member Forums

Program Scope and Functional Description

The success of the NPCC programs depends on the active and direct volunteerism and participation of its members. The stakeholders are the source of subject matter expertise in the industry. To promote the reliable and efficient operation of the interconnected bulk power systems in Northeastern North America, NPCC invites high-level policy makers from Federal, Provincial and State regulatory and/or governmental authorities and senior executives within NPCC and NERC to identify and discuss emerging issues related to the reliability of the NPCC Region.

2020 Key Assumptions

- NPCC’s standing committee and subgroup structure for effective stakeholder involvement will continue in 2020.
- NPCC will continue to utilize methods to encourage active involvement in its Regional programs that require less stakeholder travel and face-to-face meetings, as the economy improves in 2020.
- NPCC will continue to invest in technology and innovation to allow efficient collaboration on technical issues related to reliability.

The Technical Committees and Member Forums activities indicated below are done in support of ERO Goal No. 4 “*Identification and Assessment of Emerging Risks to Reliability.*” A related contributing activity to this Goal is to “Educate policy makers, regulators, and the industry of reliability effects and interconnection requirements for the changing resource mix.”

Technical Committees and Member Forums 2020 Goals and Deliverables

- The 2020 NPCC General Meeting provides an opportunity for NPCC Members to meet high level policy makers from Federal, Provincial and State regulatory and/or governmental authorities and senior NERC and NPCC executives to discuss topics related to the reliable planning and operation of the power system, including consideration of emerging reliability, critical infrastructure and environmental issues; and,
- The objective of the NPCC Public Information Committee is to highlight and summarize NPCC activities and accomplishments in the past year, disseminate and coordinate the appropriate release of information to the media, respond to related requests for information, and coordinate with related NPCC Area, NERC media and public information activities. Activities anticipated include, but are not limited to:
 - Conducting the Media Event – release of the Summer 2020 NPCC Reliability Assessment; and,
 - Participation in NERC Regional communication initiatives:
 - Regional communications teleconferences as required
 - Coordination of Emergency or Blackout communications plans
 - Coordination with other NERC activities as required (i.e., situation awareness, event analysis, reliability assessments, etc.)

Resource Requirements

- No significant changes.

General and Administrative

Program Scope and Functional Description

The NPCC general and administrative function provides executive management of the corporation, management of NPCC office, and other administrative support programs.

NPCC total overhead expenses, such as office rent and office costs, will be charged to the Administrative Services Programs and then reallocated proportionately based on FTE to the programs through Indirect Expenses.

Resource Requirements

- During 2020 an executive search will be conducted in order to identify a successor CEO to transition into that role by vote of the Membership at its Annual Meeting to become effective January 1, 2021. The incumbent President and CEO has identified a planned retirement during the first quarter of 2021. The expectation is that the identified successor will join NPCC by early November or December, 2020 in an executive leadership capacity. Costs related to the executive search efforts and succession plan implementation will be funded from the existing Business Continuity Reserve, identified by the NPCC Board of Directors in 2017 and approved at varying intervals within 2020 by the Board for reserve release. Therefore, 2020 assessments will not be impacted by these succession-related expenses.

Legal and Regulatory

Program Scope and Functional Description

NPCC's professional legal services provide counsel to the President and CEO, Board of Directors, Senior Vice President and COO, Treasurer, General Counsel and staff on a wide range of legal and regulatory matters including legislation, corporate law, code of conduct, confidentiality, governance, employment law, tax matters, contract law and other areas affecting NPCC, consistent with ERO Goal 6. In support of ERO Goal 4, NPCC's in-house counsel evaluates internal controls and corporate, operational, strategic and reputational risk, and participates in risk identification, evaluation and mitigation activities. In-house counsel provides legal advice to advance significant corporate policy and strategic planning initiatives and also provide legal support to other program areas on matters arising in connection with the performance of NPCC's delegated functions. In-house counsel draft agreements and pleadings and provide interpretations of relevant statutes, regulations, court opinions, and regulatory decisions of FERC, state agencies and provincial authorities. Outside counsel, as necessary, reviews items filed with the governmental agencies for legal sufficiency, maintains relationships with U.S. and Canadian jurisdictions and provides contract review.

Resource Requirements

Personnel

- NPCC plans to hire one FTE in the Legal and Regulatory program in 2020. A paralegal/legal assistant will support General Counsel and add to the overall efficiency of the organization. This addition is partially offset by a projected decrease in professional fees.

Information Technology

Program Scope and Functional Description

NPCC's Information Technology services ensure information assets and the environment in which they operate are secure and in conformance to NPCC IT Policies and Procedures and all applicable Critical Electric Infrastructure Information protection and Confidentiality requirements. NPCC maintains an offsite backup server for continuity of essential operations in the event that its primary location is unavailable.

NPCC supports the ERO efforts to implement, operate and maintain software tools supporting common enterprise wide operations and leveraging ERO solutions which have been approved by the ERO Executive Management Group (ERO EMG), which is comprised of the senior leadership of NERC and each of the Regional Entities. NPCC's budget assumes the availability of enterprise software tools as described in NERC's business plan and budget. If implementation of these software applications is delayed or otherwise not available as planned, NPCC could incur additional costs to implement ERO Enterprise-wide programs pending the availability of these applications.

NERC and the Regional Entities are committed to working collaboratively to minimize duplication of effort and investments, and improve operational efficiency. This collaboration continues to refine existing strategies, governance and procurement practices applicable to the development, operation and maintenance of enterprise architecture, software and data systems supporting complementary and combined NERC and Regional Entity operations.

The NERC information technology budget does not supplant NPCC's need for IT expenditures for specific regional projects and internal region specific IT support needs. NPCC's 2020 Business Plan and Budget assumes agreed-upon ERO Enterprise applications will be available and includes only NPCC costs for Region specific support needs.

2020 Key Assumptions

- Continue to maintain the compliance portal through collaboration with other Regional Entities and NERC (CUG), while transitioning to the ERO Enterprise CMEP IT Tool (Align).
- Support the Event Analysis program through continued participation in the tools used for the tracking and analysis of system events and identification of better practice elements.
- Support the Bulk Electric System Exception Process (BEP) to enable and facilitate tracking and processing of exceptions submitted. Maintenance of the BESNET support services such as updates, patching, coordinating issues with NERC.
- Support Cyber Security Reviews done by Compliance to provide advisory role during those reviews.

2020 Goals and Key Deliverables

Responsibilities encompass a variety of complex technical, administrative, and supervisory work in the development, installation, and maintenance of information technology systems. IT goals include, but are not limited to:

- Continue to expand the utilization of the document management system throughout the company.
- Constantly review and evaluate security measures taken to reduce breach of security risks.

- Ensure all information systems are functional and secure, and that all applications running on those systems meet business requirements for performance, availability, and security.
- Provide outreach and education to NPCC members in IT best practices.
- Continually improve Disaster Recovery and Business Continuity policies and practices to ensure continuity and reliability of IT and business related services.
- Upgrade various hardware and equipment.

Resource Requirements**Personnel**

- NPCC anticipates no need to hire additional personnel in this program area in 2020.

Fixed Assets

- Capital expenditures planned for 2020 include the continuing implementation and enhancement of the document management system and equipment upgrades.

Human Resources

Program Scope and Functional Description

NPCC has assembled an exceptional team of highly qualified employees to carry out its activities. The human resources function, in adherence with applicable federal and state laws, designs, plans, and implements human resources policies and procedures, including: staffing; compensation; benefits; employee relations; training and development; and employee time tracking.

Resource Requirements

- No significant changes.

Accounting and Finance

Program Scope and Functional Description

The accounting and finance function directs the overall financial plans and accounting practices of the organization; oversees treasury, accounting, budget, tax, and audit activities; and oversees financial and accounting system controls and standards. NPCC uses a CPA firm to prepare its unaudited statements of activities and financial statements for quarterly reviews. Independent audits have identified this system as a best practice.

2020 Goals and Key Deliverables

The objectives are to provide or obtain the financial and accounting services for NPCC and coordinate with NERC requirements:

- Utilize the NERC System of Accounts for consistency
- Utilize an accrual method of accounting for consistency with NERC in methodology
- Alignment of changes in budget and changes in aggregate assessment
- Cash Management
- Budget Development using the NERC budget template formats
- Forecasts and Projections
- Alignment of NPCC Committees, Task Forces and Working Groups with the programs
- Payroll and expense administration
- Preparation of unaudited Quarterly Financial Variance Reports
- IRS Reporting
- Annual Independent Audit initiated by the Regional Entity

Resource Requirements

- No significant changes.

Regional Entity Assessment Analysis

In the area of assessments there are distinct funding mechanisms as outlined in the following table. For the Regional Entity division, the North American Electric Reliability Corporation (NERC) will assess load serving entities (LSEs) or their designees (within NPCC the designees are the Balancing Authority Areas (BAAs) for New York, New England, New Brunswick, Nova Scotia, Ontario and Québec) based upon 2017 proportional Net Energy for Load (NEL) and other specific program area funding arrangements and make quarterly remittances to the Regional Entity on or about the 15th day of January, April, July and October. For funding associated with the Criteria Services division, the Independent System Operators/Balancing Authority Areas (ISO/BAAs) will be assessed by NPCC for their proportional share of the divisional budget based upon 2018 NEL within the Region. Non ISO/BAA Full Members will be assessed no membership fee.

NPCC Cost Allocation Methodology

The accompanying table provides information regarding cost allocation for both the Regional Entity division and the Criteria Services division of NPCC, including the details associated with the funding of the Compliance Program within the RE division. For purposes of determining assessments to support NPCC's resource requirements, costs are allocated among the ISOs/BAAs within NPCC as the designees for the load serving entities (LSEs) in New York, New England, Ontario, Québec, New Brunswick and Nova Scotia.

In order to reflect and respect the international membership and nature of NPCC, any sub-Regional reliability assessment costs in response to U.S. only regulatory initiatives will be considered for allocation to U.S. only ISOs/BAAs consistent with NERC Rules of Procedure section 1102. Additionally, the compliance responsibilities and authorities within the U.S., and the specific compliance responsibilities within each of the Canadian provinces within NPCC, and the attendant costs of portions of the compliance program differ among the areas within the Regional Entity. Within the U.S. portion of NPCC all costs attributable to delegated (statutory) functions performed by NPCC, including all compliance functions, are assessed based on a net energy for load (NEL) allocation. Within the Canadian portion of NPCC those costs attributable to compliance functions performed by NPCC on behalf of provincial governmental and/or regulatory authorities are allocated consistent with the unique Memoranda of Understanding or Agreements that have been entered into for those provinces. To address these different compliance regimes, NPCC developed a composite cost allocation methodology that allocates U.S. only reliability assessment and compliance costs on a fair and equitable basis within the Regional Entity.

As an initial step of that methodology, the NEL for each of the BAAs and their relative percentage to the NPCC total NEL is calculated for the most recent year for which data is available, the second previous year. In order to establish the RE division funding requirements for each Balancing Authority Area on a NEL basis for all programs except for Compliance, the proposed expenses and fixed assets of all other programs are calculated and the adjustment for the RE division cash reserve requirement is identified. Any penalty monies received from NPCC registered entities within the U.S. prior to June 30th of the year preceding the business plan and budget year are then allocated among the NPCC program areas based on their FTE ratio and between the U.S. BAAs based on their relative NELs. Consistent with each of the Canadian provincial MOUs and agreements, all penalty monies resulting from compliance actions within Canada, if any, would remain within the applicable province. The total budgeted fees for NPCC

workshop participation are indicated as a credit, with the resultant addition being the RE division assessment, without the compliance program costs, calculated on a NEL basis.

In accordance with the *NPCC Amended and Restated Bylaws* the CS division proposed expenses and fixed assets of all programs are calculated and the adjustment for the CS division cash reserve requirement is identified, with the resultant addition being the CS division funding requirement and assessment, calculated on a NEL basis.

For costs associated with the RE division compliance program, NPCC's allocation methodology apportions 20.54% of the costs for the program, attributed to CORC Fundamentals (CF), between the BAAs in the United States and Canada on a NEL basis.

Audits and Investigations (AI) related costs, representing 60.87% of the costs of the compliance program, are allocated between U.S. and Canadian BAAs in NPCC, and among the Canadian provinces, using an audit-based methodology. The audit-based methodology incorporates relative costs based on categories of compliance audits which are reflective of their size and complexity, as well as the differing compliance program implementation models that are utilized in NPCC due to the international nature of the Regional Entity. The portion allocated to the U.S. BAAs in NPCC is calculated using the audit-based methodology, and this amount is then re-allocated between the New York and New England BAAs based on their relative NEL.

The remaining 18.59% of the costs of the compliance program represent Mitigation and Enforcement (ME) related costs and are allocated between U.S. and Canadian BAAs in NPCC, and among the Canadian provinces, using an enforcement activity based methodology. Based on historical data, NPCC reviewed each BAAs percentage of violations, mitigation plans and settlement agreements to determine each BAA's total average percentage of enforcement activities. The portion allocated to the U.S. BAA's in NPCC is calculated using the enforcement activity based methodology, and this amount is then re-allocated between the New York and New England BAAs based on their relative NEL.

Any penalty monies received from NPCC registered entities within the U.S. by June 30th of the year preceding the business plan and budget year are then allocated among the NPCC program areas based on their FTE ratio and between the U.S. BAAs based on their relative NELs, and then added to the total compliance program expenses and fixed assets to yield a total compliance program assessment.

The CORC actual vs budget variance from the most recent year for which audited financials are available is broken out from the rest of the Adjustment to Cash Reserve and assigned to the CORC program allocation of costs. Within Québec these costs are funded directly by the regulator, therefore, the assignment of program area variances needs to respect those specific circumstances.

Finally, the total RE division funding requirements and assessments by BAA are tabulated and the total funding requirements and assessments for NPCC, both the RE and CS divisions, are combined.

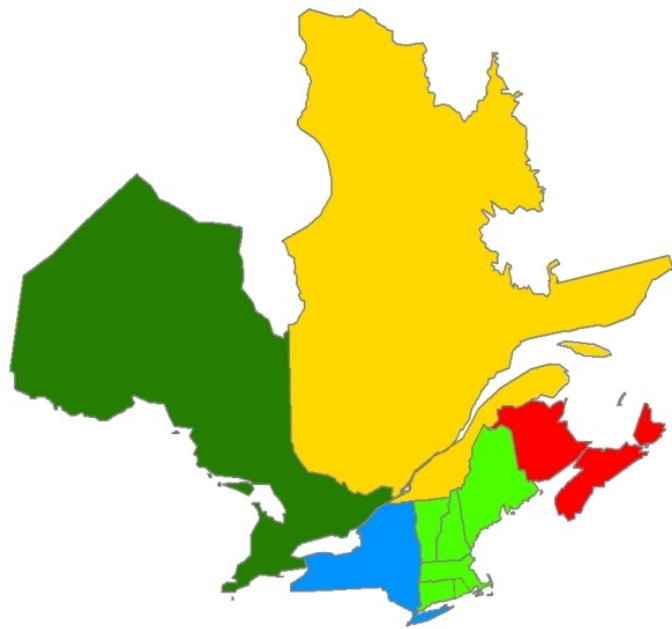
NPCC 2020 Regional Entity (RE) and Criteria Services (CS) Divisional Funding Information

A-1	B-1	B-1a	C-1	C-1a	D-1	E-1	F-1	G-1	H-1	I-1	J-1	K-1	L-1	M-1
(LSE Designees)	2018 Net Energy for Load (MWh)	2018 NPCC US NEL (MWh)	2018 NPCC NEL % of Total	2018 NPCC NEL % of U.S. Only	Associated Costs with U.S. Only Reliability Study	2020 ² NPCC RE Division Expenses & Fixed Assets Minus CORC	Adjustment to 2020 ² NPCC RE Division Cash Reserve Requirement Less CORC	2020 ² NPCC RE Division Funding Requirement Minus CORC	Penalty Monies Applied to RE Division	Budgeted Workshop Fees and Interest	2020 ² NPCC RE Division Assessment Minus CORC (G-1 plus H-1)	2020 NPCC CS Division Expenses Minus Interest Income (K-1 plus L-1)	2020 CS Division Adjustment to CS Division Cash Reserve Requirement	2020 NPCC CS Division Funding Requirement & Member Fees (M-1 plus L-1)
New England	123,472,000	123,472,000	19.905%	43.387%	TBD	1,491,274	-201,954	1,289,321	-21,696	-24,543	1,243,082	227,805	-15,778	212,027
New York	161,114,000	161,114,000	25.973%	56.613%	TBD	1,945,908	-263,522	1,682,386	-28,310	-32,025	1,620,051	297,254	-20,588	276,666
Ontario	137,437,000	137,437,000	22.156%			1,659,941	-224,795	1,435,146	0	-27,319	1,407,828	253,570	-17,562	236,008
Quebec	172,900,000	172,900,000	27.873%			2,088,258	-282,799	1,805,458	0	-34,368	1,771,091	318,999	-22,094	296,905
New Brunswick	14,077,000	14,077,000	2.269%			170,020	-23,025	146,995	0	-2,798	144,197	25,972	-1,799	24,173
Nova Scotia	11,311,000	11,311,000	1.823%			136,612	-18,501	118,112	0	-2,248	115,864	20,869	-1,445	19,423
Total	620,311,000	284,586,000	100.000%	100.000%	\$0	\$7,492,014	-\$1,014,596	\$6,477,418	-\$50,006	-\$123,300	\$6,304,112	\$1,144,468	-\$79,265	\$1,065,202

A-2	B-2	C-2	D-2	E-2	F-2	G-2	H-2	I-2	J-2	K-2	L-2	M-2	N
NPCC Balancing Authorities (LSE Designees)	2018 NEL Based Allocation of 2054% of 2020 CORC Program Fundamentals ³	2020 Audit and Investigation Allocation Methodology	2020 CORC Audit and Investigation Cost Allocation ⁴	2020 Mitigation and Enforcement Allocation Methodology	2020 CORC Mitigation and Enforcement Cost Allocation ⁵	2020 Total CORC Program Expenses & Fixed Assets	Penalty Monies Applied to CORC Program	Assigned CORC Program 2018 Actual vs Budget Variance	Total CORC Program Assessment (G-2 plus H-2 plus I-2)	2020 RE Division Total Funding Requirement (G-1 plus G-2 plus I-2)	2020 RE Division Total Assessment (L-1 plus L-2)	2020 NPCC Total Funding Requirement (M-1 plus K-2)	2020 NPCC Total Assessment & Member Fees (M-1 plus L-2)
New England	372,415	44,762%	2,001,117	42.811%	569,943	2,943,475	-30,368	-1,638	2,911,469	4,231,157	41,544,551	4,443,184	4,366,578
New York	483,950	38.416%	2,611,183	34.755%	743,698	3,840,830	-39,626	-2,117	3,799,087	5,521,099	5,421,138	5,797,765	5,697,804
Ontario	414,536	4.466%	247,639	5.378%	91,085	753,259	0	-404	752,856	2,188,002	2,160,683	2,424,009	2,396,691
Quebec	521,499	8.925%	494,893	12.289%	208,119	1,224,511	0	-680	1,223,831	3,029,289	2,994,922	3,326,195	3,291,827
New Brunswick	42,459	1.781%	98,779	4.262%	72,185	213,422	0	-93	213,329	360,324	357,526	384,497	381,699
Nova Scotia	34,116	1.650%	91,486	0.504%	8,535	134,137	0	-83	134,054	252,165	249,917	271,589	269,340
Total	\$1,870,974	83.178%	\$4,612,299	100.000%	\$1,313,641	\$9,109,633	-\$69,994	-\$5,015	\$9,044,625	\$15,582,037	\$15,338,737	\$16,647,229	\$16,403,939

1 Any sub-regional reliability assessment costs in response to U.S. only regulatory initiatives will be considered for allocation to U.S. only BAs consistent with NERC Rules of Procedure section 1102.
 2 Consistent with NERC's Policy on Allocation of Certain Compliance and Enforcement Costs, the NPCC Board approved Allocation Methodologies for Certain NPCC Compliance Program Area Costs Assessed to Non-U.S. Entities.
 3 CORC Program Fundamentals expenses of \$1,870,974 represent 20.34% of the Total CORC Program Costs and are allocated using the Regional NEL based methodology.
 4 Audit and Investigation expenses of \$5,545,096 represent 60.87% of the Total CORC Program Costs. The Canadian costs are allocated utilizing an audit based methodology. The portion of 83.178% attributable to U.S. NPCC is allocated between the New York and New England balancing authority areas based on their respective net energy for load (NEL) as shown in Columns B-1a and C-1a. The ratios in C-1a are applied to the 83.178% of U.S. audit costs to obtain the percentages in Column C-2 b) which are then applied to the 60.87% of CORC costs. Audit based allocation uses Compliance Registry Data registrants as of May 1, 2019.
 5 Mitigation and Enforcement expenses of \$1,693,564 represent 18.59% of the Total CORC Program Costs. The Canadian costs are allocated utilizing an enforcement activity based methodology. The portion of 77.567% attributable to U.S. NPCC is allocated between the New York and New England balancing authority areas based on their respective net energy for load (NEL) as shown in Columns B-1a and C-1a. The ratios in C-1a are applied to the 77.567% of U.S. enforcement costs to obtain the percentages in Column E-2 b) which are then applied to the 18.59% of CORC costs.

Section B — Supplemental Financial Information 2020 Business Plan and Budget



Section B – Supplemental Financial Information

Reserve Balance

Table B-1 Reserve Balance

Working Capital and Operating Reserve Analysis 2019-2020				
REGIONAL ENTITY DIVISION				
	Total Reserve	Operating Reserve	Working Capital	Business Continuity
Beginning Total Reserve, December 31, 2018	4,974,092	2,717,154	1,316,938	940,000
Plus: 2019 ERO Funding (from LSEs or designees)	15,003,411	15,003,411		
Plus: 2019 Other funding sources	67,500	67,500		
Less: 2019 Projected expenses & capital expenditures	(15,618,891)	(15,618,891)		
Projected Total Reserve, December 31, 2019	4,426,112	2,169,174	1,316,938	940,000
Desired Total Reserve, December 31, 2020	3,406,501	1,527,626 ¹	1,383,415 ²	495,460 ³
Less: Projected Total Reserve, December 31, 2019	(4,426,112)	(2,169,174)	(1,316,938)	(940,000)
Increase(decrease) in assessments to achieve desired Total Reserve	(1,019,611)	(641,548)	66,477	(444,540)
2020 Expenses and Capital Expenditures	16,601,647			
Less: Penalty Sanctions ⁴	(120,000)			
Less: Other Funding Sources	(123,300)			
Less: Release of Business Continuity Reserve Funds ³	(444,540)			
Adjustment to Working Capital to achieve desired Total Reserve balance ²	66,477			
Adjustment to Operating Reserve to achieve desired Total Reserve balance ¹	(641,548)			
2020 Assessment	15,338,737			

¹ Operating Reserve within a range from 8.33% to 25.00% of Budget. \$1,527,626 represents 9.20% of the 2020 budget of \$16,601,647

² Working Capital equal to 8.33% of Budget. \$1,383,415 represents 8.33% of the 2020 budget of \$16,601,647

³ Business Continuity Reserve (BCR) established in 2017 as approved by the NPCC Board of Directors to fund Succession Planning related expenses.

⁴ Represents collections July 1, 2018 to June 30, 2019.

Explanation of Changes in Reserve Policy from Prior Year

There was no change to the existing Working Capital and Operating Reserve Policy. A separate Business Continuity Reserve (BCR) in the amount of \$1,000,000 (allocated between the Regional Entity and Criteria Services divisions) was established in 2017 as approved by the NPCC Board of Directors, upon recommendation by the Management Development and Compensation Committee and endorsement by the Finance and Audit Committee, to be drawn upon as subsequently brought before the Board of Directors for approval of release of funds in association with President & CEO succession related activities associated with the planned or a sudden retirement, as well as other sudden changing workforce staffing requirements which could be brought about by coincident multiple staff retirements.

Breakdown by Statement of Activity Sections

The following detailed schedules are in support of the Regional Entity division Statement of Activities on page 13 of the 2020 Business Plan and Budget. All significant variances have been disclosed by program area in the preceding pages.

Penalty Sanctions

U.S. penalty monies received prior to June 30, 2019 are to be used to offset assessments in the 2020 Budget, as documented in the NERC Policy – Accounting, Financial Statement, and Budgetary Treatment of Penalties Imposed and Received for Violations of Reliability Standard. Penalty monies received from July 1, 2018 through June 30, 2019 are listed below. Penalty monies received from July 1, 2019 through June 30, 2020 will be used to offset U.S. load serving entity designee assessments in the 2021 Budget.

Allocation Method: U.S. penalty sanctions received have been allocated to the following Regional Entity division programs to reduce assessments: Reliability Standards; Compliance Monitoring & Enforcement and Organization Registration & Certification; Reliability Assessments and Performance Analysis; Training, Education and Operator Certification; and Situation Awareness and Infrastructure Security. U.S. penalty sanctions are allocated based upon the number of FTEs in the Program divided by the aggregate total FTEs in the Programs receiving the allocation.

Table B-2 Penalty Sanctions

Penalty Sanctions Received Prior to June 30, 2019	Date Received	Amount Received
	7/16/2018	\$ 120,000.00
Total Penalties Received		\$ 120,000.00

Table B-3 Supplemental Funding

Outside Funding Breakdown By Program (excluding ERO Assessments & Penalty Sanctions)	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget
Reliability Standards				
Total	\$ -	\$ -	\$ -	\$ -
Compliance Monitoring, Enforcement & Org. Registration				
	\$ -	\$ -	\$ -	\$ -
	-	-	-	-
Total	\$ -	\$ -	\$ -	\$ -
Reliability Assessment and Performance Analysis				
	\$ -	\$ -	\$ -	\$ -
	-	-	-	-
Total	\$ -	\$ -	\$ -	\$ -
Training and Education				
Workshops	\$ 67,500	\$ 67,500	\$ 67,500	\$ -
Total	\$ 67,500	\$ 67,500	\$ 67,500	\$ -
Situation Awareness and Infrastructure Security				
	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ -
Technical Committees and Member Forums				
	\$ -	\$ -	\$ -	\$ -
Total	\$ -	\$ -	\$ -	\$ -
Administrative Services Programs				
Interest & Investment Income	\$ -	\$ -	\$ 55,800	\$ 55,800
Total	\$ -	\$ -	\$ 55,800	\$ 55,800
Total Outside Funding	\$ 67,500	\$ 67,500	\$ 123,300	\$ 55,800

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- NPCC estimates interest & investment income of \$55,800 in 2020 from investment of reserves in a 100% U.S. Treasury money market fund, which will offset 2020 assessments.

Table B-4 Personnel Expenses

Personnel Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Salaries					
Salary	\$ 7,298,280	\$ 7,298,280	\$ 7,664,262	\$ 365,982	5.0%
Employment Agency Fees	\$ 10,000	\$ 10,000	\$ 16,000	\$ 6,000	60.0%
Temporary Office Services	\$ 24,000	\$ 24,000	\$ 24,000	\$ -	0.0%
Total Salaries	\$ 7,332,280	\$ 7,332,280	\$ 7,704,262	\$ 371,982	5.1%
Total Payroll Taxes	\$ 449,994	\$ 449,994	\$ 479,019	\$ 29,026	6.5%
Benefits					
Education Reimbursement	\$ 32,000	\$ 32,000	\$ 27,500	\$ (4,500)	-14.1%
Training and Seminars	\$ 58,290	\$ 58,290	\$ 83,580	\$ 25,290	43.4%
Medical Insurance	\$ 901,783	\$ 901,783	\$ 1,168,854	\$ 267,071	29.6%
Life-LTD-STD Insurance	\$ 94,804	\$ 94,804	\$ 110,889	\$ 16,085	17.0%
Worker's Compensation	\$ 20,000	\$ 20,000	\$ 32,000	\$ 12,000	60.0%
Vacation	\$ 506,201	\$ 506,201	\$ 504,062	\$ (2,139)	-0.4%
Relocation	\$ -	\$ -	\$ -	\$ -	-
Total Benefits	\$ 1,613,078	\$ 1,613,078	\$ 1,926,885	\$ 313,806	19.5%
Retirement					
Pension Contribution	\$ -	\$ -	\$ -	\$ -	-
Employee Savings Plan	\$ 741,511	\$ 741,511	\$ 770,950	\$ 29,440	4.0%
Savings Admin	\$ 36,000	\$ 36,000	\$ 36,000	\$ -	0.0%
Deferred Compensation	\$ 76,000	\$ 76,000	\$ 76,000	\$ -	0.0%
Total Retirement	\$ 853,511	\$ 853,511	\$ 882,950	\$ 29,440	3.4%
Total Personnel Costs	\$ 10,248,862	\$ 10,248,862	\$ 10,993,117	\$ 744,254	7.3%
FTEs	38.86	38.86	41.09	2.23	5.7%
Cost per FTE					
Salaries	\$ 188,685	\$ 188,685	\$ 187,497	\$ (1,187)	-0.6%
Payroll Taxes	\$ 11,580	\$ 11,580	\$ 11,658	\$ 78	0.7%
Benefits	\$ 41,510	\$ 41,510	\$ 46,894	\$ 5,384	13.0%
Retirement	\$ 21,964	\$ 21,964	\$ 21,488	\$ (476)	-2.2%
Total Cost per FTE	\$ 263,738	\$ 263,738	\$ 267,538	\$ 3,799	1.4%

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- Increase in Training and Seminars is due to an increase per employee training budget.
- Medical insurance increase reflects a premium increase of 8%. Additionally, fewer employees are waiving NPCC coverage for that of a prior employer.
- Personnel expenses include some succession planning related costs that will be funded through business continuity reserves and do not impact assessments.

Table B-5 Meeting Expense

Meeting Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Meetings	\$ 370,750	\$ 370,750	\$ 361,750	\$ (9,000)	-2.4%
Travel	\$ 845,900	\$ 845,900	\$ 845,900	\$ -	0.0%
Conference Calls	\$ 36,000	\$ 36,000	\$ 36,000	\$ -	0.0%
Total Meeting Expenses	\$ 1,252,650	\$ 1,252,650	\$ 1,243,650	\$ (9,000)	-0.7%

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

- No significant variances.

Table B-6 Consultants and Contracts

Consultants	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Consultants					
Reliability Standards	\$ -	\$ -	\$ -	\$ -	-
Compliance Enforcement and Organization Registration and Certification	\$ -	\$ -	\$ -	\$ -	-
Reliability Assessment and Performance Analysis	\$ -	\$ -	\$ -	\$ -	-
Training and Education	\$ -	\$ -	\$ -	\$ -	-
Situation Awareness and Infrastructure Security	\$ -	\$ -	\$ -	\$ -	-
Member Forums	\$ -	\$ -	\$ -	\$ -	-
General and Administrative	\$ -	\$ -	\$ 279,000	\$ 279,000	-
Legal and Regulatory	\$ -	\$ -	\$ -	\$ -	-
Information Technology	\$ -	\$ -	\$ -	\$ -	-
Human Resources	\$ -	\$ -	\$ -	\$ -	-
Accounting and Finance	\$ -	\$ -	\$ -	\$ -	-
Consultants Total	\$ -	\$ -	\$ 279,000	\$ 279,000	-
Contracts	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Reliability Standards	\$ 10,000	\$ 10,000	\$ 20,000	\$ 10,000	100.0%
Compliance Enforcement and Organization Registration and Certification	\$ 1,357,150	\$ 1,357,150	\$ 1,097,150	\$ (260,000)	-19.2%
Reliability Assessment and Performance Analysis	\$ 430,000	\$ 430,000	\$ 533,000	\$ 103,000	24.0%
Training and Education	\$ -	\$ -	\$ -	\$ -	-
Situation Awareness and Infrastructure Security	\$ 130,000	\$ 130,000	\$ 60,000	\$ (70,000)	-53.8%
Member Forums	\$ -	\$ -	\$ -	\$ -	-
General and Administrative	\$ 88,000	\$ 88,000	\$ 75,000	\$ (13,000)	-14.8%
Legal and Regulatory	\$ -	\$ -	\$ -	\$ -	-
Information Technology	\$ -	\$ -	\$ -	\$ -	-
Human Resources	\$ -	\$ -	\$ -	\$ -	-
Accounting and Finance	\$ 7,000	\$ 7,000	\$ 7,000	\$ -	0.0%
Contracts Total	\$ 2,022,150	\$ 2,022,150	\$ 1,792,150	\$ (230,000)	-11.4%
Total Consultants and Contracts	\$ 2,022,150	\$ 2,022,150	\$ 2,071,150	\$ 49,000	2.4%

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- General and Administrative - During 2020 an executive search will be conducted in order to identify a successor CEO. Consulting costs related to the search efforts will be funded from the existing Business Continuity Reserves. 2020 assessments will not be impacted by these succession-related expenses.
- Ongoing effort to decrease the use of consultants and contractors when possible. (See program area sections for detail regarding a specific program area.)

Table B-7 Office Rent

Office Rent	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Office Rent	\$ 650,000	\$ 650,000	\$ 650,000	\$ -	0.0%
Utilities	\$ 45,000	\$ 45,000	\$ 47,000	\$ 2,000	4.4%
Maintenance	\$ 37,000	\$ 37,000	\$ 37,000	\$ -	0.0%
Security	\$ 2,700	\$ 2,700	\$ 2,700	\$ -	0.0%
Real Estate Taxes	\$ 86,000	\$ 86,000	\$ 96,000	\$ 10,000	11.6%
Total Office Rent	\$ 820,700	\$ 820,700	\$ 832,700	\$ 12,000	1.5%

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- No significant variances.

Table B-8 Office Costs

Office Costs	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Telephone	\$ 88,720	\$ 88,720	\$ 88,720	\$ -	0.0%
Internet Expense	\$ 82,740	\$ 82,740	\$ 74,340	\$ (8,400)	-10.2%
Office Supplies	\$ 33,000	\$ 33,000	\$ 33,000	\$ -	0.0%
Computer Supplies and Maintenance	\$ 397,387	\$ 397,387	\$ 424,921	\$ 27,534	6.9%
Subscriptions & Publications	\$ 13,500	\$ 13,500	\$ 14,000	\$ 500	3.7%
Dues	\$ 3,400	\$ 3,400	\$ 3,400	\$ -	0.0%
Postage	\$ 1,200	\$ 1,200	\$ 1,200	\$ -	0.0%
Express Shipping	\$ 10,000	\$ 10,000	\$ 6,000	\$ (4,000)	-40.0%
Copying	\$ 26,400	\$ 26,400	\$ 26,400	\$ -	0.0%
Reports	\$ 8,000	\$ 8,000	\$ 2,000	\$ (6,000)	-75.0%
Stationary and Office Forms	\$ 2,000	\$ 2,000	\$ 2,000	\$ -	0.0%
Equipment Repair/Service Contracts	\$ -	\$ -	\$ -	\$ -	-
Bank Charges	\$ 10,000	\$ 10,000	\$ 10,000	\$ -	0.0%
Sales and Use Tax	\$ -	\$ -	\$ -	\$ -	-
Merchant Credit Card Fees	\$ -	\$ -	\$ -	\$ -	-
Presentation and Publicity	\$ -	\$ -	\$ -	\$ -	-
Total Office Costs	\$ 676,347	\$ 676,347	\$ 685,981	\$ 9,634	1.4%

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- Total Office costs are expected to remain relatively flat.

Table B-9 Professional Services

Professional Services	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
BOT Fee	\$ 346,000	\$ 346,000	\$ 332,000	\$ (14,000)	-4.0%
BOT Search Fee	\$ -	\$ -	\$ -	\$ -	-
Legal - Reorganization	\$ -	\$ -	\$ -	\$ -	-
Accounting & Auditing Fees	\$ 300,000	\$ 300,000	\$ 310,000	\$ 10,000	3.3%
Legal Fees - Other	\$ 262,000	\$ 262,000	\$ 235,000	\$ (27,000)	-10.3%
Insurance - Commercial	\$ 70,000	\$ 70,000	\$ 70,000	\$ -	0.0%
Total Services	\$ 978,000	\$ 978,000	\$ 947,000	\$ (31,000)	-3.2%

Table B-10 Miscellaneous

Miscellaneous Expense	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Miscellaneous Expense	\$ 51,000	\$ 51,000	\$ 51,000	\$ -	0.0%
Total Miscellaneous Expense	\$ 51,000	\$ 51,000	\$ 51,000	\$ -	0.0%

Table B-11 Other Non-Operating Expenses

Other Non-Operating Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Interest Expense	\$ -	\$ -	\$ -	\$ -	-
Office Relocation	\$ -	\$ -	\$ -	\$ -	-
Total Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	-

Table B-12 Fixed Assets

Fixed Asset Additions	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Equipment CapEx	\$ -	\$ -	\$ -	\$ -	-
Computer & Software CapEx	\$ 170,000	\$ 170,000	\$ 170,000	\$ -	0.0%
Furniture & Fixtures CapEx	\$ -	\$ -	\$ -	\$ -	-
Leasehold Improvements	\$ -	\$ -	\$ -	\$ -	-
Allocation of Fixed Assets	\$ -	\$ -	\$ -	\$ -	-
Total Fixed Asset Additions	\$ 170,000	\$ 170,000	\$ 170,000	\$ -	0.0%

Explanation of Significant Variances –2020 Budget versus 2019 Budget

- Capital expenditures planned for 2020 include the continuing implementation of the document management system and equipment upgrades.

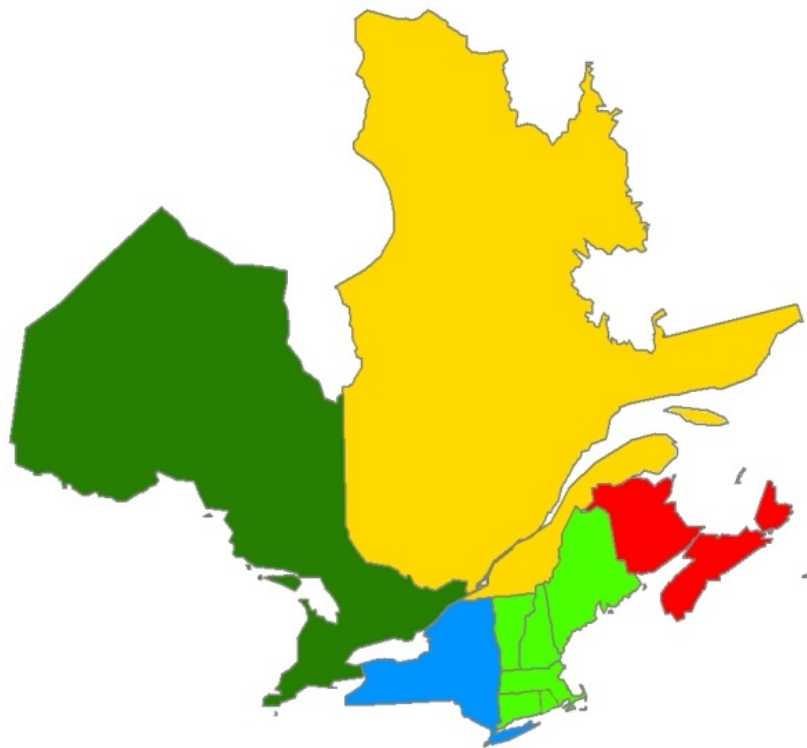
Table B-13

Statement of Activities and Capital Expenditures 2020 Budget & Projected 2021 and 2022 Budgets							
	2020 Budget	2021 Projection	\$ Change 20 v 21	% Change 20 v 21	2022 Projection	\$ Change 21 v 22	% Change 21 v 22
Funding							
ERO Funding							
ERO Assessments	\$ 15,338,737	\$ 15,762,784	\$ 424,048	2.8%	\$ 16,206,361	\$ 443,577	2.7%
Penalty Sanctions	120,000	-	(120,000)	-100.0%	-	-	
Total ERO Funding	\$ 15,458,737	\$ 15,762,784	\$ 304,048	2.0%	\$ 16,206,361	\$ 443,577	2.7%
Membership Dues	-	-	-	-	-	-	
Testing Fees	-	-	-	-	-	-	
Services & Software	-	-	-	-	-	-	
Workshops & Miscellaneous	67,500	67,500	-	0.0%	67,500	-	0.0%
Interest & Investment Income	55,800	58,590	2,790	5.0%	61,520	2,930	5.0%
Total Funding (A)	\$ 15,582,037	\$ 15,888,874	\$ 306,838	2.0%	\$ 16,335,381	\$ 446,506	2.8%
Expenses							
Personnel Expenses							
Salaries	\$ 7,704,262	\$ 7,935,390	\$ 231,128	3.0%	\$ 8,173,452	\$ 238,062	3.0%
Payroll Taxes	479,019	493,390	14,371	3.0%	508,192	14,802	3.0%
Benefits	1,943,385	2,098,855	155,471	8.0%	2,266,764	167,908	8.0%
Retirement Costs	882,950	909,439	26,489	3.0%	936,722	27,283	3.0%
Total Personnel Expenses	\$ 11,009,617	\$ 11,437,074	\$ 427,458	3.9%	\$ 11,885,129	\$ 448,055	3.9%
Meeting Expenses							
Meetings	\$ 361,750	\$ 365,368	\$ 3,618	1.0%	\$ 369,021	\$ 3,654	1.0%
Travel	845,900	854,359	8,459	1.0%	862,903	8,544	1.0%
Conference Calls	36,000	36,360	360	1.0%	36,724	364	1.0%
Total Meeting Expenses	\$ 1,243,650	\$ 1,256,087	\$ 12,437	1.0%	\$ 1,268,647	\$ 12,561	1.0%
Operating Expenses							
Consultants & Contracts	\$ 2,071,150	\$ 2,071,150	-	0.0%	\$ 2,071,150	\$ -	0.0%
Office Rent	832,700	841,027	8,327	1.0%	849,437	8,410	1.0%
Office Costs	685,981	699,701	13,720	2.0%	713,695	13,994	2.0%
Professional Services	947,000	947,000	-	0.0%	947,000	-	0.0%
Miscellaneous	51,000	51,510	510	1.0%	52,025	515	1.0%
Total Operating Expenses	\$ 4,587,831	\$ 4,610,388	\$ 22,557	0.5%	\$ 4,633,307	\$ 22,919	0.5%
Total Direct Expenses	\$ 16,841,098	\$ 17,303,548	\$ 462,451	2.7%	\$ 17,787,084	\$ 483,535	2.8%
Indirect Expenses	\$ (409,450)	\$ (417,639)	\$ (8,189)	2.0%	\$ (425,992)	\$ (8,353)	2.0%
Other Non-Operating Expenses	\$ -	\$ -	\$ -		\$ -	\$ -	
Total Expenses (B)	\$ 16,431,647	\$ 16,885,909	\$ 454,262	2.8%	\$ 17,361,092	\$ 475,182	2.8%
Change in Assets	\$ (849,611)	\$ (997,035)	\$ (147,424)	17.4%	\$ (1,025,711)	\$ (28,676)	2.9%
Fixed Assets Additions (C)	\$ 170,000	\$ 100,000	\$ (70,000)	-41.2%	\$ 100,000	\$ (50,000)	-50.0%
TOTAL BUDGET (=B+C)	\$ 16,601,647	\$ 16,985,909	\$ 384,262	2.3%	\$ 17,461,092	\$ 475,182	2.8%
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (1,019,611)	\$ (1,097,035)	\$ (77,424)	7.6%	\$ (1,125,711)	\$ (28,676)	0.0%
FTEs	41.09	41.09	0	0.0%	41.09	0	0.0%

Assumptions

- No changes in assumptions
- Staffing remains flat
- Change in assessments is equal to change in total budget

Section C — Criteria Services Division Activities 2020 Business Plan and Budget



Section C – Criteria Services Division Activities

Criteria Services Division			
(in whole dollars)			
	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	2.14	2.16	0.02
Total Direct Expenses	\$662,756	\$709,217	\$46,461
Total Indirect Expenses	\$415,818	\$409,450	(\$6,368)
Other Non-Operating Expenses	\$0	\$0	\$0
Working Capital and Operating Reserves Requirement	(\$49,707)	(\$79,265)	(\$29,558)
Fixed Asset Additions	\$30,000	\$30,000	\$0
Funding Requirement	\$1,058,866	\$1,069,402	\$10,536

NPCC Regionally-Specific Criteria Services Background

NPCC Criteria Services division activities are based on the development, maintenance (including retirement when no longer needed), and promulgation of new or revised Regionally-specific, more stringent reliability criteria and supporting guideline or procedural documents. The requirements in NPCC Reliability Criteria apply only to those facilities defined as NPCC Bulk Power System elements through the performance based methodology identified in the NPCC Document A-10, “Classification of Bulk Power System Elements.”

In accordance with the NERC Rules of Procedure (RoP) Section 313, Regional Entities may develop Regional Criteria necessary to implement, augment, or facilitate compliance with NERC Reliability Standards. These Regional Criteria may also be utilized to address issues not within the scope or jurisdiction of FERC as outlined in Section 215 of the Federal Power Act, such as resource adequacy. Regional Criteria may also address Canadian Provincial reliability issues, and may include specific operating or planning parameters, guides, agreements, protocols or other documents used to enhance the reliability of the Bulk Power System in the Region. These documents typically provide benefits by promoting more consistent implementation of the NERC Reliability Standards within the Region. These documents are not NERC Reliability Standards, Regional Reliability Standards, or Regional Variances, and therefore are not enforceable under the authority delegated by NERC pursuant to delegation agreements.

As NERC Reliability Standards are revised or new standards are developed, NPCC performs reviews of any associated Regional Criteria for possible impact.

For 2020 and beyond, the potential reliability impacts of increased penetration of Distributed Energy Resources (DER, e.g. solar and wind), and changing fuel mixes warrant further consideration. The Criteria Services Division has a unique opportunity to review these issues and develop criteria, guideline, and procedural documents for DER which may be outside of the jurisdiction of FERC and NERC Reliability Standards. Participation of the entities responsible for development of DER renewable resources to develop reliability documents will become increasingly important over time. Outreach, collaboration, and coordination of topics related to DER will enable NPCC to develop guidelines allowing more effective integration of these resources.

Increasing resilience of the BPS through alternative approaches to standards development using potential NPCC criteria, guidelines, and whitepapers will also be continually reviewed by NPCC's body of subject matter experts.

Membership and Governance

Full members, in accordance with NPCC's Amended and Restated Bylaws, are subject to compliance with Regionally-specific criteria and receive criteria-related services from the Criteria Services division.

Full Members, aside from those who perform the Balancing Authority function, are not assessed an annual membership fee. Those that perform Balancing Authority functions are assessed and remit a proportional net energy for load share of expenses for Criteria Services. NPCC would also directly assign Criteria Service division costs to a Balancing Authority Area or entity, where significant costs are incurred for that Balancing Authority Area. The funding for NPCC's Criteria Services division is approved by the NPCC Board of Directors.

Under Criteria Services NPCC will identify for membership, those entities involved in emerging technologies to assure that those entities that have an impact on Bulk Electric System reliability are included in appropriate NPCC activities.

Criteria Services Division Functional Scope

Through its Criteria Services division, NPCC promotes the reliable and efficient operation of the international, interconnected bulk power systems in Northeastern North America through the establishment of Regionally-specific criteria, and monitoring and enforcement of compliance with such criteria.

NPCC provides Full Members with Regional reliability assurance services, and acts as the vehicle through which States and Provinces can fulfill their political mandates, with respect to resource adequacy, as well as overseeing the Northeastern North American electric infrastructure.

Major 2020 Assumptions and Cost Impacts

The Criteria Services division activities are expected to remain stable or slightly increase throughout 2020 depending on reliability need.

- The Criteria Compliance Enforcement Program (CCEP) review and evaluation process is the mechanism for monitoring key criteria attributes as determined by the respective NPCC Task Forces and the Compliance Committee.
- Past non-compliances, if any, followed the due process stated in the CCEP-1 process document and proper resolution/enforcement action taken.

2020 Primary Goals and Objectives

- Continue with the development and maintenance of a set of NPCC Directories which augment or add specificity to the NERC Reliability Standards and which clearly delineate the more stringent NPCC criteria requirements. The combination of North American and more stringent NPCC Regional criteria provide for consistency and operational clarity while providing more robust defense in-depth, results based, criteria requirements to ensure NPCC BPS reliability.
- Continually review the criteria found in the NPCC Directories and the ERO standards to ensure no redundancies or inconsistencies exist.

- Retire Directories and/or Criteria which have been overtaken by improved NERC standards.
 - Directory No. 12 “Automatic Underfrequency Load Shedding Requirements” will be retired in 2020 upon approval of PRC-006-NPCC-2 “Automatic Underfrequency Load Shedding” Regional Standard
- Identify opportunities to develop criteria, procedures or guideline documents to address reliability related matters with DER.
- Identify opportunities to address improvements in BES resilience with NPCC processes and documentation.
- Continually review the need to file revised and updated more stringent requirements with the New York State Department of Public Service and Canadian Provinces as applicable.
- Review, maintain, and revise the NPCC Regional Reliability Directories to facilitate compliance assessments and ensure the Criteria portions of the Directories augment and are not duplicative with, the approved and effective NERC Standards.
- The Criteria Services division and CCEP Working Group (reporting to the Compliance Committee) will work with the various Task Forces to develop Criteria Compliance Reporting Forms for any additional NPCC Directories to ensure that the more stringent or Regionally-specific criteria is being met.
- The Criteria Services division and CCEP working group will work with TFCO, TFCP, TFSS, and TFSP to review criteria and measures within each specific NPCC Directory to identify and develop them into specific reporting forms for approval.
- Continually review impact of Bulk Electric System definition on Directory and Criteria content and compliance reporting.
- Continually review potential impacts of Sector or NPCC organizational changes on the Directories and Criteria by performing a review of enforcement and arbitration processes as needed.
- Assist Legal with preparation of revised Directories for Regulatory filings with the individual Provinces in accordance with their respective Memorandum of Understandings (MOUs) as well as the State of New York Public Service Commission.
- Facilitate any requested clarifications for NPCC Criteria with the necessary subject matter experts and also identify any other potential opportunities for clarifications of the Criteria.
- Conduct review of the following Documents:
 - Directory No. 7 – *Special Protection Systems* – the TFSP will serve as lead Task Force working in conjunction with TFCP and TFSS on revisions required to ensure consistency with the development of the NERC standard on Remedial Action Schemes.
 - Review and respond to Requests for Clarifications to existing NPCC Standards, Directories, and Criteria.

NPCC Reliability Directory Maintenance and Development

The NPCC Regional Reliability Directories were developed to demonstrate that the NPCC more stringent criteria augment, add specificity, or address issues not covered in the NERC Reliability Standards as mandated by the NERC Rules of Procedure. The conversion of NPCC’s reliability criteria into Directories was undertaken to remove any redundancies with the NERC or NPCC Regional Reliability Standards and to clearly delineate the more stringent NPCC criteria requirements, assign Functional Model designations to those responsible for compliance and create measurable compliance criteria. Subsequent to the initial establishment of the Directories, which also organized functionally related B Guidelines and C Procedures into a single Directory, the Directories were further reviewed to translate existing criteria language into a requirements and “standards type” format. The development of the criteria into NERC style requirements

facilitates the NPCC Region's CCEP and also ensures the delineation of the more stringent and more specific Regional criteria from the latest approved and effective set of NERC ERO standards.

In 2020, work will continue with the maintenance, revision, or potential retirement of individual Directories to address any actual or anticipated redundancies with new or modified NERC or NPCC Reliability Standards. The ongoing review and maintenance of the Directories will require Task Force and Criteria Services staff to support this effort and to serve as subject matter experts. In addition to the ongoing review of the criteria within the Directories for potential duplicity with the NERC standards, any Directories that have not had the criteria translated into NERC style requirements will also be reviewed in order to achieve criteria "requirements" which are clear, concise and measurable. Also, a standards style template will continue to be applied to the existing Directories to make them more consistent with the format of NERC standards. As NERC standards improve, the need for NPCC Directories and the amount of criteria contained therein may decrease over time, however in the interim, significant review is necessary to ensure the criteria remain consistent with the NERC standards as outlined in the NERC Rules of Procedure. NPCC will conduct internal reviews of all draft standards against Regional criteria and utilize subject matter experts to identify reliability and compliance related concerns. NPCC will file the revised NPCC Directories and notifications of retirements of Directories with the Canadian governmental and/or provincial Regulatory authorities within the NPCC "footprint", on an as needed basis, in accordance with established provincial procedures and agreements executed with NPCC.

Additionally, as NERC Reliability Standards are developed, associated Directories will be reviewed for continued need. This review will identify the incremental reliability enhancement the Directory's criteria will yield, determine if the enhancement is sufficient to warrant retention and if so, are there any potential cost effective alternatives that may exist to achieve that enhanced level of reliability.

NPCC Operations and Planning Directories

The following Directories are envisioned to remain active for 2020.

Directory #1, Design and Operation of the Bulk Power System.

This Directory documents NPCC's Regionally-specific, more stringent criteria, and demonstrates coordination and consistency with all the existing NERC TPL, BAL, IRO, INT, MOD, TOP, PRC and VAR standards. The NPCC TFCP and TFCO completed a review of the Directory#1 criteria, during which the criteria was translated into NERC style requirements and revisions were enacted to ensure consistency with recent changes to the TPL and TOP standards.

Directory #2, Emergency Operations

This Directory documents NPCC's Regionally-specific, more stringent criteria, and demonstrates coordination and consistency with all the existing NERC EOP and TOP standards. The NPCC Task Force on Coordination of Operation is reviewing this Directory in 2019.

Directory #4, System Protection Criteria

This Directory documents NPCC's Regionally-specific, more stringent criteria, and demonstrates coordination and consistency with certain applicable NERC PRC standards. The NPCC Task Force on System Protection will lead this review and revision.

Directory #5, *Reserve*

This Directory documents NPCC's Regionally-specific, more stringent criteria, and demonstrates coordination and consistency with all the existing applicable NERC BAL, INT, and IRO standards. The NPCC Task Force on Coordination of Operation will lead this review and revision and ensure consistency with the BAL standards.

Directory #7, *Special Protection Systems*

This Directory documents NPCC's Regionally-specific, more stringent criteria for application and approval of SPS. The NPCC Task Force on System Protection will lead this review and revision and ensure consistency with the Remedial Action Scheme PRC-012 standard.

Directory #8, *System Restoration*

This Directory documents NPCC's Regionally-specific, more stringent criteria with which each applicable entity must plan for and perform power system restoration following a major or a total blackout, and demonstrates coordination and consistency with applicable NERC EOP standards. The NPCC Task Force on Coordination of Operation lead the review and revision of this Directory in 2018. The Directory was re-formatted to be consistent with the style of NERC standards.

Directory #11, *Disturbance Monitoring Equipment*,

This directory documents NPCC's Regionally-specific, more stringent criteria, and demonstrates coordination and consistency with certain existing NERC PRC standards. The NPCC Task Force on System Protection anticipates the development and approval of Directory#11 in order to facilitate the retirement of PRC -002-NPCC-1 and will lead this review and revision.

NPCC Criteria Compliance and Enforcement Program (CCEP)

The NPCC Criteria Services division supports the reliable operation of the NPCC Bulk Power System (BPS) through implementation of the NPCC Criteria Compliance Program (CCEP). This program monitors, assesses, and enforces compliance on a subset of the regionally specific, more stringent NPCC Criteria that are unique to the NPCC BPS and are not duplicative of the NERC Reliability Standards. The physical characteristics and topology of the transmission system within the Region require that certain aspects of criteria be monitored for compliance.

The Criteria Services division and the NPCC Compliance Committee (CC) administer the CCEP. The CC is a stakeholder body consisting of NPCC Members and is structured by the seven sectors that appear in the NPCC Bylaws.

Noncompliance to NPCC Criteria is not subject to monetary sanctions and results in a notification of noncompliance to the Chief Executive Officer of the appropriate Full Member.

The CCEP program is described in document CCEP-1, *NPCC Criteria Compliance and Enforcement Program (CCEP) Process Document*. The CC reviews CCEP-1 annually and revisions to CCEP-1 are reviewed and approved by the CC.

The CCEP-1 document:

1. Provides a comprehensive CCEP Process Flow Diagram showing the process of evaluating and approving Criteria Certification submittals, and additional processes and responsibilities in the event that noncompliances, disputes, and sanctions arise;

2. Describes the roles and responsibilities of Reporting Members, the CC, the NPCC Reliability Coordinating Committee, and the Enforcement Panel in the compliance review and enforcement process
3. Describes non-monetary Sanctions, the Lateness Policy, and the Arbitration/Dispute Resolution process
4. Addresses the development of Mitigation Plans for any violations under the enforcement process

The CCEP Working Group (under the CC) develops a draft of the annual CCEP Implementation Plan and updates the blank certification templates for the upcoming Plan year. The Implementation Plan identifies the subset of Criteria that must be certified to and includes the certification form due dates. The draft CCEP Implementation Plan for the coming year and the draft certification templates are then submitted to the CC for review and approval.

The CC members review the completed certification forms that are returned by Full Members. NPCC Staff develops an assessment report and scorecard that summarizes the certifications that were received for the CC to review and approve. The assessment report and any recommendations on noncompliances are then presented to the NPCC Reliability Coordinating Committee (RCC) for approval.

Compliance to the NPCC Criteria is a responsibility of the NPCC Members and is codified in the *AMENDED AND RESTATED BYLAWS OF NORTHEAST POWER COORDINATING COUNCIL, INC.* Implementation of the CCEP is also consist with the current Memorandum of Understanding that NPCC has with its Canadian Members.

Explanation of Significant Variances – 2020 Budget versus 2019 Budget

- No significant variances.

2019 Budget and Projection and 2020 Budget Comparisons

Statement of Activities and Capital Expenditures					
2019 Budget & Projection, and 2020 Budget					
CRITERIA SERVICES DIVISION					
	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)
Funding					
ERO Funding					
ERO Assessments	\$ -	\$ -	\$ -	\$ -	\$ -
Penalty Sanctions	-	-	-	-	-
Total ERO Funding	\$ -	\$ -	\$ -	\$ -	\$ -
Membership Dues	1,058,866	1,058,866	-	1,069,402	10,536
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops & Misc Revenue	-	-	-	-	-
Interest & Investment Income	-	-	-	-	-
Total Funding (A)	\$ 1,058,866	\$ 1,058,866	\$ -	\$ 1,069,402	\$ 10,536
Expenses					
Personnel Expenses					
Salaries	\$ 371,938	\$ 371,938	\$ -	\$ 367,979	\$ (3,959)
Payroll Taxes	23,696	23,696	-	24,864	1,168
Benefits	102,779	102,779	-	123,261	20,482
Retirement Costs	43,182	43,182	-	41,954	(1,228)
Total Personnel Expenses	\$ 541,596	\$ 541,596	\$ -	\$ 558,057	\$ 16,462
Meeting Expenses					
Meetings	\$ 5,000	\$ 5,000	\$ -	\$ 14,000	\$ 9,000
Travel	56,800	56,800	-	56,800	-
Total Meeting Expenses	\$ 61,800	\$ 61,800	\$ -	\$ 70,800	\$ 9,000
Operating Expenses, excluding Depreciation					
Consultants & Contracts	\$ 55,360	\$ 55,360	\$ -	\$ 76,360	\$ 21,000
Office Rent	-	-	-	-	-
Office Costs	-	-	-	-	-
Professional Services	-	-	-	-	-
Computer & Equipment Leases	-	-	-	-	-
Miscellaneous	4,000	4,000	-	4,000	-
Total Operating Expenses, excluding Depreciation	\$ 59,360	\$ 59,360	\$ -	\$ 80,360	\$ 21,000
Total Direct Expenses	\$ 662,756	\$ 662,756	\$ -	\$ 709,217	\$ 46,462
Indirect Expenses	\$ 415,818	\$ 415,818	\$ -	\$ 409,450	\$ (6,368)
Other Non-Operating Expenses	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expenses (B)	\$ 1,078,574	\$ 1,078,574	\$ -	\$ 1,118,668	\$ 40,094
Change in Net Assets (=A-B)	\$ (19,707)	\$ (19,707)	\$ -	\$ (49,265)	\$ (29,558)
Fixed Asset Additions, excluding Right of Use Assets (C)	\$ 30,000	\$ 30,000	\$ -	\$ 30,000	\$ -
TOTAL BUDGET (=B+C)	\$ 1,108,574	\$ 1,108,574	\$ -	\$ 1,148,668	\$ 40,094
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	\$ (49,707)	\$ (49,707)	\$ -	\$ (79,265)	\$ (29,558)

Personnel Analysis

Total FTEs by Program Area	Budget 2019	Projection 2019	Direct FTEs 2020 Budget	Shared FTEs ¹ 2020 Budget	Total FTEs 2020 Budget	Change from 2019 Budget
CRITERIA SERVICES DIVISION						
Operational Programs						
Reliability Standards	1.07	1.07	1.00	0.08	1.08	0.01
Compliance Enforcement and Organization Registration and Certification	0.00	0.00	0.00	0.00	0.00	0.00
Training and Education	0.00	0.00	0.00	0.00	0.00	0.00
Reliability Assessment and Performance Analysis	1.07	1.07	1.00	0.08	1.08	0.01
Situation Awareness and Infrastructure Security	0.00	0.00	0.00	0.00	0.00	0.00
Total FTEs Operational Programs	2.14	2.14	2.00	0.16	2.16	0.02
Administrative Programs						
Member Forums	0.00	0.00	0.00	0.00	0.00	0.00
General and Administrative	0.00	0.00	0.00	0.00	0.00	0.00
Information Technology	0.00	0.00	0.00	0.00	0.00	0.00
Legal and Regulatory	0.00	0.00	0.00	0.00	0.00	0.00
Human Resources	0.00	0.00	0.00	0.00	0.00	0.00
Accounting and Finance	0.00	0.00	0.00	0.00	0.00	0.00
Total FTEs Administrative Programs	0.00	0.00	0.00	0.00	0.00	0.00
Total FTEs	2.14	2.14	2.00	0.16	2.16	0.02

¹A shared FTE is defined as an employee who performs both Regional Entity and Criteria Services division functions.

Reserve Analysis 2019 - 2020

Working Capital and Operating Reserve Analysis 2019-2020				
CRITERIA SERVICES DIVISION				
	Total Reserve	Operating Reserve	Working Capital	Business Continuity
Beginning Total Reserve, December 31, 2018	571,369	422,614	88,755	60,000
2019 Non-Statutory Funding (from members)	1,058,866	1,058,866		
Plus: 2019 Other funding sources	0	0		
Less: 2019 Projected expenses & fixed asset additions	(1,108,574)	(1,108,574)		
Projected Total Reserve, December 31, 2019	521,661	372,906	88,755	60,000
Desired Total Reserve, December 31, 2020	442,396	320,137 ¹	95,718 ²	26,540 ³
Less: Projected Total Reserve, December 31, 2019	(521,661)	(372,906)	(88,755)	(60,000)
Increase(decrease) in assessments to achieve desired Total Reserve	(79,265)	(52,769)	6,963	(33,460)
2020 Funding requirement for expenses and fixed asset additions	1,148,668			
Less: Other Funding Sources	(4,200)			
Less: Release of Business Continuity Reserve Funds ³	(33,460)			
Adjustment to Working Capital to achieve desired Total Reserve balance ²	6,963			
Adjustment to Operating Reserve to achieve desired Total Reserve balance ¹	(52,769)			
2020 Funding and reserve requirement	1,065,202			

¹ Total NPCC Operating Reserve must be within a range from 8.33% to 25.00% of Budget. \$320,137 represents 27.87% of the 2019 CS budget of \$1,148,668.

² Total NPCC Working Capital must equal 8.33% of Budget. \$95,718 represents 8.33% of the 2019 CS budget of \$1,148,668.

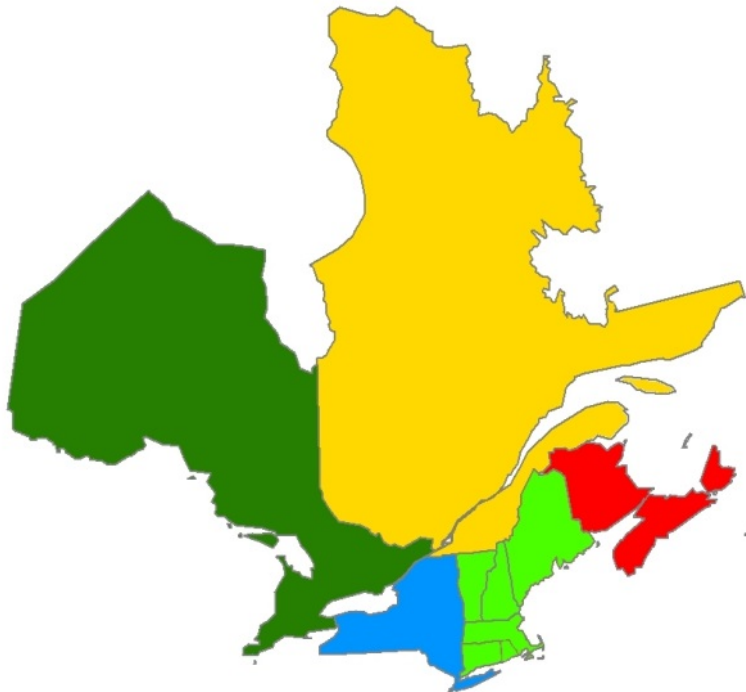
³ Business Continuity Reserve (BCR) established in 2017 as approved by the NPCC Board of Directors to fund Succession Planning related expenses.

Explanation of Changes in Reserve Policy from Prior Year

There was no change to the existing Working Capital and Operating Reserve Policy. A separate Business Continuity Reserve (BCR) in the amount of \$1,000,000 (allocated between the Regional Entity and Criteria Services divisions) was established in 2017 as approved by the NPCC Board of Directors, upon recommendation by the Management Development and Compensation Committee and endorsement by the Finance and Audit Committee, to be drawn upon as subsequently brought before the Board of Directors for approval of release of funds in association with President & CEO succession related activities associated with the planned or a sudden retirement, as well as other sudden changing workforce staffing requirements which could be brought about by coincident multiple staff retirements.

Section D – Additional Consolidated Financial Statements

2020 Business Plan and Budget



Section D — Additional Financial Statements

Statement of Financial Position

Statement of Financial Position				
2018 Audited, 2019 Projection, and 2020 Budget				
Regional Entity and Criteria Services Division				
		(Per Audit)	Projected	Budget
		31-Dec-18	31-Dec-19	31-Dec-20
ASSETS				
Cash		\$ 6,912,908	\$ 2,095,000	\$ 2,100,000
Restricted cash		270,293	270,000	150,000
Temporary cash investments		1,840,294	5,300,000	4,111,000
Prepaid expenses		244,237	245,000	245,000
Other assets		247,216	250,000	272,000
Equipment and leasehold improvements, net		611,242	564,000	504,000
Total Assets		\$ 10,126,190	\$ 8,724,000	\$ 7,382,000
LIABILITIES AND NET ASSETS				
Liabilities				
Accrued expenses and other liabilities		\$ 2,817,673	\$ 2,841,000	\$ 2,879,000
Deferred revenue		509,901	-	-
Deferred rent		526,061	440,000	339,000
Total Liabilities		3,853,635	3,281,000	3,218,000
Net Assets - Without Donor Restrictions				
Available for operations		5,272,555	4,443,000	3,642,000
Board designated for future use		1,000,000	1,000,000	522,000
Total Net Assets Without Donor Restrictions		6,272,555	5,443,000	4,164,000
Total Liabilities and Net Assets		\$ 10,126,190	\$ 8,724,000	\$ 7,382,000

Section D — Additional Financial Statements

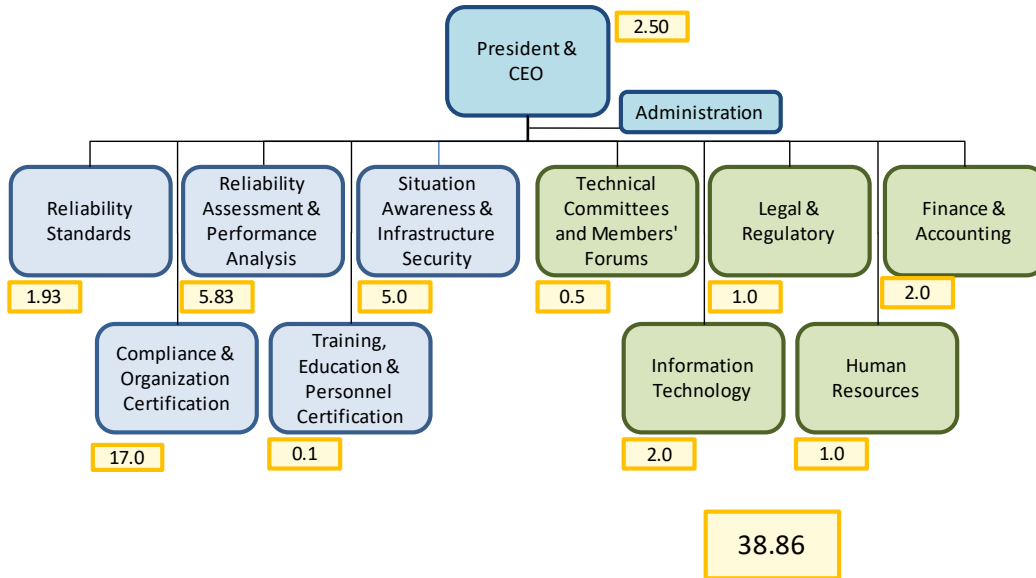
NPCC Statement of Activities 2020 Budget	RE Division Total	Reliability Standards (Section 300)	Compliance Monitoring and Enforcement and Organization Registration and Certification (Section 400 & 500)	Reliability Assessment and Performance Analysis (Section 800)	Training, Education, and Operator Certification (Section 900)	Situation Awareness and Infrastructure Security (Section 1000)	Technical Committees and Member Forums	Administrative Services
Funding								
ERO Funding								
ERO Assessments	15,338,737	1,063,510	9,034,625	3,210,055	171,524	2,484,879	-	(625,856)
Penalty Sanctions	120,000	7,505	69,994	21,115	389	20,998	-	-
Total ERO Funding	15,458,737	1,071,015	9,104,618	3,231,169	171,912	2,505,877	-	(625,856)
Membership Dues	-	-	-	-	-	-	-	-
Testing Fees	-	-	-	-	-	-	-	-
Services & Software	-	-	-	-	-	-	-	-
Workshops & Misc Revenue	67,500	-	-	-	67,500	-	-	-
Interest & Investment Income	55,800	-	-	-	-	-	-	55,800
Total Funding (A)	15,582,037	1,071,015	9,104,618	3,231,169	239,412	2,505,877	-	(570,056)
Expenses								
Personnel Expenses								
Salaries	7,704,262	400,744	2,928,438	1,006,128	11,793	924,110	42,551	2,433,049
Payroll Taxes	479,019	23,034	202,717	64,023	939	61,713	3,940	126,595
Benefits	1,943,385	110,172	732,104	218,787	5,652	202,020	19,182	674,649
Retirement Costs	882,950	43,833	314,664	109,418	1,478	99,986	5,270	313,571
Total Personnel Expenses	11,009,617	577,783	4,177,923	1,398,356	19,862	1,287,829	70,943	3,547,864
Meeting Expenses								
Meetings	361,750	5,000	15,000	22,000	185,000	8,000	750	126,750
Travel	845,900	90,900	300,400	216,200	15,000	94,300	4,100	129,100
Conference Calls	36,000	-	-	-	-	-	-	36,000
Total Meeting Expenses	1,243,650	95,900	315,400	238,200	200,000	102,300	4,850	291,850
Operating Expenses, excluding Depreciation								
Consultants & Contracts	2,071,150	20,000	1,097,150	533,000	-	60,000	-	361,000
Office Rent	832,700	-	-	-	-	-	-	832,700
Office Costs	685,981	-	-	-	-	-	-	685,981
Professional Services	947,000	-	-	-	-	-	-	947,000
Miscellaneous	51,000	-	-	-	-	-	-	51,000
Total Operating Expenses, excluding Depreciation	4,587,831	20,000	1,097,150	533,000	-	60,000	-	2,877,681
Total Direct Expenses	16,841,098	693,683	5,590,473	2,169,556	219,862	1,450,129	75,793	6,717,395
Indirect Expenses	(409,450)	366,700	3,420,003	1,031,701	19,000	1,026,001	(75,793)	(6,272,855)
Other Non-Operating Expenses	-	-	-	-	-	-	-	-
Total Expenses (B)	16,431,647	1,060,383	9,010,476	3,201,257	238,862	2,476,130	-	444,540
Change in Net Assets (=A-B)	(849,611)	10,632	94,142	29,913	551	29,747	-	(1,014,596)
Fixed Asset Additions								
Computer & Software CapEx	170,000	-	-	-	-	-	-	170,000
Furniture & Fixtures CapEx	-	-	-	-	-	-	-	-
Equipment CapEx	-	-	-	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-	-	-	-
Allocation of Fixed Asset Additions	-	10,632	99,157	29,913	551	29,747	-	(170,000)
Fixed Asset Additions, excluding Right of Use Assets (C)	170,000	10,632	99,157	29,913	551	29,747	-	-
TOTAL BUDGET (=B + C)	16,601,647	1,071,015	9,109,633	3,231,169	239,412	2,505,877	-	444,540
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	(1,019,611)	0	(5,015)	0	0	0	-	(1,014,596)
FTEs	41.09	1.93	18.00	5.43	0.10	5.40	0.50	10.23

Section D — Additional Financial Statements

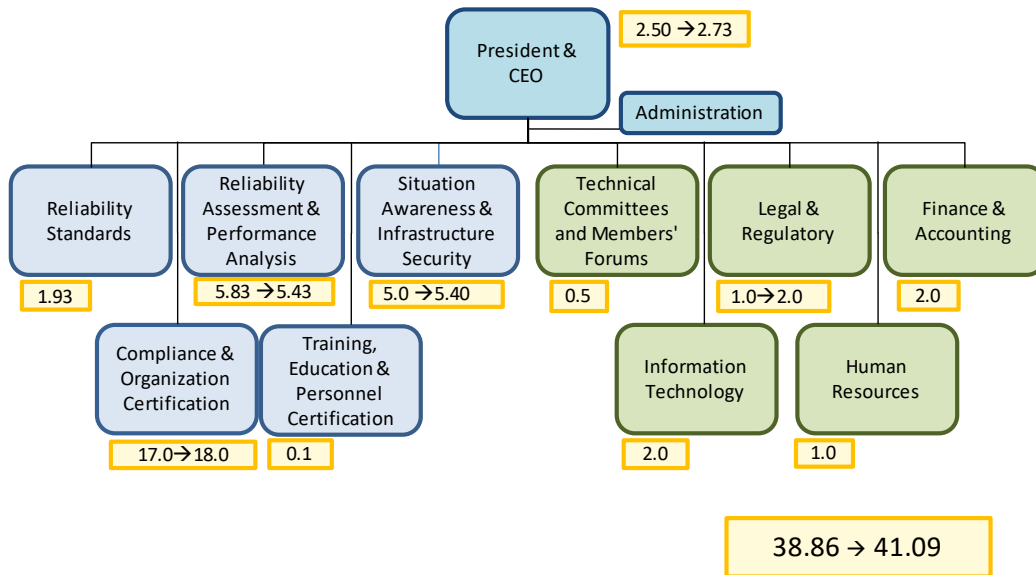
NPCC Statement of Activities 2020 Budget		Criteria Services Total	Criteria Development	Criteria Assessment	General and Administrative
Funding					
ERO Funding					
	ERO Assessments	-	-	-	-
	Penalty Sanctions	-	-	-	-
	Total ERO Funding	-	-	-	-
	Membership Dues	1,065,202	567,485	560,183	(62,465)
	Testing Fees	-	-	-	-
	Services & Software	-	-	-	-
	Workshops & Misc Revenue	-	-	-	-
	Interest & Investment Income	4,200	-	-	4,200
	Total Funding (A)	1,069,402	567,485	560,183	(58,265)
Expenses					
Personnel Expenses					
	Salaries	367,979	195,238	172,742	-
	Payroll Taxes	24,864	12,557	12,306	-
	Benefits	123,261	57,736	65,525	-
	Retirement Costs	41,954	22,003	19,950	-
	Total Personnel Expenses	558,057	287,535	270,523	-
Meeting Expenses					
	Meetings	14,000	1,500	12,500	-
	Travel	56,800	28,200	28,600	-
	Conference Calls	-	-	-	-
	Total Meeting Expenses	70,800	29,700	41,100	-
Operating Expenses, excluding Depreciation					
	Consultants & Contracts	76,360	29,000	26,360	21,000
	Office Rent	-	-	-	-
	Office Costs	-	-	-	-
	Professional Services	-	-	-	-
	Miscellaneous	4,000	2,000	2,000	-
	Total Operating Expenses, excluding Depreciation	80,360	31,000	28,360	21,000
	Total Direct Expenses	709,217	348,235	339,983	21,000
	Indirect Expenses	409,450	204,250.16	205,200.16	-
	Other Non-Operating Expenses	-	-	-	-
	Total Expenses (B)	1,118,668	552,485	545,183	21,000
	Change in Net Assets (=A-B)	(49,265)	15,000	15,000	(79,265)
Fixed Asset Additions					
	Computer & Software CapEx	30,000	15,000	15,000	-
	Furniture & Fixtures CapEx	-	-	-	-
	Equipment CapEx	-	-	-	-
	Leasehold Improvements	-	-	-	-
	Allocation of Fixed Asset Additions	-	-	-	-
	Fixed Asset Additions, excluding Right of Use Assets (C)	30,000	15,000	15,000	-
	TOTAL BUDGET (=B + C)	1,148,668	567,485	560,183	21,000
	TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	(79,265)	-	-	(79,265)
	FTEs	2.16	1.08	1.08	0

Appendix A Staff Allocations

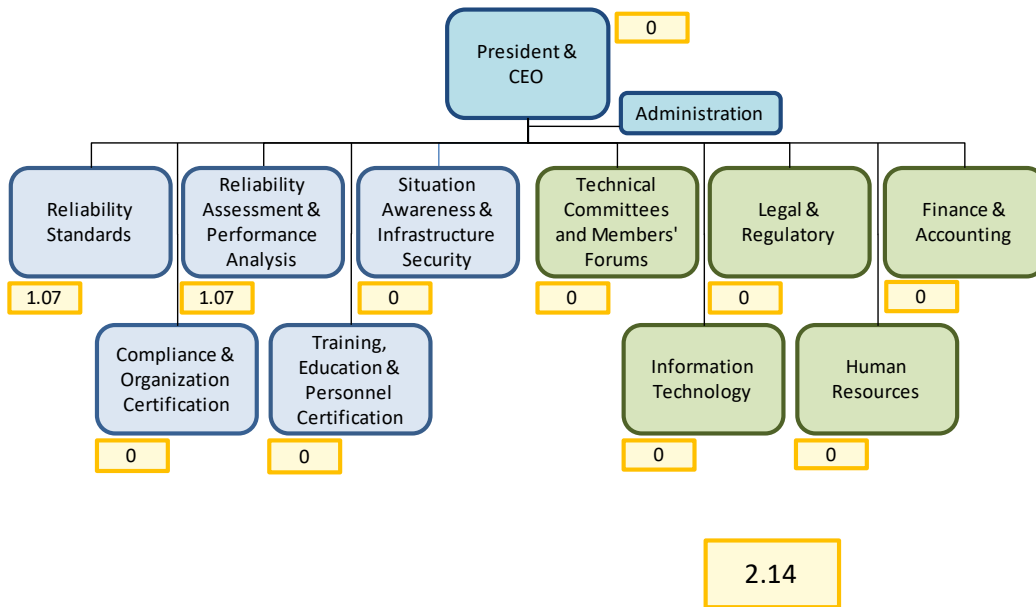
2019 Budget Staff Allocations - RE Division



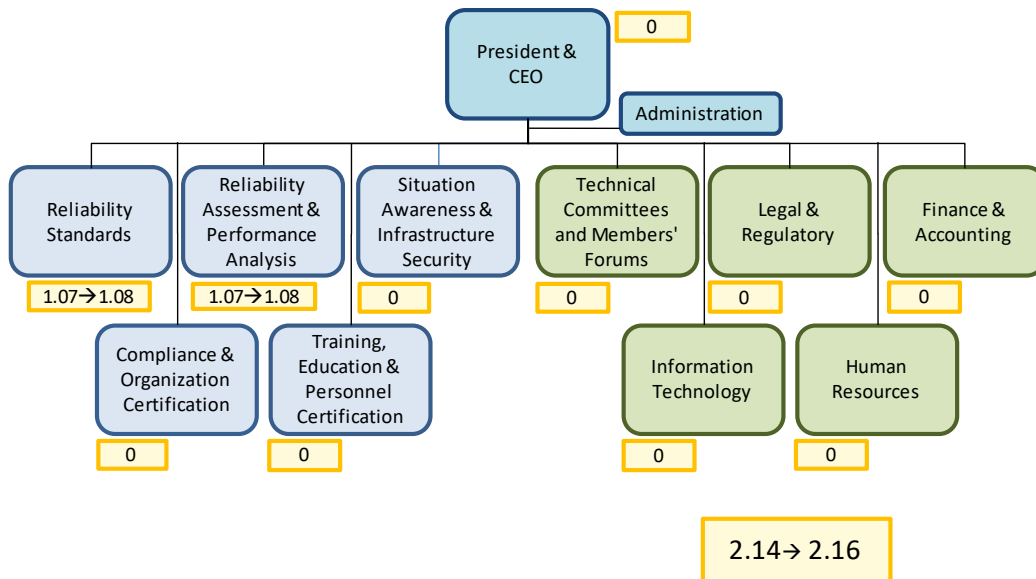
2020 Budget Staff Allocations - RE Division



2019 Budget Staff Allocations - CS Division



2020 Budget Staff Allocations - CS Division



Appendix B Acronyms

This section lists acronyms used in this document.

Acronym	Definition
AI	Audits and Investigations
BAA	Balancing Authority Area
BEPWG	BES Exception Process Working Group
BES	Bulk Electric System
BOT	Board of Trustees
BPS	Bulk Power System
CC	Compliance Committee
CCEP	Criteria Compliance Enforcement Program
CDAA	CMEP Data Administration Application
CEAP	Cost Effective Analysis Process
CEH	Continuing Education Hour
CGNC	Corporate Governance and Nominating Committee
CIPC	Critical Infrastructure Protection Committee
CIPIS	Critical Information Protection Information Sharing
CMEP	Compliance Monitoring and Enforcement Program
CORC	Compliance Monitoring and Enforcement and Organization Registration and Certification Program
CPP	Clean Power Plan
CRRA	Cost of Risk Reduction Analysis
CUG	Consortium Users Group
DADS	Demand Availability Data System
DADSWG	Demand Response Availability Data System Working Group
ERA	Entity Reliability Assessment
ERAG	Eastern Interconnection Reliability Assessment Group
ERO	Electric Reliability Organization
EUB	Electric Utility Board
EUB	Energy and Utilities Board
FAC	Finance and Audit Committee
FERC	Federal Energy Regulatory Commission
FFT	Find, Fix, Track
GADS	Generator Availability Data System
GADSWG	Generating Availability Data System Working Group
GMD	Geomagnetic Disturbance
HQCMÉ	Hydro-Québec Contrôle des mouvements d'énergie
HSIN	Homeland Security Information Network
ICE	Internal Controls Evaluation
IED	Intelligent Electronic Device
IERP	Independent Experts Review Panel Report
IESO	Independent Electricity System Operator
IRA	Inherent Risk Assessment
ISO	Independent System Operator
ITSG	IT Steering Group
LCEFT	Load, Capacity, Energy, Fuels, and Transmission
LMS	Learning Management System
LMWG	Load Modeling Working Group
LSE	Load Serving Entity
MACD	Market Assessment and Compliance Division of the IESO
MDCC	Management Development and Compensation Committee
ME	Mitigation and Enforcement
MMWG	Multi-Regional Modeling Working Group
MOU	Memorandum of Understanding
MPLS	Multiprotocol Label Switching
MVWG	Model Validation Working Group
NAESB	North American Electric Standards Review Board

Appendix B

Acronym	Definition
NEL	Net Energy for Load
NERC	North American Electric Reliability Corporation
NOAV	Notice of Alleged Violation
NOCV	Notice of Confirmed Violation
NOPR	Notice of Proposed Rulemaking
NOPV	Notice of Possible Violation
NPCC	Northeast Power Coordinating Council, Inc.
NRAP	NPCC Reliability Assessment program
NSPI	Nova Scotia Power Incorporated
NSUARB	Nova Scotia Utility and Review Board
OEB	Ontario Energy Board
PAS	Performance Analysis Subcommittee
PC	Pension Committee
PMOS	Project Management Oversight Subcommittee
PSMTF	Protection System Mis-operations Task Force
PSTN	Public Switched Telephone Network
QCMEP	Québec Reliability Standards Compliance Monitoring and Enforcement Program
RADS	Reliability Assessment Data System
RADWG	Reliability Assessment Data Working Group
RAS	Reliability Assessment Subcommittee
RC	Reliability Coordinator
RCC	Reliability Coordinating Committee
RISC	Reliability Issues Steering Committee
RSAW	Reliability Standards Audit Worksheet
RSC	Regional Standards Committee
RTO	Regional Transmission Organization
SAFNR	Situational Awareness-FERC, NERC, Regions
SAMS	System Analysis and Modeling Subcommittee
SAR	Standards Authorization Request
SAT	Systematic Approach to Training
SBS	Standards Balloting System
SCPS	Standards Committee Process Subcommittee
SDT	Standards Drafting Team
SEDS	Spare Equipment Database System
SEDTF	Spare Equipment Database Task Force
SPS	Special Protection Systems
TADS	Transmission Availability Data System
TADSWG	Transmission Availability Data System Working Group
TFCO	Task Force on Coordination of Operation
TFCP	Task Force on Coordination of Planning
TFE	Technical Feasibility Exception
TFIST	Task Force on Infrastructure Security and Technology
TFSP	Task Force on System Protection
TFSS	Task Force on System Studies
TLR	Transmission Loading Relief
TOP	Transmission Operator
UFLS	Underfrequency Load Shedding
UVLS	Under-Voltage Load Shedding
VRF	Violation Risk Factor
VSL	Violation Security Level

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**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 4

**NERC MANAGEMENT'S RESPONSES
TO STAKEHOLDER COMMENTS SUBMITTED
ON DRAFT #1 AND DRAFT #2 OF NERC'S
2020 BUSINESS PLAN AND BUDGET**

Re: Management Response to 2020 Business Plan and Budget (BP&B) Comments

Draft #1

Date: July 11, 2019

The deadline for comments on the first draft of NERC's 2020 Business Plan and Budget (BP&B) was May 17–June 28, 2019. Comments were submitted by six entities and covered a range of topics. Below is a summary of those comments and NERC management's responses as applicable.

Bonneville Power Administration (BPA)

BPA expressed support for the investment and the importance of the Electricity Information Sharing and Analysis Center (E-ISAC) and the Cybersecurity Risk Information Sharing Program (CRISP), and applauded NERC and the industry on the Standards Efficiency Review (SER) project. BPA indicated the need for a better understanding of the E-ISAC and CRISP programs and a higher degree of transparency on the tangible benefits to the industry, as well as assurance that as resources are transferred from other programs to the E-ISAC, that those programs will still be viable to the industry.

NERC Management Response

Under the oversight of the Electricity Subsector Coordination Council's Member Executive Committee, NERC is making ongoing investments into additional resources, including personnel and technology, in support of the *E-ISAC Long-Term Strategic Plan*, while at the same time stabilizing costs in other NERC programs through ongoing effectiveness efforts and efficiency increases. However, NERC remains committed to investing in all NERC programs in support of the strategic focus areas outlined in the broader *ERO Enterprise Long-Term Strategy*.

The benefits for industry that result from investment in the E-ISAC long-term strategy are detailed in the NERC 2020 BP&B, Section A, in the "Stakeholder Engagement and Benefit" portion of the E-ISAC section. These benefits include, but are not limited to, enhancements to the following:

- **E-ISAC Portal, Communications, and Critical Broadcast Program (CBP)** – The E-ISAC Portal includes a user-community capability that allows members with similar security concerns to collaborate directly on a secure platform. In addition to Portal communications, the E-ISAC issues bulletins, develops periodic reports, and holds monthly and dynamic briefings. The E-ISAC also developed the CBP to deliver information rapidly to stakeholders about emerging security threats based on the best analysis available at the time, with follow-on updates as more details emerge.

3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

- **Watch Operations** – Watch Operations is the principal entry and egress point for information sharing between the E-ISAC and its members and partners. Information flows into the organization via E-ISAC Portal postings, emails, phone calls, and other means and receives initial analysis by Watch Officers to determine (1) the severity of the event, (2) if it is part of an ongoing series of related events, and (3) whether it rises to the level that requires a “deeper dive” by cyber and physical security subject matter experts. As part of the long-term strategy, the E-ISAC is transitioning to 24/7 watch operations in support of increased information sharing and analysis objectives. Watch Operations staff and physical and cyber analysts will rotate through an after-hours, on-call schedule on a weekly basis. If escalation is required, a physical and/or cyber analyst will be involved, with further management escalation as needed.
- **Analysis** – As mentioned above, the E-ISAC publishes reports, bulletins, and advisories; conducts webinars; and convenes experts for classified and unclassified briefings for its members. The most valuable content in those activities comes from analysis by E-ISAC cyber security, physical security, and threat intelligence teams. The E-ISAC long-term strategy has guided investments in hiring and training skilled security analysts, identifying and leveraging additional technology, enhancing relationships with government analysis sources, and developing strategic vendor relationships.
- **GridEx and GridSecCon** – The E-ISAC’s biennial GridEx is designed to (1) exercise the electricity industry’s crisis response to simulated coordinated cyber and physical security threats and incidents, (2) strengthen crisis response functions, and (3) provide input for lessons learned. GridSecCon is the E-ISAC’s annual conference that brings together hundreds of subject matter experts on cyber, physical, and operations technology threats and solutions, with training sessions and classified and official use only briefs on topics vital to grid security.
- **CRISP** – CRISP is a unique private-public initiative among the E-ISAC, North American electric utility industry, the U.S. Department of Energy, and the U.S. Intelligence Community. Using passive information sharing devices on CRISP participant networks outside boundary firewalls, participant data is matched against identified threat signatures to examine potential threats and provide participants with recommended mitigation steps. Aggregated indicators of compromise and other relevant security information is shared with all asset owners and operators (AOOs) that are registered with the E-ISAC, regardless of participation in CRISP, through E-ISAC Portal postings.
- **Cyber Automated Information Sharing System (CAISS)** – The E-ISAC has also broadened automated information sharing capabilities beyond CRISP. In 2017 and early 2018, the E-ISAC and several industry partners piloted CAISS. The pilot evaluated technological solutions for bi-directional communication, workflow between participants, the handling and vetting of shared information, and lessons learned from the technology and processes overall. CAISS became operational in 2019 and is available for voluntary participation by industry AOOs.

Additional information is also provided below in response to comments from the Canadian Electricity Association (CEA) and the Independent Electricity System Operator (IESO).

CEA and IESO

CEA and IESO, both Canadian entities, provided similar comments, commending NERC's budget stabilization efforts outside of the E-ISAC through ongoing cost-effectiveness and efficiency increases. However, both organizations expressed concern with the magnitude of E-ISAC budget increases and the corresponding value for stakeholders, including Canadians, urging NERC to continue to seek opportunities to leverage capabilities already available from other agencies and partners.

NERC Management Response

NERC recognizes that Canadian entities have important and experienced industry and governmental resources focused on cyber security. The E-ISAC is an important supplemental resource offering the following unique and complementary attributes:

- **Broad View** – The E-ISAC is positioned to take a broad view of the threat landscape across all of North America. E-ISAC membership includes utilities with interests in Canada, Mexico, and the United States (including Alaska, Hawaii, and its territories) and covers a range of organizations from municipal and cooperative entities to investor-owned entities, including generation, transmission, and distribution functions.
- **Electricity Industry Focus** – The E-ISAC is focused on threats to the electricity industry, and provides industry-specific guidance. At the same time, it maintains relationships with other ISACs that address security issues impacting critical interdependent sectors.
- **Access to the Intelligence Community** – Due to the E-ISAC's partnerships with various government entities, the E-ISAC also has access to the Intelligence Community and its data and resources. The E-ISAC can use information below the tear line from the Intelligence Community and share it with members subject to the requirements of established information sharing protocols.
- **Member Community** – Because the E-ISAC is focused on the electricity industry, it has a well-defined community of members and offers a range of opportunities for members to interact with each other. Some opportunities include monthly briefings, unclassified threat workshops, and large security training and exercise events like GridSecCon and GridEx. The E-ISAC also maintains close working relationships with Canadian entities, as well as with Natural Resources Canada, Public Safety Canada, the Canadian Centre for Cyber Security, the Canadian Communications Security Establishment, and the Royal Canadian Mounted Police.
- **Physical Security** – The E-ISAC is also a growing source for aggregated physical security information. The E-ISAC works closely with both U.S. and Canadian member organizations and governments to regularly review physical security threat information to track and identify threats.
- **Partnership Outreach** – The E-ISAC has focused on enhancing its partnerships with Canadian industry members and finding collaboration opportunities. The E-ISAC has committed to visiting companies across the provinces. So far, E-ISAC staff members have visited IESO, New Brunswick Power, BC Hydro, Hydro Quebec, and Manitoba Hydro, and are confirming additional meetings over the coming months. The feedback has been positive, the relationships stronger and, most

importantly, the E-ISAC is seeing increases in membership, information sharing, and collaboration. In late 2018 through 2019, the E-ISAC had 25 new Canadian AOO user accounts.

In addition, over the past few months, the E-ISAC and IESO have been working in good faith to gain additional insights on their respective capabilities, including the IESO's new and unique role in cyber information sharing and analysis within the Ontario province. These discussions have also focused on the mutual benefits of entering into pilot collaboration agreement, which builds on the strengths of both organizations and improves the overall efficiency and effectiveness in the execution of their common objective of assisting industry with cyber security awareness and reducing cyber security risks.

Edison Electric Institute (EEI)

EEI expressed support for NERC's investment in the E-ISAC. EEI also encouraged NERC to continue enterprise-wide effectiveness and efficiency efforts, and to clearly identify those savings to stakeholders, particularly with respect to meetings and travel expenses in light of efforts to improve productivity and effectiveness of stakeholder engagement activities. Additionally, EEI requested that NERC provide clarity on the drivers for its salary increase, and continue to look for opportunities to reduce medical expenses.

NERC Management Response

As part of the *ERO Enterprise Long-Term Strategy*, NERC is committed to effectiveness and efficiency efforts and reflecting identified cost savings as part of the BP&B process. Meeting and travel expenses are increasing slightly in 2020 mainly due to E-ISAC personnel increases, engagement efforts, and enhanced conference call capabilities. Potential savings from the NERC stakeholder committee restructure will be analyzed and determined once there is more certainty on the outcome of the committee and meeting structures going forward.

Also as part of the ERO Enterprise long-term strategy, NERC is committed to building and maintaining top talent with the required specialized expertise necessary to fulfill the ERO Enterprise's mission-critical roles. Executive and staff compensation and benefits are determined based on guidelines established by the Board of Trustees (Board) Corporate Governance and Human Resources Committee and the results of market compensation and benefit studies. The 2020 budget for base salaries assumes a 3.0% increase over actual 2019 base salaries for merit adjustments and, as requested by the Board, up to 0.5% for equity and market adjustments.

NERC benchmarks benefit costs with industry and similar organizations and works actively with an independent broker to keep costs reasonable to stay competitive for talent acquisition and retention, and increases to medical insurance plan costs were below market for several years. NERC's medical benefits plans have not changed for 2020; however, the past two years have shown higher increases due to recent loss experience and fewer medical insurance provider options in the state of Georgia. NERC continues to negotiate these premiums and will have final amounts for 2020 at the end of 2019.

ISO RTO Council Standards Review Committee (SRC)

The ISO RTO Council SRC expressed the following:

- Following the results of the SER, NERC should make adjustments in the Reliability Standards and compliance program areas to include reduced compliance requirements reflected in NERC's processes;
- Ensure the E-ISAC is able to provide the most relevant and timely actions in response to bulk power system threats and vulnerabilities;
- Following the implementation of the Compliance Monitoring and Enforcement Program (CMEP) tool, Align, and the Centralized Organization Registration ERO System (CORES), NERC should identify and reflect resulting savings in future budget years; and
- NERC committee structure changes in development by the Stakeholder Engagement Team could result in reduced meeting and travel expense projections for future budget years.

NERC Management Response

NERC generally agrees with the statements above, as they are aligned with the goals or potential outcomes of the SER project, the *E-ISAC Long-Term Strategy*, Align and CORES tools, and the effectiveness and efficiency efforts related to stakeholder engagement. With regard to financial savings following the implementation of Align and CORES, savings for application costs (i.e., software licenses, maintenance, and support) will be realized in future Regional Entity budgets as they transition from their legacy CMEP systems to the centralized tools.

National Rural Electric Cooperative Association (NRECA)

NRECA expressed general support for the first draft of NERC's 2020 BP&B and encouraged NERC to continue with its efficiency and effectiveness activities to undertake further cost saving under this 2020 budget and future budget years as well. NRECA noted that this effort should not only be a short-term focus, but should be a long-term focus for NERC.

NERC Management Response

NERC agrees with NRECA and notes that its effectiveness and efficiency efforts are part of the *ERO Enterprise Long-Term Strategy*.

Draft #2

Date: August 7, 2019

The deadline for comments on the second draft of NERC's 2020 BP&B was July 15–31, 2019. Comments were submitted by the Cooperative Sector and the Independent Electricity System Operator (IESO). The Cooperative Sector's comments were supportive of the second draft of NERC's 2020 budget and efforts to stabilize costs outside of the Electricity Information Sharing and Analysis Center (E-ISAC). The Cooperative Sector also noted the expectation that the combined NERC and E-ISAC budget should trend toward a more flat result after the full implementation of the *E-ISAC Long-Term Strategic Plan* in 2022. IESO expressed appreciation for NERC's efforts to respond to concerns regarding potential redundancies between the services the E-ISAC provides and those being provided by other agencies in Canada. IESO specifically acknowledged the development of a pilot collaboration agreement between NERC and IESO for cyber security information sharing.

NERC Management Response

We appreciate the comments received and stakeholders' continuing support of NERC's mission, particularly regarding the work of the E-ISAC and the implementation of its long-term strategy and engagement and collaboration efforts with Canada. NERC encourages stakeholders' continued participation in the BP&B process during its development of the 2021 budget.

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 5

**CALCULATION OF ADJUSTMENTS
THE AESO 2020 NERC ASSESSMENT,
THE IESO 2020 NERC ASSESSMENT,
THE NEW BRUNSWICK 2020 NERC ASSESSMENT,
AND THE QUEBEC 2020 NERC ASSESSMENT**

2020 AESO Assessment Adjustment

Credit for NERC Compliance Costs

Includes adjustment for 2018 Actual v Budgeted Costs

	AESO NEL Share		2020 Compliance FTEs			Costs Paid by	
	2020 NERC Budget	(2018) 1.391%	Total	Credit	% Credit	AESO Credit	AESO
NERC Compliance Program Budget							
Compliance Assurance	\$ 9,756,389	\$ 135,695	16.92	15.60	92.2%	\$ 125,110	\$ 10,584
Registration and Certification	2,535,712	35,267	4.70	4.47	95.0%	33,504	1,763
Enforcement	6,725,572	93,541	12.22	12.22	100.0%	93,541	-
Total Compliance Costs, including Fixed Assets	\$ 19,017,673	\$ 264,503	33.84	32.29		\$ 252,156	\$ 12,348
True-up 2018 Actual						6,159	
Additional Non-Compliance Costs							
Event Analysis	\$ 4,733,857	\$ 65,840	9.40	0.94	10.0%	\$ 6,584	\$ 59,256
SAFNR v3 support and maintenance	454,500	6,321			100.0%	6,321	
2020 Total Compliance, Event Analysis and SAFNR	\$ 24,206,030	\$ 336,664	43.24	33.23		\$ 271,220	\$ 71,603
2019	\$ 26,633,919	\$ 372,494	46.53	35.61		\$ 314,351	\$ 77,128
Change from 2019	\$ (2,427,889)	\$ (35,830)	(3.29)	(2.38)		\$ (43,131)	\$ (5,524)
2020 Assessment							
2020 NERC Assessment	\$ 730,335						
2020 RE Assessment (WECC & WIRAB)	1,061,104						
Total 2020 Assessment	\$ 1,791,439						
2019 Assessment							
2019 NERC Assessment	\$ 656,732						
2019 RE Assessment (WECC & WIRAB)	876,478						
Total 2019 Assessment	\$ 1,533,210						
Change in Total Assessment	\$ 258,229						16.8%
Change in NERC Assessment	\$ 73,603						11.2%

2020 New Brunswick Assessment Adjustment

Credit for NERC Compliance Costs

Includes adjustment for 2018 Actual v Budgeted Costs

	2020 NERC Budget	NB NEL Share (2018) 0.307%	2020 Compliance FTEs			NB Credit	Costs Paid by	
			Total	Credit	% Credit		NB	
NERC Compliance Program Budget								
Compliance Assurance	\$ 9,756,389	\$ 29,917	16.92	14.08	83.2%	\$ 24,891	\$ 5,026	
Registration and Certification	2,535,712	7,775	4.70	4.47	95.0%	7,387	389	
Enforcement	6,725,572	20,623	12.22	12.22	100.0%	20,623	-	
Total Compliance Costs, including Fixed Assets	\$ 19,017,673	\$ 58,315	33.84	30.76		\$ 52,900	\$ 5,415	

True-up 2018 Actual

1,038

Additional Non-Compliance Costs

Event Analysis	\$ 4,733,857	14,516	9.40	0.94	10.0%	\$ 1,452	\$ 13,064	
SAFNR v3 support and maintenance	454,500	1,394			100.0%	1,394		
2020 Total Compliance, Event Analysis and SAFNR	\$ 24,206,030	\$ 74,225	43.24	31.70		\$ 56,783	\$ 18,479	
2019	\$ 26,633,919	\$ 82,561	46.53	34.13		\$ 67,084	\$ 17,034	
Change from 2019	\$ (2,427,889)	\$ (8,336)	(3.29)	(2.43)		\$ (10,300)	\$ 1,445	

2020 Assessment

2020 NERC Assessment	\$ 164,031
2020 RE Assessment	357,526
Total 2019 Assessment	\$ 521,556

2019 Assessment

2019 NERC Assessment	\$ 148,152
2019 RE Assessment	354,392
Total 2019 Assessment	\$ 502,544

Change in Total Assessment

\$ 19,012
3.8%

Change in NERC Assessment

\$ 15,879
10.7%

**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 6

**METRICS COMPARING
REGIONAL ENTITY OPERATIONS
BASED ON
THE 2020 BUDGETS**

2020 Metrics for Budget Submissions

	Budget Metrics	MRO	NPCC⁶	RF	SERC	Texas RE	WECC
1	Number of registered entities ¹	197	215	240	248	224	377
2	Number of registered functions	563	448	498	698	417	926
3	Total NEL (GWh)	492,730	620,311	916,079	1,315,969	378,082	867,600
4	NEL (GWh) per registered entity	2,501	2,885	3,817	5,306	1,688	2,301
5	Total ERO Funding ²	\$ 16,983,521	\$ 15,582,037	\$ 22,586,250	\$ 24,584,123	\$ 14,054,128	\$ 28,027,000
6	ERO Funding per registered entity	\$ 86,211	\$ 72,475	\$ 94,109	\$ 99,130	\$ 62,742	\$ 74,342
7	ERO Funding per registered function	\$ 30,166	\$ 34,781	\$ 45,354	\$ 35,221	\$ 33,703	\$ 30,267
8	Total Budget ³	\$ 17,540,969	\$ 16,601,647	\$ 23,650,862	\$ 24,525,013	\$ 13,831,126	\$ 27,756,089
9	Total Budget per registered entity	\$ 89,040	\$ 77,217	\$ 98,545	\$ 98,891	\$ 61,746	\$ 73,624
10	Total Budget per registered function	\$ 31,156	\$ 37,057	\$ 47,492	\$ 35,136	\$ 33,168	\$ 29,974
11	Total Statutory FTE ⁴	63.00	41.09	79.35	98.00	60.00	143.00
12	Registered entity per Statutory FTE	3.127	5.232	3.025	2.531	3.733	2.636
13	Registered function per Statutory FTE	8.937	10.903	6.276	7.122	6.950	6.476
14	Total Compliance Budget ⁵	\$ 11,847,844	\$ 9,109,633	\$ 16,945,917	\$ 18,585,684	\$ 10,637,638	\$ 15,558,674
15	Compliance budget per registered entity	\$ 60,141	\$ 42,370	\$ 70,608	\$ 74,942	\$ 47,489	\$ 41,270
16	Compliance budget per registered function	\$ 21,044	\$ 20,334	\$ 34,028	\$ 26,627	\$ 25,510	\$ 16,802
17	Total Compliance FTE	33.63	18.00	45.00	98.00	35.75	61.00
18	Registered entity per Compliance FTE	5.9	11.9	5.3	2.5	6.3	6.2
19	Registered function per Compliance FTE	16.7	24.9	11.1	7.1	11.7	15.2

¹ As of June 2019.

² ERO Funding is the sum of Assessments and Penalty Sanctions only. (Excludes funding such as Membership Dues, Testing Fees, Services & Software, Workshops, Interest, and Miscellaneous.)

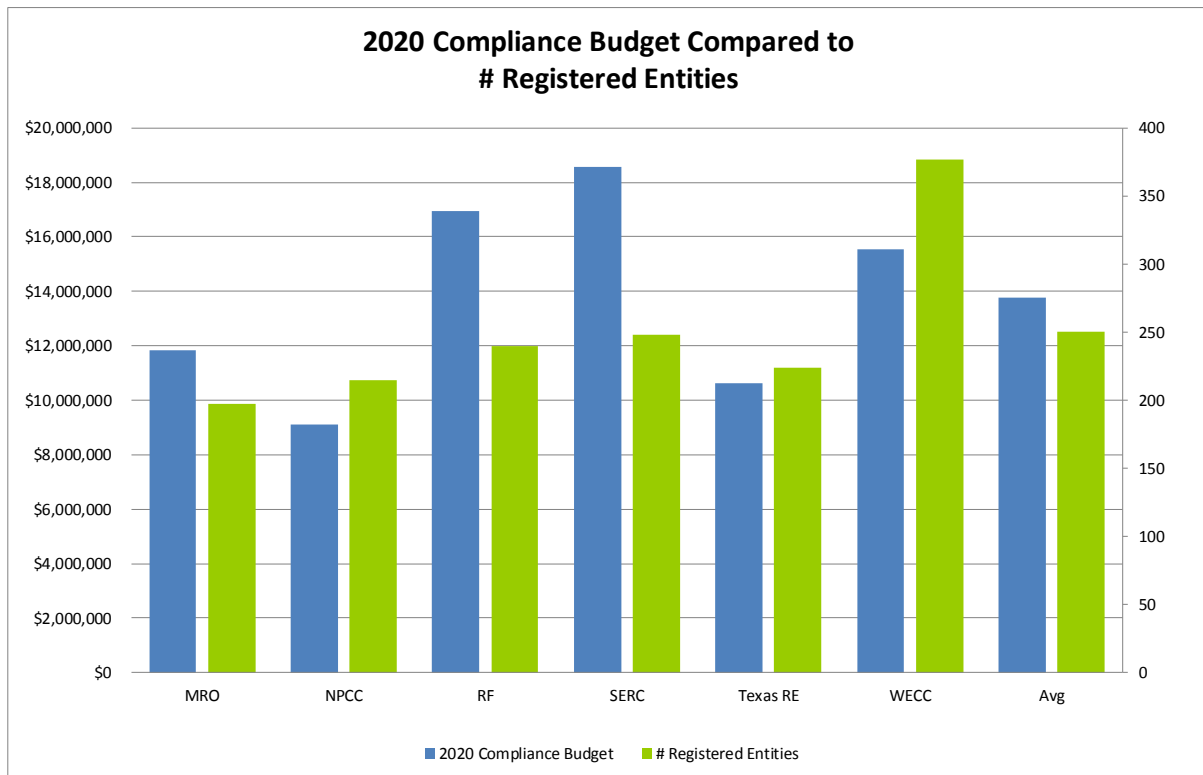
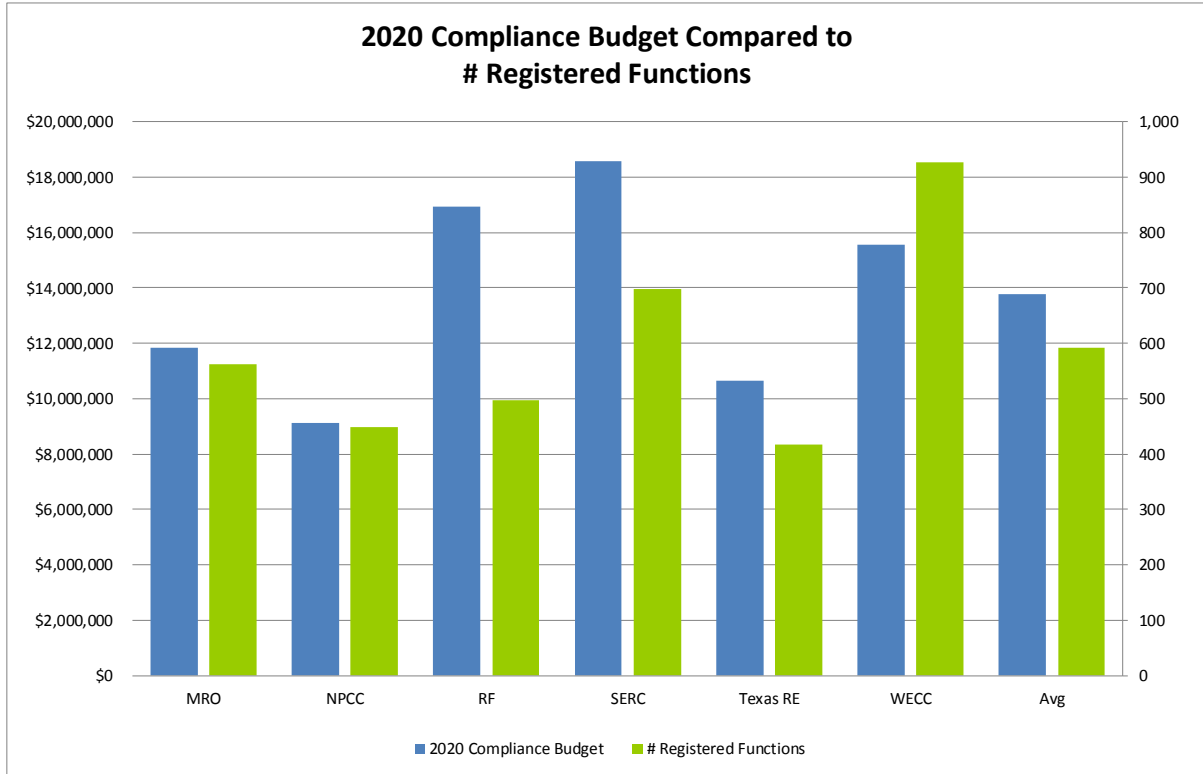
³ Total Budget is the sum of Total Expenses and the Increase/(Decrease) in Fixed Assets.

⁴ Each FTE that works 2,080 hours per year is counted as one FTE. An FTE working less than the 2,080 hours per year is counted as a fractional FTE.

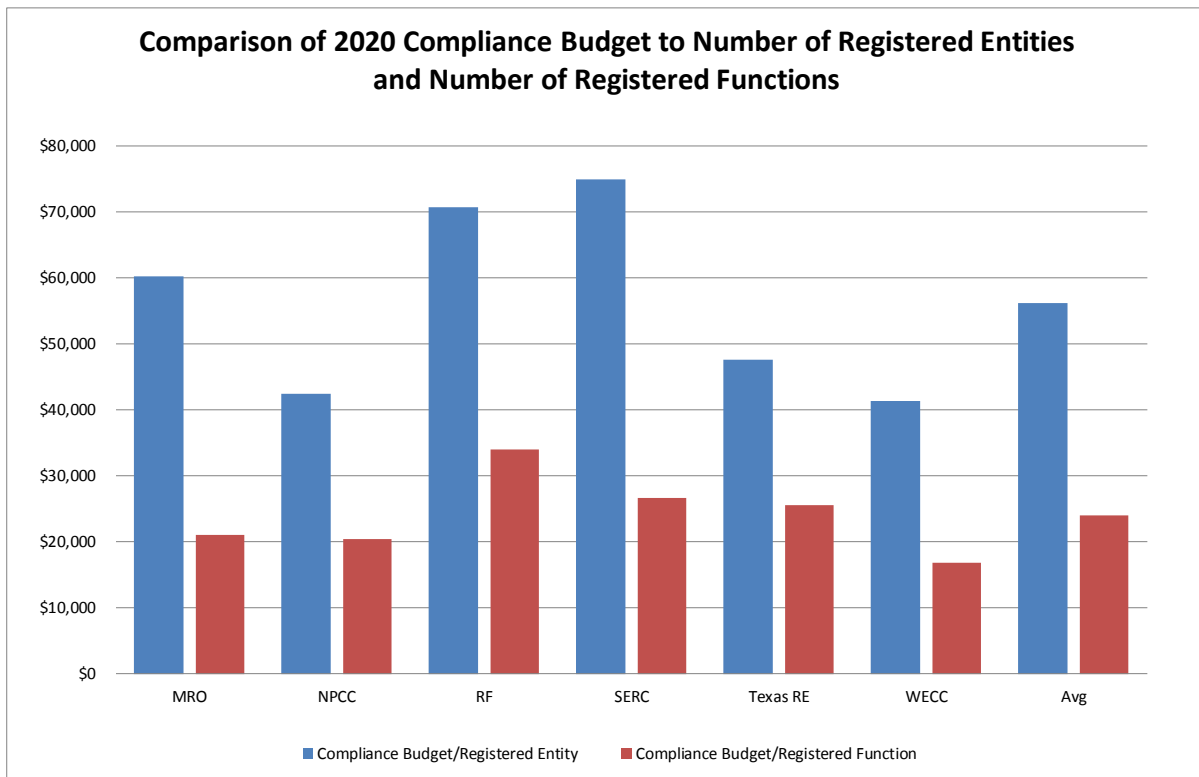
⁵ Total Compliance Budget is a sum of Direct Expenses, Indirect Expenses, and Capital Expenditures.

⁶ Due to the specifics of the compliance program included in the individual provincial MOUs for cross-border regional entities, some of these metrics are not directly comparable.

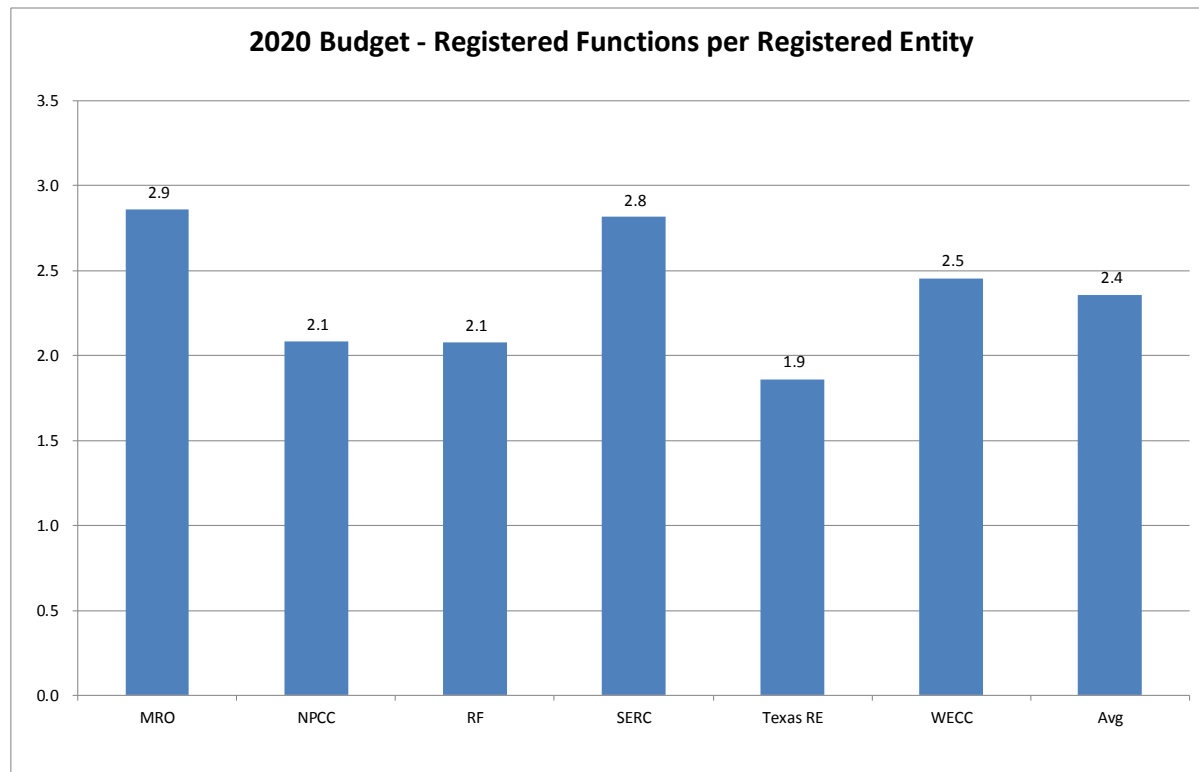
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
2020 Compliance Budget	\$11,847,844	\$9,109,633	\$16,945,917	\$18,585,684	\$10,637,638	\$15,558,674	\$13,780,898
# Registered Entities	197	215	240	248	224	377	250
# Registered Functions	563	448	498	698	417	926	592



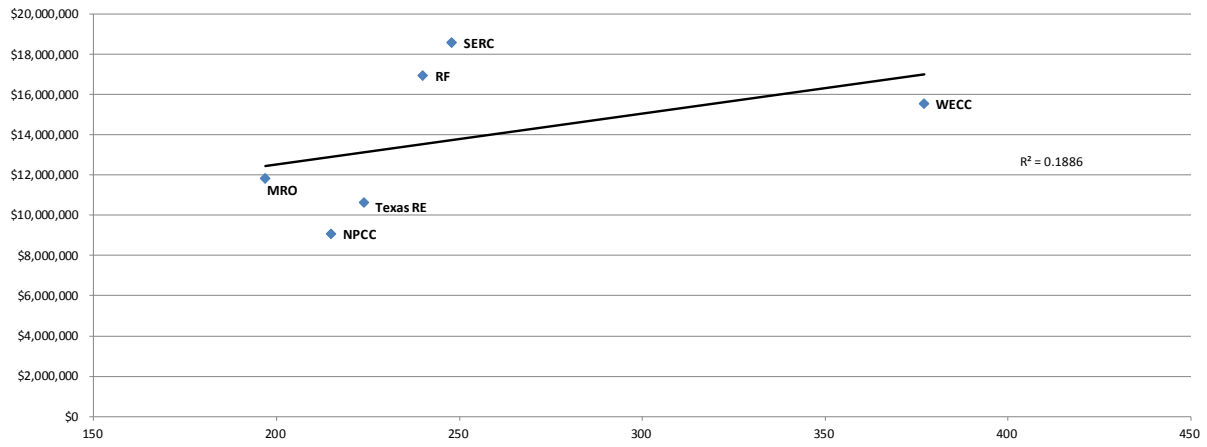
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
Compliance Budget/Registered Entity	\$60,141	\$42,370	\$70,608	\$74,942	\$47,489	\$41,270	\$56,137
Compliance Budget/Registered Function	\$21,044	\$20,334	\$34,028	\$26,627	\$25,510	\$16,802	\$24,058



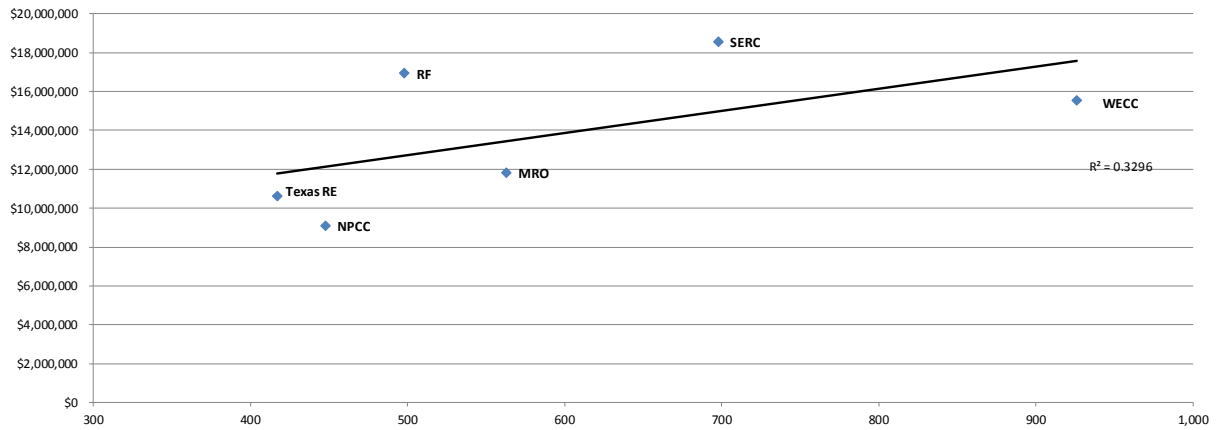
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
Registered Functions per Registered Entity 2020 Budget	2.9	2.1	2.1	2.8	1.9	2.5	2.4



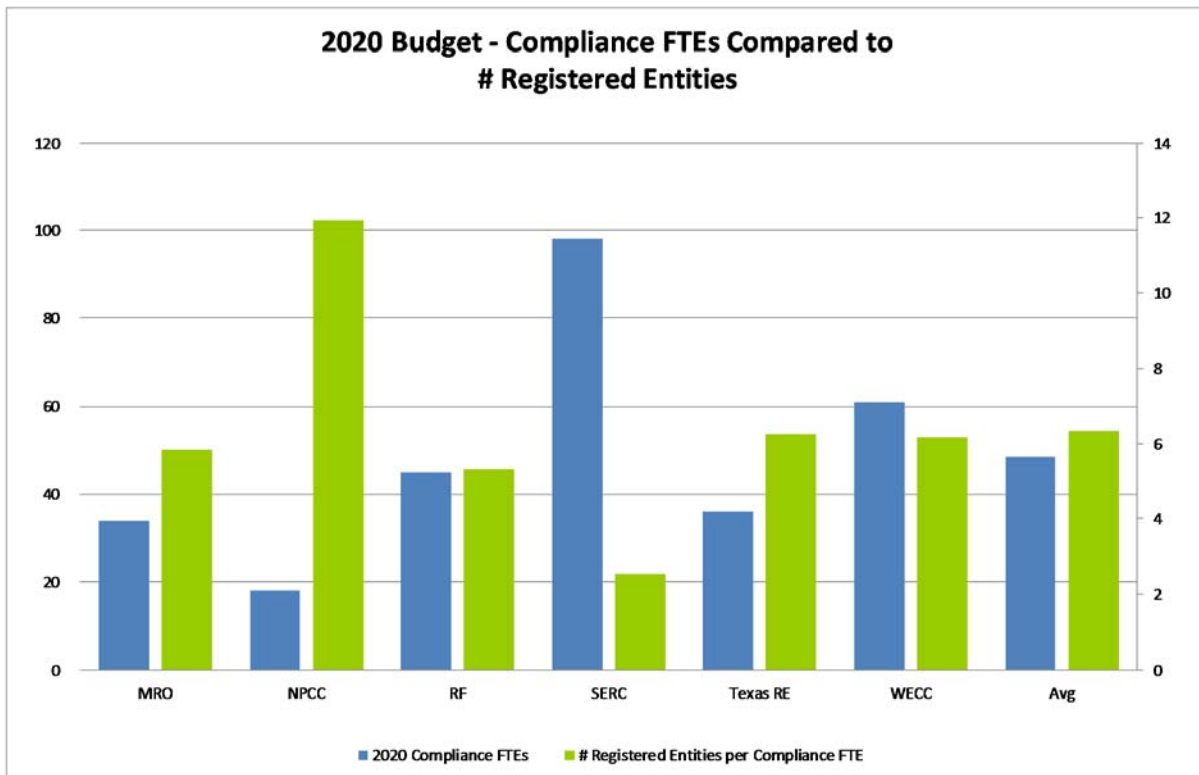
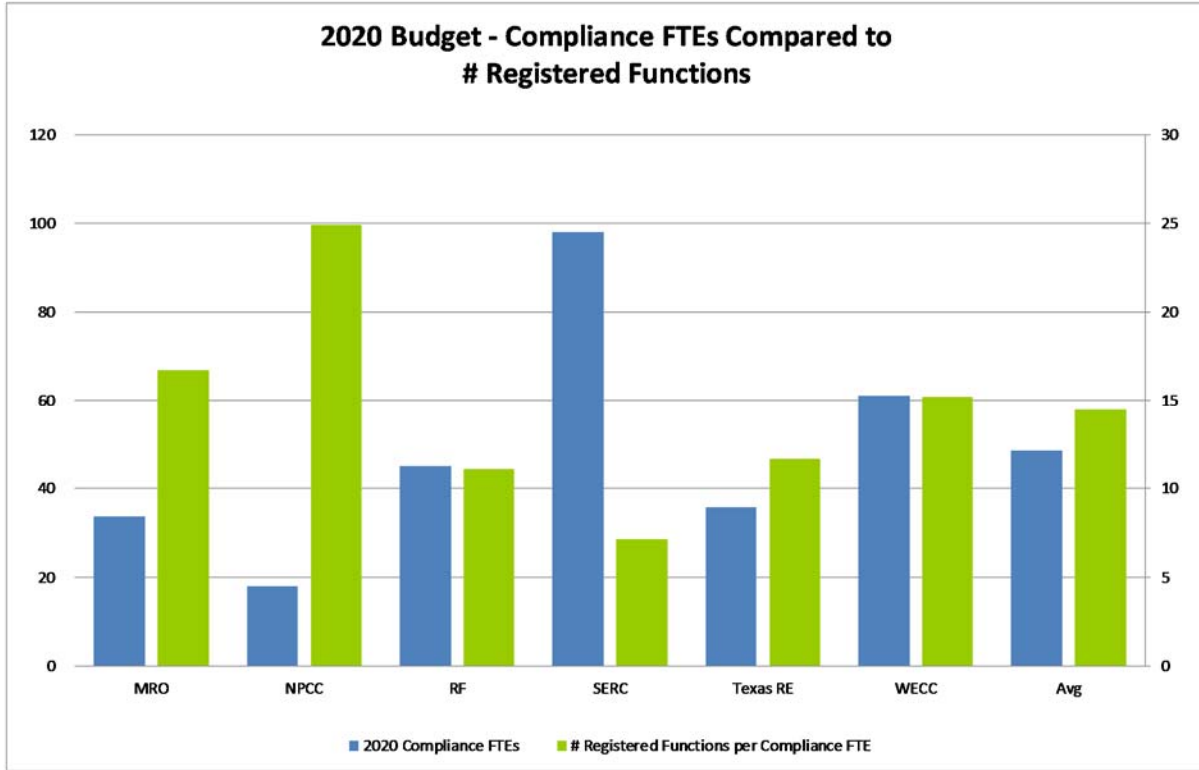
Regional Entity 2020 Compliance Program Budget as Function of Number of Registered Entities



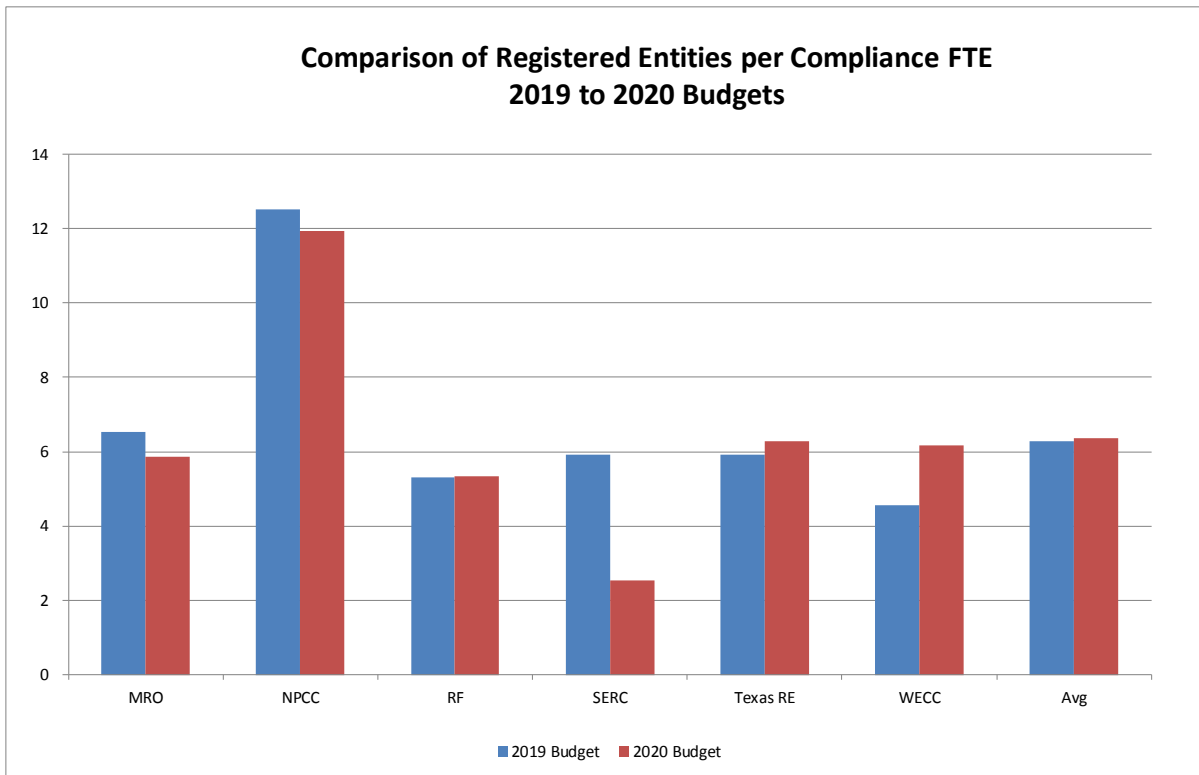
Regional Entity 2020 Compliance Program Budget as Function of Number of Registered Functions



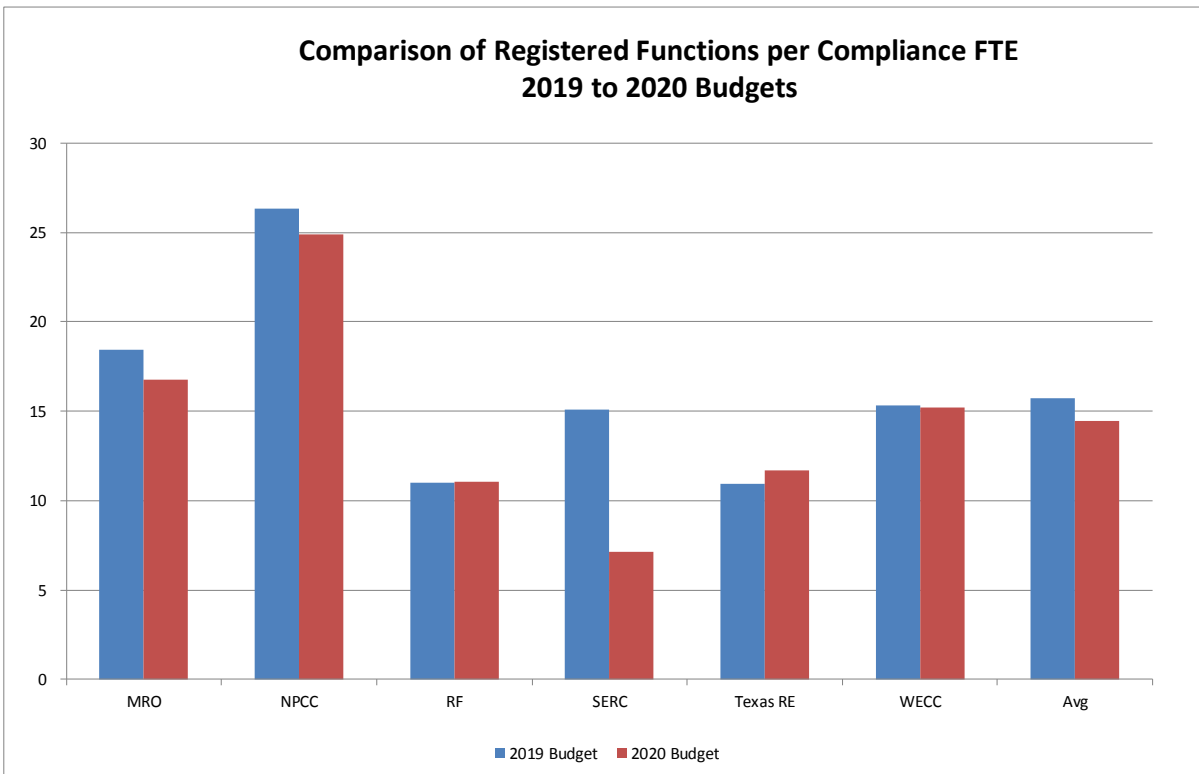
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
2020 Compliance FTEs	33.63	18.00	45.00	98.00	35.75	61.00	48.56
# Registered Entities per Compliance FTE	5.9	11.9	5.3	2.5	6.3	6.2	6.4
# Registered Functions per Compliance FTE	16.7	24.9	11.1	7.1	11.7	15.2	14.4



	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
2019 Budget	6.5	12.5	5.3	5.9	5.9	4.6	6.3
2020 Budget	5.9	11.9	5.3	2.5	6.3	6.2	6.4



	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
2019 Budget	18.4	26.4	11.0	15.1	10.9	15.3	15.7
2020 Budget	16.7	24.9	11.1	7.1	11.7	15.2	14.4



**NORTH AMERICAN ELECTRIC RELIABILITY
CORPORATION**

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 7

METRICS ON NERC AND REGIONAL ENTITY

ADMINISTRATIVE (INDIRECT) COSTS

BASED ON

THE 2019 AND 2020 BUDGETS

**Analysis of Indirect (Administrative Services) Costs
2020 Budget versus 2019 Budget**

2019 BUDGET						2020 BUDGET				
Total Statutory Budget	Total Statutory Direct Budget	Total Statutory Indirect Budget	% Statutory Indirect Budget to Total Statutory Budget	Ratio of Statutory Direct Budget to Indirect Budget		Total Statutory Budget	Total Statutory Direct Budget	Total Statutory Indirect Budget	% Statutory Indirect Budget to Total Statutory Budget	Ratio of Statutory Direct Budget to Indirect Budget
\$ 79,854,654	\$ 48,508,291	\$ 31,346,363	39.3%	1.55	NERC	\$ 83,417,475	\$ 49,266,239	\$ 34,151,236	40.9%	1.44
6,695,787	5,634,096	1,061,691	15.9%	5.31	FRCC	-	-	-	-	-
15,980,354	10,967,562	5,012,792	31.4%	2.19	MRO	17,540,969	11,600,412	5,940,557	33.9%	1.95
15,803,890	10,086,863	5,717,027	36.2%	1.76	NPCC	16,431,647	10,123,703	6,307,944	38.4%	1.60
22,648,458	15,832,553	6,815,905	30.1%	2.32	RF	23,650,862	16,495,173	7,155,689	30.3%	2.31
18,144,949	8,637,442	9,507,507	52.4%	0.91	SERC	24,525,013	13,520,965	11,004,048	44.9%	1.23
13,069,599	7,974,836	5,094,762	39.0%	1.57	Texas RE	13,831,127	8,168,666	5,662,461	40.9%	1.44
\$ 26,950,566	\$ 17,730,811	\$ 9,219,755	34.2%	1.92	WECC	\$ 27,756,089	\$ 17,824,182	\$ 9,931,907	35.8%	1.79
			30.9%	1.95	AVERAGE				29.4%	1.31

2019 BUDGETED FTEs					2020 BUDGETED FTEs					
Total Statutory FTEs	Total Statutory Direct FTEs	Total Statutory Indirect FTEs	Indirect FTE as % of Total FTE	# Direct to Indirect Statutory FTEs		Total Statutory FTEs	Total Statutory Direct FTEs	Total Statutory Indirect FTEs	Indirect FTE as % of Total FTE	# Direct to Indirect Statutory FTEs
204.92	137.24	67.68	33.0%	2.03	NERC	213.38	139.12	74.26	34.8%	1.87
20.75	16.37	4.38	21.1%	3.74	FRCC	-	-	-	-	-
59.00	47.78	11.22	19.0%	4.26	MRO	63.00	49.14	13.86	22.0%	3.55
38.86	29.86	9.00	23.2%	3.32	NPCC	41.09	30.86	10.23	24.9%	3.02
78.20	61.60	16.60	21.2%	3.71	RF	79.35	62.60	16.75	21.1%	3.74
78.00	44.85	33.15	42.5%	1.35	SERC	98.00	64.50	33.50	34.2%	1.93
60.00	45.25	14.75	24.6%	3.07	Texas RE	60.00	45.25	14.75	24.6%	3.07
143.00	105.00	38.00	26.6%	2.76	WECC	143.00	104.50	38.50	26.9%	2.71
			23.5%	2.69	AVERAGE				20.9%	2.21