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**

[1]Starting 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

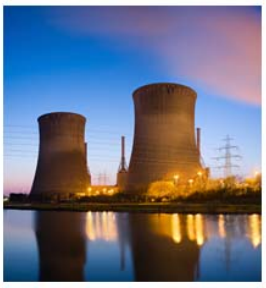
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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

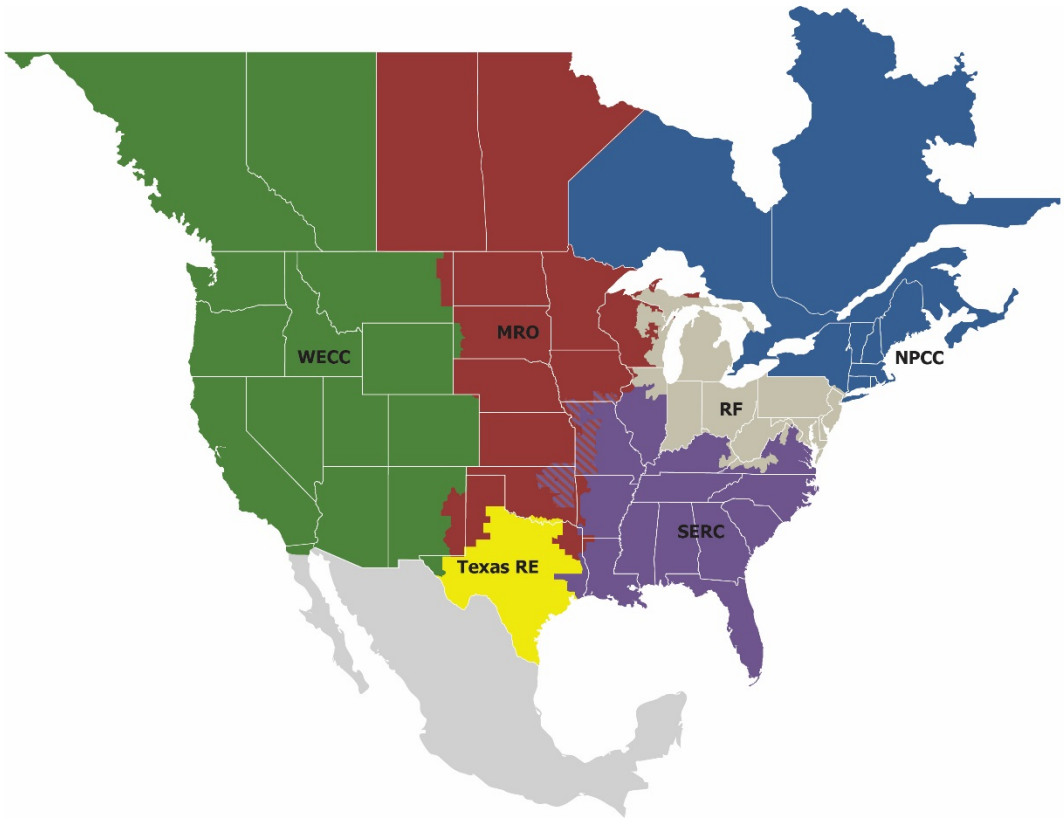
Table of Contents

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 BPS[1]—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 provinces[2] 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, *Comísion 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 2019 Projection v 2019 Budget Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)	% 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 Anlaysis	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 Anlaysis	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.

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.

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%**

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*.

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 Peformance Analaysis (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 plan[10] 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.

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.

Statement of Activities and Fixed Asset Additions
2019 Budget & Projection, and 2020 Budget
SITUATION AWARENESS

	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	$ 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.

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 publically 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.

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 staff[11] 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-leaning platform for improving soft and technical skills; (2) broad-based staff development training though 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.

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**					

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

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

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

[4]Represents 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		$ 1,521,000
Adjustments		
Total penalties released to offset assessments in the 2020 Budget		$ -
Total penalties held in Assessment Stabilization Reserve 12/31/2020		$ 1,521,000

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 RATC 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 RATC'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 ad 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 took 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)
Probablistic 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 Effectivness 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 Actual	2019 Projected	2020 Budget	2021 Projected	2022 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

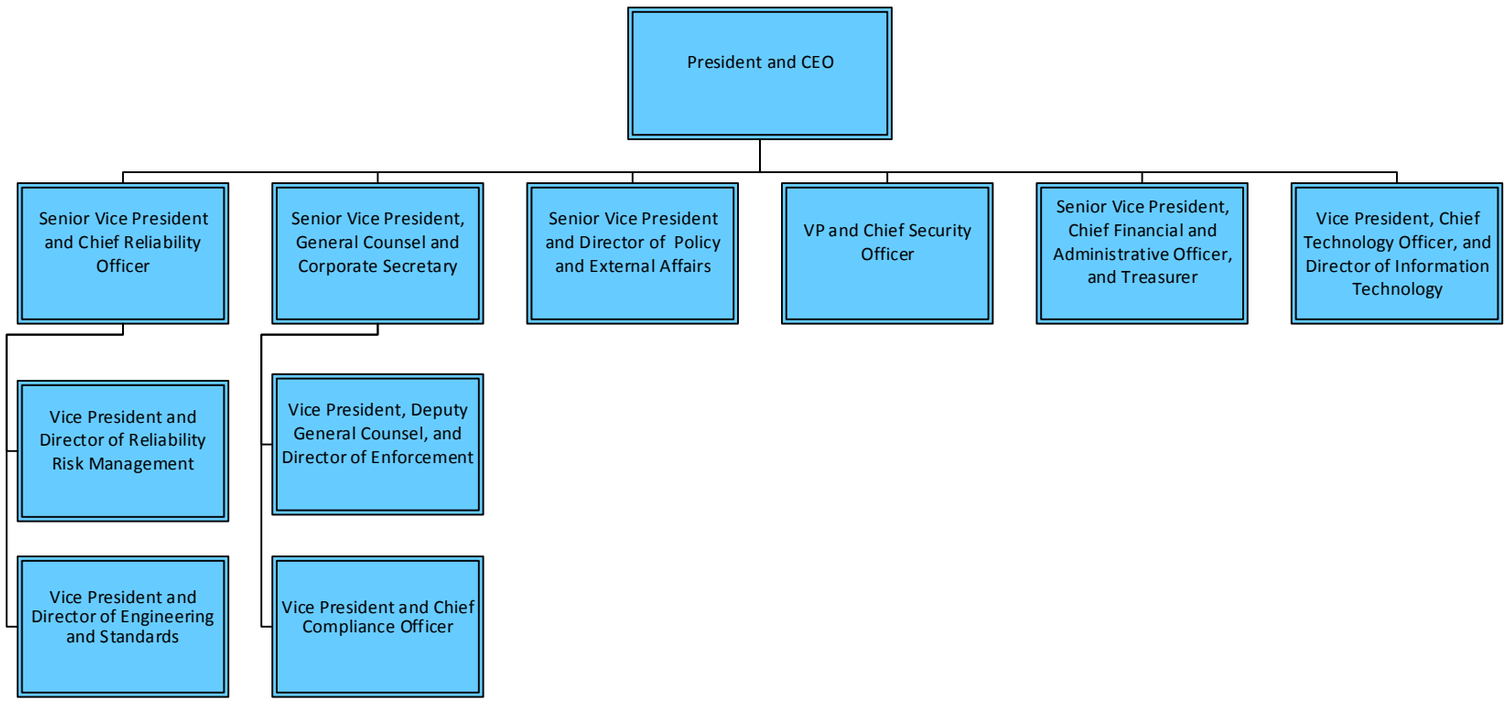
	Future Annual Payments for Debt Service			
	2019 Projected	2020 Budget	2021 Projected	2022 Projected
Prior Years - Principal	$ 394,688	$ 32,890	$ -	$ -
2019 Projection	-	544,667	544,667	544,667
2020 Budgeted	-	-	669,000	669,000
2021 Projected	-	-	-	433,333
2022 Projected	-	-	-	-
Interest Expense	13,708	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:

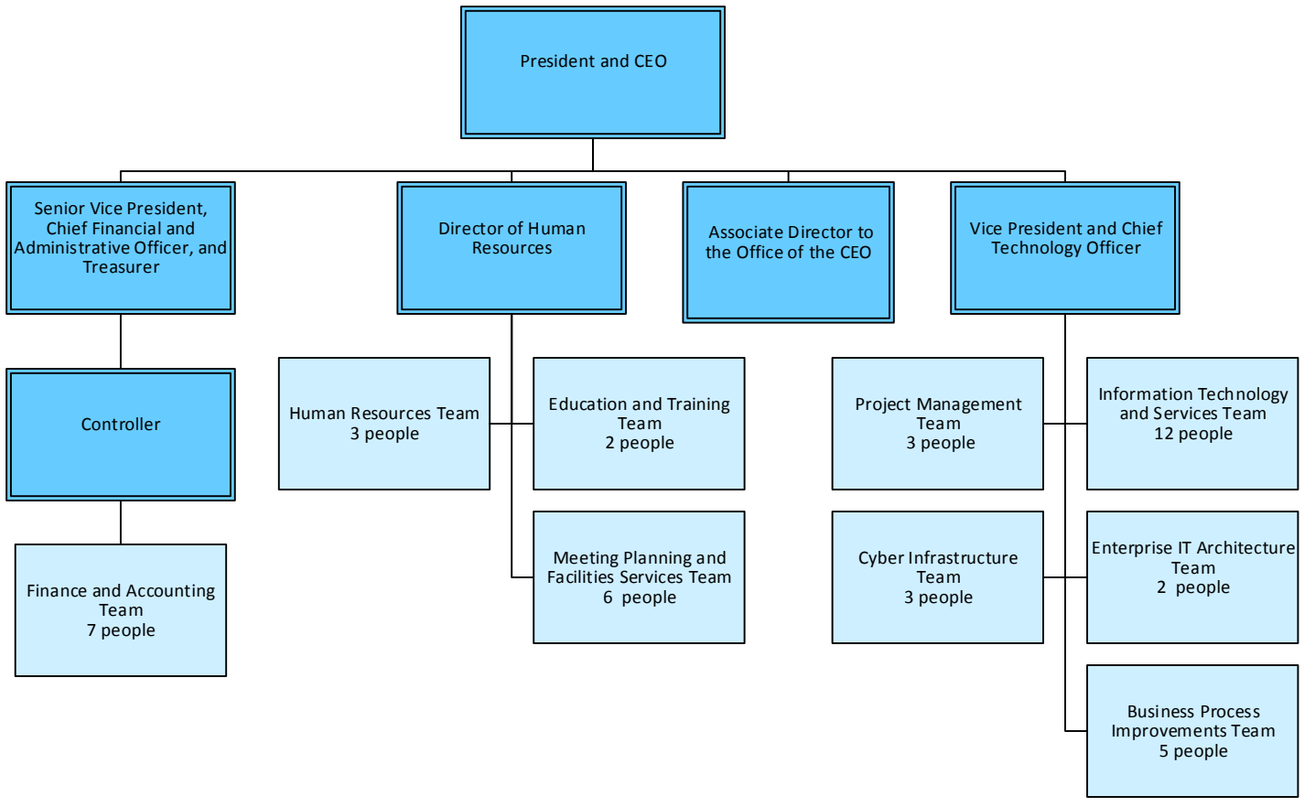
- **Future Obligation Reserve** – Includes funding that has been received to satisfy future obligations under lease, credit, loan, or other agreements to which the company is a party. This reserve is budgeted to be $1.6M for 2020.
- **System Operator Certification Reserve** – Includes surplus funding 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



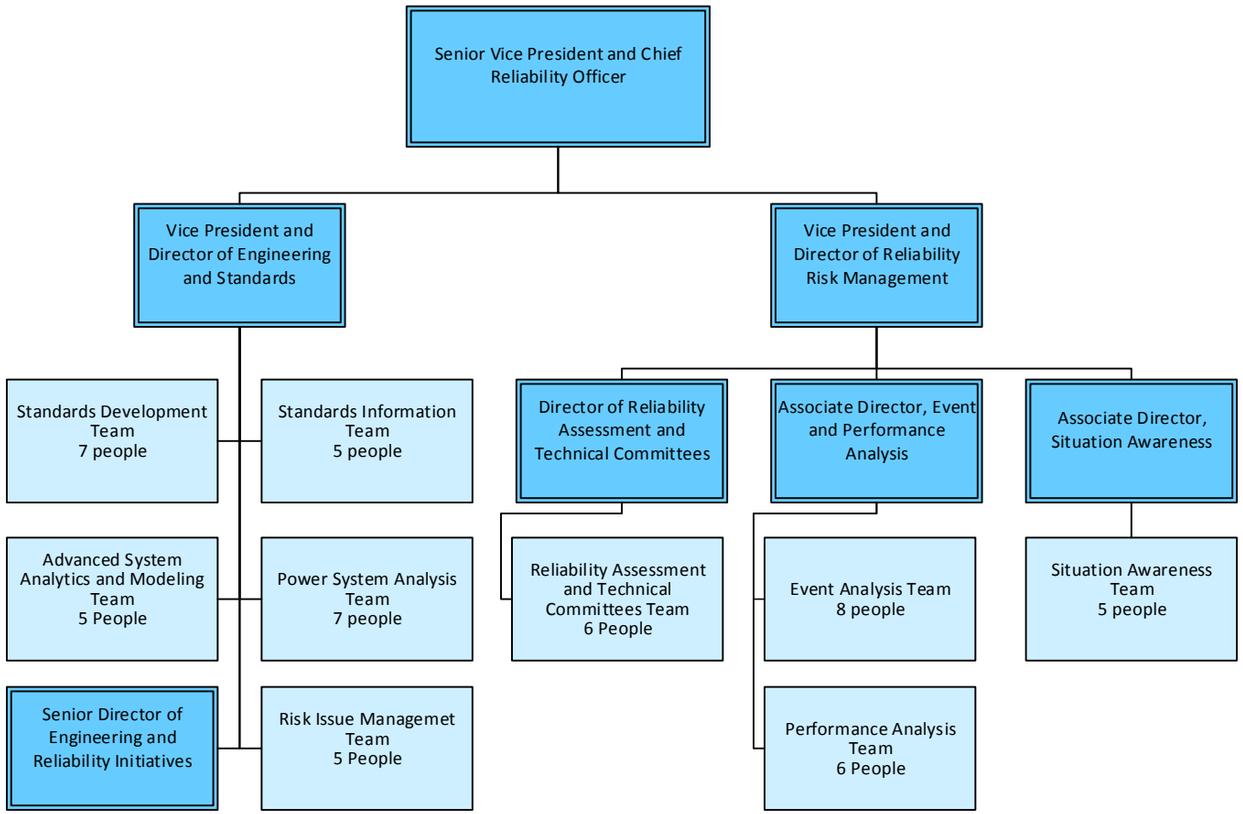
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Executive, IT, Finance, & HR and Administration



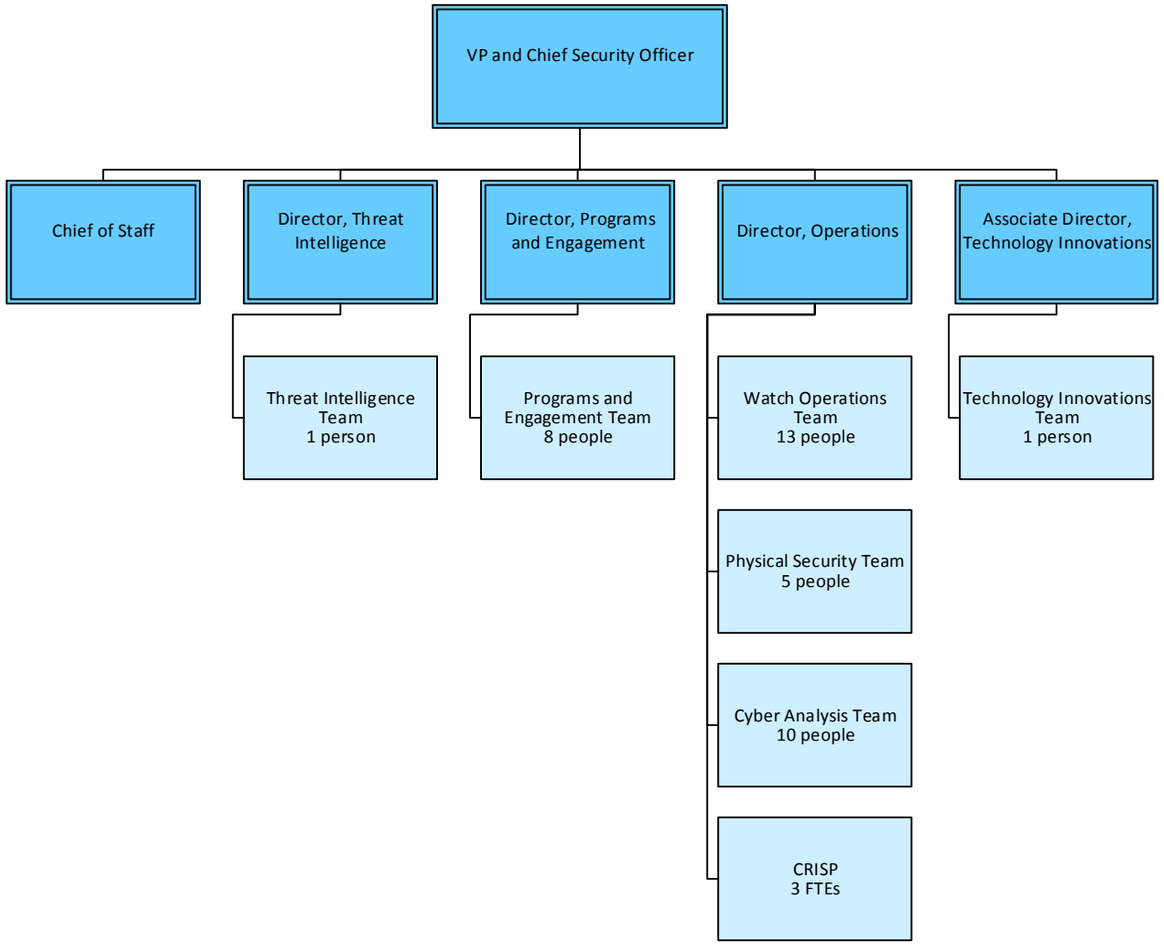
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Engineering and Standards & Reliability Risk Management



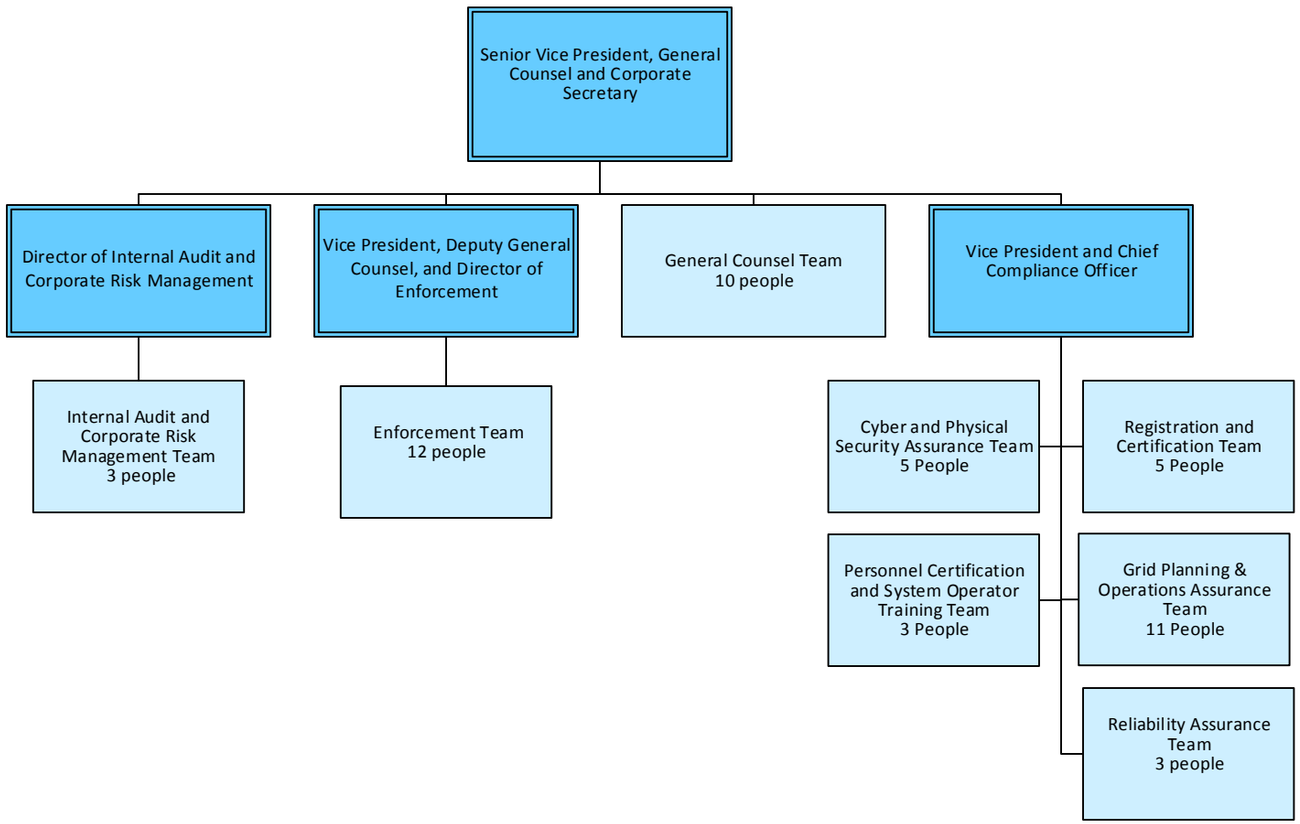
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Electricity Information Sharing and Analysis Center



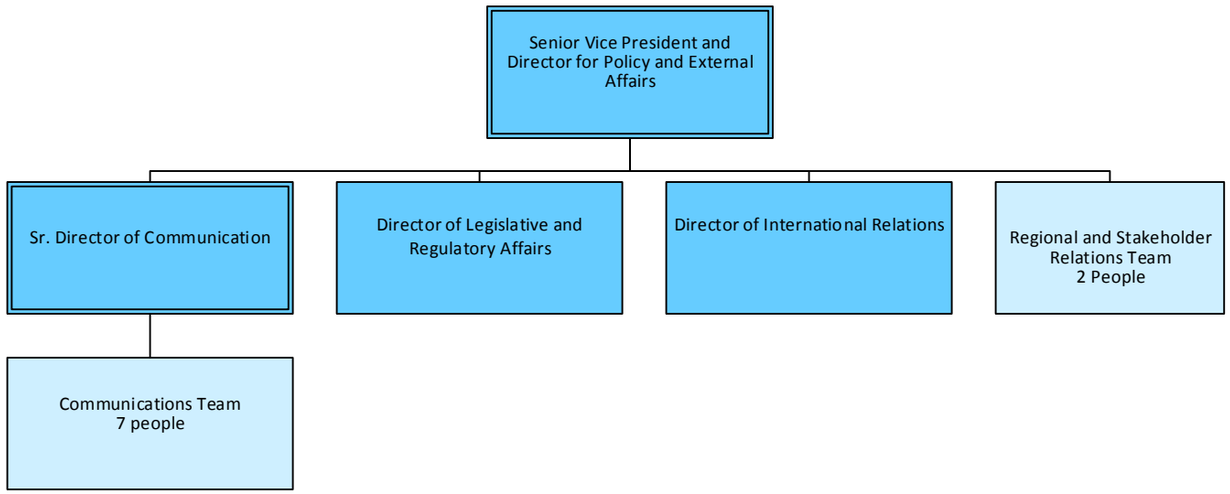
NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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



NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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%

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	Muscatine 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 (SMMPA)	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 Interconnnection, 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%

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 Robertsdale 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%

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%

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%

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-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%

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%

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%

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		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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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 (BEPC)	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 (CMMPA)	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	KCPL - 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 i	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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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.	37,720	37,720	-	-	11,994	11,994	-	-	25,725	25,725	-	-
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 (SMMPA)	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 (I	U.S.	2,346	2,346	-	-	746	746	-	-	1,600	1,600	-	-
2018	MRO	C-1240	Western Area Power Administration Upper Great Plains (UM) (I	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) (WPPI)	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		Quebec	Canada	5,208,353	-	5,208,353	-	2,213,431	-	2,213,431	-	2,994,921	-	2,994,921	-
2018		C-1341	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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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 Interconnnection, 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	-	-

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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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	-	-

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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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.	22,050	22,050	-	-	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

					Total ERO Assessments (NERC, RE & WIRAB Costs)				Total NERC Assessments				Total Regional Entity Assessments (Including WIRAB Assessments)			
Data Year	Regional Entity	NERC ID	Entity	Country	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

APPENDIX 2-C

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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 (BEPC)	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 (FARMCOOPN	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	Muscatine 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

APPENDIX 2-C

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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 Croswell	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 Interconnnection, 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

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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	-	-	11,110	11,110	-	-	-	-	233	233	-	-

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

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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 Stantonsburg, 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

APPENDIX 2-C

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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		Aguila 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

APPENDIX 2-C

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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

APPENDIX 2-C

					Total NERC Assessments				NERC NEL Assessments				Penalty Sanctions		NERC Compliance Credits			
Data Year	Regional Entity	NERC ID	Entity	Country	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

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

APPENDIX 2-D

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	MRO	C-1217	Manitoba Hydro	Canada	777,644	-	777,644	-	777,644	-	777,644	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1235	SaskPower	Canada	902,897	-	902,897	-	902,897	-	902,897	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1707	AEP-VEMCO	U.S.	24,115	24,115	-	-	24,994	24,994	-	-	(879)	(879)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1195	Alliant Energy (ALTE- WPL & ALTW IPL)	U.S.	1,010,392	1,010,392	-	-	1,047,217	1,047,217	-	-	(36,824)	(36,824)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1246	American Electric Power Service Corporation	U.S.	1,311,920	1,311,920	-	-	1,359,734	1,359,734	-	-	(47,814)	(47,814)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1196	Ames Municipal Electric System	U.S.	27,251	27,251	-	-	28,244	28,244	-	-	(993)	(993)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1986	Arkansas Electric Cooperative Corporation (AECC)	U.S.	150,665	150,665	-	-	156,156	156,156	-	-	(5,491)	(5,491)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1604	Atlantic Municipal Utilities (AMU)	U.S.	4,091	4,091	-	-	4,240	4,240	-	-	(149)	(149)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1199	Basin Electric Power Cooperative (BEPC)	U.S.	726,319	726,319	-	-	752,790	752,790	-	-	(26,471)	(26,471)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1247	Board of Public Utilities (Kansas City, KS) (BPU)	U.S.	87,071	87,071	-	-	90,245	90,245	-	-	(3,173)	(3,173)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1620	Board of Public Utilities City of McPherson, KS (MCPHER)	U.S.	37,156	37,156	-	-	38,510	38,510	-	-	(1,354)	(1,354)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1647	Carthage Water and Light	U.S.	10,583	10,583	-	-	10,969	10,969	-	-	(386)	(386)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1200	Cedar Falls Utilities (CFU)	U.S.	18,548	18,548	-	-	19,224	19,224	-	-	(676)	(676)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1201	Central Iowa Power Cooperative (CIPCO)	U.S.	104,421	104,421	-	-	108,226	108,226	-	-	(3,806)	(3,806)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1477	Central Minnesota Municipal Power Agency (CMMPA)	U.S.	13,575	13,575	-	-	14,070	14,070	-	-	(495)	(495)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1469	Central Valley Electric Cooperative (CVEC)	U.S.	31,595	31,595	-	-	32,747	32,747	-	-	(1,152)	(1,152)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1556	City of Bentonville (BENVILL)	U.S.	24,995	24,995	-	-	25,906	25,906	-	-	(911)	(911)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1713	City of Bloomer (Bloomer Electric & Water Co.)	U.S.	2,045	2,045	-	-	2,120	2,120	-	-	(75)	(75)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1703	City of Chanute (CHANUTEKS)	U.S.	17,785	17,785	-	-	18,434	18,434	-	-	(648)	(648)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1203	City of Escanaba (EME)	U.S.	4,665	4,665	-	-	4,835	4,835	-	-	(170)	(170)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1718	City of Guttenberg	U.S.	706	706	-	-	731	731	-	-	(26)	(26)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1719	City of Kasota	U.S.	132	132	-	-	137	137	-	-	(5)	(5)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1709	City of Nixa	U.S.	5,576	5,576	-	-	5,780	5,780	-	-	(203)	(203)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1722	City of Spooner	U.S.	1,140	1,140	-	-	1,182	1,182	-	-	(42)	(42)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1436	City Utilities of Springfield, MO (SPRM)	U.S.	113,652	113,652	-	-	117,794	117,794	-	-	(4,142)	(4,142)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1204	Corn Belt Power Cooperative (CBPC)	U.S.	72,056	72,056	-	-	74,683	74,683	-	-	(2,626)	(2,626)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1710	Dahlberg Electric Company	U.S.	4,128	4,128	-	-	4,279	4,279	-	-	(150)	(150)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1207	Dairyland Power Cooperative (DPC)	U.S.	211,364	211,364	-	-	219,067	219,067	-	-	(7,703)	(7,703)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1437	East Texas Electric Cooperative, Inc. (ETEC)	U.S.	34,110	34,110	-	-	35,354	35,354	-	-	(1,243)	(1,243)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1716	Eldridge Electric and Water Utilities	U.S.	1,563	1,563	-	-	1,620	1,620	-	-	(57)	(57)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1250	Empire District Electric Co.	U.S.	191,532	191,532	-	-	198,513	198,513	-	-	(6,981)	(6,981)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1205	Falls City Water & Light Department	U.S.	2,131	2,131	-	-	2,209	2,209	-	-	(78)	(78)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1470	Farmers Electric Cooperative, Inc. of New Mexico (FARMCOOPN	U.S.	11,488	11,488	-	-	11,906	11,906	-	-	(419)	(419)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1206	Fremont Department of Utilities (City of)	U.S.	15,425	15,425	-	-	15,987	15,987	-	-	(562)	(562)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1208	Geneseo Municipal Utilities	U.S.	2,361	2,361	-	-	2,447	2,447	-	-	(86)	(86)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1438	Golden Spread Electric Cooperative, Inc (GSEC)	U.S.	197,437	197,437	-	-	204,633	204,633	-	-	(7,196)	(7,196)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1209	Grand Island Utilities Department	U.S.	26,934	26,934	-	-	27,915	27,915	-	-	(982)	(982)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1251	Grand River Dam Authority (GRDA)	U.S.	185,900	185,900	-	-	192,675	192,675	-	-	(6,775)	(6,775)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1717	Great Lakes Utilities	U.S.	53,119	53,119	-	-	55,055	55,055	-	-	(1,936)	(1,936)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1210	Great River Energy (GRE)	U.S.	474,156	474,156	-	-	491,437	491,437	-	-	(17,281)	(17,281)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1606	Harlan Municipal Utilities	U.S.	626	626	-	-	649	649	-	-	(23)	(23)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1211	Hastings Utilities (HAST)	U.S.	15,544	15,544	-	-	16,110	16,110	-	-	(566)	(566)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1212	Heartland Consumers Power District (HCPD)	U.S.	16,002	16,002	-	-	16,585	16,585	-	-	(583)	(583)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1213	Hutchinson Utilities Commission (HUCH)	U.S.	10,053	10,053	-	-	10,419	10,419	-	-	(366)	(366)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1248	Independence Power & Light (Independence, MO) (INDN)	U.S.	38,163	38,163	-	-	39,554	39,554	-	-	(1,391)	(1,391)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1252	Kansas City Power & Light (KCPL)	U.S.	562,124	562,124	-	-	582,611	582,611	-	-	(20,487)	(20,487)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1439	Kansas Electric Power Cooperative (KEPC)	U.S.	77,095	77,095	-	-	79,905	79,905	-	-	(2,810)	(2,810)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1440	Kansas Municipal Energy Agency (KMEA)	U.S.	55,820	55,820	-	-	57,854	57,854	-	-	(2,034)	(2,034)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1637	Kansas Power Pool (KPP)	U.S.	30,676	30,676	-	-	31,794	31,794	-	-	(1,118)	(1,118)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1598	KCPL - Greater Missouri Operations (KCPL-GMO)	U.S.	311,361	311,361	-	-	322,709	322,709	-	-	(11,348)	(11,348)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1649	Kennett Board of Public Works	U.S.	4,984	4,984	-	-	5,166	5,166	-	-	(182)	(182)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1472	Lea County Electric Cooperative (LCEC)	U.S.	44,321	44,321	-	-	45,936	45,936	-	-	(1,615)	(1,615)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1215	Lincoln Electric System (LES)	U.S.	114,433	114,433	-	-	118,603	118,603	-	-	(4,171)	(4,171)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1216	Madison, Gas and Electric (MGE)	U.S.	117,802	117,802	-	-	122,095	122,095	-	-	(4,293)	(4,293)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1650	Malden Board of Public Works	U.S.	1,787	1,787	-	-	1,852	1,852	-	-	(65)	(65)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1220	MidAmerican Energy Company (MEC)	U.S.	928,901	928,901	-	-	962,756	962,756	-	-	(33,854)	(33,854)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1441	Midwest Energy, Inc (MIDW)	U.S.	63,429	63,429	-	-	65,740	65,740	-	-	(2,312)	(2,312)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1224	Minnesota Municipal Power Agency (MMPA) Avant Energy Inc i	U.S.	58,906	58,906	-	-	61,053	61,053	-	-	(2,147)	(2,147)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1221	Minnesota Power (MP)	U.S.	441,745	441,745	-	-	457,845	457,845	-	-	(16,100)	(16,100)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1222	Minnkota Power Cooperative, Inc. (MPC)	U.S.	138,567	138,567	-	-	143,617	143,617	-	-	(5,050)	(5,050)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1987	Missouri Joint Municipal Electric Utility	U.S.	15,418	15,418	-	-	15,980	15,980	-	-	(562)	(562)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1223	Missouri River Energy Services	U.S.	96,984	96,984	-	-	100,519	100,519	-	-	(3,535)	(3,535)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1226	Montana-Dakota Utilities Co. (MDU)	U.S.	113,807	113,807	-	-	117,955	117,955	-	-	(4,148)	(4,148)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1607	Montezuma Municipal Light & Power	U.S.	880	880	-	-	912	912	-	-	(32)	(32)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1227	Municipal Energy Agency of Nebraska (MEAN)	U.S.	35,797	35,797	-	-	37,101	37,101	-	-	(1,305)	(1,305)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1228	Muscatine Power and Water (MPW)	U.S.	31,065	31,065	-	-	32,197	32,197	-	-	(1,132)	(1,132)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1229	Nebraska City Utilities	U.S.	4,693	4,693	-	-	4,864	4,864	-	-	(171)	(171)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1230	Nebraska Public Power District (NPPD)	U.S.	462,706	462,706	-	-	479,570	479,570	-	-	(16,864)	(16,864)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1711	North Central Power Company	U.S.	1,342	1,342	-	-	1,391	1,391	-	-	(49)	(49)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1442	Northeast Texas Electric Cooperative, Inc. (NTEC)	U.S.	115,618	115,618	-	-	119,832	119,832	-	-	(4,214)	(4,214)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1231	NorthWestern Energy (NWE)	U.S.	58,021	58,021	-	-	60,136	60,136	-	-	(2,115)	(2,115)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1712	NorthWestern Wisconsin Electric Company	U.S.	6,658	6,658	-	-	6,900	6,900	-	-	(243)	(243)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1255	Oklahoma Gas and Electric Co. (OKGE)	U.S.	1,057,888	1,057,888	-	-	1,096,444	1,096,444	-	-	(38,555)	(38,555)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1444	Oklahoma Municipal Power Authority (OMPA)	U.S.	101,317	101,317	-	-	105,010	105,010	-	-	(3,693)	(3,693)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1232	Omaha Public Power District (OPPD)	U.S.	395,519	395,519	-	-	409,934	409,934	-	-	(14,415)	(14,415)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1233	Otter Tail Power Company (OTP)	U.S.	177,025	177,025	-	-	183,477	183,477	-	-	(6,452)	(6,452)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1651	Paragould Light, Water & Cable (PARAGOULD)	U.S.	21,345	21,345	-	-	22,123	22,123	-	-	(778)	(778)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1725	Peoples Electric Cooperative (PEC)	U.S.	25,725	25,725	-	-	26,663	26,663	-	-	(938)	(938)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1652	Piggott Municipal Light, Water & Sewer	U.S.	1,350	1,350	-	-	1,399	1,399	-	-	(49)	(49)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1653	Poplar Bluff Municipal Utilities	U.S.	13,200	13,200	-	-	13,681	13,681	-	-	(481)	(481)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1720	Resale Power Group of Iowa	U.S.	19,815	19,815	-	-	20,537	20,537	-	-	(722)	(722)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1721	Rice Lake Utilities	U.S.	5,815	5,815	-	-	6,027	6,027	-	-	(212)	(212)	-	-	-	-	-	-	-	-	-	-	-

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

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	MRO	C-1234	Rochester Public Utilities (RPU)	U.S.	115	115	-	-	119	119	-	-	(4)	(4)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1473	Roosevelt County Electric Cooperative	U.S.	5,817	5,817	-	-	6,029	6,029	-	-	(212)	(212)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1654	Sikeston Board of Municipal Utilities	U.S.	13,691	13,691	-	-	14,190	14,190	-	-	(499)	(499)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1236	Southern Minnesota Municipal Power Agency (SMMPA)	U.S.	97,274	97,274	-	-	100,819	100,819	-	-	(3,545)	(3,545)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1257	Southwestern Public Service Co. Xcel Energy (SPS)	U.S.	770,035	770,035	-	-	798,100	798,100	-	-	(28,064)	(28,064)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1256	Sunflower Electric Cooperative (SECI)	U.S.	161,609	161,609	-	-	167,499	167,499	-	-	(5,890)	(5,890)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1475	Tri County Electric Cooperative, Inc. of Oklahoma (TRICEC)	U.S.	13,192	13,192	-	-	13,672	13,672	-	-	(481)	(481)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1665	Upper Peninsula Power Co (UPPC)	U.S.	24,012	24,012	-	-	24,887	24,887	-	-	(875)	(875)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1714	Village of Caddott	U.S.	450	450	-	-	466	466	-	-	(16)	(16)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1260	Westar Energy (WR)	U.S.	745,240	745,240	-	-	772,401	772,401	-	-	(27,161)	(27,161)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1239	Western Area Power Administration Rocky Mountain Region (I	U.S.	1,600	1,600	-	-	1,658	1,658	-	-	(58)	(58)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1240	Western Area Power Administration Upper Great Plains (UM) (	U.S.	317,290	317,290	-	-	328,854	328,854	-	-	(11,564)	(11,564)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1259	Western Farmers Electric Cooperative (WFEC)	U.S.	325,470	325,470	-	-	337,332	337,332	-	-	(11,862)	(11,862)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1501	West Texas Municipal Power Agency (WTMPA)	U.S.	102,051	102,051	-	-	105,770	105,770	-	-	(3,719)	(3,719)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1241	Willmar Municipal Utilities (WLMRWL)	U.S.	8,928	8,928	-	-	9,254	9,254	-	-	(325)	(325)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1242	Wisconsin Public Power, Inc. (East and West regions) (WPPI)	U.S.	183,655	183,655	-	-	190,348	190,348	-	-	(6,693)	(6,693)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1983	Wolverine Power Marketing Cooperative	U.S.	1,439	1,439	-	-	1,492	1,492	-	-	(52)	(52)	-	-	-	-	-	-	-	-	-	-	-
2018	MRO	C-1244	Xcel Energy Company Northern States Power (NSP)	U.S.	1,524,413	1,524,413	-	-	1,579,971	1,579,971	-	-	(55,558)	(55,558)	-	-	-	-	-	-	-	-	-	-	-
			TOTAL 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	C-1336	New England	U.S.	4,154,551	4,154,551	-	-	1,264,778	1,264,778	-	-	(52,064)	(52,064)	2,941,837	2,941,837	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1339	New York	U.S.	5,421,138	5,421,138	-	-	1,650,361	1,650,361	-	-	(67,936)	(67,936)	3,838,713	3,838,713	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1337	Ontario	Canada	2,160,683	-	2,160,683	-	1,407,827	-	1,407,827	-	-	-	752,856	-	752,856	-	-	-	-	-	-	-	-
2018	NPCC		Quebec	Canada	2,994,921	-	2,994,921	-	1,771,090	-	1,771,090	-	-	-	1,223,831	-	1,223,831	-	-	-	-	-	-	-	-
2018		C-1341	Hydro Quebec	Canada		-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018		C-1572	Regie	Canada		-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	NPCC	C-1705	New Brunswick	Canada	357,526	-	357,526	-	144,197	-	144,197	-	-	-	213,329	-	213,329	-	-	-	-	-	-	-	-
2018	NPCC	C-1340	Nova Scotia	Canada	249,918	-	249,918	-	115,864	-	115,864	-	-	-	134,054	-	134,054	-	-	-	-	-	-	-	-
			TOTAL 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	C-1102	Cannelton Utilities	U.S.	369	369	-	-	373	373	-	-	(4)	(4)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1106	City of Croswell	U.S.	979	979	-	-	990	990	-	-	(12)	(12)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1490	City of Lansing	U.S.	53,523	53,523	-	-	54,165	54,165	-	-	(642)	(642)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1120	Cloverland Electric Cooperative	U.S.	18,284	18,284	-	-	18,504	18,504	-	-	(219)	(219)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1122	CMS ERM Michigan LLC	U.S.	4,290	4,290	-	-	4,341	4,341	-	-	(51)	(51)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1124	Constellation New Energy (MECS-CONS)	U.S.	44,057	44,057	-	-	44,585	44,585	-	-	(528)	(528)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1123	Constellation New Energy (MECS-DET)	U.S.	51,121	51,121	-	-	51,734	51,734	-	-	(613)	(613)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1126	Consumers Energy Company	U.S.	830,511	830,511	-	-	840,470	840,470	-	-	(9,959)	(9,959)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1128	Detroit Edison Company	U.S.	1,134,957	1,134,957	-	-	1,148,567	1,148,567	-	-	(13,609)	(13,609)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1166	Duke Energy Indiana	U.S.	745,818	745,818	-	-	754,761	754,761	-	-	(8,943)	(8,943)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1135	Ferdinand Municipal Light & Water	U.S.	1,096	1,096	-	-	1,110	1,110	-	-	(13)	(13)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1646	FirstEnergy Solutions (MECS-CONS)	U.S.	21,752	21,752	-	-	22,013	22,013	-	-	(261)	(261)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1549	FirstEnergy Solutions (MECS-DET)	U.S.	2,346	2,346	-	-	2,374	2,374	-	-	(28)	(28)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1145	Hoosier Energy	U.S.	196,463	196,463	-	-	198,818	198,818	-	-	(2,356)	(2,356)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1148	Indiana Municipal Power Agency (DUKE CIN)	U.S.	77,738	77,738	-	-	78,670	78,670	-	-	(932)	(932)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1485	Indiana Municipal Power Agency (NIPSCO)	U.S.	10,800	10,800	-	-	10,930	10,930	-	-	(130)	(130)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1486	Indiana Municipal Power Agency (SIGE)	U.S.	14,837	14,837	-	-	15,015	15,015	-	-	(178)	(178)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1149	Indianapolis Power & Light Co.	U.S.	353,389	353,389	-	-	357,627	357,627	-	-	(4,238)	(4,238)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1666	Constellation New Energy(FKA Integrys Energy Services)	U.S.	7,515	7,515	-	-	7,605	7,605	-	-	(90)	(90)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1614	Just Energy (MECS-DET)	U.S.	190	190	-	-	192	192	-	-	(2)	(2)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1154	Michigan Public Power Agency	U.S.	94,660	94,660	-	-	95,795	95,795	-	-	(1,135)	(1,135)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1155	Michigan South Central Power Agency	U.S.	19,342	19,342	-	-	19,574	19,574	-	-	(232)	(232)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1158	MidAmerican Energy Company Retail	U.S.	101	101	-	-	102	102	-	-	(1)	(1)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1163	Northern Indiana Public Service Co.	U.S.	412,609	412,609	-	-	417,557	417,557	-	-	(4,948)	(4,948)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1164	Ontonagon County Rural Electrification Assoc.	U.S.	691	691	-	-	699	699	-	-	(8)	(8)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1265	PJM Interconnnection, LLC	U.S.	16,817,007	16,817,007	-	-	17,018,663	17,018,663	-	-	(201,656)	(201,656)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1172	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solutions	U.S.	7,860	7,860	-	-	7,955	7,955	-	-	(94)	(94)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1171	Calpine Energy Solutions (k.n.a.Noble Americas Energy Solutions	U.S.	15,058	15,058	-	-	15,238	15,238	-	-	(181)	(181)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1176	Direct Energy (fka:Strategic Energy,LLC) (MECS-CONS)	U.S.	1,313	1,313	-	-	1,329	1,329	-	-	(16)	(16)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1174	Direct Energy (fka:Strategic Energy,LLC) (MECS-DET)	U.S.	40,829	40,829	-	-	41,318	41,318	-	-	(490)	(490)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1581	Spartan Renewable Energy	U.S.	3,191	3,191	-	-	3,229	3,229	-	-	(38)	(38)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1985	Spartan Renewable Energy (MI UP)	U.S.	1,800	1,800	-	-	1,822	1,822	-	-	(22)	(22)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1180	Thumb Electric Cooperative	U.S.	4,619	4,619	-	-	4,675	4,675	-	-	(55)	(55)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-2027	Upper Michigan Energy Resources	U.S.	16,165	16,165	-	-	16,359	16,359	-	-	(194)	(194)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1181	Vectren Energy Delivery of IN	U.S.	129,305	129,305	-	-	130,856	130,856	-	-	(1,551)	(1,551)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1184	Wabash Valley Power Association Inc. (DUKE CIN)	U.S.	73,459	73,459	-	-	74,339	74,339	-	-	(881)	(881)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1488	Wabash Valley Power Association Inc.(NIPSCO)	U.S.	43,657	43,657	-	-	44,181	44,181	-	-	(524)	(524)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1185	Wisconsin Electric Power Co.	U.S.	684,203	684,203	-	-	692,408	692,408	-	-	(8,204)	(8,204)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1664	Wisconsin Public Service Co.	U.S.	283,612	283,612	-	-	287,013	287,013	-	-	(3,401)	(3,401)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1189	Wolverine Power Marketing Cooperative	U.S.	16,952	16,952	-	-	17,155	17,155	-	-	(203)	(203)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1191	Wolverine Power Supply Cooperative	U.S.	69,426	69,426	-	-	70,258	70,258	-	-	(833)	(833)	-	-	-	-	-	-	-	-	-	-	-
2018	RF	C-1190	Wolverine Power Marketing Cooperative(MECS-DET)	U.S.	12,729	12,729	-	-	12,881	12,881	-	-	(153)	(153)	-	-	-	-	-	-	-	-	-	-	-
			TOTAL RELIABILITYFIRST		22,318,623	22,318,623	-	-	22,586,250	22,586,250	-	-	(267,627)	(267,627)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1267	Alabama Municipal Electric Authority	U.S.	59,561	59,561	-	-	64,599	64,599	-	-	(5,039)	(5,039)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1268	Alabama Power Company	U.S.	987,956	987,956	-	-	1,071,535	1,071,535	-	-	(83,579)	(83,579)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1269	Ameren - Illinois	U.S.	739,786	739,786	-	-	802,371	802,371	-	-	(62,585)	(62,585)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1271	Ameren - Missouri	U.S.	653,651	653,651	-	-	708,949	708,949	-	-	(55,298)	(55,298)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1273	Associated Electric Cooperative Inc.	U.S.	358,962	358,962	-	-	389,330	389,330	-	-	(30,368)	(30,368)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1582	Beauregard Electric Cooperative, Inc.	U.S.	21,488	21,488	-	-	23,306	23,306	-	-	(1,818)	(1,818)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1462	Benton Utility District	U.S.	4,583	4,583	-	-	4,971	4,971	-	-	(388)	(388)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1274	Big Rivers Electric Corporation	U.S.	66,106	66,106	-	-	71,698	71,698	-	-	(5,592)	(5,592)	-	-	-	-	-	-	-	-	-	-	-

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

APPENDIX 2-D

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	SERC	C-1275	Black Warrior EMC	U.S.	7,426	7,426	-	-	8,054	8,054	-	-	(628)	(628)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1276	Blue Ridge EMC	U.S.	24,882	24,882	-	-	26,987	26,987	-	-	(2,105)	(2,105)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1628	Brazos Electric Power Cooperative, Inc.	U.S.	8,777	8,777	-	-	9,519	9,519	-	-	(743)	(743)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1463	Canton, MS	U.S.	2,186	2,186	-	-	2,371	2,371	-	-	(185)	(185)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1277	Central Electric Power Cooperative Inc.	U.S.	308,522	308,522	-	-	334,622	334,622	-	-	(26,100)	(26,100)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1667	Century Aluminum - Hawesville	U.S.	53,799	53,799	-	-	58,351	58,351	-	-	(4,551)	(4,551)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1668	Century Aluminum - Sebree	U.S.	36,034	36,034	-	-	39,083	39,083	-	-	(3,048)	(3,048)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1278	City of Blountstown FL	U.S.	589	589	-	-	639	639	-	-	(50)	(50)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1279	City of Camden SC	U.S.	3,430	3,430	-	-	3,721	3,721	-	-	(290)	(290)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1280	City of Collins MS	U.S.	799	799	-	-	866	866	-	-	(68)	(68)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1281	City of Columbia MO	U.S.	21,076	21,076	-	-	22,859	22,859	-	-	(1,783)	(1,783)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1282	City of Conway AR (Conway Corporation)	U.S.	17,674	17,674	-	-	19,169	19,169	-	-	(1,495)	(1,495)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1284	City of Evergreen AL	U.S.	976	976	-	-	1,058	1,058	-	-	(83)	(83)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1285	City of Hampton GA	U.S.	553	553	-	-	600	600	-	-	(47)	(47)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1286	City of Hartford AL	U.S.	460	460	-	-	499	499	-	-	(39)	(39)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1287	City of Henderson (KY) Municipal Power & Light	U.S.	10,600	10,600	-	-	11,497	11,497	-	-	(897)	(897)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1288	City of North Little Rock AR (DENL)	U.S.	16,381	16,381	-	-	17,767	17,767	-	-	(1,386)	(1,386)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1289	City of Orangeburg SC Department of Public Utilities	U.S.	14,285	14,285	-	-	15,493	15,493	-	-	(1,208)	(1,208)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1290	City of Robertsdale AL	U.S.	1,516	1,516	-	-	1,645	1,645	-	-	(128)	(128)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1291	City of Ruston LA (DERS)	U.S.	4,827	4,827	-	-	5,235	5,235	-	-	(408)	(408)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1292	Seneca Light & Power	U.S.	2,845	2,845	-	-	3,086	3,086	-	-	(241)	(241)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1115	City of Springfield (CWLP)	U.S.	30,359	30,359	-	-	32,928	32,928	-	-	(2,568)	(2,568)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1465	City of Thayer, MO	U.S.	337	337	-	-	365	365	-	-	(29)	(29)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1293	City of Troy AL	U.S.	7,225	7,225	-	-	7,836	7,836	-	-	(611)	(611)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1294	City of West Memphis AR (West Memphis Utilities)	U.S.	6,751	6,751	-	-	7,322	7,322	-	-	(571)	(571)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1583	Claiborne Electric Cooperative, Inc.	U.S.	11,745	11,745	-	-	12,739	12,739	-	-	(994)	(994)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1584	Concordia Electric Cooperative, Inc.	U.S.	3,887	3,887	-	-	4,215	4,215	-	-	(329)	(329)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1726	Cube Hydro Carolinas	U.S.	331	331	-	-	359	359	-	-	(28)	(28)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1283	Dalton Utilities	U.S.	32,231	32,231	-	-	34,958	34,958	-	-	(2,727)	(2,727)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1585	Dixie Electric Membership Corporation	U.S.	39,343	39,343	-	-	42,671	42,671	-	-	(3,328)	(3,328)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1295	Dominion Virginia Power	U.S.	1,530,621	1,530,621	-	-	1,660,109	1,660,109	-	-	(129,488)	(129,488)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1296	Duke Energy Carolinas, LLC	U.S.	1,501,402	1,501,402	-	-	1,628,418	1,628,418	-	-	(127,016)	(127,016)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1466	Durant, MS	U.S.	438	438	-	-	476	476	-	-	(37)	(37)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1478	LG&E and KU Services Co as agent for LG&E Co and KU Co	U.S.	602,532	602,532	-	-	653,505	653,505	-	-	(50,973)	(50,973)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1297	East Kentucky Power Cooperative	U.S.	243,788	243,788	-	-	264,412	264,412	-	-	(20,624)	(20,624)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1298	East Mississippi Electric Power Association	U.S.	7,533	7,533	-	-	8,170	8,170	-	-	(637)	(637)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1669	Electricities of North Carolina Inc	U.S.	206,760	206,760	-	-	224,251	224,251	-	-	(17,492)	(17,492)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1300	EnergyUnited EMC	U.S.	46,477	46,477	-	-	50,409	50,409	-	-	(3,932)	(3,932)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1301	Entergy	U.S.	2,090,288	2,090,288	-	-	2,267,122	2,267,122	-	-	(176,834)	(176,834)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1302	Fayetteville (NC) Public Works Commission	U.S.	37,301	37,301	-	-	40,456	40,456	-	-	(3,156)	(3,156)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1303	Florida Public Utilities (FL Panhandle Load)	U.S.	5,061	5,061	-	-	5,489	5,489	-	-	(428)	(428)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1304	French Broad EMC	U.S.	9,707	9,707	-	-	10,528	10,528	-	-	(821)	(821)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1305	Georgia Power Company	U.S.	1,506,429	1,506,429	-	-	1,633,870	1,633,870	-	-	(127,441)	(127,441)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1306	Georgia System Optns Corporation	U.S.	704,005	704,005	-	-	763,562	763,562	-	-	(59,557)	(59,557)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1479	Greenwood (MS) Utilities Commission	U.S.	4,758	4,758	-	-	5,161	5,161	-	-	(403)	(403)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1307	Greenwood (SC) Commissioners of Public Works	U.S.	5,607	5,607	-	-	6,082	6,082	-	-	(474)	(474)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1308	Gulf Power Company	U.S.	200,365	200,365	-	-	217,316	217,316	-	-	(16,951)	(16,951)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1586	Haywood EMC	U.S.	5,703	5,703	-	-	6,186	6,186	-	-	(482)	(482)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1984	Hoosier Energy REC, Inc	U.S.	7,747	7,747	-	-	8,403	8,403	-	-	(655)	(655)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1309	Illinois Municipal Electric Agency	U.S.	31,804	31,804	-	-	34,494	34,494	-	-	(2,691)	(2,691)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1480	Itta Bena, MS	U.S.	253	253	-	-	275	275	-	-	(21)	(21)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1587	Jefferson Davis Electric Cooperative, Inc.	U.S.	4,844	4,844	-	-	5,254	5,254	-	-	(410)	(410)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1617	Kentucky Municipal Power	U.S.	12,087	12,087	-	-	13,110	13,110	-	-	(1,023)	(1,023)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1481	Kosciusko, MS	U.S.	1,296	1,296	-	-	1,406	1,406	-	-	(110)	(110)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1482	Leland, MS	U.S.	532	532	-	-	577	577	-	-	(45)	(45)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1313	McCormick Commission of Public Works	U.S.	286	286	-	-	310	310	-	-	(24)	(24)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1314	Mississippi Power Company	U.S.	176,501	176,501	-	-	191,432	191,432	-	-	(14,932)	(14,932)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1630	Mt. Carmel Public Utility	U.S.	1,754	1,754	-	-	1,902	1,902	-	-	(148)	(148)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1315	Municipal Electric Authority of Georgia	U.S.	193,415	193,415	-	-	209,777	209,777	-	-	(16,363)	(16,363)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1316	N.C. Electric Membership Corp.	U.S.	230,832	230,832	-	-	250,360	250,360	-	-	(19,528)	(19,528)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1588	Northeast Louisiana Power Cooperative, Inc.	U.S.	5,279	5,279	-	-	5,725	5,725	-	-	(447)	(447)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1574	Northern Virginia Electric Cooperative	U.S.	94,585	94,585	-	-	102,586	102,586	-	-	(8,002)	(8,002)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1319	Old Dominion Electric Cooperative	U.S.	87,547	87,547	-	-	94,953	94,953	-	-	(7,406)	(7,406)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1618	Osceola (Arkansas) Municipal Light and Power	U.S.	2,645	2,645	-	-	2,869	2,869	-	-	(224)	(224)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1320	Owensboro (KY) Municipal Utilities	U.S.	14,290	14,290	-	-	15,499	15,499	-	-	(1,209)	(1,209)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1321	Piedmont EMC in Duke and Progress Areas	U.S.	9,469	9,469	-	-	10,270	10,270	-	-	(801)	(801)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1323	Piedmont Municipal Power Agency (PMPA)	U.S.	42,098	42,098	-	-	45,660	45,660	-	-	(3,561)	(3,561)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1589	Pointe Coupee Electric Memb. Corp.	U.S.	4,369	4,369	-	-	4,739	4,739	-	-	(370)	(370)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1266	PowerSouth Energy	U.S.	155,404	155,404	-	-	168,551	168,551	-	-	(13,147)	(13,147)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1330	Prairie Power, Inc.	U.S.	27,744	27,744	-	-	30,091	30,091	-	-	(2,347)	(2,347)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1706	Duke Energy Progress	U.S.	804,283	804,283	-	-	872,323	872,323	-	-	(68,041)	(68,041)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1325	Rutherford EMC	U.S.	24,038	24,038	-	-	26,072	26,072	-	-	(2,034)	(2,034)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1631	Sam Rayburn G&T Electric Cooperative Inc.	U.S.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1326	South Carolina Electric & Gas Company	U.S.	407,024	407,024	-	-	441,458	441,458	-	-	(34,433)	(34,433)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1327	South Carolina Public Service Authority	U.S.	152,032	152,032	-	-	164,894	164,894	-	-	(12,862)	(12,862)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1590	South Louisiana Electric Cooperative Association	U.S.	9,954	9,954	-	-	10,796	10,796	-	-	(842)	(842)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1328	Cooperative Energy (formerly SMEPA)	U.S.	173,773	173,773	-	-	188,474	188,474	-	-	(14,701)	(14,701)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1329	Southern Illinois Power Cooperative	U.S.	27,220	27,220	-	-	29,523	29,523	-	-	(2,303)	(2,303)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1591	Southwest Louisiana Electric Membership Corporation	U.S.	44,644	44,644	-	-	48,421	48,421	-	-	(3,777)	(3,777)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1619	Southwestern Electric Cooperative, Inc.	U.S.	8,197	8,197	-	-	8,891	8,891	-	-	(693)	(693)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1331	Tennessee Valley Authority	U.S.	2,792,338	2,792,338	-	-	3,028,564	3,028,564	-	-	(236,227)	(236,227)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1632	Tex-La Electric Cooperative of Texas, Inc	U.S.	37,397	37,397	-	-	40,560	40,560	-	-	(3,164)	(3,164)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1332	Tombigbee Electric Cooperative Inc.	U.S.	2,303	2,303	-	-	2,497	2,497	-	-	(195)	(195)	-	-	-	-	-	-	-	-	-	-	-

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

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	Total	US	Canada	Mexico	Total	US	Canada	Mexico	Total	US	Total	US	Canada	Total	US	Canada	Mexico	Total	US	Canada	Mexico
2018	SERC	C-1594	Town of Sharpsburg, N.C.	U.S.	324	324	-	-	352	352	-	-	(27)	(27)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1595	Town of Stantonsburg, N.C. JRO	U.S.	986	986	-	-	1,070	1,070	-	-	(83)	(83)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1333	Town of Waynesville NC	U.S.	1,530	1,530	-	-	1,659	1,659	-	-	(129)	(129)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1334	Town of Winnsboro SC	U.S.	1,086	1,086	-	-	1,178	1,178	-	-	(92)	(92)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1335	Town of Winterville NC	U.S.	952	952	-	-	1,033	1,033	-	-	(81)	(81)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1597	Washington-St.Tammany Electric Cooperative, Inc.	U.S.	18,806	18,806	-	-	20,397	20,397	-	-	(1,591)	(1,591)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1435	Arkansas Electric Cooperative Corporation	U.S.	188,207	188,207	-	-	204,128	204,128	-	-	(15,922)	(15,922)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1557	City of Clarksdale, Mississippi	U.S.	2,392	2,392	-	-	2,595	2,595	-	-	(202)	(202)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1708	City of Abbeville	U.S.	2,376	2,376	-	-	2,577	2,577	-	-	(201)	(201)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1558	Hope Water & Light (HWL)	U.S.	5,333	5,333	-	-	5,784	5,784	-	-	(451)	(451)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1559	City of Minden	U.S.	2,572	2,572	-	-	2,790	2,790	-	-	(218)	(218)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1249	Cleco Power LLC	U.S.	199,411	199,411	-	-	216,281	216,281	-	-	(16,870)	(16,870)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1648	Jonesboro City Water & Light	U.S.	24,937	24,937	-	-	27,047	27,047	-	-	(2,110)	(2,110)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1471	Lafayette Utilities System	U.S.	35,860	35,860	-	-	38,894	38,894	-	-	(3,034)	(3,034)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1253	Louisiana Energy & Power Authority (LEPA)	U.S.	16,889	16,889	-	-	18,318	18,318	-	-	(1,429)	(1,429)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1443	Missouri Joint Municipal Electric Utility Commission	U.S.	35,941	35,941	-	-	38,982	38,982	-	-	(3,041)	(3,041)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1639	OzMo Ozark Missouri, West Plains MO	U.S.	3,381	3,381	-	-	3,667	3,667	-	-	(286)	(286)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1653	Poplar Bluff Municipal Utilities	U.S.	6,590	6,590	-	-	7,147	7,147	-	-	(557)	(557)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1636	City of Prescott	U.S.	1,510	1,510	-	-	1,637	1,637	-	-	(128)	(128)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1561	Public Service Commission of Yazoo City of Mississippi	U.S.	2,096	2,096	-	-	2,273	2,273	-	-	(177)	(177)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1654	Sikeston Board of Municipal Utilities	U.S.	6,433	6,433	-	-	6,977	6,977	-	-	(544)	(544)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1074	Alachua, City of	U.S.	2,348	2,348	-	-	2,547	2,547	-	-	(199)	(199)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1075	Bartow, City of	U.S.	4,997	4,997	-	-	5,420	5,420	-	-	(423)	(423)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1076	Chattahoochee, City of	U.S.	620	620	-	-	672	672	-	-	(52)	(52)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1077	Florida Keys Electric Cooperative Assn	U.S.	12,595	12,595	-	-	13,661	13,661	-	-	(1,066)	(1,066)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1078	Florida Power & Light Co.	U.S.	1,975,614	1,975,614	-	-	2,142,747	2,142,747	-	-	(167,133)	(167,133)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1079	Florida Public Utilities Company	U.S.	5,973	5,973	-	-	6,479	6,479	-	-	(505)	(505)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1080	Gainesville Regional Utilities	U.S.	31,694	31,694	-	-	34,376	34,376	-	-	(2,681)	(2,681)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1081	Homestead, City of	U.S.	9,097	9,097	-	-	9,866	9,866	-	-	(770)	(770)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1082	JEA	U.S.	218,674	218,674	-	-	237,174	237,174	-	-	(18,499)	(18,499)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1083	Lakeland Electric	U.S.	54,272	54,272	-	-	58,863	58,863	-	-	(4,591)	(4,591)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1626	Lee County Electric Cooperative, Inc	U.S.	72,106	72,106	-	-	78,206	78,206	-	-	(6,100)	(6,100)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1661	City of Lake Worth	U.S.	8,192	8,192	-	-	8,885	8,885	-	-	(693)	(693)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1084	Mount Dora, City of	U.S.	1,592	1,592	-	-	1,727	1,727	-	-	(135)	(135)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1085	New Smyrna Beach, Utilities Commission of	U.S.	7,561	7,561	-	-	8,200	8,200	-	-	(640)	(640)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1086	Orlando Utilities Commission	U.S.	104,965	104,965	-	-	113,845	113,845	-	-	(8,880)	(8,880)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1087	Duke Energy Florida	U.S.	724,768	724,768	-	-	786,082	786,082	-	-	(61,314)	(61,314)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1088	Quincy, City of	U.S.	2,162	2,162	-	-	2,345	2,345	-	-	(183)	(183)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1089	Reedy Creek Improvement District	U.S.	20,582	20,582	-	-	22,324	22,324	-	-	(1,741)	(1,741)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1090	St. Cloud, City of (OUC)	U.S.	13,785	13,785	-	-	14,951	14,951	-	-	(1,166)	(1,166)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1091	Tallahassee, City of	U.S.	48,128	48,128	-	-	52,199	52,199	-	-	(4,072)	(4,072)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1092	Tampa Electric Company	U.S.	352,647	352,647	-	-	382,481	382,481	-	-	(29,833)	(29,833)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1093	Wauchula, City of	U.S.	1,161	1,161	-	-	1,259	1,259	-	-	(98)	(98)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1094	Williston, City of	U.S.	621	621	-	-	674	674	-	-	(53)	(53)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1095	Winter Park, City of	U.S.	7,637	7,637	-	-	8,283	8,283	-	-	(646)	(646)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1724	Moore Haven, City of	U.S.	273	273	-	-	296	296	-	-	(23)	(23)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1072	Florida Municipal Power Agency	U.S.	104,560	104,560	-	-	113,406	113,406	-	-	(8,846)	(8,846)	-	-	-	-	-	-	-	-	-	-	-
2018	SERC	C-1073	Seminole Electric Cooperative	U.S.	256,187	256,187	-	-	277,860	277,860	-	-	(21,673)	(21,673)	-	-	-	-	-	-	-	-	-	-	-
			TOTAL SERC		22,459,123	22,459,123	-	-	24,359,123	24,359,123	-	-	(1,900,000)	(1,900,000)	-	-	-	-	-	-	-	-	-	-	-
2018	Texas RE	C-1019	ERCOT	U.S.	13,344,128	13,344,128	-	-	14,054,128	14,054,128	-	-	(710,000)	(710,000)	-	-	-	-	-	-	-	-	-	-	-
			TOTAL ERCOT		13,344,128	13,344,128	-	-	14,054,128	14,054,128	-	-	(710,000)	(710,000)	-	-	-	-	-	-	-	-	-	-	-
2018	WECC		Alberta Electric System Operator	Canada	1,061,104	-	1,061,104	-	2,062,606	-	2,062,606	-	-	-	-	-	-	(1,074,088)	-	(1,074,088)	-	72,585	-	72,585	-
2018	WECC		British Columbia Hydro & Power Authority	Canada	2,192,642	-	2,192,642	-	2,036,714	-	2,036,714	-	-	-	-	-	-	84,254	-	84,254	-	71,674	-	71,674	-
2018	WECC		Centro Nacional de Control de Energia	Mexico	487,767	-	-	487,767	453,080	-	-	453,080	-	-	-	-	-	18,743	-	-	18,743	15,944	-	-	15,944
2018	WECC		3 Phases Renewables	U.S.	122	122	-	-	127	127	-	-	(15)	(15)	-	-	-	5	5	-	-	4	4	-	-
2018	WECC		Aguila Irrigation District - APS	U.S.	1,033	1,033	-	-	1,076	1,076	-	-	(126)	(126)	-	-	-	45	45	-	-	38	38	-	-
2018	WECC		Aha Macav Power Service	U.S.	580	580	-	-	604	604	-	-	(71)	(71)	-	-	-	25	25	-	-	21	21	-	-
2018	WECC		Ajo Improvement District	U.S.	339	339	-	-	353	353	-	-	(41)	(41)	-	-	-	15	15	-	-	12	12	-	-
2018	WECC		Arizona Electric Power Cooperative, Inc	U.S.	112,315	112,315	-	-	117,041	117,041	-	-	(13,686)	(13,686)	-	-	-	4,842	4,842	-	-	4,119	4,119	-	-
2018	WECC		Arizona Public Service Company	U.S.	896,152	896,152	-	-	933,858	933,858	-	-	(109,201)	(109,201)	-	-	-	38,632	38,632	-	-	32,863	32,863	-	-
2018	WECC		Arkansas River Power Authority (ARPA)	U.S.	8,286	8,286	-	-	8,634	8,634	-	-	(1,010)	(1,010)	-	-	-	357	357	-	-	304	304	-	-
2018	WECC		Avangrid Renewables	U.S.	3,106	3,106	-	-	3,237	3,237	-	-	(379)	(379)	-	-	-	134	134	-	-	114	114	-	-
2018	WECC		Avista Corporation	U.S.	291,944	291,944	-	-	304,227	304,227	-	-	(35,575)	(35,575)	-	-	-	12,585	12,585	-	-	10,706	10,706	-	-
2018	WECC		Barrick Goldstrike Mines Inc.	U.S.	43,287	43,287	-	-	45,109	45,109	-	-	(5,275)	(5,275)	-	-	-	1,866	1,866	-	-	1,587	1,587	-	-
2018	WECC		Basin Electric Power Cooperative - CM	U.S.	65,081	65,081	-	-	67,819	67,819	-	-	(7,930)	(7,930)	-	-	-	2,806	2,806	-	-	2,387	2,387	-	-
2018	WECC		Basin Electric Power Cooperative - NW	U.S.	25,253	25,253	-	-	26,316	26,316	-	-	(3,077)	(3,077)	-	-	-	1,089	1,089	-	-	926	926	-	-
2018	WECC		Basin Electric Power Cooperative - UG	U.S.	4,614	4,614	-	-	4,808	4,808	-	-	(562)	(562)	-	-	-	199	199	-	-	169	169	-	-
2018	WECC		Beartooth Electric Cooperative	U.S.	2,412	2,412	-	-	2,514	2,514	-	-	(294)	(294)	-	-	-	104	104	-	-	88	88	-	-
2018	WECC		Big Horn County Electric Cooperative	U.S.	2,172	2,172	-	-	2,264	2,264	-	-	(265)	(265)	-	-	-	94	94	-	-	80	80	-	-
2018	WECC		Black Hills Energy	U.S.	65,863	65,863	-	-	68,635	68,635	-	-	(8,026)	(8,026)	-	-	-	2,839	2,839	-	-	2,415	2,415	-	-
2018	WECC		Black Hills Power/Cheyenne Light Fuel & Power	U.S.	138,526	138,526	-	-	144,355	144,355	-	-	(16,880)	(16,880)	-	-	-	5,972	5,972	-	-	5,080	5,080	-	-
2018	WECC		Black Hills State University South Dakota	U.S.	620	620	-	-	646	646	-	-	(76)	(76)	-	-	-	27	27	-	-	23	23	-	-
2018	WECC		Bonneville Power Administration	U.S.	6,189	6,189	-	-	6,449	6,449	-	-	(754)	(754)	-	-	-	267	267	-	-	227	227	-	-
2018	WECC		Bonneville Power Administration-Power Services	U.S.	195,932	195,932	-	-	204,175	204,175	-	-	(23,875)	(23,875)	-	-	-	8,446	8,446	-	-	7,185	7,185	-	-
2018	WECC		Bonneville Power Administration-Transmission	U.S.	1,717,197	1,717,197	-	-	1,789,448	1,789,448	-	-	(209,249)	(209,249)	-	-	-	74,025	74,025	-	-	62,973	62,973	-	-
2018	WECC		Buckeye Water Conservation and Drainage District - APS	U.S.	707	707	-	-	737	737	-	-	(86)	(86)	-	-	-	30	30	-	-	26	26	-	-
2018	WECC		Bureau of Reclamation (Desalter) - c/o DSW EMMO	U.S.	3	3	-	-	3	3	-	-	(0)	(0)	-	-	-	0	0	-	-	0	0	-	-
2018	WECC		Bureau of Reclamation (Wellfield)	U.S.	318	318	-	-	332	332	-	-	(39)	(39)	-	-	-	14	14	-	-	12	12	-	-
2018	WECC		Burlington	U.S.	967	967	-	-	1,008	1,008	-	-	(118)	(118)	-	-	-	42	42	-	-	35	35	-	-
2018	WECC		Caesars Entertainment LLC/North	U.S.	1,930	1,930	-	-	2,011	2,011	-	-	(235)	(235)	-	-	-	83	83	-	-	71	71	-	-
2018	WECC		Caesars Entertainment LLC/South	U.S.	14,860	14,860	-	-	15,485	15,485	-	-	(1,811)	(1,811)	-	-	-	641	641	-	-	545	545	-	-

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

APPENDIX 2-D

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	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		Intermountain 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	421	-	-	358	358	-	-
2018	WECC		Navajo Tribal Utility Authority-New Mexico	U.S.	5,759	5,759	-	-	6,001	6,001	-	-	(702)	(702)	-	-	-	248	248	-	-	211	211	-	-
2018	WECC		Nebraska Public Power Marketing	U.S.	117	117	-	-	122	122	-	-	(14)	(14)	-	-	-	5	5	-	-	4	4	-	-
2018	WECC		Needles Public Utilities Authority	U.S.	1,261	1,261	-	-	1,314	1,314	-	-	(154)	(154)	-	-	-	54	54	-	-	46	46	-	-
2018	WECC		Nevada Power Company dba NV Energy	U.S.	976,494	976,494	-	-	1,017,580	1,017,580	-	-	(118,991)	(118,991)	-	-	-	42,095	42,095	-	-	35,810	35,810	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC	U.S.	9,023	9,023	-	-	9,403	9,403	-	-	(1,100)	(1,100)	-	-	-	389	389	-	-	331	331	-	-
2018	WECC		NorthWestern Corp. dba NorthWestern Energy, LLC - 1	U.S.	300,103	300,103	-	-	312,730	312,730	-	-	(36,569)	(36,569)	-	-	-	12,937	12,937	-	-	11,005	11,005	-	-
2018	WECC		Okanogan PUD	U.S.	19,379	19,379	-	-	20,195	20,195	-	-	(2,361)	(2,361)	-	-	-	835	835	-	-	711	711	-	-
2018	WECC		Overton Power District No. 5	U.S.	12,805	12,805	-	-	13,343	13,343	-	-	(1,560)	(1,560)	-	-	-	552	552	-	-	470	470	-	-
2018	WECC		PacifiCorp (EasternBalAuth)	U.S.	1,574,476	1,574,476	-	-	1,640,722	1,640,722	-	-	(191,858)	(191,858)	-	-	-	67,873	67,873	-	-	57,739	57,739	-	-
2018	WECC		PacifiCorp (IPC)	U.S.	62	62	-	-	65	65	-	-	(8)	(8)	-	-	-	3	3	-	-	2	2	-	-
2018	WECC		PacifiCorp (Portland)	U.S.	133	133	-	-	139	139	-	-	(16)	(16)	-	-	-	6	6	-	-	5	5	-	-
2018	WECC		PacifiCorp (WAPA-CO-MO)	U.S.	3,364	3,364	-	-	3,505	3,505	-	-	(410)	(410)	-	-	-	145	145	-	-	123	123	-	-
2018	WECC		PacifiCorp West (PACW)	U.S.	640,392	640,392	-	-	667,336	667,336	-	-	(78,035)	(78,035)	-	-	-	27,606	27,606	-	-	23,484	23,484	-	-
2018	WECC		Pend Oreille County PUD No. 1	U.S.	31,639	31,639	-	-	32,970	32,970	-	-	(3,855)	(3,855)	-	-	-	1,364	1,364	-	-	1,160	1,160	-	-
2018	WECC		Peppermill Hotel Casino	U.S.	1,297	1,297	-	-	1,351	1,351	-	-	(158)	(158)	-	-	-	56	56	-	-	48	48	-	-
2018	WECC		Platte River Power Authority	U.S.	101,455	101,455	-	-	105,723	105,723	-	-	(12,363)	(12,363)	-	-	-	4,374	4,374	-	-	3,721	3,721	-	-
2018	WECC		Portland General Electric Company	U.S.	550,477	550,477	-	-	573,638	573,638	-	-	(67,078)	(67,078)	-	-	-	23,730	23,730	-	-	20,187	20,187	-	-
2018	WECC		Public Service Company of Colorado (Xcel)	U.S.	968,501	968,501	-	-	1,009,251	1,009,251	-	-	(118,017)	(118,017)	-	-	-	41,750	41,750	-	-	35,517	35,517	-	-
2018	WECC		Public Service Company of Colorado (Xcel)-(WAPA-CO-MO)	U.S.	3,632	3,632	-	-	3,785	3,785	-	-	(443)	(443)	-	-	-	157	157	-	-	133	133	-	-
2018	WECC		Public Service Company of New Mexico	U.S.	289,762	289,762	-	-	301,954	301,954	-	-	(35,309)	(35,309)	-	-	-	12,491	12,491	-	-	10,626	10,626	-	-
2018	WECC		Public Utility District No. 1 of Chelan County	U.S.	54,643	54,643	-	-	56,942	56,942	-	-	(6,659)	(6,659)	-	-	-	2,356	2,356	-	-	2,004	2,004	-	-
2018	WECC		PUD No. 1 of Douglas County	U.S.	30,658	30,658	-	-	31,948	31,948	-	-	(3,736)	(3,736)	-	-	-	1,322	1,322	-	-	1,124	1,124	-	-
2018	WECC		PUD No. 2 of Grant County	U.S.	155,068	155,068	-	-	161,592	161,592	-	-	(18,896)	(18,896)	-	-	-	6,685	6,685	-	-	5,687	5,687	-	-
2018	WECC		PUD No. 2 of Grant County - 1	U.S.	2,870	2,870	-	-	2,991	2,991	-	-	(350)	(350)	-	-	-	124	124	-	-	105	105	-	-
2018	WECC		Puget Sound Energy, Inc.	U.S.	738,140	738,140	-	-	769,198	769,198	-	-	(89,946)	(89,946)	-	-	-	31,820	31,820	-	-	27,069	27,069	-	-
2018	WECC		Raton Public Service	U.S.	1,519	1,519	-	-	1,583	1,583	-	-	(185)	(185)	-	-	-	65	65	-	-	56	56	-	-
2018	WECC		Roosevelt Irrigation District - APS	U.S.	1,369	1,369	-	-	1,427	1,427	-	-	(167)	(167)	-	-	-	59	59	-	-	50	50	-	-
2018	WECC		Sacramento Municipal Utility District	U.S.	348,305	348,305	-	-	362,960	362,960	-	-	(42,443)	(42,443)	-	-	-	15,015	15,015	-	-	12,773	12,773	-	-

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

APPENDIX 2-D

					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			
Data Year	Regional Entity	NERC ID	Entity	Country	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

WESTERN ELECTRICITY COORDINATING COUNCIL

PROPOSED 2020 BUSINESS PLAN AND BUDGET

WECC

2020 Business Plan and Budget

Approved by: WECC Board of Directors

Date: June 19, 2019

Contents

Introduction

TOTAL RESOURCES (in whole dollars)	2020 Budget	U.S.	Canada	Mexico
Statutory FTEs*	143.0			
Non-statutory FTEs	6.0			
Total FTEs	149.0			
Statutory Expenses	$ 27,704,075			
Non-Statutory Expenses	$ 1,828,549			
Total Expenses	$ 29,532,624			
Statutory Incr(Decr) in Fixed Assets	$ 52,014			
Non-Statutory Incr(Decr) in Fixed Assets	$ 2,986			
Total Inc(Dec) in Fixed Assets	$ 55,000			
Statutory Working Capital Requirement**	$ 928,162			
Non-Statutory Working Capital Requirement***	$ 352,946			
Total Working Capital Requirement	$ 1,281,108			
Total Statutory Funding Requirement	$ 28,684,250			
Total Non-Statutory Funding Requirement	$ 2,184,481			
Total Funding Requirement	$ 30,868,731			
Statutory Assessments	$ 25,282,000	$ 21,700,691	$ 3,109,486	$ 471,823
Non-Statutory Fees	$ 2,184,481	$ 2,162,636	$ 21,845	$ -
NEL****	867,599,555	726,676,149	126,897,939	14,025,467
NEL%	100.0%	83.8%	14.6%	1.6%

Organizational Overview

WECC is a 501(c)(4) social welfare organization funded through Load-Serving Entity (LSE) assessments authorized by the Federal Energy Regulatory Commission (FERC) under Section 215 of the Federal Power Act. WECC's mission is to effectively and efficiently mitigate risks to the reliability and security of the Western Interconnection Bulk Power System (BPS), while carrying out the responsibilities of the Regional Entity. WECC operates under a delegation agreement with the North American Electric Reliability Corporation (NERC) and in accordance with its Bylaws. WECC executes its mission while working with a broad community consisting of industry stakeholders and two advisory bodies—the Member Advisory Committee (MAC) and the Western Interconnection Regional Advisory Body (WIRAB).

The Western Interconnection is a geographic area in which the use and generation of electricity is synchronized. This area includes all or part of 14 Western states in the United States, the

Canadian provinces of British Columbia and Alberta, and a portion of Baja California Norte, Mexico.

WECC delivers its mission through:

- Effective risk-based monitoring and enforcement of Reliability Standards through standards development, entity registration, compliance risk assessment, and audits and investigations;
- Informed actions, practices and decisions of industry participants, regulators and policy-makers through reliability planning, performance analysis, situation awareness, and event analysis; and
- Targeted educational training and outreach to build a culture of reliability and security throughout the West.

WECC creates value for the stakeholders in the Western Interconnection through:

Independence—We serve the public interest and represent what is best for reliability and security within the Western Interconnection with an impartial and unbiased voice.

Perspective—We are uniquely situated to develop comprehensive and influential work products for the reliability and security of the Western Interconnection.

Partnership—We collaborate with industry and other organizations to reduce risks to the reliability and security of the Western Interconnection.

Membership and Governance

WECC has 301 members[1] divided into the following five Membership Classes:

- Large Transmission Owners;
- Small Transmission Owners;
- Electric Line of Business Entities doing business in the Western Interconnection that do not own, control, or operate transmission or distribution lines in the Western Interconnection;
- End Users and entities that represent the interests of End Users; and
- Representatives of state and provincial governments.

[1] As of June 19, 2019.

WECC membership is open to any person or entity that has an interest in the reliable operation of the Western Interconnection's BPS. WECC membership is not a requirement for participation in the WECC Standards Development process.[2]

WECC is governed by a Board of Directors (Board) comprised of nine independent Directors elected by the WECC membership, and WECC's president and chief executive officer. The nine Directors are compensated by WECC for their governance and oversight activities.

Five governance committees provide functional oversight of WECC operations:

- Compliance Hearing Body (CHB);
- Finance and Audit Committee (FAC);
- Governance Committee (GC);
- Human Resources and Compensation Committee (HRCC); and
- Nominating Committee (NC).

Under the direction of the Board, additional committees provide technical advice and policy recommendations to the Board:

- Joint Guidance Committee (JGC);
- Market Interface Committee (MIC);
- Member Advisory Committee (MAC);
- Operating Committee (OC);
- Reliability Assessment Committee (RAC); and
- WECC Standards Committee (WSC).

Pursuant to Section 215(j) of the Federal Power Act, WIRAB's purpose is to advise WECC, NERC, and FERC regarding the governance of WECC, and whether proposed Reliability Standards and the budget are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

WECC and FERC may request that WIRAB provide advice on other topics. Members are appointed by the Governors/Premiers from Alberta, Arizona, British Columbia, California, Colorado, Idaho, Montana, Nebraska, Nevada, New Mexico, Oregon, South Dakota, Utah, Washington, Wyoming, and Mexico. WECC's budget does not include any costs related to WIRAB operations.

[2] Non-WECC members may participate in standards drafting teams and may vote on Regional Reliability Standards. See WECC's Reliability Standards Development Procedures.

2020 Key Assumptions

The Board recognizes the electric industry is undergoing profound changes nationally, and especially in the West, and other institutions are involved in furthering the understanding of these changes. While WECC will not duplicate the efforts of other qualified entities, the Board believes WECC should proactively address issues where the impacts to the Western Interconnection's reliability and security are less understood or where WECC and its committees are positioned to make a significant contribution to Western BPS reliability and security.

Therefore, in addition to supporting the Electric Reliability Organization (ERO) Enterprise[3]-driven programs and long-term strategy, the Board has established the following strategic priorities for WECC:

- Monitor progress as proposals are developed for structural changes in the West and be prepared to evaluate potential impacts on reliability.
- Assess the reliability implications of the ongoing evolution of load composition and resource mix in the Western Interconnection, as well as fuel security, resource and transmission adequacy, and BPS stability.
- Identify key vulnerability issues and work with stakeholders to address them.
- Maximize sharing of operating and system data (within agreed parameters), and insights from Event Analysis including, to the extent possible, near-misses.
- Focus reliability assessment efforts on identifying the impacts and possible mitigation efforts surrounding a handful of future industry evolution scenarios or high-impact/low-probability events.

Additionally, through WECC's Strategic and Operating Planning Process, the Board approved the following Near-Term Priorities at its June 2018 meeting. These Near-Term Priorities will serve as input to update committee and program area 2019–2021 work plans. Much of the work related to the Near-Term Priorities involves staff time; specific examples of activities supporting these priorities are noted in the appropriate statutory program area sections of the business plan.

[3] The ERO Enterprise is comprised of NERC and the six Regional Entities, which collectively bring together their leadership, experience, judgment, skills, and supporting technologies to fulfill the ERO's statutory obligations to assure the reliability of the North American BPS.

Representation of Inverter-Based Resources

Improve the representation of inverter-based resources in WECC's base cases with a focus on data collection for utility-scale photovoltaic resources, battery storage, and Distributed Energy Resources (DER).

Impacts of the Changing Resource Mix

Evaluate the impacts of the changing resource mix on:

- Existing path ratings;
- Remedial Action Scheme (RAS) effectiveness;
- The expansion of utility-scale energy storage devices;
- Protection system settings (based on fault duty);
- Resource adequacy and the advantages of alternatives for determining resource adequacy;
- The interface between the transmission and distribution systems due to DER, with a focus on modeling techniques that can be used as DER penetration increases; and
- Essential reliability services specific to the Western Interconnection.

Expansion of RC and Market Service Providers

Evaluate potential reliability risks and mitigating measures, including consideration of Regional Reliability Standards, resulting from the expansion of Reliability Coordinators (RC) and market service providers in the Western Interconnection.

Clarify Roles in BPS Planning

Improve coordination by clarifying the roles, responsibilities, and relationships among WECC, the Regional Planning Groups, International Planning Groups, Planning Coordinators, Transmission Planners, and other stakeholders involved in BPS planning.

2020 Key Strategic Goals

NERC and the Regional Entities' business plans and budgets reflect the collaborative development of the ERO Enterprise Long-term Strategy and the ERO Enterprise Operating Plan. These documents are available on NERC's website: http://www.nerc.com/AboutNERC/Pages/Strategic-Documents.aspx. WECC supports both the long-term strategy and operating plan as well as deliverables specific to WECC that are

discussed in WECC's 2019-2021 Operating Plan and described in each statutory program area in Section A.

Working collaboratively, the ERO Enterprise has established six perennial goals, each of which is supported by key contributing activities of the ERO Enterprise:

- 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; and
- Effective and efficient ERO Enterprise operations.

2020 Overview of Cost Impacts

WECC's proposed 2020 statutory budget is $27.76 million, an $806,000 (3.0-percent) increase from the 2019 statutory budget. The net increase is mainly due to a net of the elimination of Compliance contract labor, increase in office rent due to a new lease for the Salt Lake City office, changes in position levels, a three-percent merit pool, and labor float assumption changes based on actual turnover and vacancy rates.

Full-time equivalents (FTE) represent the fractional allocation of a full-time position's cost to one or more functional areas. Headcount (HC) represents either vacant or filled positions. Major drivers of the change between the 2020 and 2019 statutory budgets are as follows:

- Personnel Expenses increase by $842,000 primarily due to changes in position levels, a budgeted three-percent merit pool, continued refinement of labor float percentages, and the refinement of payroll tax and benefits rates.
- Consultants and Contracts decrease by $255,000 primarily due to the elimination of Compliance contract labor.
- Office Rent increases by $275,000 primarily due to the new lease for the Salt Lake City office.

Beginning with the 2020 budget, NERC and the Regions have revised the Statements of Activities format. The goal of the new format is to improve the effectiveness of the report to the reader. These revisions are intended to ensure consistent reporting for new accounting standards (e.g., leasing standards and right-of-use assets) and streamline sections of the report related to non-cash expenses (primarily depreciation and amortization). One specific format

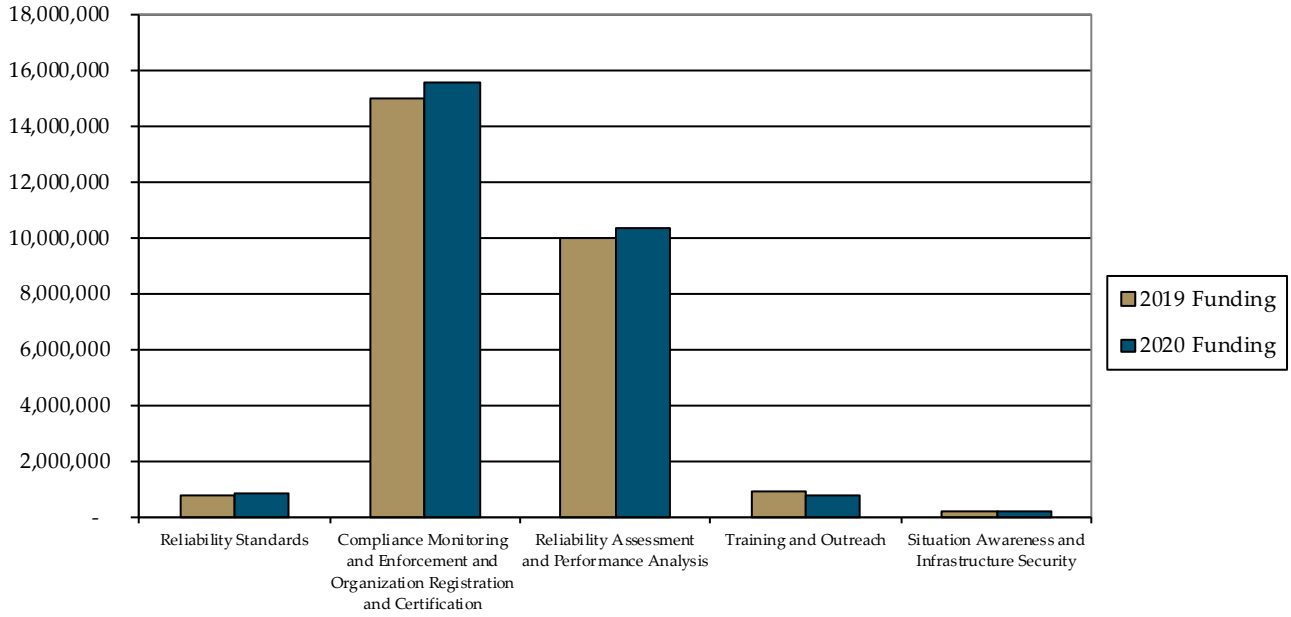
revision is the removal of an expense line item for depreciation and the corresponding credit for depreciation in the fixed asset activity section, which resulted in depreciation having no impact on funding requirements or actual results in past budgets.

In this document, the 2019 budget has been restated to reflect the new reporting format when comparing 2020 to 2019 to show budget changes on a comparable basis. As such, in the total and program 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. The total 2019 budget amount was unchanged.

The following table and graph present a summary of funding requirements for WECC's primary statutory program areas:

Program	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Reliability Standards	$ 807,516	$ 825,702	$ 837,662	$ 30,146	3.7%
Compliance Monitoring and Enforcement and Organization Registration and Certification	14,966,474	15,084,189	15,558,674	592,200	4.0%
Reliability Assessment and Performance Analysis	10,022,744	9,361,236	10,329,057	306,313	3.1%
Training and Outreach	938,456	889,121	794,057	(144,399)	(15.4%)
Situation Awareness and Infrastructure Security	215,376	228,894	236,639	21,263	9.9%
Total By Program	**$ 26,950,566**	**$ 26,389,142**	**$ 27,756,089**	**$ 805,523**	**3.0%**

Comparison of 2020 to 2019 Budgeted Funding Requirements



Personnel Analysis

In the 2020 budget, WECC is not adding additional FTEs. WECC realigned some positions between Program Areas in its 2020 budget due to an internal reorganization in 2019. Through attrition, and due to efficiencies gained in Corporate Services, one position was redeployed to Compliance as an auditor position. A regulatory affairs and policy analyst position was transferred from Reliability Assessment and Planning Analysis (RAPA) to Legal and Regulatory due to organizational realignment. A knowledge-transfer position was moved from Training and Outreach to Human Resources. Other allocation changes account for the remaining changes in FTEs. The transfers and allocation changes account for the balance of the changes in FTEs between 2020 and 2019. Details are discussed in the respective Program Area sections of the Business Plan and Budget.

Total FTEs by Program Area	Budget 2019	Projection 2019	Direct FTEs 2020 Budget	Shared FTEs* 2020 Budget	Total FTEs 2020 Budget	Change from 2019 Budget
STATUTORY						
Operational Programs						
Reliability Standards	3.0	3.0	3.0	-	3.0	**-**
Compliance Monitoring and Enforcement and Organization Registration and Certification	60.0	62.0	61.0	-	61.0	**1.0**
Reliability Assessment and Performance Analysis	39.0	36.0	38.0	-	38.0	**(1.0)**
Training and Outreach	2.0	1.0	1.5	-	1.5	**(0.5)**
Situation Awareness and Infrastructure Security	1.0	1.0	1.0	-	1.0	**-**
Total FTEs Operational Programs	**105.0**	**103.0**	**104.5**	**-**	**104.5**	**(0.5)**
Corporate Services						
Technical Committees and Member Forums	-	-	-	-	-	**-**
General & Administrative	17.05	17.95	16.5	-	16.5	**(0.55)**
Legal and Regulatory	6.0	7.0	7.0	-	7.0	**1.0**
Information Technology	8.7	8.0	8.0	-	8.0	**(0.7)**
Human Resources	3.0	3.0	4.0	-	4.0	**1.0**
Finance and Accounting	3.25	2.95	3.0	-	3.0	**(0.25)**
Total FTEs Corporate Services	**38.0**	**38.9**	**38.5**	**-**	**38.5**	**0.5**
Total FTEs	**143.0**	**141.9**	**143.0**	**-**	**143.0**	**-**

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

2019 Statutory Budget and Projection and 2020 Budget Comparisons

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget STATUTORY	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 25,282,000	$ 25,282,000	$ -	$ 25,282,000	$ -
Penalty Sanctions	587,686	587,686	-	2,745,000	2,157,314
Total Statutory Funding	**$ 25,869,686**	**$ 25,869,686**	**$ -**	**$ 28,027,000**	**$ 2,157,314**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	424,500	543,695	119,195	457,250	32,750
Interest	120,000	261,953	141,953	200,000	80,000
Total Revenue (A)	**$ 26,414,186**	**$ 26,675,334**	**$ 261,148**	**$ 28,684,250**	**$ 2,270,064**
Expenses					
Personnel Expenses					
Salaries	$ 15,865,018	$ 15,595,950	$ (269,068)	$ 16,475,075	$ 610,057
Payroll Taxes	1,037,393	955,714	(81,679)	1,074,352	36,959
Benefits	2,302,710	2,259,523	(43,187)	2,377,007	74,297
Retirement Costs	1,311,110	1,397,575	86,465	1,431,482	120,372
Total Personnel Expenses	**$ 20,516,231**	**$ 20,208,762**	**$ (307,469)**	**$ 21,357,916**	**$ 841,685**
Meeting Expenses					
Meetings & Conference Calls	$ 698,553	$ 739,371	$ 40,818	$ 714,095	$ 15,542
Travel	1,408,868	1,369,791	(39,077)	1,401,818	(7,050)
Total Meeting Expenses	**$ 2,107,421**	**$ 2,109,162**	**$ 1,741**	**$ 2,115,913**	**$ 8,492**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ 1,292,890	$ 1,062,443	$ (230,447)	$ 1,038,160	$ (254,730)
Office Rent	972,909	993,850	20,941	1,248,251	275,342
Office Costs	1,557,679	1,530,383	(27,296)	1,557,312	(367)
Professional Services	908,280	922,108	13,828	953,790	45,510
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 4,731,758**	**$ 4,508,784**	**$ (222,974)**	**$ 4,797,513**	**$ 65,755**
Total Direct Expenses	**$ 27,355,410**	**$ 26,826,708**	**$ (528,702)**	**$ 28,271,342**	**$ 915,932**
Indirect Expenses	**$ (532,909)**	**$ (536,716)**	**$ (3,807)**	**$ (567,267)**	**$ (34,358)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 26,822,501**	**$ 26,289,992**	**$ (532,509)**	**$ 27,704,075**	**$ 881,574**
Change in Net Assets (=A-B)	**$ (408,315)**	**$ 385,342**	**$ 793,657**	**$ 980,175**	**$ 1,388,490**
Fixed Asset Additions, excluding Right of Use Assets (C)	**$ 128,065**	**$ 99,148**	**$ (28,917)**	**$ 52,014**	**$ (76,051)**
TOTAL BUDGET (B+C)	**$ 26,950,566**	**$ 26,389,140**	**$ (561,426)**	**$ 27,756,089**	**$ 805,523**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (536,380)**	**$ 286,194**	**$ 822,574**	**$ 928,161**	**$ 1,464,541**
FTEs	143.0	142.0	(1.0)	143.0	-
HC	143.0	142.0	(1.0)	143.0	-

Section A

Statutory Programs

Section A—Statutory Programs

Reliability Standards

Reliability Standards Program (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	3.0	3.0	-
Direct Expenses	$ 544,095	$ 552,536	$ 8,441
Indirect Expenses	$ 266,454	$ 283,633	$ 17,179
Other Non-Operating Expenses	$ -	$ -	$ -
Inc(Dec) in Fixed Assets	$ (3,033)	$ 1,493	$ 4,526
Total Funding Requirement	$ 807,516	$ 837,662	$ 30,146

Program Scope and Functional Description

The Reliability Standards Program supports the NERC Reliability Standards Program as well as facilitates the development of Regional Reliability Standards (RRS), Regional Variances to NERC Reliability Standards, and Regional Criteria.

The Reliability Standards Program also conducts a five-year review of each current RRS, Regional Variance to NERC Reliability Standards, and Regional Criteria. These reviews can result in revisions to the reviewed document, a finding that no changes are necessary, or the retirement of the document if it is determined that the document is no longer needed for reliability.

WECC supports the development of Regional Variances to NERC Reliability Standards when it is necessary to address Western Interconnection reliability issues. The variances are necessitated by a physical difference in the BPS or in instances in which Western stakeholders desire more stringent performance. WECC will only develop an RRS (rather than a variance) when a NERC Reliability Standard addressing a reliability issue does not exist.

Regional Criteria may be necessary to implement, augment, or comply with NERC Reliability Standards, but they are not Reliability Standards themselves and are not enforceable. Regional Criteria may include acceptable operating or planning parameters, guides, or other documents used to enhance BPS reliability.

2020 Key Assumptions

- WECC expects the number of RRS projects to remain low, with the majority focusing on potential retirement of existing RRSs, due to the subject matter now being included in NERC Continent-wide Standards. It is possible, but not likely, that regulatory directives could result in RRS projects. For 2020, it may be necessary to develop either new RRSs or Regional Variances to NERC Reliability Standards to address potential reliability concerns resulting from the addition of multiple new RCs in the Western Interconnection.
- WECC expects that much of the work required to develop RRSs, Regional Variances to NERC Reliability Standards, and Regional Criteria will continue to be performed by voluntary stakeholder participation.
- Continue to rely on stakeholder volunteers to staff most NERC Standards drafting teams. Staff may, at times, participate as drafting team members or observers.
- Integration of renewable resources and related energy storage devices may require new or modified NERC Reliability Standards or RRSs. WECC supports the concept and will participate, when appropriate, in the enhanced periodic reviews of NERC Reliability Standards.
- Inverter-based resource growth may result in the need for a new RRS or a Regional Variance to NERC Reliability Standards.
- WECC expects that the effort necessary to complete these assumptions can be achieved by existing resources.

2020 Goals and Deliverables

- Represent the Western Interconnection perspective in NERC Continent-wide Reliability Standards or, if necessary, through the development of Regional Variances or RRSs if a NERC Continent-wide Standard addressing a Western Interconnection reliability issue does not exist.
- Ensure the RRSs and Regional Criteria developed using the WECC Reliability Standards Development Procedures meet the needs of the Western stakeholders.
- Ensure development of RRSs and Regional Criteria is in accordance with the most recent WECC Reliability Standards Development Procedures.
- Actively participate in the communication of NERC Standards drafting teams' activities to the Western stakeholders.
- Continue to review existing RRSs to determine whether any are candidates for incorporation as a Regional Variance to a NERC Continent-wide Reliability Standard

and, if so, coordinate with NERC to address the incorporation during NERC's next enhanced periodic review of the NERC Reliability Standard(s).

- Conduct periodic reviews of existing RRSs and Regional Criteria to improve their content and quality.
- Evaluate information obtained from audit and enforcement experiences as well as information learned through events analysis to determine whether any new RRSs or revisions to existing RRSs are necessary.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- No significant changes.

Meeting Expenses

- No significant changes.

Operating Expenses

- No significant changes.

Fixed Assets

- No significant changes.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Reliability Standards Program Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget RELIABILITY STANDARDS	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 771,224	$ 771,224	$ -	$ 781,127	$ 9,903
Penalty Sanctions	16,791	16,791	-	78,804	62,013
Total Statutory Funding	**$ 788,015**	**$ 788,015**	**$ -**	**$ 859,931**	**$ 71,916**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	-	-	-	-	-
Interest	3,429	7,630	4,201	5,742	2,313
Total Revenue (A)	**$ 791,444**	**$ 795,645**	**$ 4,201**	**$ 865,673**	**$ 74,229**
Expenses					
Personnel Expenses					
Salaries	$ 423,024	$ 418,160	$ (4,864)	$ 427,045	$ 4,021
Payroll Taxes	26,828	26,064	(764)	26,752	(76)
Benefits	37,174	55,654	18,480	39,901	2,727
Retirement Costs	34,984	38,193	3,209	37,153	2,169
Total Personnel Expenses	**$ 522,010**	**$ 538,071**	**$ 16,061**	**$ 530,851**	**$ 8,841**
Meeting Expenses					
Meetings & Conference Calls	$ 260	$ -	$ (260)	$ -	$ (260)
Travel	18,290	19,797	1,507	18,250	(40)
Total Meeting Expenses	**$ 18,550**	**$ 19,797**	**$ 1,247**	**$ 18,250**	**$ (300)**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ -	$ -	$ -	$ -	$ -
Office Rent	-	-	-	-	-
Office Costs	3,535	3,361	(174)	3,435	(100)
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 3,535**	**$ 3,361**	**$ (174)**	**$ 3,435**	**$ (100)**
Total Direct Expenses	**$ 544,095**	**$ 561,229**	**$ 17,134**	**$ 552,536**	**$ 8,441**
Indirect Expenses	**$ 266,454**	**$ 268,358**	**$ 1,904**	**$ 283,633**	**$ 17,179**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 810,549**	**$ 829,587**	**$ 19,038**	**$ 836,169**	**$ 25,620**
Change in Net Assets (=A-B)	**$ (19,105)**	**$ (33,942)**	**$ (14,837)**	**$ 29,504**	**$ 48,609**
Fixed Assets, excluding Right of Use Assets (C)	**$ (3,033)**	**$ (3,885)**	**$ (852)**	**$ 1,493**	**$ 4,526**
TOTAL BUDGET (B+C)	**$ 807,516**	**$ 825,702**	**$ 18,186**	**$ 837,662**	**$ 30,146**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (16,072)**	**$ (30,057)**	**$ (13,985)**	**$ 28,011**	**$ 44,083**
FTEs	3.0	3.0	-	3.0	-
HC	3.0	3.0	-	3.0	-

Compliance Monitoring and Enforcement and Organization Registration and Certification Program

Compliance Monitoring and Enforcement and Organization Registration and Certification Program (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	60.0	61.0	1.0
Direct Expenses	$ 9,698,042	$ 9,761,102	$ 63,060
Indirect Expenses	$ 5,329,085	$ 5,767,210	$ 438,125
Other Non-Operating Expenses	$ -	$ -	$ -
Inc(Dec) in Fixed Assets	$ (60,654)	$ 30,362	$ 91,016
Total Funding Requirement	$ 14,966,473	$ 15,558,674	$ 592,201

Program Scope and Functional Description

The Compliance Monitoring and Enforcement and Organization Registration and Certification Program (CMEP) is implemented by Reliability and Security Oversight and Enforcement staff, who are independent of all users, owners, and operators of the BPS.

To accomplish its objectives, staff is divided into five main areas:

1) Organization Registration;
2) Risk Assessment and Mitigation;
3) Compliance Monitoring;
4) Enforcement; and
5) Oversight Analysis and Program Services.

WECC will continue to conduct its monitoring and enforcement activities in accordance with the Board-endorsed Regulatory Philosophy, the key tenets of which are: be an informed regulator, identify top risks to reliability, exercise discretion responsibly, and enforce fairly. Staff monitors and enforces the FERC-approved NERC Reliability Standards across 377[4] registered owners, operators, and users of the BPS through a variety of risk-based activities.

Staff will dedicate, assess, and deploy required resources in support of the ERO Enterprise-level initiatives, which include the following activities:

- Regional Reliability Risk Assessments;

[4] As of June 19, 2019.

- Inherent Risk Assessments (IRA);
- Internal Controls Evaluations (ICE);
- Organization Registration;
- Mitigation plan reviews, acceptance, approvals, and verification;
- Reviews of self-logged minimal risk issues;
- Processing and assessing self-reports and self-certification requests;
- Review and validation of periodic data submittals;
- Internal compliance program assessments;
- Monitoring activities, such as compliance audits, spot-checks, investigations and assessments of complaints;
- Creation of compliance oversight plans along with schedules to align monitoring activities based on potential risk;
- Bulk Electric System (BES) Exception request activities; and
- Enforcement activities in accordance with established risk-based approaches.

These are joint-ERO Enterprise initiatives that benefit NERC, the Regional Entities, and the registered entities.

Compliance in Alberta, British Columbia, and Mexico

Alberta and British Columbia, Canada, and a portion of Baja California Norte, Mexico, are all part of the Western Interconnection and have adopted or are adopting mandatory Reliability Standards based on FERC-approved Standards. WECC has entered into agreements with the Alberta Market Surveillance Administrator (MSA), the British Columbia Utilities Commission (BCUC), and Mexico's Comisión Reguladora de Energía (CRE), under which WECC performs compliance monitoring activities to help assure reliability across international borders within the Western Interconnection.

2020 Key Assumptions

The CMEP incorporates the Regional Entity-specific contributing activities as described in the ERO Enterprise Operating Plan, and includes the following additional WECC-specific assumptions:

- WECC promotes a culture of compliance that addresses reliability risks by monitoring the FERC-approved NERC Reliability Standards for applicable entities through audits and/or spot-checks. WECC applies a risk-based approach that covers and ensures all audit, on-site/off-site, and post-audit activities are completed in accordance with the

NERC Rules of Procedure and the CMEP within the United States. With respect to non-U.S. jurisdictions, WECC monitors compliance in accordance with the approved agreements and applicable compliance monitoring programs with Canadian and Mexican authorities.

- WECC will develop and implement compliance oversight plans for registered entities. The plans will focus on relevant risks, including consideration of inherent risk assessments, entity performance history, and the effectiveness of internal controls.
- WECC will continue work in consultation with the international compliance enforcement authorities to determine which elements of the risk-based CMEP should be incorporated in the respective programs for international entities. Currently, WECC does not conduct IRAs or ICEs for international entities.
- WECC will allocate resources and provide continued support for the implementation of cybersecurity Reliability Standards for CIP v5 low-impact training, coordination, and facilitation of ERO Enterprise efforts and initiatives.
- Resource allocation will continue for activities associated with registration. WECC plans to participate in four NERC-led, centralized review panel sessions as part of the application process for materiality tests of the risk-based registration process outlined in Appendix 5A of the NERC Rules of Procedure. WECC will continue to review, assess, validate, and submit registration recommendations to NERC for new registrations, partial deactivations, transfer of access, and full deregistration changes impacting the NERC Compliance Registry (NCR).
- WECC will fully support ERO Enterprise efforts and activities to evaluate ERO business practices, consistency, implementation, and guidance within the risk-based CMEP. WECC will provide feedback to the ERO Enterprise regarding existing risks, with an emphasis on standards development, standards modification, audit and monitoring approaches, and potential gaps. WECC will work within the ERO Enterprise to develop application business requirements and allocate resources to test business functionality for application projects.
- WECC will use the results of the Regional Risk Assessment (RRA) to build areas of focus in the WECC CMEP Implementation Plan.
- WECC does not foresee any hearings in 2020. To date, WECC has never had a hearing and, therefore, does not budget for them. Any costs related to a hearing that may occur will be funded through working capital reserves.
- One FTE is transferred from Information Technology to support audit workload.

2020 Goals and Deliverables

- Continue to support the transition to Align by providing outreach and training to Registered Entities.
- Process and complete organization registration request reviews, validations, and recommendations to NERC in accordance with risk-based registration activities and initiatives.
- Process all BES Exception submittals.
- Participate in ERO Enterprise working groups to ensure consistency in processing registration requests in accordance with the NERC Rules of Procedure outlined in Appendix 5B (Statement of Compliance Registry Criteria).
- Monitor and enforce compliance with mandatory standards in accordance with the WECC/NERC Delegation Agreement, including the Rules of Procedure and the CMEP within the U.S. With respect to non-U.S. jurisdictions, monitor compliance in accordance with the approved agreements and applicable compliance monitoring programs with Canadian and Mexican authorities.
- Complete 23 on-site audits and 10 off-site audits of registered entities for 2020. Additional compliance audits and/or spot-checks will be determined from risk-based analysis.
- Complete initial IRAs by the end of 2020 for all entities registered after June 2016.
- Gather and review risk reports and operations information to update WECC's RRA of the Western Interconnection.
- Work with registered entities within the WECC Region to promote a strong culture of reliability and security.
- Represent the Western Interconnection in the development of NERC and regional initiatives.
- Conduct industry outreach in various forums—webinars, conferences, and entity-specific engagements—in support of ERO Enterprise activities and priorities.
- Monitor and manage enforcement measures and metrics in support of the ERO Enterprise Strategic Plan, including caseload index, violation aging, and mitigation plan aging; and collaborate with the ERO Enterprise to develop better measures of program effectiveness.
- Continue working with NERC and the other Regional Entities to shape and refine the ERO Enterprise enforcement philosophy that supports uniform, repeatable, transparent, and reliability-focused approaches.

- Conduct initial violation fact and circumstance reviews, and resolve enforcement actions in a timely manner using a reliability risk-based focus. Ensure enforcement discretion is consistent with NERC directives and FERC Orders, rules, and regulations.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses increase by a net of $445,000 primarily due to one FTE transferred from Information Technology, a budgeted three-percent merit pool, continued refinement of labor float percentages, changes in position levels, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- Travel decreases by $23,000 primarily due to planned reductions in travel requirements for support staff.

Operating Expenses

- Consultants & Contracts decrease by $262,000 due to the elimination of Compliance contract labor, corresponding knowledge transfer to existing staff, and the addition of one FTE.
- Office Costs decrease by $94,000 primarily due to the implementation of Align and the resulting reduction in webCDMS licensing fees.

Fixed Assets

- Fixed Assets increase by a net of $91,000 primarily due to a reduction in fixed asset additions and changes in financial presentation of depreciation.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Compliance Monitoring and Enforcement and Organization Registration and Certification Program Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget COMPLIANCE MONITORING AND ENFORCEMENT AND ORGANIZATION REGISTRATION AND CERTIFICATION	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 14,264,214	$ 14,264,214	$ -	$ 14,359,865	$ 95,651
Penalty Sanctions	335,821	335,821	-	1,602,344	1,266,523
Total Statutory Funding	**$ 14,600,035**	**$ 14,600,035**	**$ -**	**$ 15,962,209**	**$ 1,362,174**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	-	-	-	-	-
Interest	68,571	157,680	89,109	116,746	48,175
Total Revenue (A)	**$ 14,668,606**	**$ 14,757,715**	**$ 89,109**	**$ 16,078,955**	**$ 1,410,349**
Expenses					
Personnel Expenses					
Salaries	$ 6,521,216	$ 6,683,851	$ 162,635	$ 6,889,592	$ 368,376
Payroll Taxes	449,911	431,708	(18,203)	471,719	21,808
Benefits	789,012	768,962	(20,050)	783,899	(5,113)
Retirement Costs	538,748	599,403	60,655	598,756	60,008
Total Personnel Expenses	**$ 8,298,887**	**$ 8,483,924**	**$ 185,037**	**$ 8,743,966**	**$ 445,079**
Meeting Expenses					
Meetings & Conference Calls	$ 4,910	$ 5,326	$ 416	$ 1,505	$ (3,405)
Travel	835,205	763,889	(71,316)	812,183	(23,022)
Total Meeting Expenses	**$ 840,115**	**$ 769,215**	**$ (70,900)**	**$ 813,688**	**$ (26,427)**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ 261,890	$ 84,993	$ (176,897)	$ -	$ (261,890)
Office Rent	-	-	-	-	-
Office Costs	297,150	280,274	(16,876)	203,448	(93,702)
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 559,040**	**$ 365,267**	**$ (193,773)**	**$ 203,448**	**$ (355,592)**
Total Direct Expenses	**$ 9,698,042**	**$ 9,618,406**	**$ (79,636)**	**$ 9,761,102**	**$ 63,060**
Indirect Expenses	**$ 5,329,085**	**$ 5,546,062**	**$ 216,977**	**$ 5,767,210**	**$ 438,125**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 15,027,127**	**$ 15,164,468**	**$ 137,341**	**$ 15,528,312**	**$ 501,185**
Change in Net Assets (=A-B)	**$ (358,521)**	**$ (406,753)**	**$ (48,232)**	**$ 550,643**	**$ 909,164**
Fixed Assets, excluding Right of Use Assets (C)	**$ (60,654)**	**$ (80,280)**	**$ (19,626)**	**$ 30,362**	**$ 91,015**
TOTAL BUDGET (B+C)	**$ 14,966,474**	**$ 15,084,189**	**$ 117,715**	**$ 15,558,674**	**$ 592,200**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (297,868)**	**$ (297,868)**	**$ (28,606)**	**$ 520,281**	**$ 818,149**
FTEs	60.0	62.0	2.0	61.0	1.0
HC	60.0	62.0	2.0	61.0	1.0

Reliability Assessment and Performance Analysis

Reliability Assessment and Performance Analysis (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	39.0	38.0	(1.0)
Direct Expenses	$ 6,598,263	$ 6,717,454	$ 119,191
Indirect Expenses	$ 3,463,906	$ 3,592,689	$ 128,783
Other Non-Operating Expenses	$ -	$ -	$ -
Inc(Dec) in Fixed Assets	$ (39,425)	$ 18,914	$ 58,339
Total Funding Requirement	$ 10,022,744	$ 10,329,057	$ 306,313

Program Scope and Functional Description

Staff conducts a variety of assessments, analyses, and studies essential to the reliable planning and operation of the BPS in the Western Interconnection. In addition, staff compiles and distributes data and information used by stakeholders to aid in regional and local planning studies. These integrated assessment and planning efforts enhance WECC's overall ability to assess potential reliability risks in the Western Interconnection.

The RAPA Program is organized into three departments:

1. The ***Performance Analysis Department*** conducts robust analyses on the historical operation and performance of the Western Interconnection to use as building blocks to assess interconnection-wide risks and vulnerabilities. The information produced helps to identify best practices and mitigate potential risk.
2. The ***Events Analysis Department*** analyzes system conditions and events that impact or have the potential to impact the reliable operation of the BPS. The activities of the department ensure that stakeholders, NERC, and FERC are well-informed of system events, emerging trends, lessons learned, and expected actions impacting BPS reliability.
3. The ***Reliability Planning Department*** develops and maintains WECC's integrated capability to study Western Interconnection reliability issues for the near- and long-term planning horizon. The group is the NERC-designated, interconnection-wide model builder under MOD-32 and is focused on developing the planning tools and data sets to support transmission planning, and performing special studies on priority

reliability issues as they are identified. The studies, performed in close collaboration with the technical committees, consider both system adequacy and system stability.

In addition to the Western Interconnection-specific work described above, the RAPA Program supports the development of NERC's RAPA activities through targeted data gathering and, as needed, participation in the Summer, Winter, Long-Term Reliability, and Special Assessments.

2020 Key Assumptions

The RAPA Program incorporates the Regional Entity-specific contributing activities as described in the ERO Enterprise Operating Plan, and includes the following additional WECC-specific assumptions:

- Staff and technical committees continue to focus on assessment activities that address the Strategic Priority areas identified by the Board in December 2016 and the Near-Term Priorities approved by the Board in June 2018.
- Building on the NERC Reliability Issues Steering Committee (RISC) Report, staff and stakeholders will continue to play a leadership role in the identification of Western Interconnection-specific reliability challenges.
- In 2019, the RAC re-envisioned its assessment process and moved toward issue-based assessments. Staff will refine the approach in 2020 and work with stakeholders and policymakers to identify key vulnerabilities.
- Meetings occurring during January 2020 may need to be hosted off-site due to Salt Lake City meeting space upgrades.
- One FTE is transferred to Legal and Regulatory due to organizational realignment.

2020 Goals and Deliverables

- Continue the three-year planning cycle, in conjunction with the JGC, to align staff and technical committee work plans in support of the Board-approved strategic priorities.
- Coordinate internally with Western Interconnection stakeholders and NERC to ensure that emerging reliability challenges, such as those potentially resulting from the expansion of RC and market service providers, are identified and addressed.
- Prepare interconnection-wide power flow and stability base cases and conduct studies to address key reliability challenges facing the Western Interconnection.
- Provide technical oversight, insight, and guidance to analyze the effects of the changing resource mix and recommend any actions to minimize reliability risks or improve modeling capabilities.

- Create and model alternate plausible futures for the Western Interconnection, considering technical, economic, policy, and other drivers.
- Implement lessons learned from the 2028 Anchor Data Set (ADS) development process and complete development of the 2030 ADS.
- Facilitate dynamic model development, focusing on new technology resources, such as inverter-based resources.
- Continue to develop and maintain database(s) for production cost and other models.
- Enhance tools and capabilities used for probabilistic-based planning and analysis.
- Enhance tools to study the impact of changing load characteristics and integration of new technology resources.
- Conduct reliability assessments evaluating the adequacy and security of the BPS in the planning horizon, including supporting the NERC Long-Term Reliability Assessment and incorporated probabilistic assessment, Summer Reliability Assessment, and Winter Reliability Assessment.
- Conduct Special Reliability Assessments as needed for low-probability/high-impact events such as geomagnetic disturbances or prolonged droughts.
- Conduct Special Reliability Assessments to study the benefits and impacts of integrating new technology resources.
- Use data from actual system disturbances to validate power flow and stability base-case models.
- Publish transmission maps of the existing and planned system in the West.
- Facilitate the Project Coordination and Project Rating Review Process.
- Process BES Exception requests.
- Verify and submit NERC Transmission Availability Data System (TADS), Generator Availability Data System (GADS), Demand-Response Availability Data System (DADS), and Misoperation Information Data Analysis System (MIDAS) filings.
- Analyze trends and patterns in historical system performance, resource and load composition, and publish in reports such as the annual State of the Interconnection report.
- Assess entity performance through site visits or short surveys regarding key operational practices to identify and share best practices and potential risks to Interconnection-wide reliability.

- Evaluate historical system performance trends to identify reliability risk metrics, key indicators, and potential improvement strategies. Work with technical committees to engage in proactive reliability improvement activities.
- Enhance risk analysis capabilities through increased analysis of risk data sources such as Event Analysis reports, TADS, GADS, and protection system misoperations.
- Identify key vulnerability issues and work with stakeholders to address them (e.g., physical and cybersecurity, situation awareness and coordination across neighboring systems, human performance, and equipment misoperations or failures).
- Complete Event Analysis reports and develop lessons learned to minimize the possibility and reoccurrence of significant events.
- Educate stakeholders about Event Analysis work and specific events on the system through an Event Analysis dashboard.
- Align internal processes and tools around the Event Analysis process to ensure consistency in information and analysis.
- Develop Reliability Guidelines, technical white papers and reports, and reference documents to address emerging issues, operational risks, and industry concerns related to system operations.
- Ensure the Western Interconnection is represented in reliability matters by participating in regional and national stakeholder forums.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses increase by a net of $149,000 primarily due to a net of one FTE transferred to Legal and Regulatory, a budgeted three-percent merit pool, continued refinement of labor float percentages, changes in position levels, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- Meetings & Conference Calls decrease by $50,000 primarily due to refinement of meeting attendance and costs.

Operating Expenses

- Consultants & Contracts increase by $10,000 primarily due to impact studies of the changing resource mix. Studies will relate to the potential impacts on existing Path Ratings and/or RAS effectiveness as the resource mix in the Western Interconnection continues to evolve.

- Office Costs increase by $10,000 primarily due to increases in computer licensing fees.

Fixed Assets

- Fixed Assets increase by a net of $58,000 primarily due to a reduction in fixed asset additions and changes in financial presentation of depreciation.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Reliability Assessment and Performance Analysis Program Funding Sources and Expenditures

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 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 9,560,414	$ 9,560,414	$ -	$ 9,603,551	$ 43,137
Penalty Sanctions	218,283	218,283	-	998,182	779,899
Total Statutory Funding	**$ 9,778,697**	**$ 9,778,697**	**$ -**	**$ 10,601,733**	**$ 823,036**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	-	-	-	-	-
Interest	44,571	91,556	46,985	72,727	28,156
Total Revenue (A)	**$ 9,823,268**	**$ 9,870,253**	**$ 46,985**	**$ 10,674,460**	**$ 851,192**
Expenses					
Personnel Expenses					
Salaries	$ 4,278,285	$ 3,938,155	$ (340,130)	$ 4,371,606	$ 93,321
Payroll Taxes	294,608	259,301	(35,307)	299,047	4,439
Benefits	494,397	460,521	(33,876)	519,073	24,676
Retirement Costs	353,659	360,449	6,790	380,135	26,476
Total Personnel Expenses	**$ 5,420,949**	**$ 5,018,426**	**$ (402,523)**	**$ 5,569,861**	**$ 148,912**
Meeting Expenses					
Meetings & Conference Calls	$ 128,110	$ 30,944	$ (97,166)	$ 77,685	$ (50,425)
Travel	244,640	267,232	22,592	245,010	370
Total Meeting Expenses	**$ 372,750**	**$ 298,176**	**$ (74,574)**	**$ 322,695**	**$ (50,055)**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ 590,000	$ 632,092	$ 42,092	$ 600,000	$ 10,000
Office Rent	-	-	-	-	-
Office Costs	214,564	238,861	24,297	224,898	10,334
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 804,564**	**$ 870,953**	**$ 66,389**	**$ 824,898**	**$ 20,334**
Total Direct Expenses	**$ 6,598,263**	**$ 6,187,555**	**$ (410,708)**	**$ 6,717,454**	**$ 119,191**
Indirect Expenses	**$ 3,463,906**	**$ 3,220,295**	**$ (243,611)**	**$ 3,592,689**	**$ 128,783**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 10,062,169**	**$ 9,407,850**	**$ (654,319)**	**$ 10,310,143**	**$ 247,974**
Change in Net Assets (=A-B)	**$ (238,901)**	**$ 462,403**	**$ 701,304**	**$ 364,317**	**$ 603,218**
Fixed Assets, excluding Right of Use Assets (C)	**$ (39,425)**	**$ (46,614)**	**$ (7,189)**	**$ 18,914**	**$ 58,339**
TOTAL BUDGET (B+C)	**$ 10,022,744**	**$ 9,361,236**	**$ (661,508)**	**$ 10,329,057**	**$ 306,313**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (199,476)**	**$ 509,017**	**$ 708,493**	**$ 345,403**	**$ 544,879**
FTEs	39.0	36.0	(3.0)	38.0	(1.0)
HC	40.0	37.0	(3.0)	39.0	(1.0)

Training and Outreach

Training and Outreach (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	2.0	1.5	(0.5)
Direct Expenses	$ 762,842	$ 651,493	$ (111,349)
Indirect Expenses	$ 177,636	$ 141,817	$ (35,819)
Other Non-Operating Expenses	$ -	$ -	$ -
Inc(Dec) in Fixed Assets	$ (2,022)	$ 747	$ 2,769
Total Funding Requirement	$ 938,456	$ 794,057	$ (144,399)

Program Scope and Functional Description

The Training and Outreach Program provides outreach, education, and training on the application of Reliability Standards, compliance issues, improvement of compliance programs, reliability planning and performance analysis, grid operations, and human performance.

2020 Key Assumptions

The Training and Outreach Program incorporates the Regional Entity-specific contributing activities as described in the ERO Enterprise Operating Plan, and includes the following additional WECC-specific assumptions:

- Deliver two Reliability and Security Workshops to provide in-depth education and training related to:
  - Lessons learned and process improvement for implementation of risk-based concepts in the CMEP;
  - Enforcement trends and statistics; and
  - Information on audit approach for upcoming standards changes and transitions.
- Conduct webinars and workshops to expand awareness of reliability planning tools, modeling capabilities, and study results.

2020 Goals and Deliverables

- Deliver nine Compliance Open Webinars.
- Deliver three Grid Fundamentals workshops.
- Deliver one Compliance 101 workshop.
- Deliver one Human Performance conference.

- Deliver two Reliability and Security Workshops.
- Deliver educational webinars and workshops on:
  - Reliability planning tools and modeling capabilities, including base-case and common-case studies;
  - Contingency studies and analysis;
  - RAC studies;
  - Scenario planning and regulatory issues and trends; and
  - Event analysis.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses decrease by $133,000 primarily due to a net of one FTE transferred to Human Resources, a budgeted three-percent merit pool, continued refinement of labor float percentages, changes in position levels and allocations, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- Office Costs increase by $18,000 primarily due to anticipated increases in printing costs, meeting registration costs, and shipping fees, which are directly related to increases in anticipated attendance.

Fixed Assets

- No significant changes.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Training and Outreach Program Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget TRAINING AND OUTREACH	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 481,798	$ 481,798	$ -	$ 321,087	$ (160,711)
Penalty Sanctions	11,194	11,194	-	39,402	28,208
Total Statutory Funding	**$ 492,992**	**$ 492,992**	**$ -**	**$ 360,489**	**$ (132,503)**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	424,500	536,150	111,650	457,250	32,750
Interest	2,286	2,543	257	2,871	585
Total Revenue (A)	**$ 919,778**	**$ 1,031,685**	**$ 111,907**	**$ 820,610**	**$ (99,168)**
Expenses					
Personnel Expenses					
Salaries	$ 254,696	$ 160,554	$ (94,142)	$ 143,854	$ (110,842)
Payroll Taxes	18,305	10,933	(7,372)	10,433	(7,872)
Benefits	29,484	20,521	(8,963)	23,842	(5,642)
Retirement Costs	21,064	13,461	(7,603)	12,515	(8,549)
Total Personnel Expenses	**$ 323,549**	**$ 205,469**	**$ (118,080)**	**$ 190,644**	**$ (132,905)**
Meeting Expenses					
Meetings & Conference Calls	$ 409,173	$ 543,283	$ 134,110	$ 405,905	$ (3,268)
Travel	10,603	12,109	1,506	11,475	872
Total Meeting Expenses	**$ 419,776**	**$ 555,392**	**$ 135,616**	**$ 417,380**	**$ (2,396)**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ -	$ 6,160	$ 6,160	$ 6,160	$ 6,160
Office Rent	-	-	-	-	-
Office Costs	19,517	33,942	14,425	37,309	17,792
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 19,517**	**$ 40,102**	**$ 20,585**	**$ 43,469**	**$ 23,952**
Total Direct Expenses	**$ 762,842**	**$ 800,963**	**$ 38,121**	**$ 651,493**	**$ (111,349)**
Indirect Expenses	**$ 177,636**	**$ 89,453**	**$ (88,183)**	**$ 141,817**	**$ (35,819)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 940,478**	**$ 890,416**	**$ (50,062)**	**$ 793,310**	**$ (147,168)**
Change in Net Assets (=A-B)	**$ (20,700)**	**$ 141,269**	**$ 161,969**	**$ 27,300**	**$ 48,000**
Fixed Assets, excluding Right of Use Assets (C)	**$ (2,022)**	**$ (1,295)**	**$ 727**	**$ 747**	**$ 2,769**
TOTAL BUDGET (B+C)	**$ 938,456**	**$ 889,121**	**$ (49,335)**	**$ 794,057**	**$ (144,399)**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (18,678)**	**$ 142,564**	**$ 161,242**	**$ 26,553**	**$ 45,231**
FTEs	2.0	1.0	(1.0)	1.5	(0.5)
HC	2.0	1.0	(1.0)	1.0	(1.0)

Situation Awareness and Infrastructure Security

Situation Awareness and Infrastructure Security (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	1.0	1.0	-
Direct Expenses	$ 127,569	$ 141,597	$ 14,028
Indirect Expenses	$ 88,818	$ 94,544	$ 5,726
Other Non-Operating Expenses	$ -	$ -	$ -
Inc(Dec) in Fixed Assets	$ (1,011)	$ 498	$ 1,509
Total Funding Requirement	$ 215,376	$ 236,639	$ 21,263

Program Scope and Functional Description

The Situation Awareness and Infrastructure Security (SAIS) Program maintains near Real-time awareness about the conditions and significant occurrences on the BPS in the Western Interconnection, with the objective of recognizing conditions and situations that could impact the reliability of the BPS. WECC has access to limited Real-time data via the Situation Awareness for FERC, NERC, and the Regions (SAFNR) tool, Genscape Real-time Power Application, and the University of Tennessee Frequency Monitoring NETwork (FNET).

This Program is part of WECC's delegation-related accountabilities to NERC and does not in any way duplicate the Real-time situation awareness and operating coordination provided by other entities within the Western Interconnection. WECC's role is to understand system issues when they emerge and coordinate with relevant parties (typically NERC and FERC) about the conditions of the BPS. Through this coordination, WECC discerns patterns and identifies trends that will help build a stronger and more resilient system. Additionally, staff responds to events by providing coordination, assistance, and communication with the RCs, stakeholders, and NERC SAIS personnel. Additionally, SAIS work feeds into Event Analysis capabilities.

2020 Key Assumptions

The SAIS Program incorporates the Regional Entity-specific contributing activities as described in the ERO Enterprise Operating Plan, and includes the following additional WECC-specific assumptions.

WECC will:

- Continue using the SAFNR tool and Genscape Real-time Power Application to provide situation awareness capabilities.
- Support NERC and FERC's efforts for situation awareness of current system conditions.
- Work with stakeholders, government agencies, NERC, and the Electricity Information Sharing and Analysis Center (E-ISAC) to ensure appropriate event information is disseminated to industry entities in a timely manner.
- Ensure data and information sources are tracked and new agreements are in place to maintain SAIS functionality after the RC transition.
- Maximize sharing of operating and system data, within agreed parameters, and insights from Event Analysis, including near-misses, to optimize understanding of reliability issues, promote operational excellence, share best practices and lessons learned in a timely manner, and engage third-party experts to expand capabilities and resources applied to critical reliability issues.
- Collaborate with specific stakeholder groups in the development of lessons learned and recommendations from events and identified risks.

2020 Goals and Deliverables

- Monitor system events, collect information, and coordinate the distribution of timely updates on system events to industry stakeholders and NERC SAIS personnel.
- Work with NERC to monitor system data, weather, and technological developments to understand trends that affect reliability for the near- and long-term horizons.
- Participate in daily NERC SAIS calls to coordinate the communication of any critical information.
- Support efforts and work to develop and enhance ways to improve the use of SAFNR and Genscape Real-time Power Application data to further support SAIS.
- Represent the Western Interconnection in reliability matters by participating in various NERC committees and industry forums.
- Participate, as appropriate, in periodic wide-area security exercises (e.g., GridEx, Monitoring and Situation Awareness Workshop, NERC Human Performance Conference).
- Promote rapid and appropriate situation awareness information sharing to support critical infrastructure security.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses increase by $14,000 primarily due to a budgeted three-percent merit pool, continued refinement of labor float percentages, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- No significant changes.

Fixed Assets

- No significant changes.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Situation Awareness and Infrastructure Security Program Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget SITUATION AWARENESS AND INFRASTRUCTURE SECURITY	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ 204,350	$ 204,350	$ -	$ 216,370	$ 12,020
Penalty Sanctions	5,597	5,597	-	26,268	20,671
Total Statutory Funding	**$ 209,947**	**$ 209,947**	**$ -**	**$ 242,638**	**$ 32,691**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	-	-	-	-	-
Interest	1,143	2,543	1,400	1,914	771
Total Revenue (A)	**$ 211,090**	**$ 212,490**	**$ 1,400**	**$ 244,552**	**$ 33,462**
Expenses					
Personnel Expenses					
Salaries	$ 100,159	$ 108,207	$ 8,048	$ 111,297	$ 11,138
Payroll Taxes	7,516	7,063	(453)	8,344	828
Benefits	11,620	18,064	6,444	12,273	653
Retirement Costs	8,274	7,402	(872)	9,683	1,409
Total Personnel Expenses	**$ 127,569**	**$ 140,736**	**$ 13,167**	**$ 141,597**	**$ 14,028**
Meeting Expenses					
Meetings & Conference Calls	$ -	$ -	$ -	$ -	$ -
Travel	-	-	-	-	-
Total Meeting Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ -	$ -	$ -	$ -	$ -
Office Rent	-	-	-	-	-
Office Costs	-	-	-	-	-
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Direct Expenses	**$ 127,569**	**$ 140,736**	**$ 13,167**	**$ 141,597**	**$ 14,028**
Indirect Expenses	**$ 88,818**	**$ 89,453**	**$ 635**	**$ 94,544**	**$ 5,726**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 216,387**	**$ 230,189**	**$ 13,802**	**$ 236,141**	**$ 19,754**
Change in Net Assets (=A-B)	**$ (5,297)**	**$ (17,699)**	**$ (12,402)**	**$ 8,411**	**$ 13,708**
Fixed Assets, excluding Right of Use Assets (C)	**$ (1,011)**	**$ (1,295)**	**$ (284)**	**$ 498**	**$ 1,509**
TOTAL BUDGET (B+C)	**$ 215,376**	**$ 228,894**	**$ 13,518**	**$ 236,639**	**$ 21,263**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ (4,286)**	**$ (16,404)**	**$ (12,118)**	**$ 7,913**	**$ 12,199**
FTEs	1.0	1.0	-	1.0	-
HC	-	-	-	-	-

Corporate Services

Corporate Services (in whole dollars) Direct Expenses and Fixed Assets	2019 Budget	2020 Budget	Increase (Decrease)	FTEs 2019 Budget	FTEs 2020 Budget	Increase (Decrease)
Committee and Member Forums	$ 11,200	$ 77,350	$ 66,150	-	-	-
General and Administrative	$ 5,206,619	$ 5,364,402	$ 157,783	17.05	16.50	(0.55)
Legal and Regulatory	$ 1,323,239	$ 1,531,728	$ 208,489	6.00	7.00	1.00
Information Technology	$ 1,803,654	$ 1,806,959	$ 3,305	8.70	8.00	(0.70)
Human Resources	$ 868,319	$ 1,232,509	$ 364,190	3.00	4.00	1.00
Accounting and Finance	$ 533,568	$ 489,212	$ (44,356)	3.25	3.00	(0.25)
Total Corporate Services*	$ 9,746,599	$ 10,502,160	$ 755,561	38.00	38.50	0.50

*WECC's 2020 Corporate Services budget (expenses plus fixed assets) is $10,502,160, of which $570,253 is allocated to non-statutory activities. As a result of the allocation to the non-statutory function, the Corporate Services expenses included in the 2020 statutory budget are $9,931,907, which is a $712,152 increase from the 2019 budget.

Program Scope and Functional Description

Corporate Services encompasses the following program areas and includes all business and administrative functions of the organization:

- Technical Committees and Member Forums;
- General and Administrative;
- Legal and Regulatory;
- Information Technology;
- Human Resources; and
- Finance and Accounting.

These functions are necessary for the existence and operation of the organization and support the performance of statutory activities. This area provides executive leadership; communications and external affairs; and administrative support for staff, committees, and members.

Methodology for Allocation of Corporate Services Expenses to Programs

Corporate Services expenses are allocated to statutory and non-statutory program areas based on FTEs.

Technical Committees and Member Forums

Program Scope and Functional Description

The Standing Committees (OC, MIC, and RAC) and the JGC provide forums for members and other interested stakeholders to discuss and share reliability, compliance, and operating concerns.

2020 Key Assumptions

- The Standing Committees meet three times each year.
- In 2020, one meeting will be held off-site.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- No significant changes.

Meeting Expenses

- Meetings increase by $66,000 due to one Standing Committee meeting being held off-site.

Operating Expenses

- No significant changes.

Fixed Assets

- No significant changes.

General and Administrative

Program Scope and Functional Description

The General and Administrative Program provides executive leadership; communications; and administrative support for staff, committees, and members; as well as logistics support of the Salt Lake City office and meeting facilities, and the Vancouver office. In addition, indirect costs such as Office Rent that benefit multiple functional areas are accounted for in this Program.

2020 Key Assumptions

- Provide the same level of meetings and meeting support for the Board of Directors and Board Committees in 2020.
- Hold the 2020 Annual Meeting in Lake Las Vegas, Henderson, Nevada.
- Compensate Directors for meeting participation in accordance with the current Board compensation structure.

2020 Goals and Deliverables

- Provide excellent executive leadership and strong strategic guidance for the activities undertaken by WECC and ensure that WECC supports the ERO Enterprise Long-Term Strategy and ERO Enterprise Operating Plan.
- Support and coordinate the logistics for the Board and Board Committees.
- Continue to enhance the meetings team and stakeholder services groups to drive efficiencies and effective services.
- Continue to enhance external relations and outreach programs.
- Upgrade the Salt Lake City meeting space, funded by the landlord through a negotiated tenant improvement allowance.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses decrease by $81,000 primarily due to a budgeted three-percent merit pool, allocation changes, continued refinement of labor float percentages, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- Consultants & Contracts decrease by a net of $62,000 primarily due to a reduction in Director training and an increase in Board search fees.
- Office Rent increases by $275,000 primarily due to the new lease for the Salt Lake City office.
- Office Costs decrease by $14,000 primarily due to the completion of the WECC rebrand.
- Professional Services increase by $53,000 due to increases in Director retainers resulting from a 2019 Board compensation study.

Fixed Assets

- No significant changes.

Legal and Regulatory

Program Scope and Functional Description

The Legal and Regulatory Program provides coordinated legal services and subject matter expertise to the Board, committees, and staff, in addition to consistent legal interpretations of relevant statutes, regulations, court opinions, and regulatory decisions. On occasion, major efforts may be outsourced to select law firms, but the responsibility for all legal matters remains with the Legal and Regulatory Program. The Program also coordinates regulatory affairs and outreach at the federal, state, and regional level.

WECC's broad scope of activities requires significant legal support and review. Arranging for legal support is complicated by the technical nature of this developing area of law, and there are many potential areas of conflict prohibiting the use of law firms with energy practices.

2020 Key Assumptions

- Maintain the scope of current operations and contribute positively to ERO Enterprise activities.
- One FTE is transferred from RAPA due to organizational realignment.

2020 Goals and Deliverables

- Provide efficient, cost-effective legal support to the Board, committees, and staff through a combination of in-house and outside resources.
- Advise staff on legal matters.
- Bolster and expand regulatory affairs activities to:
  - Appropriately inform executive leadership about key national and Western policy and legislative initiatives; and
  - Increase engagement with policymakers and legislators.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses increase by $203,000 due to one FTE transferred from RAPA, a budgeted three-percent merit pool, continued refinement of labor float percentages, changes in position levels, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- No significant changes.

Fixed Assets

- No significant changes.

Information Technology

Program Scope and Functional Description

The Information Technology (IT) Program provides systems support including: servers, data, email, telephone systems, and internet and Intranet website maintenance. IT develops new technology solutions, using both staff and external service providers. IT provides resources and tools to enable the organization to meet evolving requirements to support activities and responsibilities as directed by NERC and FERC.

2020 Key Assumptions

The IT Program incorporates the Regional Entity-specific contributing activities as described in the ERO Enterprise Operating Plan, and includes the following additional WECC-specific assumptions.

- Use consultants as needed instead of increasing headcount.
- Achieve long-term levelized costs by obtaining subscription services for software and infrastructure when practical.
- Replace computer equipment on a four-year refresh cycle, refresh servers every five years, and replace network equipment every seven-to-10 years.
- Support the ERO Enterprise IT Strategy and continue working collaboratively to minimize duplication of effort and investments and improve operational efficiency.
- One FTE is transferred to CMEP due to efficiencies gained.

2020 Goals and Deliverables

- Provide data support, analysis, and communication.
- Create centralized databases, automated processes, and tools to organize a growing volume of electronic data.
- Increase security capabilities with additional authentication controls and enhanced threat detection.
- Enhance the capabilities and security controls of mobile devices and remote workers.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses decrease by a net of $33,000 due to one FTE transferred to CMEP, a budgeted three-percent merit pool, continued refinement of labor float percentages, changes in position levels, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- Consultants & Contracts increase by $18,000 primarily due to a SharePoint upgrade for the wecc.org website.
- Office Costs increase by $70,000 primarily due to an increase in computer licensing fees and a continued shift to subscription-based services for infrastructure and security initiatives.

Fixed Assets

- Fixed Assets decrease by $55,000 primarily due to the completion of planned 2019 equipment refreshes.

Human Resources

Program Scope and Functional Description

The Human Resources (HR) Program is responsible for the delivery of all HR functions, including recruitment, staffing, compensation, benefits, safety, health and wellness, employee relations, performance management, succession planning, and employee training and development. HR maintains and supports employee-related systems and ensures compliance with all federal and state requirements.

2020 Key Assumptions

- Total headcount remains flat.
- Maintain current benefit levels and negotiate minimal premium increases.
- Minimize skills gaps through training, development, and targeted hiring practices.
- One FTE is transferred from Training and Outreach due to organizational realignment.

2020 Goals and Deliverables

- Increase the effectiveness of performance management processes through manager training and development.
- Conduct harassment prevention training for all employees and managers.
- Enhance the scope of succession planning and employee development and training, which are vital to maintaining a highly skilled, qualified, and diverse workforce.
- Deliver an attractive benefits package to retain current employees and attract potential employees.
- Manage benefits package costs and minimize premium increases.
- Expand recruiting efforts through college campus outreach, social media platforms, and employee referral programs.
- Offer one technical writing course.
- Provide access for all employees to the NERC Learning Management System and develop learning plans for employee training using computer-based training modules and classroom training.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses increase by $316,000 primarily due to one FTE transferred from Training and Outreach, a budgeted three-percent merit pool, continued refinement of

labor float percentages, changes in position levels, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- Travel increases by $10,000 primarily due to anticipated increases in the numbers of out-of-state job applicants.

Operating Expenses

- Consultants & Contracts increase by $35,000 primarily due to a compensation study.

Fixed Assets

- No significant changes.

Finance and Accounting

Program Scope and Functional Description

The Finance and Accounting Program provides accounting and financial analysis support. The Program is responsible for accounts payable, accounts receivable, budgeting, fixed assets management, banking, cash management, payroll, and financial reporting.

2020 Key Assumptions

- Implement secure and reliable cloud-based software.
- Interest rates remain flat.

2020 Goals and Deliverables

- Assist departments to efficiently and effectively manage resources and operate within approved budgets.
- Identify and implement efficiencies in financial processes.
- Ensure WECC has effective financial controls.
- Provide quality reporting and financial analysis to managers, the FAC, and the Board.

Resource Requirements/Explanation of Significant Changes

Personnel Expenses

- Personnel Expenses decrease by $47,000 primarily due to a budgeted three-percent merit pool, allocation changes, continued refinement of labor float percentages, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- No significant changes.

Fixed Assets

- No significant changes.

See Section B—Supplemental Financial Information for explanations of other variances between the 2019 and 2020 budgets.

Corporate Services Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget CORPORATE SERVICES	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ -	$ -	$ -	$ -	$ -
Penalty Sanctions	-	-	-	-	-
Total Statutory Funding	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Membership Fees	$ -	$ -	$ -	$ -	$ -
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	-	-	-	-	-
Interest	-	-	-	-	-
Total Revenue (A)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Expenses					
Personnel Expenses					
Salaries	$ 4,287,638	$ 4,287,024	$ (614)	$ 4,531,681	$ 244,043
Payroll Taxes	240,225	220,645	(19,580)	258,057	17,832
Benefits	941,023	935,802	(5,221)	998,019	56,996
Retirement Costs	354,381	378,668	24,287	393,240	38,859
Total Personnel Expenses	**$ 5,823,267**	**$ 5,822,139**	**$ (1,128)**	**$ 6,180,997**	**$ 357,730**
Meeting Expenses					
Meetings & Conference Calls	$ 156,100	$ 159,819	$ 3,719	$ 229,000	$ 72,900
Travel	300,130	306,764	6,634	314,900	14,770
Total Meeting Expenses	**$ 456,230**	**$ 466,583**	**$ 10,353**	**$ 543,900**	**$ 87,670**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ 441,000	$ 339,198	$ (101,802)	$ 432,000	$ (9,000)
Office Rent	972,909	993,850	20,941	1,248,251	275,342
Office Costs	1,022,913	973,944	(48,969)	1,088,222	65,309
Professional Services	908,280	922,108	13,828	953,790	45,510
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 3,345,102**	**$ 3,229,100**	**$ (116,002)**	**$ 3,722,263**	**$ 377,161**
Total Direct Expenses	**$ 9,624,599**	**$ 9,517,822**	**$ (106,777)**	**$ 10,447,160**	**$ 822,561**
Indirect Expenses	**$ (9,624,599)**	**$ (9,517,822)**	**$ 106,777**	**$ (10,447,160)**	**$ (822,561)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Change in Net Assets (=A-B)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Fixed Assets, excluding Right of Use Assets (C)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL BUDGET (B+C)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
FTEs	40.7	38.9	(1.8)	38.5	(2.2)
HC	41.0	39.0	(2.0)	39.0	(2.0)

Section B

Supplemental Financial Information

Section B—Supplemental Financial Information

Reserve Analysis

Table B-1

Working Capital Reserve Analysis 2019-2020 STATUTORY		
Beginning Working Capital Reserve (Deficit), December 31, 2018	$	6,537,757
Plus: 2019 Funding (from Load-Serving Entities (LSE) or designees)		25,869,686
Plus: 2019 Other funding sources		805,648
Less: 2019 Projected expenses & capital expenditures		(26,389,140)
Projected Working Capital Reserve (Deficit), December 31, 2019	**$**	**6,823,951**
Projected Working Capital Reserve, December 31, 2020[1]	$	7,752,113
Less: Projected Working Capital Reserve, December 31, 2019		(6,823,951)
Increase(Decrease) in Assessments to Achieve Projected Working Capital Reserve	$	928,162
2020 Expenses and Capital Expenditures	$	27,756,089
Less: Penalty Sanctions[2]		(2,745,000)
Less: Other Funding Sources		(657,250)
Adjustment to achieve desired Working Capital Reserve		928,162
2020 WECC Assessment	**$**	**25,282,000**

1 - On June 19, 2019, the WECC Board of Directors approved this reserve level.

2 - Represents collections of Penalty Sanctions from July 1, 2018 through June 30, 2019. See page 50 for full disclosure.

WECC's Board has approved a Working Capital Reserve balance equal to one-to-three months of Personnel, Meeting, and Operating Expenses per its Reserve Policy, approved by the FAC on June 19, 2018.

Breakdown of Statement of Activities

The following detailed schedules are in support of the Statutory Statement of Activities and Capital Expenditures on page 10.

Monetary Penalties

As documented in the NERC Policy *Accounting, Financial Statement and Budgetary Treatment of Penalties Imposed and Received for Violations of Reliability Standards*, penalty monies received on or prior to June 30, 2019, will be used to offset assessments in the 2020 WECC budget.

All penalty monies received on or prior to June 30, 2019, are listed in Table B-2, including the amount and the date received.

Allocation Method: Penalty monies received have been allocated to the following Statutory Programs to reduce assessments:

- Reliability Standards;
- Compliance Monitoring and Enforcement and Organization Registration and Certification;
- Reliability Assessment and Performance Analysis;
- Training and Outreach; and
- Situation Awareness and Infrastructure Security.

Penalty monies are allocated based on the number of FTEs in the functional areas divided by the aggregate total FTEs in the programs receiving the allocation.

Penalty Sanctions

Table B-2

Penalty Sanctions Received on or Prior to June 30, 2019	
Date Received	Amount Received
7/11/2018	2,700,000
10/16/2018	45,000
Total Penalties Received	2,745,000
Penalties Offset to Assessments	**2,745,000**

Supplemental Funding

Table B-3

Other Revenue Breakdown By Program (Excludes Assessments & Penalty Sanctions)	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget
Reliability Standards				
Interest	$ 3,429	$ 7,630	$ 5,742	$ 2,313
Total	$ 3,429	$ 7,630	$ 5,742	$ 2,313
Compliance Monitoring, Enforcement & Org. Registration				
Workshops & Miscellaneous	$ -	$ -	$ -	$ -
Interest	68,571	157,680	116,746	48,175
Total	$ 68,571	$ 157,680	$ 116,746	$ 48,175
Reliability Assessment and Performance Analysis				
Interest	$ 44,571	$ 91,556	$ 72,727	$ 28,156
Total	$ 44,571	$ 91,556	$ 72,727	$ 28,156
Training and Outreach				
Workshops & Miscellaneous	$ 424,500	$ 536,150	$ 457,250	$ 32,750
Interest	2,286	2,543	2,871	585
Total	$ 426,786	$ 538,693	$ 460,121	$ 33,335
Situation Awareness and Infrastructure Security				
Interest	$ 1,143	$ 2,543	$ 1,914	$ 771
Total	$ 1,143	$ 2,543	$ 1,914	$ 771
Corporate Services				
Interest	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -
Total Outside Funding	**$ 544,500**	**$ 798,102**	**$ 657,250**	**$ 112,750**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

WECC anticipates its investments will earn interest of approximately $200,000 in 2020. This revenue is allocated to the Statutory Programs based on FTEs.

Reliability Standards

- No significant changes.

Compliance Monitoring and Enforcement and Organization Registration and Certification

- No significant changes.

Training and Outreach

- Workshops & Miscellaneous revenue increases by $33,000 due to increases in anticipated attendance at outreach events.

Situation Awareness and Infrastructure Security

- No significant changes.

Corporate Services

- No significant changes.

Personnel Expenses

Table B-4

Personnel Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Salaries					
Salaries	$ 15,865,019	$ 15,595,071	$ 16,475,075	$ 610,056	3.8%
Employment Agency Fees	-	-	-	-	
Temporary Office Services	-	881	-	-	
Total Salaries	$ 15,865,019	$ 15,595,952	$ 16,475,075	$ 610,056	3.8%
Total Payroll Taxes	$ 1,037,394	$ 955,715	$ 1,074,352	$ 36,958	3.6%
Benefits					
Workers Compensation	$ 14,800	$ 15,990	$ 17,985	$ 3,185	21.5%
Medical Insurance	1,826,239	1,867,474	1,969,722	143,483	7.9%
Life-LTD-STD Insurance	87,974	97,993	99,995	12,021	13.7%
Education	300,704	234,258	217,301	(83,403)	(27.7%)
Relocation	55,992	24,000	50,000	(5,992)	(10.7%)
Other	17,000	19,807	22,004	5,004	29.4%
Total Benefits	$ 2,302,709	$ 2,259,522	$ 2,377,007	$ 74,298	3.2%
Retirement					
Discretionary 401k Contribution	$ 1,311,109	$ 1,397,574	$ 1,431,482	$ 120,373	9.2%
Retirement Administration Fees	-	-	-	-	
Total Retirement	$ 1,311,109	$ 1,397,574	$ 1,431,482	$ 120,373	9.2%
Total Personnel Costs	$ 20,516,231	$ 20,208,763	$ 21,357,916	$ 841,685	4.1%
FTEs	143.0	141.9	143.0	0.0	0.0%
Cost per FTE					
Salaries	$ 110,944	$ 109,908	$ 115,210	$ 4,266	3.8%
Payroll Taxes	7,255	6,735	7,513	258	3.6%
Benefits	16,103	15,923	16,622	520	3.2%
Retirement	9,169	9,849	10,010	842	9.2%
Total Cost per FTE	**$ 143,470**	**$ 142,416**	**$ 149,356**	**$ 5,886**	**4.1%**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

Salaries

- Salaries increase by a net of $610,000 primarily due to a budgeted three-percent merit pool, continued refinement of labor float percentages, and changes in position levels.

Payroll Taxes

- Payroll Taxes increase by a net of $37,000 primarily due to increases in salaries.

Benefits

- Medical Insurance increases by $144,000 primarily due to increases in participation and increases in the cost of premiums.
- Life-LTD-STD Insurance increases by $12,000 primarily due to increases in salaries.
- Education decreases by $83,000 primarily due to anticipated training and development required based on existing staff skill sets.

Retirement

- Discretionary 401(k) Contributions increase by $120,000 primarily due to increases in salaries and retirement plan participation.

Meeting Expenses

Table B-5

Meeting & Conference Call Expense	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Reliability Standards	$ 260	$ -	$ -	$ (260)	(100.0%)
Compliance Monitoring and Enforcement and Organization Registration and Certification	4,910	5,326	1,505	(3,405)	(69.3%)
Reliability Assessment and Performance Analysis	128,110	30,944	77,685	(50,425)	(39.4%)
Training and Outreach	409,173	543,283	405,905	(3,268)	(0.8%)
Situation Awareness and Infrastructure Security	-	-	-	-	
Corporate Services	156,100	159,819	229,000	72,900	46.7%
Total Meeting Expenses	**$ 698,553**	**$ 739,371**	**$ 714,095**	**$ 15,542**	**2.2%**

Travel Expense	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Reliability Standards	$ 18,290	$ 19,797	$ 18,250	$ (40)	(0.2%)
Compliance Monitoring and Enforcement and Organization Registration and Certification	835,205	763,889	812,183	(23,022)	(2.8%)
Reliability Assessment and Performance Analysis	244,640	267,232	245,010	370	0.2%
Training and Outreach	10,603	12,109	11,475	872	8.2%
Situation Awareness and Infrastructure Security	-	-	-	-	
Corporate Services	300,130	306,764	314,900	14,770	4.9%
Total Travel Expenses	**$ 1,408,868**	**$ 1,369,791**	**$ 1,401,818**	**$ (7,050)**	**(0.5%)**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

Meeting & Conference Call Expense

- RAPA decreases by $50,000 primarily due to refinement of meeting cost assumptions and anticipated meeting attendance.
- Corporate Services increases by $73,000 primarily due to one Standing Committee meeting being held off-site.

Travel Expense

- Compliance decreases by $23,000 primarily due to planned reductions in travel requirements for support staff.
- Corporate Services increases by $15,000 primarily due to increases in travel requirements and attendance at off-site meetings.

Consultants and Contracts

Table B-6

Consultants	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Consultants					
Reliability Standards	$ -	$ -	$ -	$ -	
Compliance Monitoring and Enforcement and Organization Registration and Certification	-	-	-	-	
Reliability Assessment and Performance Analysis	590,000	632,092	600,000	10,000	1.7%
Training and Outreach	-	6,160	6,160	6,160	
Situation Awareness and Infrastructure Security	-	-	-	-	
Corporate Services	441,000	339,198	432,000	(9,000)	(2.0%)
Consultants Total	$ 1,031,000	$ 977,450	$ 1,038,160	$ 7,160	0.7%

Contracts	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Contracts					
Reliability Standards	$ -	$ -	$ -	$ -	
Compliance Monitoring and Enforcement and Organization Registration and Certification	261,890	84,993	-	(261,890)	(100.0%)
Reliability Assessment and Performance Analysis	-	-	-	-	
Training and Outreach	-	-	-	-	
Situation Awareness and Infrastructure Security	-	-	-	-	
Corporate Services	-	-	-	-	
Contracts Total	$ 261,890	$ 84,993	$ -	$ (261,890)	(100.0%)
Total Consulting and Contracts	**$ 1,292,890**	**$ 1,062,443**	**$ 1,038,160**	**$ (254,730)**	(19.7%)

Explanation of Significant Variances—2020 Budget versus 2019 Budget

Consultants

- RAPA increases by $10,000 primarily due to impact studies of the changing resource mix. Studies will relate to the potential impacts on existing Path Ratings and/or RAS effectiveness as the resource mix in the Western Interconnection continues to evolve.

Contracts

- Compliance decreases by $262,000 due to the elimination of Compliance contract labor, corresponding knowledge transfer to existing staff, and the addition of one FTE.

Office Rent

Table B-7

Office Rent	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Office Rent	$ 953,484	$ 971,734	$ 1,223,800	$ 270,316	28.4%
Utilities	-	-	-	-	0.0%
Maintenance	19,425	22,115	24,451	5,026	25.9%
Security	-	-	-	-	0.0%
Total Office Rent	**$ 972,909**	**$ 993,849**	**$ 1,248,251**	**$ 275,342**	**28.3%**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Office Rent increases by $270,000 due to the new lease for the Salt Lake City office.

Office Costs

Table B-8

Office Costs	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Telephone	$ 57,316	$ 67,403	$ 64,400	$ 7,084	12.4%
Internet	69,252	68,030	67,660	(1,592)	(2.3%)
Office Supplies	129,751	99,221	112,143	(17,608)	(13.6%)
Computer Supplies and Maintenance	850,566	905,500	894,698	44,132	5.2%
Publications & Subscriptions	29,556	35,879	25,390	(4,166)	(14.1%)
Dues and Fees	280,438	216,267	247,720	(32,718)	(11.7%)
Postage	4,520	5,179	2,120	(2,400)	(53.1%)
Express Shipping	3,319	2,622	8,330	5,011	151.0%
Copying	23,837	27,836	27,405	3,568	15.0%
Bank Charges	57,275	53,010	58,546	1,271	2.2%
Taxes	51,849	49,438	48,900	(2,949)	(5.7%)
Total Office Costs	**$ 1,557,679**	**$ 1,530,385**	**$ 1,557,312**	**$ (367)**	**(0.0%)**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Office Supplies decrease by $18,000 primarily due to the completion of the stakeholder recognition wall expansion and corporate collateral updates.
- Computer Supplies and Maintenance increases by a net of $44,000 primarily due to the reduction in webCDMS fees and a continued shift to subscription-based services for infrastructure and security initiatives.
- Dues and Fees decrease by $33,000 primarily due to the realignment of anticipated needs with historical spending.

Professional Services

Table B-9

Professional Services	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Board Director Fees	$ 797,500	$ 797,500	$ 850,500	$ 53,000	6.6%
Outside Legal	9,000	17,527	-	(9,000)	(100.0%)
Accounting & Auditing Fees	31,700	31,189	32,250	550	1.7%
Insurance Commercial	70,080	75,893	71,040	960	1.4%
Total Services	**$ 908,280**	**$ 922,109**	**$ 953,790**	**$ 45,510**	**5.0%**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Board Director Fees increase by $53,000 due to increases in Director retainers resulting from a 2019 Board compensation study.

Miscellaneous Expenses

Table B-10

Miscellaneous Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Miscellaneous	$ -	$ -	$ -	$ -	
Total Micellaneous Expenses	**$ -**	**$ -**	**$ -**	**$ -**	

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Not applicable.

Other Non-Operating

Table B-11

Other Non-Operating Expenses	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Interest Expense	$ -	$ -	$ -	$ -	
Line of Credit Payment	-	-	-	-	
Office Relocation	-	-	-	-	
Total Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Not applicable.

Fixed Assets

Table B-12

Fixed Assets	Budget 2019	Projection 2019	Budget 2020	Variance 2019 Budget v 2020 Budget	Variance %
Computer & Software CapEx	$ 5,000	$ -	$ 5,000	$ -	0.0%
Furniture & Fixtures CapEx	-	-	-	-	
Equipment CapEx	105,000	79,379	50,000	(55,000)	(52.4%)
Leasehold Improvements	12,000	12,000	-	(12,000)	(100.0%)
	$ 122,000	**$ 91,379**	**$ 55,000**	**$ (67,000)**	**(54.9%)**

Explanation of Significant Variances—2020 Budget versus 2019 Budget

- Equipment CapEx decreases by $55,000 primarily due to the completion of planned 2019 equipment refreshes.
- Leasehold improvements decrease by $12,000 primarily due to the completion of the WECC rebrand.

Section C

Non-Statutory Program

Section C—Non-Statutory Program

Western Renewable Energy Generation Information System (in whole dollars)	2019 Budget	2020 Budget	Increase (Decrease)
Total FTEs	6.0	6.0	-
Direct Expenses	$ 1,248,601	$ 1,261,282	$ 12,681
Indirect Expenses	$ 532,909	$ 567,267	$ 34,358
Inc(Dec) in Fixed Assets	$ (6,065)	$ 2,986	$ 9,051
Total Funding Requirement	$ 352,326	$ 352,946	$ 620

Western Renewable Energy Generation Information System (WREGIS)

WREGIS is an independent, renewable energy database for the Western Interconnection. WREGIS creates renewable energy certificates (REC) for verifiable renewable generation from units that are registered in the database.

WREGIS was developed through a collaborative process between the Western Governors' Association, the Western Regional Air Partnership, and the California Energy Commission (CEC). This process included gathering stakeholder input from more than 400 participants for more than three years.

The Program was integrated into WECC on March 31, 2012, following the expiration of the contract between WECC and the CEC that provided for backstop funding. WREGIS is advised by a Stakeholder Committee consisting of representatives from members and various stakeholder groups.

WREGIS costs fall outside Section 215 of the Federal Power Act. Participants fund WREGIS through registration and transaction fees. To avoid any cross-subsidy of Section 215 dollars, a portion of WECC's overhead costs are allocated to the Program based on a formula implemented following a FERC audit.

WREGIS consists of two parts: 1) the information system software, and 2) administrative operations. Staff coordinate with the software contractor and performs all the administrative tasks including:

- Registering account holders and generation units;
- Training users;
- Auditing generation and other data; and

- Managing the budgeting, billing, and financial reporting.

2020 Key Assumptions

WREGIS is funded entirely by user fees and is not subsidized by Section 215 funding. There are several types of user fees. Annual fees are paid by all users and are based on size (generation capacity) and user type. Usage fees are paid by all but micro, small, and medium generation owners. WREGIS also charges ad-hoc reporting fees.

- User fees are based on size and user type.
  - Approximately four percent of revenues are based on size.
  - Approximately 92 percent of revenues are based on usage levels, which can depend on factors such as weather (wind and solar generation levels) and state regulatory policies (retirement, transfers, etc.).
  - Approximately four percent of revenues are attributable to fees for specific, requested functions such as tracking e-Tags.
- Revenues vary from year to year; therefore, the Program maintains non-statutory reserves to fund operations in years when revenues are low, and to fund large, non-recurring expenditures (e.g., major software upgrades).
- Perform six account holder audits.
- Deliver two account holder training sessions.

2020 Goals and Key Deliverables

- Maintain compliance with the participating states', provinces', and voluntary programs.
- Register program participants.
- Maintain program software to ensure optimum performance both in terms of efficiency and ease of use for account holders.
- Refine and improve data collection to ensure high-quality data.
- Keep abreast of possible needs to increase system functionality.

Resource Requirements/Explanation of Significant Changes

Funding Sources (other than ERO Assessments)

- Membership Fees increase by $57,000 primarily due to anticipated increases in account holders and certificate volumes.

Personnel Expenses

- Personnel Expenses increase by $10,000 primarily due to a budgeted three-percent merit pool, continued refinement of labor float percentages, and the refinement of payroll tax and benefits rates.

Meeting Expenses

- No significant changes.

Operating Expenses

- No significant changes.

Indirect Expenses

- Indirect Expenses are allocated to statutory and non-statutory program areas based on FTEs.

Other Non-Operating Expenses

- No significant changes.

WREGIS Program Funding Sources and Expenditures

Statement of Activities, Fixed Assets Expenditures, and Change in Working Capital 2019 Budget & Projection, and 2020 Budget NON-STATUTORY	2019 Budget	2019 Projection	Variance 2019 Budget v 2019 Projection Over(Under)	2020 Budget	Variance 2020 Budget v 2019 Budget Inc(Dec)
Revenue					
Statutory Funding					
WECC Assessments	$ -	$ -	$ -	$ -	$ -
Penalty Sanctions	-	-	-	-	-
Total Statutory Funding	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Membership Fees	$ 2,058,996	$ 2,061,244	$ 2,248	2,117,181	$ 58,185
Services & Software	-	-	-	-	-
Workshops & Miscellaneous	1,875	12,144	10,269	-	(1,875)
Interest	66,900	148,330	81,430	67,300	400
Total Revenue (A)	**$ 2,127,771**	**$ 2,221,718**	**$ 93,947**	**$ 2,184,481**	**$ 56,710**
Expenses					
Personnel Expenses					
Salaries	$ 477,082	$ 499,398	$ 22,316	$ 493,849	$ 16,767
Payroll Taxes	32,879	32,987	108	33,957	1,078
Benefits	83,974	60,306	(23,668)	72,769	(11,205)
Retirement Costs	39,420	40,107	687	42,893	3,473
Total Personnel Expenses	**$ 633,355**	**$ 632,798**	**$ (557)**	**$ 643,468**	**$ 10,113**
Meeting Expenses					
Meetings & Conference Calls	$ 3,813	$ 5,620	$ 1,807	$ 3,870	$ 57
Travel	17,265	21,622	4,357	17,400	135
Total Meeting Expenses	**$ 21,078**	**$ 27,242**	**$ 6,164**	**$ 21,270**	**$ 192**
Operating Expenses, excluding Depreciation					
Consultants & Contracts	$ -	$ -	$ -	$ -	$ -
Office Rent	-	-	-	-	-
Office Costs	594,168	556,412	(37,756)	596,544	2,376
Professional Services	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Operating Expenses	**$ 594,168**	**$ 556,412**	**$ (37,756)**	**$ 596,544**	**$ 2,376**
Total Direct Expenses	**$ 1,248,601**	**$ 1,216,452**	**$ (32,149)**	**$ 1,261,282**	**$ 12,681**
Indirect Expenses	**$ 532,909**	**$ 536,716**	**$ 3,807**	**$ 567,267**	**$ 34,358**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 1,781,510**	**$ 1,753,168**	**$ (28,342)**	**$ 1,828,549**	**$ 47,039**
Change in Net Assets (=A-B)	**$ 346,261**	**$ 468,550**	**$ 122,289**	**$ 355,932**	**$ 9,671**
Fixed Assets, excluding Right of Use Assets (C)	**$ (6,065)**	**$ (7,769)**	**$ (1,704)**	**$ 2,986**	**$ 9,051**
TOTAL BUDGET (=B+C)	**$ 1,775,445**	**$ 1,745,399**	**$ (30,046)**	**$ 1,831,535**	**$ 56,090**
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	**$ 352,326**	**$ 476,319**	**$ 123,993**	**$ 352,946**	**$ 620**
FTEs	6.0	6.0	-	6.0	-
HC	6.0	6.0	-	6.0	-

Personnel Analysis

FTEs are defined as full-time equivalent employees only. Fractional FTEs reflect part-time employees or employees who worked in fewer than all four quarters of the year.

Total FTEs by Program Area	Budget 2019	Projection 2019	Direct FTEs 2020 Budget	Shared FTEs* 2020 Budget	Total FTEs 2020 Budget	Change from 2019 Budget
NON-STATUTORY						
Operational Programs						
Total FTEs Operational Programs	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Administrative Programs						
WREGIS	6.0	6.0	6.0	0.0	6.0	0.0
Total FTEs Administrative Programs	**6.0**	**6.0**	**6.0**	**0.0**	**6.0**	**0.0**
Total FTEs	**6.0**	**6.0**	**6.0**	**0.0**	**6.0**	**0.0**

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

Reserve Analysis

Working Capital Reserve Analysis NON-STATUTORY		
Beginning Working Capital Reserve (Deficit), December 31, 2018	$	6,452,646
Plus: 2019 Funding		2,221,718
Plus: 2019 Other funding sources		
Less: 2019 Projected expenses & capital expenditures		(1,745,399)
Projected Working Capital Reserve (Deficit), December 31, 2019	**$**	**6,928,965**
Projected Working Capital Reserve, December 31, 2020		7,281,911
Less: Projected Working Capital Reserve, December 31, 2019		(6,928,965)
2020 Reserve Increase (Decrease)	**$**	**352,946**

Section D

Additional Financial Information

Section D—Additional Financial Information

2020 Consolidated Statement of Activities by Program, Statutory and Non-Statutory

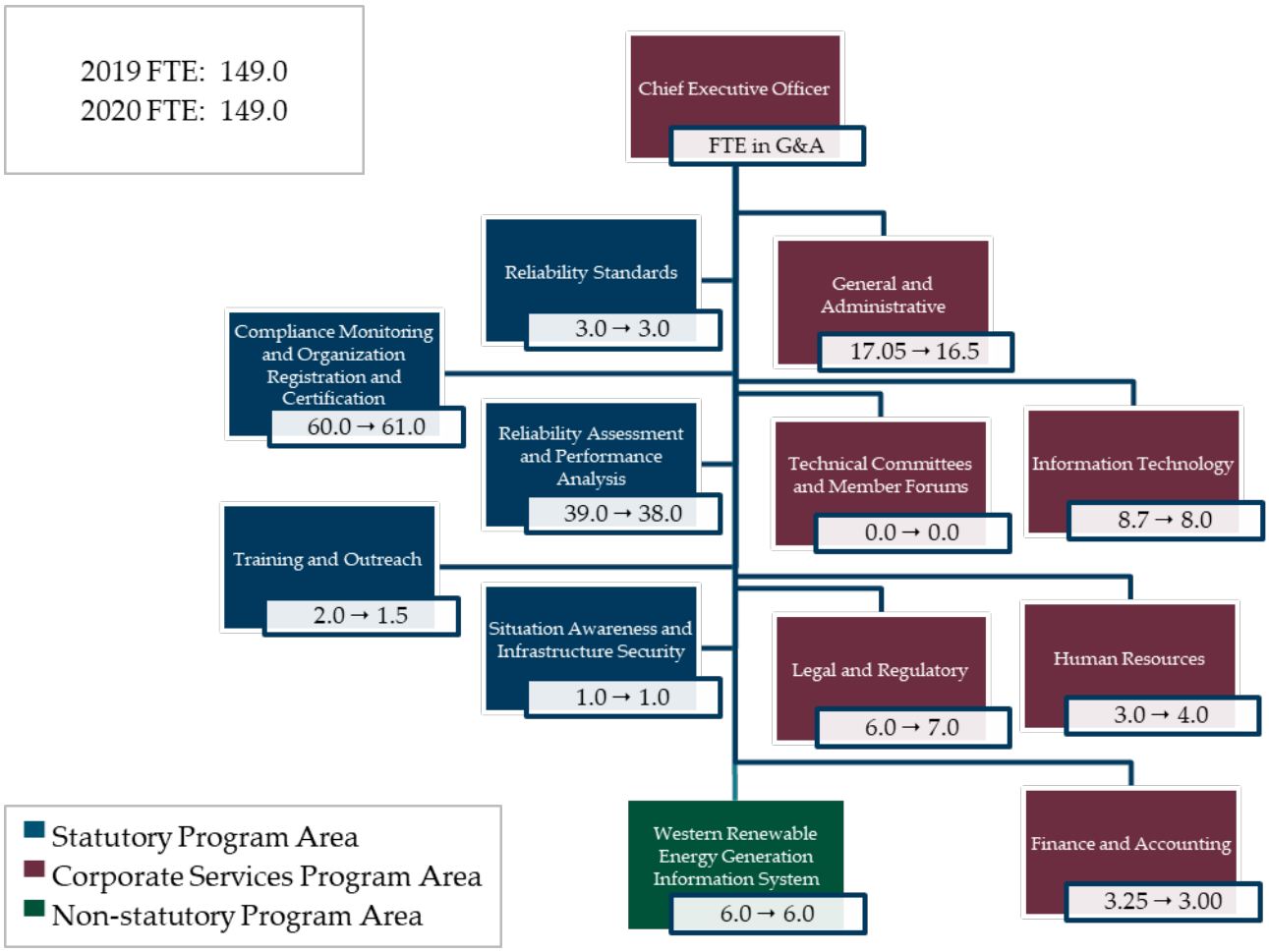
Statement of Activities and Capital Expenditures by Program	Total	Statutory Total	Non-Statutory Total	Statutory Functions							Non-Statutory Functions	
				Statutory Total	Reliability Standards	Compliance and Organization Registration and Certification	Reliability Assessment and Performance Analysis	Training and Outreach	Situation Awareness and Infrastructure Security	Corporate Services	Non-Statutory Total	WREGIS
Revenue												
Statutory Funding												
WECC Assessments	$ 25,282,000	$ 25,282,000	$ -	$ 25,282,000	$ 781,127	$ 14,359,865	$ 9,603,551	$ 321,087	$ 216,370	$ -	$ -	$ -
Penalty Sanctions	2,745,000	2,745,000	-	2,745,000	78,804	1,602,344	998,182	39,402	26,268	-	-	-
Total Statutory Funding	**$ 28,027,000**	**$ 28,027,000**	**$ -**	**$ 28,027,000**	**$ 859,931**	**$ 15,962,209**	**$ 10,601,733**	**$ 360,489**	**$ 242,638**	**$ -**	**$ -**	**$ -**
Non-statutory Funding	$ 2,117,181	$ -	$ 2,117,181	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,117,181	$ 2,117,181
Workshops & Miscellaneous	457,250	457,250	-	457,250	-	-	-	457,250	-	-	-	-
Interest	267,300	200,000	67,300	200,000	5,742	116,746	72,727	2,871	1,914	-	67,300	67,300
Total Revenue (A)	**$ 30,868,731**	**$ 28,684,250**	**$ 2,184,481**	**$ 28,684,250**	**$ 865,673**	**$ 16,078,955**	**$ 10,674,460**	**$ 820,610**	**$ 244,552**	**$ -**	**$ 2,184,481**	**$ 2,184,481**
Expenses												
Personnel Expenses												
Salaries	$ 16,968,924	$ 16,475,075	$ 493,849	$ 16,475,075	$ 427,045	$ 6,889,592	$ 4,371,606	$ 143,854	$ 111,297	$ 4,531,681	$ 493,849	$ 493,849
Payroll Taxes	1,108,309	1,074,352	33,957	1,074,352	26,752	471,719	299,047	10,433	8,344	258,057	33,957	33,957
Benefits	2,449,776	2,377,007	72,769	2,377,007	39,901	783,899	519,073	23,842	12,273	998,019	72,769	72,769
Retirement Costs	1,474,375	1,431,482	42,893	1,431,482	37,153	598,756	380,135	12,515	9,683	393,240	42,893	42,893
Total Personnel Expenses	$ 22,001,384	$ 21,357,916	$ 643,468	$ 21,357,916	$ 530,851	$ 8,743,966	$ 5,569,861	$ 190,644	$ 141,597	$ 6,180,997	$ 643,468	$ 643,468
Meeting Expenses												
Meetings & Conference Calls	$ 717,965	$ 714,095	$ 3,870	$ 714,095	$ -	$ 1,505	$ 77,685	$ 405,905	$ -	$ 229,000	$ 3,870	$ 3,870
Travel	1,419,218	1,401,818	17,400	1,401,818	18,250	812,183	245,010	11,475	-	314,900	17,400	17,400
Total Meeting Expenses	$ 2,137,183	$ 2,115,913	$ 21,270	$ 2,115,913	$ 18,250	$ 813,688	$ 322,695	$ 417,380	$ -	$ 543,900	$ 21,270	$ 21,270
Operating Expenses, excluding Depreciation												
Consultants & Contracts	$ 1,038,160	$ 1,038,160	$ -	$ 1,038,160	$ -	$ -	$ 600,000	$ 6,160	$ -	$ 432,000	$ -	$ -
Office Rent	1,248,251	1,248,251	-	1,248,251	-	-	-	-	-	1,248,251	-	-
Office Costs	2,153,856	1,557,312	596,544	1,557,312	3,435	203,448	224,898	37,309	-	1,088,222	596,544	596,544
Professional Services	953,790	953,790	-	953,790	-	-	-	-	-	953,790	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-	
Depreciation												
Total Operating Expenses	$ 5,394,057	$ 4,797,513	$ 596,544	$ 4,797,513	$ 3,435	$ 203,448	$ 824,898	$ 43,469	$ -	$ 3,722,263	$ 596,544	$ 596,544
Total Direct Expenses	**$ 29,532,624**	**$ 28,271,342**	**$ 1,261,282**	**$ 28,271,342**	**$ 552,536**	**$ 9,761,102**	**$ 6,717,454**	**$ 651,493**	**$ 141,597**	**$ 10,447,160**	**$ 1,261,282**	**$ 1,261,282**
Indirect Expenses	$ (1)	$ (567,267)	$ 567,267	$ (567,267)	$ 283,633	$ 5,767,210	$ 3,592,689	$ 141,817	$ 94,544	$ (10,447,160)	$ 567,267	$ 567,267
Other Non-Operating Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Expenses (B)	**$ 29,532,623**	**$ 27,704,075**	**$ 1,828,549**	**$ 27,704,075**	**$ 836,169**	**$ 15,528,312**	**$ 10,310,143**	**$ 793,310**	**$ 236,141**	**$ -**	**$ 1,828,549**	**$ 1,828,549**
Change in Net Assets (=A-B)	**$ 1,336,108**	**$ 980,175**	**$ 355,932**	**$ 980,175**	**$ 29,504**	**$ 550,643**	**$ 364,317**	**$ 27,300**	**$ 8,411**	**$ -**	**$ 355,932**	**$ 355,932**
Fixed Assets, excluding Right of Use Assets (C)	**$ 55,000**	**$ 52,014**	**$ 2,986**	**$ 52,014**	**$ 1,493**	**$ 30,362**	**$ 18,914**	**$ 747**	**$ 498**	**$ -**	**$ 2,986**	**$ 2,986**
TOTAL BUDGET (B+C)	**$ 29,587,623**	**$ 27,756,089**	**$ 1,831,535**	**$ 27,756,089**	**$ 837,662**	**$ 15,558,674**	**$ 10,329,057**	**$ 794,057**	**$ 236,639**	**$ -**	**$ 1,831,535**	**$ 1,831,535**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ 1,281,108**	**$ 928,161**	**$ 352,946**	**$ 928,161**	**$ 28,011**	**$ 520,281**	**$ 345,403**	**$ 26,553**	**$ 7,913**	**$ -**	**$ 352,946**	**$ 352,946**
FTEs	**149.0**	**143.0**	**6.0**	**143.0**	**3.0**	**61.0**	**38.0**	**1.5**	**1.0**	**38.5**	**6.0**	**6.0**
HC	**149.0**	**143.0**	**6.0**	**143.0**	**3.0**	**61.0**	**39.0**	**1.0**	**-**	**39.0**	**6.0**	**6.0**

Statement of Financial Position

Statement of Financial Position 2018 Audited, 2019 Projection, and 2020 Budget STATUTORY and NON-STATUTORY	(Per Audit) 31-Dec-18	Projected 31-Dec-19	Budget 31-Dec-20
ASSETS			
Cash and cash equivalents	$ 29,343,247	$ 22,344,588	$ 22,089,588
Investments	9,698,773	8,400,000	9,681,108
Accounts receivable, net	360,735	1,250,000	1,250,000
Prepaid expenses and other assets	480,695	500,000	500,000
Property and equipment, net	368,135	496,200	551,200
Total Assets	**$ 40,251,585**	**$ 32,990,788**	**$ 34,071,896**
LIABILITIES AND NET ASSETS			
Liabilities			
Accounts payable	$ 5,133,913	$ 1,250,000	$ 1,250,000
Accrued expenses	2,319,155	1,750,000	1,750,000
Deferred revenue	18,518,576	15,400,000	15,400,000
Other liabilities	405,099	900,000	700,000
Total Liabilities	**$ 26,376,743**	**$ 19,300,000**	**$ 19,100,000**
Unrestricted net assets	13,874,842	13,690,788	14,971,896
Total Liabilities and Net Assets	**$ 40,251,585**	**$ 32,990,788**	**$ 34,071,896**

Appendix A—Organizational Chart

Changes in Budgeted FTE by Program Area



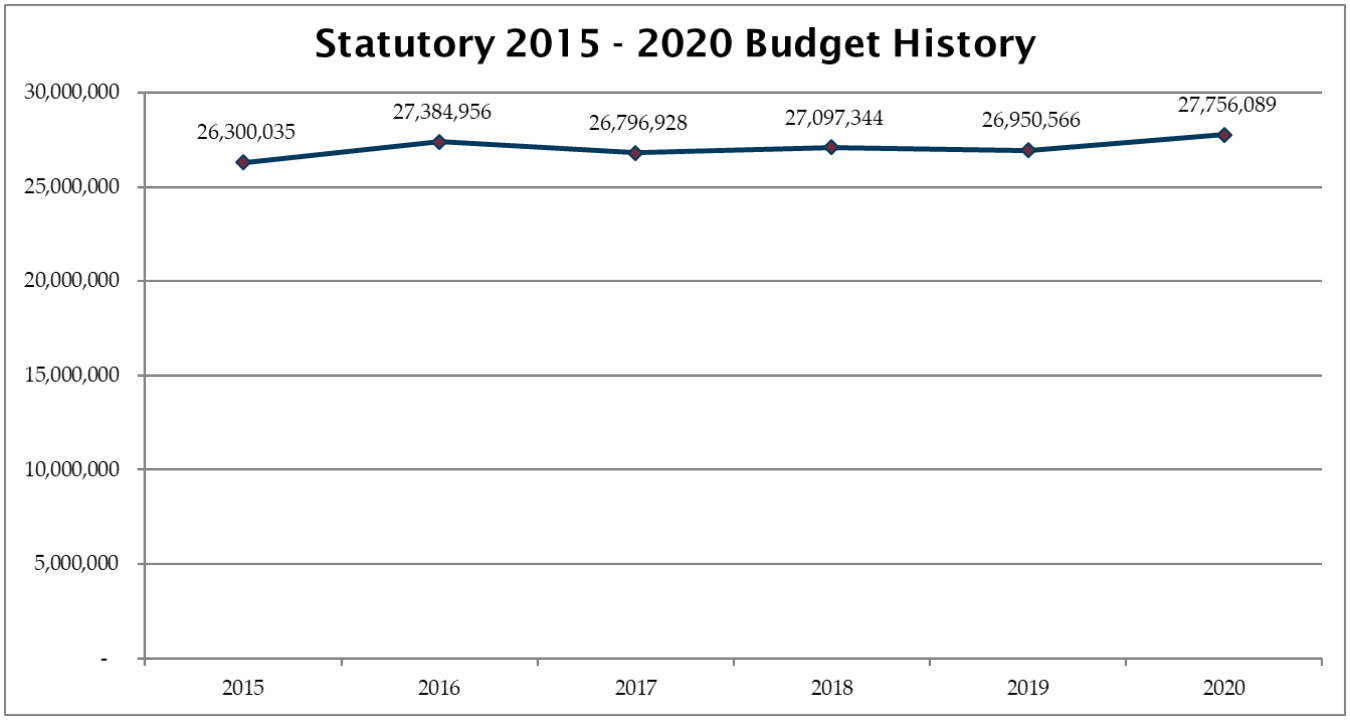
Appendix B—2020 Budget & Projected 2021 and 2022 Budgets

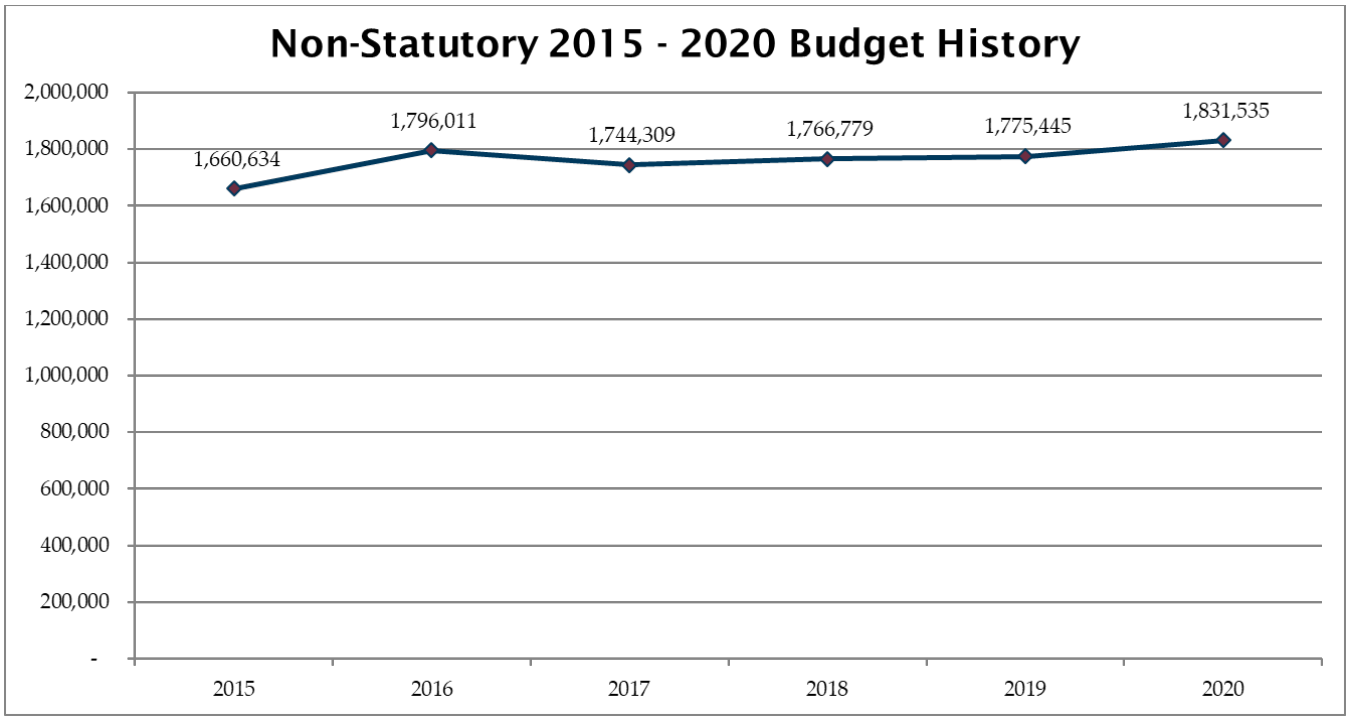
Statement of Activities and Capital Expenditures 2019 Budget & Projected 2020 and 2021 Budgets Statutory	2020 Budget	2021 Projection	$ Change 20 v 21	% Change 20 v 21	2022 Projection	$ Change 21 v 22	% Change 21 v 22
Revenue							
Statutory Funding							
WECC Assessments	$ 25,282,000	$ 25,787,640	$ 505,640	2.0%	$ 26,303,393	$ 515,753	2.0%
Penalty Sanctions	2,745,000	-	(2,745,000)	(100.0%)	-	-	
Total Statutory Funding	**$ 28,027,000**	**$ 25,787,640**	**$ (2,239,360)**	**(8.0%)**	**$ 26,303,393**	**$ 515,753**	**2.0%**
Membership Fees	$ -	$ -	$ -		$ -	$ -	
Workshops & Miscellaneous	457,250	457,250	-	0.0%	457,250	-	0.0%
Interest	200,000	200,000	-	0.0%	200,000	-	0.0%
Total Revenue (A)	**$ 28,684,250**	**$ 26,444,890**	**$ (2,239,360)**	**(7.8%)**	**$ 26,960,643**	**$ 515,753**	**2.0%**
Expenses							
Personnel Expenses							
Salaries	$ 16,475,075	$ 16,969,327	$ 494,252	3.0%	$ 17,478,407	$ 509,080	3.0%
Payroll Taxes	1,074,352	1,106,583	32,231	3.0%	1,139,780	33,197	3.0%
Benefits	2,377,007	2,495,857	118,850	5.0%	2,620,650	124,793	5.0%
Retirement Costs	1,431,482	1,474,426	42,944	3.0%	1,518,659	44,233	3.0%
Total Personnel Expenses	**$ 21,357,916**	**$ 22,046,194**	**$ 688,278**	**3.2%**	**$ 22,757,497**	**$ 711,303**	**3.2%**
Meeting Expenses							
Meetings & Conference Calls	$ 714,095	$ 648,095	$ (66,000)	(9.2%)	$ 683,095	$ 35,000	5.4%
Travel	1,401,818	1,401,818	-	0.0%	1,415,836	14,018	1.0%
Total Meeting Expenses	**$ 2,115,913**	**$ 2,049,913**	**$ (66,000)**	**(3.1%)**	**$ 2,098,931**	**$ 49,018**	**2.4%**
Operating Expenses, excluding Depreciation							
Consultants & Contracts	$ 1,038,160	$ 978,160	$ (60,000)	(5.8%)	$ 928,160	$ (50,000)	(5.1%)
Office Rent	1,248,251	1,326,220	77,969	6.2%	1,326,220	-	0.0%
Office Costs	1,557,312	1,572,885	15,573	1.0%	1,588,614	15,729	1.0%
Professional Services	953,790	953,790	-	0.0%	1,001,480	47,690	5.0%
Miscellaneous	-	-	-		-	-	
Total Operating Expenses	**$ 4,797,513**	**$ 4,831,055**	**$ 33,542**	**0.7%**	**$ 4,844,473**	**$ 13,418**	**0.3%**
Total Direct Expenses	**$ 28,271,342**	**$ 28,927,162**	**$ 655,820**	**2.3%**	**$ 29,700,901**	**$ 773,739**	**2.7%**
Indirect Expenses	**$ (567,267)**	**$ (567,267)**	**$ -**	**0.0%**	**$ (567,267)**	**$ -**	**0.0%**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**		**$ -**	**$ -**	
Total Expenses (B)	**$ 27,704,075**	**$ 28,359,895**	**$ 655,820**	**2.4%**	**$ 29,133,634**	**$ 773,739**	**2.7%**
Change in Assets	**$ 980,175**	**$ (1,915,005)**	**$ (2,895,180)**	**(295.4%)**	**$ (2,172,991)**	**$ (257,987)**	**13.5%**
Incr(Dec) in Fixed Assets (C)	**$ 52,014**	**$ -**	**$ (52,014)**	**(100.0%)**	**$ -**	**$ -**	
TOTAL BUDGET (B+C)	**$ 27,756,089**	**$ 28,359,895**	**$ 603,806**	**2.2%**	**$ 29,133,634**	**$ 773,739**	**2.7%**
TOTAL CHANGE IN WORKING CAPITAL (A-B-C)	**$ 928,161**	**$ (1,915,005)**	**$ (2,843,166)**	**0.0%**	**$ (2,172,991)**	**$ (257,987)**	**13.5%**
FTEs	**143.0**	**143.0**	**-**	**0.0%**	**143.0**	**-**	**0.0%**
HC	**143.0**	**143.0**	**-**	**0.0%**	**143.0**	**-**	**0.0%**

Appendix C—Adjustment to the Alberta Electric System Operator (AESO) Assessment

Adjustment to the AESO Assessments Credit for WECC Compliance Costs	2019 Compliance Budget AESO NEL Allocation	2020 Compliance Budget AESO NEL Allocation
WECC Compliance Costs		
Direct Costs less Direct Revenue	$ 9,629,471	$ 9,644,356
Indirect Costs	5,329,085	5,767,210
Fixed Asset Expenditures	(60,653)	30,362
Total Net Costs, including Fixed Assets	**$ 14,897,903**	**$ 15,441,928**
Net total to be allocated	**$ 14,897,903**	**$ 15,441,928**
AESO NEL Share (2017 and 2018)	7.173%	7.359%
AESO Proportional Share of Compliance Costs, including Fixed Assets	**$ 1,068,692**	**$ 1,136,426**
% Credit (58 of 60 FTE for 2019; 57.65 of 61 FTE for 2020)	96.67%	94.51%
AESO Credit for Compliance Costs	**$ 1,033,109**	**$ 1,074,088**

Appendix D—Statutory and Non-Statutory Budget History Charts





NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 4

WESTERN INTERCONNECTION REGIONAL ADVISORY BODY

PROPOSED 2020 BUSINESS PLAN AND BUDGET

Western Interconnection
Regional Advisory Body

2020 Business Plan and Budget

June 28, 2019

Approved by
Appointed Members of the
Western Interconnection Regional Advisory Body

1600 Broadway, Suite 1720
Denver, CO 80202
303-573-8910
www.westernenergyboard.org

TABLE OF CONTENTS

Introduction

The Western Interconnection Regional Advisory Body (WIRAB) proposed budget for 2020 is $1,255,200. This amount is $92,500 (8.0%) higher than the amount in WIRAB's approved 2019 budget. Total proposed FTEs for 2020 remain constant at 5.0. WIRAB's total funding requirement is $986,900. WIRAB's proposed funding assessment is $986,300, an increase of $236,300 (31.5%) from the 2019 funding assessment.[1] WIRAB's proposed funding assessment is allocated $826,096 (84%) to the U.S. portion, $144,259 (15%) to the Canadian portion, and $15,944 (1%) to the Mexican portion of the Western Interconnection. The following table summarizes the WIRAB proposed budget for 2020.

WIRAB - Total Resources (in whole dollars)	2020 Budget	U.S.	Canada	Mexico
Statutory FTEs	5.00			
Non-statutory FTEs				
Total FTEs	5.00			
Statutory Expenses	$ 1,255,200			
Non-Statutory Expenses				
Total Expenses	$ 1,255,200			
Statutory Inc(Dec) in Fixed Assets				
Non-Statutory Inc(Dec) in Fixed Assets				
Total Inc(Dec) in Fixed Assets	$ -			
Statutory Working Capital Requirement	$ (268,300)			
Non-Statutory Working Capital Requirement	0			
Total Working Capital Requirement	$ (268,300)			
Total Statutory Funding Requirement	$ 986,900			
Total Non-Statutory Funding Requirement	$ -			
Total Funding Requirement	$ 986,900			
Statutory Funding Assessments	$ 986,300	$ 826,096	$ 144,259	$ 15,944
Non-Statutory Fees				
NEL	867,599,555	726,676,149	126,897,939	14,025,467
NEL%	100.00%	83.8%	14.6%	1.6%

Table 1. WIRAB Budget for 2020

[1] Additional detail regarding the proposed funding assessment is provided in Section B – Supplemental Financial Information. Specifically, Section B describes the need to increase WIRAB's 2020 funding by 31% over 2019 funding in order to stabilize statutory assessments while reducing its surplus financial reserves over several budget cycles.

Organizational Overview

The Federal Energy Regulatory Commission (FERC or Commission) created the Western Interconnection Regional Advisory Body (WIRAB) in April 2006, upon petition of ten Western Governors and in accordance with Section 215(j) of the Federal Power Act (FPA). The Governors indicated an interest in inviting all U.S. states, Canadian provinces, and Mexican jurisdictions with territory in the Western Interconnection to join WIRAB and to participate in WIRAB's activities as a regional advisory body charged with advising FERC, the North American Electric Reliability Corporation (NERC) and the Regional Entity (i.e., WECC) on matters of electric grid reliability.

In July 2006, FERC issued an order granting the Governors' petition to establish WIRAB.[2] In FERC's order, the Commission determined that WIRAB should receive funding for its Section 215(j) activities and directed WIRAB to annually develop a budget and related information for submission through the Electric Reliability Organization (ERO) budget approval process. The Commission instructed WIRAB to develop a budget in a form similar to that specified for regional entities as set forth in Order 672.[3] The Commission also required WIRAB to identify the portion of its funding to be received from Canada and Mexico.

The Governors created WIRAB as a standing advisory committee to the Western Interstate Nuclear Board (WINB), which was formed pursuant to the Western Interstate Nuclear Compact, P.L. 91-461. WIRAB has the same status under the compact as the Western Interstate Energy Board (WIEB). Below is a chart that illustrates these organizational relationships.

[2] Order on Petition to Establish a Regional Advisory Body for the Western Interconnection, 116 FERC ¶ 61,061, Docket No. RR06-2-000, July 20, 2006.

[3] Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Reliability Standards, Order 672, Docket RM05-30-000, Feb. 3, 2006, P. 228. "Each Regional Entity must submit its complete business plan, entire budget and organizational chart to the ERO for it to submit to the Commission. The complete business plan and the entire budget will provide the Commission with necessary information about any non-statutory activities, the source of their funding, and whether the pursuit of such activities presents a conflict of interest for the Regional Entity. For a Cross-Border Regional Entity, this information will also inform the Commission as to what portion of the budget is expended upon activities within the United States."

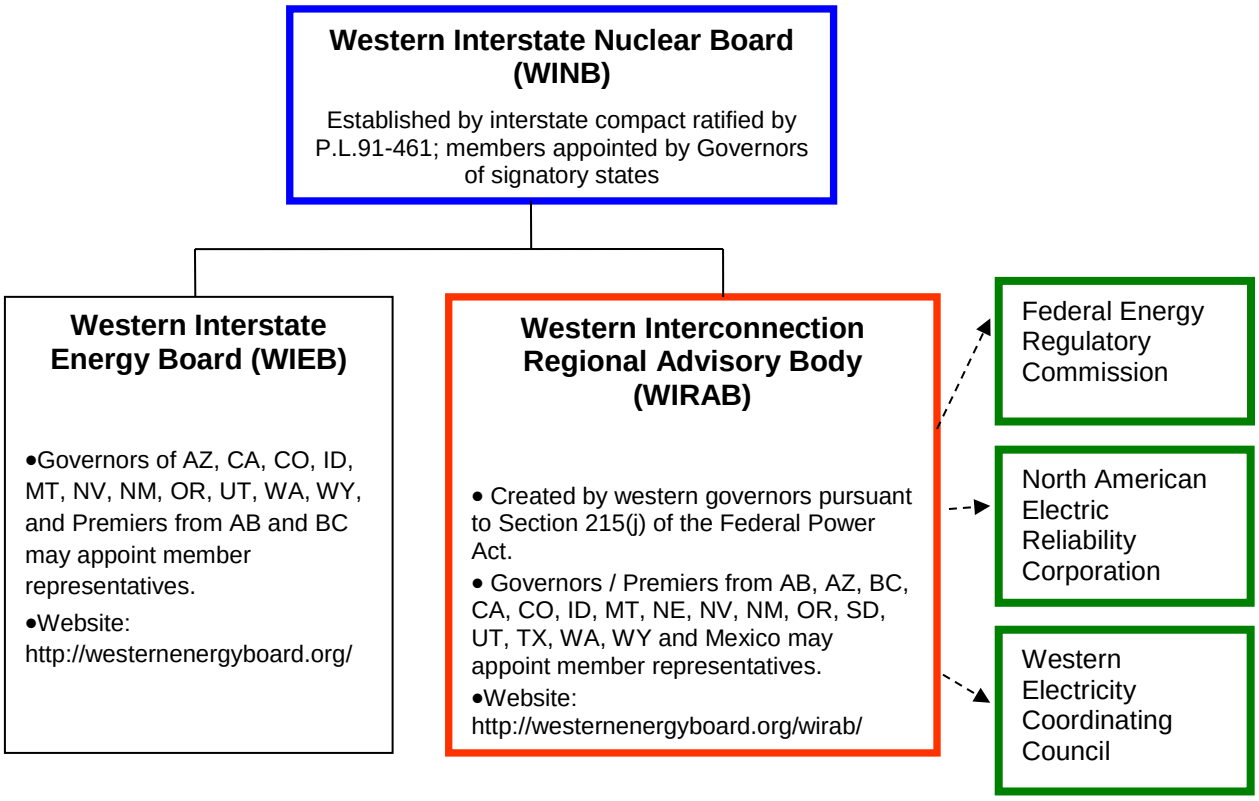


Figure 1. Organizational Relationships

Membership and Governance

All U.S. states with territory in the Western Interconnection (AZ, CA, CO, ID, MT, NE, NV, NM, OR, SD, TX, UT, WA, WY), the Canadian provinces of Alberta and British Columbia, and Mexico are eligible to appoint members to WIRAB. Member representatives of WIRAB are appointees of the Governors and Premiers, or representative-designated alternates. Below is the list of current WIRAB member representatives:

WIRAB Member Representatives		
Alberta	Christine Lazaruk	Executive Director, Strategy and Integration, Alberta Energy
Arizona	Brian Goretzki	Chief, Bureau of Radiation Control, Arizona Department of Health Services
British Columbia	Les MacLaren	Assistant Deputy Minister, Ministry of Energy, Mines and Petroleum Resources
California	Janea Scott	Commissioner, California Energy Commission
Colorado	Frances Koncilja	Commissioner, Colorado Public Utilities Commission
Idaho	Kristine Raper	Commissioner, Idaho Public Utilities Commission
Montana	Dan Lloyd	Section Supervisor, Montana Department of Environmental Quality
Nebraska	Tim Texel	Executive Director, Nebraska Power Review Board
Nevada	David Bobzien	Director, Nevada Governor's Office of Energy
New Mexico	Sarah Cottrell Propst	Cabinet Secretary, New Mexico Energy, Minerals and Natural Resources Department
Oregon	Janine Benner	Director, Oregon Department of Energy
South Dakota	Greg Rislov	Commission Advisor, South Dakota Public Utility Commission
Utah	Jordan White	Commissioner, Utah Public Service Commission
Washington	Elizabeth Osborne	Senior Energy Policy Analyst, Washington State Energy Office
Wyoming	Kara Fornstrom	Chair, Wyoming Public Service Commission

Figure 2. WIRAB Membership List

WIRAB holds two in-person meetings each year, usually in April and October. These meetings are open to the public. WIRAB also holds monthly conference calls to discuss current and emerging issues and hosts periodic webinars with presentations from subject matter experts on key electric grid reliability topics.

Statutory Functional Scope

FERC established WIRAB as a Regional Advisory Body under section 215(j) of the FPA. The language in Section 215(j) specifically provides for WIRAB's authority to advise FERC, NERC, and WECC on whether reliability standards, budgets and fees, governance, compliance, assessments, strategic direction and other activities conducted pursuant to Section 215 are just, reasonable, not unduly discriminatory or preferential, and in the public interest.

WIRAB's advice to FERC, NERC, and WECC can be grouped into four categories that are appropriately funded under Section 215 of the FPA, including:

1. Governance and Strategic Planning;

2. Emerging Trends and System Risks;
3. Periodic Reliability Assessments; and
4. Reliability Standards and Proactive Enforcement.

WIRAB's activities in each of these categories are described in Section A – Statutory Activities.

2020 Strategic Priorities and Initiatives

The resource mix of the Western power system is rapidly changing. Environmental regulations (including those to reduce regional haze and mercury emissions), efforts to transition to a lower carbon economy, and shifting market forces have resulted in announced retirements of coal-fired, natural gas-fired, and nuclear generating units. Utility-scale wind and solar generation is being built in many parts of the West. California and the Desert Southwest are experiencing rapid growth in the installation of distributed solar photovoltaic generation. State energy storage procurement mandates are also incentivizing a broader implementation of energy storage technologies that may support higher penetrations of asynchronous, variable energy resources (VER). These changes to the generation resource mix will present new reliability challenges and opportunities for the Western Interconnection.

Grid modernization efforts also present new reliability challenges and opportunities for the West. Efforts to increase electrification of energy end uses, such as transportation and space and water heating, and increased reliance on distributed energy resources (DER) is creating a need for better coordination between Bulk Power System (BPS) operators and distribution system operators as well as a greater need for implementation, research, and development of new technologies and operational tools that can be used to improve system reliability throughout the West. Grid modernization also necessitates an increasing focus on cyber security, grid resilience, and physical hardening of electric grid infrastructure. Physical and cyber threats to the grid will continue to impact the availability of data and the transparency of periodic reliability assessments, creating a need for better data sharing protocols to improve information sharing, coordination, and overall situational awareness.

The structure of Western power markets is also undergoing significant change, creating new reliability challenges and opportunities for the Western Interconnection.

The California Independent System Operator (ISO) Western Energy Imbalance Market (EIM) continues to gain new participants and the California ISO is working to offer day ahead market services to EIM participants. The Southwest Power Pool (SPP) is also offering market services, including energy imbalance market services, to Balancing Authorities (BAs) and Transmission Operators (TOPs) within the Western Interconnection. These market reforms could result in significant changes to system operations (e.g., transmission scheduling, congestion management, and reliability coordination).

The fragmentation of Reliability Coordinator (RC) responsibilities across the Western Interconnection also raises questions about ongoing reliable operations of the BPS. In 2020, Peak Reliability will no longer provide RC services for the Western Interconnection. The Alberta Electric System Operator (AESO) will continue to provide RC services in Alberta, BC Hydro will provide RC services in British Columbia, and the California ISO's RC West, SPP, and GridForce will provide RC services to BAs and TOPs throughout the U.S. portion of the Western Interconnection. These changes raise concerns about shared responsibilities for coordinated RC operations across RC boundaries and seams.

In response to these on-going changes in the Western Interconnection, WIRAB has identified four strategic initiatives that it will pursue in 2020:

Initiative 1: Encourage WECC to improve its assessment of long-term resource adequacy to ensure that state and provincial regulators, FERC, and NERC have access to accurate, consistent, and timely information to inform capacity expansion decisions in the West.

In the Western Interconnection, determinations of resource adequacy and capacity expansion are primarily the responsibility of the regulatory commissions of 14 western states and two Canadian provinces. Regulators need access to accurate, consistent, and timely information on long-term resource adequacy (i.e., over a 5- to 10-year planning horizon) to determine whether the power system will have sufficient generation resources available to meet future loads and to inform near-term decisions about capacity expansion. Overbuilding of generation capacity could encumber customers with unnecessary costs and result in stranded assets. Underbuilding of

generation capacity, on the other hand, could cause an increase in electricity costs, interfere with utilities' ability to serve load, and create risks to reliability.

A robust assessment of long-term resource adequacy is essential to informing decisions about capacity expansion in the West. However, questions of resource adequacy are complicated by a number of factors, including a changing resource mix and an increasing reliance on short-term market purchases and "front-office transactions" (FOTs). Economic and environmental considerations are driving early retirements of traditional baseload units, incentivizing replacement with variable generation resources, and increasingly contributing to ongoing changes in the Western resource mix. Despite these replacements, capacity within the region is declining and some utilities are looking to rely upon short-term market purchases and FOTs to address future capacity shortages. FOTs are anonymized market transactions for capacity that utilities, regulators, and other entities cannot trace to a specific physical generator. Therefore, it is uncertain whether multiple utilities may be relying upon the same surplus generating capacity to "guarantee" their ability to serve load. The U.S. Government Accountability Office has pointed to a lack of data on capacity commitments as a barrier to ensuring resource adequacy in regions without capacity markets.[4] If future surplus capacity is insufficient or unavailable, utilities relying on short-term market purchases or FOTs to serve load risk not having affordable or sufficient capacity available.

Resource adequacy assessments are important to informing capacity expansion decisions and to ensuring that utilities will be able to meet all future end-use electricity consumer loads under a wide range of conditions. As the Regional Entity for the Western Interconnection, WECC is well-positioned to use its best judgment and professional expertise to perform quality, independent, and robust assessments for various regions in the West. In 2020, WIRAB will encourage WECC to improve its assessment of long-term resource adequacy to ensure that state and provincial regulators, FERC, and NERC have access to accurate, consistent, and timely information to inform their decisions on resource adequacy and capacity expansion.

[4] GAO. *Electricity Markets: Four Regions Use Capacity Markets to Help Ensure Adequate Resources, but FERC Has Not Fully Assessed Their Performance.* GAO-18-131. (December 2017). https://www.gao.gov/assets/690/689293.pdf

The goals of this initiative are to:

- Improve collection of data on physical capacity and utility reliance on short-term market purchases and FOTs within the Western Interconnection.
- Produce robust and independent assessments of long-term resource adequacy.
- Disseminate findings to regulators, policymakers, industry and other stakeholders in the West.

The actions that WIRAB staff will take to achieve these goals include:

- Convening stakeholders to discuss technical and institutional opportunities to collect data on physical capacity and utility reliance on short-term market purchases and FOTs within the Western Interconnection.
- Participating directly with the WECC Reliability Assessment Committee (RAC) to conduct robust and independent long-term resource adequacy assessments and to ensure that sufficient dispatchable generation is available to meet future loads.
- Assisting WECC to disseminate findings to state regulators and policymakers, industry, and other stakeholders in the West.

Initiative 2: Encourage WECC to study and publish findings on the interrelationship between distributed energy resources and the reliability of the Bulk-Power System in the West.

Recent events in the West have demonstrated the potential for distributed energy resources to impact the BPS. During the 2018 Angeles Forest and Palmdale Roost disturbance events in Southern California, the California Independent System Operator (ISO) witnessed a noticeable increase in net load following faults on the BPS, indicating that a disturbance on the BPS can impact distributed resources behind the customer meters.[5] Under a three-year WIEB project focused on mitigating or removing barriers to

[5] NERC and WECC Staff. *April and May 2018 Fault Induced Solar Photovoltaic Resource Interruption Disturbances Report.* (January 2019).

the deployment of distributed solar photovoltaic (PV) generation in the West, the National Renewable Energy Laboratory (NREL) conducted research, modeling this phenomenon in a round-trip study from the BPS to the distribution system and back to the BPS. The research found that transmission-level faults may cause adverse voltages at inverters connecting distributed energy resources to the grid, which may cause the resources to trip offline, further impacting the BPS.

Generation is becoming more distributed. Like distributed solar PV, the cost of battery technology is enabling electric vehicles and behind-the-meter storage to be adopted at an ever-increasing rate. The distribution system is becoming bi-directional, and BPS planners cannot sit back and assume that distribution-level analysis will interact with the BPS in a well-defined and predictable manner.

In 2020, WIRAB will encourage WECC to study and publish findings on the interrelationship between distributed energy resources, including solar PV, behind-the-meter storage, and electric vehicles, and the reliability of the BPS in the West.

The goals of this initiative are to:

- Share lessons learned and modeling techniques used by NREL to conduct its assessment of reliability concerns associated with distributed solar PV systems with the WECC RAC.
- Expand modeling techniques to assess reliability implications associated with other distributed energy resources including battery storage and electric vehicles.
- Disseminate findings on the interrelationship between distributed energy resources and the BPS to regulators, policymakers, industry, and other stakeholders in the West.
- Improve the understanding around DER and the impacts they have on the operational and planning performance at the BPS.

The actions that WIRAB staff will take to achieve these goals include:

https://www.nerc.com/pa/rrm/ea/April_May_2018_Fault_Induced_Solar_PV_Resource_Int/April_May_2018_Solar_PV_Disturbance_Report.pdf

- Working with WECC's RAC to conduct round trip analysis between the BPS and distribution system to determine scenarios where there is a significant risk to regional and interconnection-wide reliability.
- Helping WECC identify the type and periodicity of information needed from DERs to ensure the aggregate technical specification of generation connected to local distribution grids are known to planners and operators.
- Monitoring and reviewing efforts to identify potential gaps in, and to provide necessary clarification for, NERC Reliability Standards that are related to the control and performance of inverter-based resources operating under abnormal grid conditions (e.g., PRC-024-2: *Generator Frequency and Voltage Protection Relay Settings*).[6]
- Monitoring and participating in NERC's Inverter-Based Resource Performance Task Force to better inform WIRAB's engagement at WECC.
- Monitoring and participating in the NERC System Planning Impacts from Distributed Energy Resources Working Group to better inform WIRAB's engagement at WECC.

Initiative 3: Encourage western Reliability Coordinators to adopt a set of consistent metrics to measure performance, to identify best practices, and to strive for exceptional reliability in the West.

Since 2014, Peak Reliability (Peak) has served as the RC for most of the Western Interconnection, maintaining a system-wide view of the bulk power system and working to ensure reliability within all or parts of fourteen western states, British Columbia, and the northern reaches of Baja California, Mexico. By 2020, as many as four other entities will be responsible for providing the RC function within this same footprint, while the AESO will continue to provide RC services in the province of Alberta.

[6] NERC Inverter-Based Resource Performance Task Force. *PRC-024-2 Gaps Whitepaper*. NERC (Feb. 2019). https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/NERC_IRPTF_PRC-024-2_Gaps_Whitepaper_FINAL_CLEAN.pdf

This transition has triggered concerns that reliability performance could potentially deteriorate.

In its efforts to improve system-wide reliability, Peak invested a significant amount of time and resources to develop and improve a set of effective RC performance metrics, which measured Peak's performance of the RC function and the quality of information being provided by BAs and TOPs. Peak's effort affected behavioral change within the Western Interconnection, advanced the operational performance of the RC, BAs, and TOPs, and significantly improved the overall level of reliability in the West.

In 2020, WIRAB will encourage all western RCs to adopt a similar set of performance metrics, conduct transparent evaluations of operational performance, and identify best practices in an effort to maintain or improve the overall level of reliability in the West. Use of a consistent set of performance metrics across all RCs in the West would allow entities to evaluate and demonstrate whether system-wide reliability has been maintained or improved over time. This set of performance metrics could also be used to inform and incentivize the implementation of best practices.

The goals of this initiative are to:

- Develop a set of consistent metrics to measure and track RC performance in the West.
- Maintain or improve the overall level of reliability in a new RC environment.
- Identify and disseminate best practices for RC service providers in the West.

The actions that WIRAB staff will take to achieve these goals include:

- Engaging with RCs to understand the current performance evaluation framework.
- Encouraging RCs to develop a consistent set of RC performance metrics.
- Encouraging RCs to identify and share best practices with each another.
- Working with WECC's Event Analysis program to identify potential power system events that produce unique lessons learned to be shared with all RCs.
- Encouraging WECC to develop and improve real-time indicators of interconnection health.

- Working with WECC to disseminate findings to state regulators and policymakers, industry, and other stakeholders in the West.

Initiative 4: Assist WECC in assessing the reliability benefits and risks associated with wholesale electricity market expansion in the West.

The structure of power markets in the West continues to undergo significant change, creating new reliability challenges and opportunities for the Western Interconnection. The California ISO continues to expand participation in its EIM; expanding to include entities in ten western states and British Columbia's PowerEx. The CAISO is also discussing the potential of extending day-ahead services to EIM participants in addition to exploring day-ahead enhancements to improve flexibility and the unit commitment process. The SPP has announced that it is also considering the development of an energy imbalance market to serve the Western Interconnection and called on utilities and other stakeholders to join in its market design and implementation.

In 2013, FERC staff released a whitepaper titled "Qualitative Assessment of Potential Reliability Benefits from a Western Energy Imbalance Market," which analyzed the reliability benefits of the then-proposed EIM.[7] Now, as the CAISO-EIM has been a success and continues to grow, and as further market expansion continues in the West, WECC's Market Interface Committee (MIC) has begun a project to qualitatively assess the potential reliability benefits and risks of the expanding wholesale markets.

In 2020, WIRAB will assist WECC in assessing and disseminating findings of the reliability benefits and risks associated with wholesale electricity market expansion in the West, in an effort to improve the understanding of markets and potential impacts to reliability.

The goals of this initiative are to:

- Develop a report on the reliability benefits and risks of expanding wholesale markets in the West.

[7] FERC Staff. *Qualitative Assessment of Potential Reliability Benefits from a Western Energy Imbalance Market.* (February 2013). https://www.westerneim.com/Documents/QualitativeAssessment-PotentialReliabilityBenefits-WesternEnergyImbalanceMarket.pdf

- Disseminate findings to industry, regulators, policymakers, and stakeholders in the West.
- Improve the understanding around markets and the impacts wholesale markets have on operational performance and reliability.

The actions that WIRAB staff will take to achieve these goals include:

- Participating directly with the WECC MIC to conduct research and develop a report on the reliability benefits and risks of expanding wholesale markets in the West.
- Encouraging the WECC Board of Directors to discuss the findings of the report at an open Board meeting.
- Encouraging WECC to disseminate the findings to the industry and encourage follow-up assessments from stakeholder input.
- Assisting WECC to disseminate the findings at a WIRAB meeting and encourage feedback from regulators and policymakers in the West.

2020 Budget and Assessment Impacts

The WIRAB proposed budget for 2020 is $1,255,200. This amount is $92,500 (8.0%) higher than the amount in WIRAB's approved budget for 2019. Total proposed FTEs for 2020 are 5.0. WIRAB's total funding requirement is $986,900. WIRAB's proposed funding assessment is $986,300, an increase of $236,300 (31.3%) from the 2019 funding assessment.

Personnel and Indirect Expenses

Personnel expenses increase from $436,500 in the 2019 Budget to $478,300 (9.6%) in the 2020 Budget due to personnel changes and cost-of-living and merit-based salary increases. WIRAB uses a single rate method for indirect expenses. The indirect expenses include office expenses, medical and retirement expenses as well as holiday, vacation and sick leave for WIRAB staff. The indirect rate is a percent of direct staff time spent on WIRAB. The indirect rate increases from 101% of direct labor costs in the

2019 Budget to 111% in the 2020 Budget. The increase is due to increased expenses for office rent, medical insurance, employee retirement, and other office costs. Table 2 shows personnel and indirect expenses per FTE for the approved 2019 Budget and the proposed 2020 Budget.

WIRAB - Personnel and Indirect Expense Analysis 2019-2020					
STATUTORY					
	Budget 2019	Projection 2019	Budget 2020	Variance 2020 Budget v 2019 Budget	Variance %
Salary Expense	$ 436,500	$ 446,000	$ 478,300	$ 41,800	9.6%
FTEs	5.00	5.00	5.00	-	0.0%
Cost per FTE	$ 87,300	$ 89,200	$ 95,660	$ 8,360	9.6%
Indirect Rate	101.3%	105.0%	111.7%		
Indirect Expense	$ 442,200	$ 468,300	$ 534,100	$ 91,900	20.8%
FTEs	5.00	5.00	5.00	-	0.0%
Cost per FTE	$ 88,440	$ 93,660	$ 106,820	$ 18,380	20.8%

Table 2. Personnel and Indirect Expense Analysis, 2019-2020.

Meeting Expense

Meeting costs decrease by $27,900 to $52,900. WIRAB will hold two major in-person meetings per year that include participation by state/provincial agencies with electric power responsibilities in the Western Interconnection. Wherever feasible, WIRAB meetings will be coordinated with other meetings of the Western states and provinces. Webinars on topics of concern will continue to be utilized between meetings. WIRAB also conducts monthly conference calls to update members on current activities and to develop positions on reliability issues in the Western Interconnection. Conference call costs remain constant at $3,200.

Travel Expense

Travel costs decrease by $13,300 to $86,700. WIRAB member travel to biannual meetings and reliability conferences accounts for $30,200. WIRAB staff travel to attend

meetings of WIRAB, WECC and NERC accounts for $56,500. Hotel and travel costs are based on experience from the last year.

Consultants and Contracts

The budget includes $100,000 in contract funding for technical expertise on issues related to improved grid operating practices, reliability standards and compliance; the same amount as budgeted for 2019. This expertise will help WIRAB to prepare and provide technically-sound advice to be submitted to FERC, NERC, and WECC as authorized under Section 215(j).

Budget Comparison

Table 3 shows the 2019 Budget and 2019 Projection compared to the 2020 Budget.

WIRAB - Statement of Activities and Change in Working Capital
2019 Budget & Projection, and 2020 Budget

STATUTORY

	2019 Budget	2019 Projection	Variance 2019 Projection v 2019 Budget Over(Under)	% Change	2020 Budget	Variance 2020 Budget v 2019 Budget Over(Under)	% Change
Funding							
WIRAB Funding							
Assessments	$ 750,000	$ 750,000	$ -	0.0%	$ 986,300	$ 236,300	31.5%
Penalty Sanctions	-	-	-		-	-	
Total WIRAB Funding	**$ 750,000**	**$ 750,000**	**$ -**	**0.0%**	**$ 986,300**	**$ 236,300**	**31.5%**
Membership Dues	-	-	-		-	-	
Testing Fees	-	-	-		-	-	
Services & Software	-	-	-		-	-	
Workshops	-	-	-		-	-	
Interest	600	600	$ -	0.0%	600	$ -	0.0%
Miscellaneous	-	-	-		-	-	
Total Funding (A)	**$ 750,600**	**$ 750,600**	**$ -**	**0.0%**	**$ 986,900**	**$ 236,300**	**31.5%**
Expenses							
Personnel Expenses							
Salaries	436,500	446,000	9,500	2.2%	478,300	$ 41,800	9.6%
Payroll Taxes			-			-	
Benefits			-			-	
Retirement Costs			-			-	
Total Personnel Expenses	**$ 436,500**	**$ 446,000**	**$ 9,500**	**2.2%**	**$ 478,300**	**$ 41,800**	**9.6%**
Meeting Expenses							
WIRAB Meetings	$ 80,800	$ 65,000	$ (15,800)	-19.6%	$ 52,900	$ (27,900)	-34.5%
State Travel	28,200	32,000	$ 3,800	13.5%	30,200	$ 2,000	7.1%
Staff Travel	71,800	60,000	$ (11,800)	-16.4%	56,500	$ (15,300)	-21.3%
Conference Calls	3,200	3,200	$ -	0.0%	3,200	$ -	0.0%
Total Meeting Expenses	**$ 184,000**	**$ 160,200**	**$ (23,800)**	**-12.9%**	**$ 142,800**	**$ (41,200)**	**-22.4%**
Operating Expenses							
Consultants & Contracts	$ 100,000	$ 75,000	$ (25,000)	-25.0%	$ 100,000	$ -	0.0%
Office Rent	-	-	-	-	-	-	-
Office Costs	-	-	-	-	-	-	-
Professional Services	-	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-
Total Operating Expenses	**$ 100,000**	**$ 75,000**	**$ (25,000)**	**-25.0%**	**$ 100,000**	**$ -**	**0.0%**
Total Direct Expenses	**$ 720,500**	**$ 681,200**	**$ (39,300)**	**-5.5%**	**$ 721,100**	**$ 600**	**0.1%**
Indirect Expenses	**$ 442,200**	**$ 468,300**	**$ 26,100**	**5.9%**	**$ 534,100**	**$ 91,900**	**20.8%**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	-	**$ -**	**$ -**	-
TOTAL BUDGET (B)	**$ 1,162,700**	**$ 1,149,500**	**$ (13,200)**	**-1.1%**	**$ 1,255,200**	**$ 92,500**	**8.0%**
CHANGE IN WORKING CAPITAL (=A-B)[1]	**$ (412,100)**	**$ (398,900)**	**$ 13,200**	-	**$ (268,300)**	**$ 143,800**	-
FTEs	5.00	5.00	-	0.0%	5.00	-	0.0%

[1] Fixed Assest included in Indirect Expenses.

Table 3. Budget Comparison, 2019 to 2020.

Statutory Assessments

WIRAB's proposed funding assessment of $986,300 is allocated $826,096 (84%) to the U.S. portion, $144,259 (15%) to the Canadian portion, and $15,944 (1%) to the Mexican portion of the Western Interconnection.

Key Assumptions

The WIRAB 2020 Business Plan and Budget is based on the following assumptions:

- There will be no significant expansion of FERC, NERC, or WECC responsibilities as a result of legislation or administrative actions.
- WIRAB will no longer provide advice to Peak Reliability and instead will monitor reliability coordination activities at the California ISO's RC West, SPP, GridForce, the AESO, and BC Hydro.
- WIRAB will hold two in-person meetings in 2020.
- WIRAB will organize and sponsor webinars and workshops on key reliability issues for WIRAB members, state and provincial representatives, industry representatives, and other interested stakeholders.
- WIRAB will attend all WECC Board of Directors and Member Advisory Committee (MAC) meetings.
- WIRAB will attend selected NERC meetings and workshops on relevant topics.
- WIRAB will annually visit with FERC in its offices.
- WIRAB will monitor all FERC business meetings.
- WIRAB will attend FERC technical conferences on reliability issues.

Section A – Statutory Activities

2020 Business Plan and Budget

Section A – Statutory Activities

WIRAB's advice to FERC, NERC, and WECC can be grouped into four categories that are appropriately funded under Section 215 of the FPA:

1. **Governance and Strategic Planning:** Section 215(j) of the FPA authorizes WIRAB to provide advice to FERC on the governance, strategic direction, budget and fees of WECC.
2. **Emerging Trends and System Risks:** WIRAB must maintain awareness of system conditions, emerging trends, and system risks in order to provide effective and technically sound advice regarding the strategic direction of FERC, NERC, and WECC. WIRAB also uses knowledge of emerging trends and risks to provide advice to WECC on reliability readiness activities and proactive compliance efforts. These activities are appropriately funded under Section 215(j) of the FPA.
3. **Periodic Reliability Assessments:** Section 215(g) of the FPA requires NERC to conduct periodic assessments of the reliability and adequacy of the BPS. WECC assists NERC in performing this statutory activity. WIRAB works closely with WECC to improve reliability and resource adequacy assessments in the Western Interconnection.
4. **Reliability Standards and Proactive Enforcement:** Section 215(j) of the FPA authorizes WIRAB to provide advice to FERC on whether reliability standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. WIRAB works closely with WECC to identify emerging problems or conditions that should be considered in the course of drafting and voting on amendments to existing standards and in developing new standards.

WIRAB's activities in each of these categories are described in the following subsections.

Governance and Strategic Planning

Section 215(j) of the FPA authorizes WIRAB to advise FERC on the governance, strategic direction, budget, and fees of WECC. The WIRAB staff engages with, and attends meetings of, the WECC Board of Directors, standing committees, staff, WECC's MAC, and MAC work groups to monitor developments related to WECC's organizational governance, strategic direction, and budget. This engagement is necessary to evaluate the effectiveness and efficiency of operations at WECC and to ensure that all "activities conducted pursuant to Section 215 are just, reasonable, not unduly discriminatory or preferential, and in the public interest."

The WIRAB staff also conducts monthly webinars to provide WIRAB Members, WECC's Class 5 Representatives (i.e., representatives of state and provincial governments), and other interested stakeholders with regular updates on current and upcoming activities at WECC and to review and develop WIRAB's written advice and guidance to the WECC Board of Directors. WIRAB provides WECC with independent expert advice on operational practices and performance, annual business plans and budgets, strategic planning, committee charters, proposed bylaw amendments, fees, and other matters. WIRAB and the WIRAB staff will continue to engage with WECC and to provide advice and recommendations to the organization as necessary.

Emerging Trends and System Risks

WIRAB staff engage in the following on-going activities in order to provide independent expert advice on emerging reliability trends and system risks:

Event Analysis and Situational Awareness:

Understanding important operational issues confronting the BPS today, as well as in the past, is key to maintaining and improving reliability in the Western Interconnection. Event analysis and situational awareness topics need to be discussed in open and transparent forums that bring together utility operators who deal with these types of issues on a day-to-day basis and thought leaders with a diverse set of expertise. It is important to share lessons learned and to promote best practices to ensure that system operators have access to the tools and knowledge available and necessary to maintain a reliable grid in real-time.

WIRAB members and the WIRAB staff engage in relevant discussions and activities by attending and participating in WECC's Operating Committee and MIC meetings, monitoring reliability coordination at the California ISO's RC West, SPP, GridForce, AESO, and BC Hydro, and monitoring reliability activities at other forums outside of WECC and the Western Interconnection's RCs. The WIRAB staff also provides leadership by conducting periodic outreach webinars and developing panel sessions for WIRAB's in-person meetings that are designed to promote discussions among Western regulators, policy makers, and other stakeholders regarding emerging trends and risks associated with system events.

Distributed Solar PV Generation Resources:

By 2026, distributed solar PV nameplate capacity in the Western U.S. is projected to total more than 16,000 MW. Significant benefits of this trend include distributed solar PV generation's increased capacity, partial coincidence with peak power demand, potential for the provision of grid support services (e.g., frequency support and voltage control), and reductions in greenhouse gas and conventional air pollutant emissions. Several potential challenges are also associated with distributed solar PV capacity, including the potential for simultaneous disconnection of distributed solar PV generation systems with narrow tolerance ranges for frequency and/or voltage deviations. Disconnection may be triggered by and/or exacerbate deviations created by a system contingency in the BPS, such as a fault or the loss of a significant generator. However, advanced inverters have a number of capabilities that can support system stability and support reliability in the event of a system contingency, such as providing frequency and/or voltage ride through.

WIEB and WIRAB are leading efforts by the National Renewable Energy Laboratory (NREL) to study potential reliability problems associated with increasing distributed solar PV generation in the Western Interconnection and to disseminate research findings and policy recommendations for addressing these problems to regulators and policymakers in Western Interconnection states.

Expanding Market Operations:

Expanding market operations is a growing trend in the Western Interconnection. Western states have engaged in discussions on the potential creation of a regional ISO that would involve a multi-state grid using the California ISO's technology to coordinate

and optimize electric systems across the states. The California ISO's EIM, which began operation in 2014, has been continuously expanding to include new participants. Now, the California ISO is developing plans to extend day ahead market services to EIM participants. Entities in the eastern part of the Western Interconnection continue to explore membership in an existing regional transmission organization. These market reforms could result in significant changes to system operations (e.g., transmission scheduling, congestion management) and create new reliability challenges and opportunities for the Western Interconnection.

The WIRAB staff monitors market reform efforts in the West and provides a forum for discussions about related issues such as the potential for a regional ISO, expansion of the California ISO's EIM to new participants, extending the California ISO's day ahead market services to EIM participants, and opportunities for joining the SPP as a full member or its proposed EIM. The WIRAB staff monitors and participates in other forums that are exploring these issues, such as public utility commission and regional TOP meetings and workshops. Additionally, the WIRAB staff attends and participates in relevant WECC committee meetings and activities, such as those of WECC's MIC. WIRAB will continue to provide advice to WECC and to make recommendations as appropriate on reliability challenges and opportunities associated with expanding market operations.

Essential Reliability Services:

With increasing numbers of synchronous generator retirements in the West, the BPS is becoming increasingly reliant on variable, asynchronous generating resources. As the resource mix continues to change, some reliability services that have traditionally been provided by synchronous generating resources may not be available to the same extent in the future. It is important that the electric utility industry examine alternative opportunities to provide these essential reliability services and ensure that practices set today support ongoing BPS reliability. Non-synchronous generation technologies, specifically solar PV generation, have historically been regarded as unable to provide the grid support services commonly associated with these synchronous generation resources; services such as frequency support and voltage control. However, new power electronic technologies, which can be implemented through advanced inverters, now enable non-synchronous generation to provide grid support more rapidly than

synchronous generators. New policies and practices accounting for these emerging technologies can help support grid reliability in the future.

WIRAB staff provides leadership and advice by attending, participating in, and monitoring WECC's RAC, Operating Committee and MIC meetings; NERC's Reliability Issues Steering Committee, Operating Committee and Planning Committee meetings; FERC's Reliability Technical Conferences; and other forums within the industry. WIRAB provides written advice to WECC and FERC on policies regarding the risks associated with the provision of essential reliability services. WIRAB staff also provides periodic outreach webinars and develops panel sessions for WIRAB's in-person meetings to discuss emerging trends and to inform Western policy makers and other interested stakeholders of the emerging risks associated with the changing resource mix and changes to the provision of essential reliability services.

Periodic Reliability Assessments

WIRAB staff engage in the following on-going activities in order to provide guidance and independent expert advice on WECC's periodic reliability assessments:

Variable Energy Resources:

High priority reliability topics for the Western Interconnection include the increasing penetration of variable renewable resources, increasing retirements of baseload coal generation that would reduce inertia on the grid, and the growth of distributed energy resources that interface with the BPS. WIRAB strives for high quality resource assessments that address the reliability implications of the changing resource mix in the Western Interconnection over a 10- to 20-year timeframe. Production cost modeling can identify economic dispatch of a potential new resource mix for every hour over a future year and identify critical hours of system stress. Power flow analysis then examines these critical stress hours for traditional reliability parameters. The integrated use of production cost modeling and power flow analysis will be an essential tool for future reliability assessments of the Western Interconnection.

WIRAB monitors, advises, and participates in WECC's RAC to promote improved reliability assessments of the Western Interconnection. WIRAB will encourage and support the RAC in its efforts to integrate WECC's data and modeling capability to

perform roundtrip reliability assessments that combine power flow analysis and production cost modeling. WIRAB will also monitor, engage, and communicate findings on leading research about the integration of variable energy resources into the Western Interconnection, such as the work of NERC's Inverter-Based Resource Performance Joint Task Force. Further, WIRAB staff monitors and engages with NREL, the Lawrence Berkeley National Laboratory (LBNL), the Energy Systems Integration Group (ESIG), the California ISO, and other researchers investigating the flexibility and reliability of the power system to integrate higher levels of renewable energy. WIRAB also provides outreach to Western states and provinces on the policy implications associated with new research.

Gas-Electric Interdependencies:

The North American power sector's reliance on natural gas for electric generation has grown significantly. Low natural gas prices, environmental regulations, and improving technologies have all contributed to rapid and sustained investment in new gas-fired power plants across the U.S. The natural gas and electricity industries evolved independently but are now inextricably interdependent. In the West, issues surrounding the Aliso Canyon natural gas storage field in southern California highlighted these interdependencies. In response to growing concerns about electric reliability, both FERC and NERC directed focused inquiries into issues related to gas-electric coordination, including NERC's assessment of single points of disruption.

In 2014, WIRAB's sister organization, WIEB, commissioned a Western-Interconnection-wide assessment of gas-electric interdependencies. Phase 1 of the study assessed natural gas infrastructure. Phase 2 of the study assessed short term operational flexibility. In 2017-2018, WIRAB staff participated in WECC's Gas and Electric Interface Study, which analyzed potential vulnerabilities between the gas sector and the electric sector in the Western Interconnection. WIRAB members and the WIRAB staff continue to work with WIRAB's partners in the Western Interconnection to assess the adequacy, security, and risks associated with natural gas infrastructure and its ability to reliably meet evolving BPS needs.

Reliability Standards and Proactive Enforcement

WIRAB staff engage in the following on-going activities in order to provide independent expert advice on the development and proactive enforcement of reliability standards:

Reliability Standards:

NERC reliability standards were created to provide minimum requirements for planning and operating the electric grid. The compliance and enforcement of these reliability standards ensures there is oversight and accountability of BPS owners and operators and that system-wide reliability is maintained. It is important that reliability standards are strict enough to guarantee that system reliability is maintained, but flexible enough to respond to the changing industry. It is important to develop and review reliability standards to ensure they effectively preserve reliability while not being overly burdensome on the entities required to comply.

WIRAB staff provides independent expert advice on the development and proactive enforcement of reliability standards by contracting with subject matter experts with direct knowledge of the efficacy of reliability standards and the burden of compliance on regulated entities. WIRAB staff attends, participates and/or monitors WECC's Operating Committee meetings, WECC's Standards Committee meetings, NERC's standard development process and other industry forums. When necessary, WIRAB provides written advice to WECC, NERC and FERC on the implementation of specific standards within the Western Interconnection. WIRAB staff also conducts periodic outreach webinars and develops panel sessions for WIRAB's in-person meetings to lead discussions on emerging trends with Western policy makers and other stakeholders and to provide independent, expert advice on reliability standards.

Physical Security and Cybersecurity:

Physical security and cybersecurity of the electric grid represent issues of growing concern in the West and across the Nation. Until recent years, most physical and cyber security incidents were confined to other sectors. Recently, however, physical and cyber incidents have represented a greater threat to the electric grid reliability.

WIRAB has monitored incidents that have compromised both the physical security and cybersecurity of the grid for several years. In 2014, 2015, and 2017, WIRAB conducted webinars on the physical security and/or cybersecurity of the grid. WIRAB will continue to monitor the development of NERC's Critical Infrastructure Protection (CIP) standards and, as appropriate, WIRAB will update its members on CIP standards. WIRAB will also continue to observe NERC's GridEX exercises, which provide utilities with opportunities to demonstrate how they would respond to coordinated cyber and physical security events.

Section B – WIRAB Supplemental Financial Information

2020 Business Plan and Budget

Section B – Supplemental Financial Information

Working Capital Reserve

WIRAB projects it will have a working capital reserve of $545,700 on December 31, 2019, as compared to a desired working capital reserve at December 31, 2020, of $277,400. The surplus working capital reserve results in a $268,300 reduction in WIRAB's funding requirement for 2020.

In its 2018 Business Plan and Budget, WIRAB changed its reserve policy to stabilize statutory assessments while reducing its surplus financial reserve over several budget cycles. FERC allows WIRAB to carry a financial reserve under the proviso that any excess reserves be used to offset future assessments. WIRAB's funding assessments are calculated roughly nine months in advance of each budget year. This assessment is fixed, meaning that, once approved, it cannot be decreased or increased mid-year to more closely match actual expenses. The financial reserve allows for some budgetary flexibility.

WIRAB reduced its working capital reserve from $1,368,238 on December 31, 2017 to $1,068,456 on December 31, 2018 and is projecting a balance of $545,700 on December 31, 2019. The desired working capital reserve for December 31, 2020 is $277,400 or 22% of WIRAB's proposed budget for 2020. WIRAB is targeting a working capital reserve equal to 20% of budgeted expenses beginning in 2021. The higher reserves in 2020 are intended to stabilize the change in assessments during the transition from the period of surplus reserves. Table B-1 shows WIRAB's analysis of its working capital reserves. Table B-2 shows past and projected assessments under WIRAB's Assessment Stabilization Plan.

WIRAB - Working Capital Reserve Analysis 2019-2020	
STATUTORY	
Beginning Working Capital Reserve (Deficit), December 31, 2018	944,599
Plus: 2019 Funding (from LSEs or designees)	750,000
Plus: 2019 Other funding sources	600
Minus: 2019 Projected expenses & capital expenditures	(1,149,500)
Projected Working Capital Reserve (Deficit), December 31, 2019	**545,700**
Desired Working Capital Reserve, December 31, 2020[1]	277,400
Minus: Projected Working Capital Reserve, December 31, 2019	(545,700)
Increase(decrease) in funding requirement to achieve Working Capital Reserve	(268,300)
2020 Expenses and Capital Expenditures	1,255,200
Less: Penalty Sanctions[2]	0
Less: Other Funding Sources	(600)
Adjustment: To achieve desired Working Capital Reserve	(268,300)
2020 NERC Assessment	986,300

[1] Desired working capital reserve is 25 percent of budgeted expenses.
[2] Penalty sanctions are not applicable to WIRAB.

Table B-1. Working Capital Reserve Analysis 2019 – 2020.

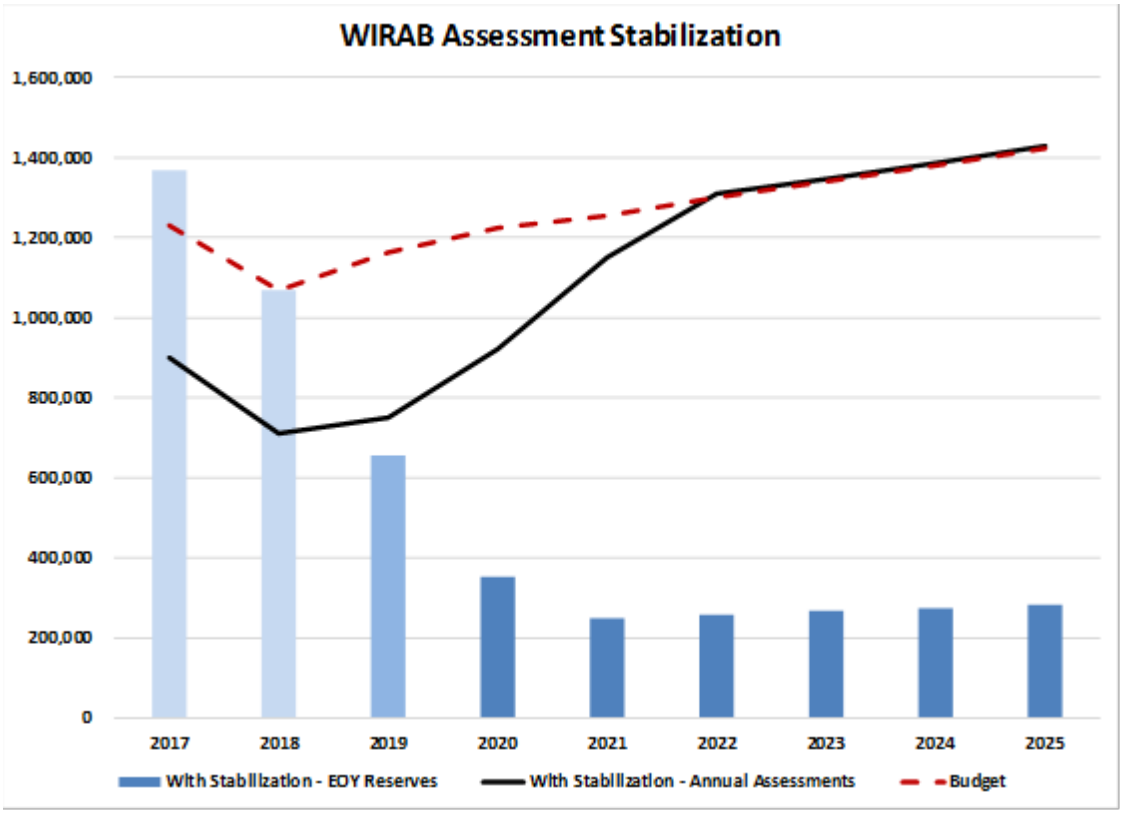


Table B-2. Assessment Stabilization Plan.

WIRAB's total statutory assessment is ultimately paid by ratepayers through transmission fees. Using WIRAB's surplus reserves to reduce statutory assessments has an intergenerational impact on these ratepayers. In the 2014-2016 time period, ratepayers paid assessments that exceeded the cost of WIRAB services. In the 2017-2019 time period, ratepayers paid assessments that were less that the full cost of WIRAB services. As noted above, in 2020, ratepayers would continue to receive an intergenerational subsidy in the amount of $268,300. WIRAB's goal is to get back to parity between assessments and expenses in 2022.

Budget Projections for 2020-2022

WIRAB - Statement of Activities and Change in Working Capital 2020 Budget & 2021 and 2022 Projections							
STATUTORY							
	2020 Budget	**2021 Projection**	**Variance 2021 Projection v 2020 Budget Over(Under)**	**% Change**	**2022 Projection**	**Variance 2022 v 2021 Projections Over(Under)**	**% Change**
Funding							
WIRAB Funding							
Assessments	$ 986,300	$ 1,281,900	$ 295,600	30.0%	$ 1,355,100	$ 73,200	5.7%
Penalty Sanctions	-	-	-		-	-	
Total WIRAB Funding	**$ 986,300**	**$ 1,281,900**	**$ 295,600**	**30.0%**	**$ 1,355,100**	**$ 73,200**	**5.7%**
Membership Dues	-	-	-		-	-	
Testing Fees	-	-	-		-	-	
Services & Software	-	-	-		-	-	
Workshops	-	-	-		-	-	
Interest	600	600	$ -	0.0%	600	$ -	0.0%
Miscellaneous	-	-	-		-	-	
Total Funding (A)	**$ 986,900**	**$ 1,282,500**	**$ 295,600**	**30.0%**	**$ 1,355,700**	**$ 73,200**	**5.7%**
Expenses							
Personnel Expenses							
Salaries	478,300	497,400	19,100	4.0%	517,300	$ 19,900	4.0%
Payroll Taxes			-			-	
Benefits			-			-	
Retirement Costs			-			-	
Total Personnel Expenses	**$ 478,300**	**$ 497,400**	**$ 19,100**	**4.0%**	**$ 517,300**	**$ 19,900**	**4.0%**
Meeting Expenses							
WIRAB Meetings	$ 52,900	$ 54,500	$ 1,600	3.0%	$ 56,100	$ 1,600	2.9%
State Travel	$ 30,200	$ 31,100	$ 900	3.0%	$ 32,000	$ 900	2.9%
Staff Travel	$ 56,500	$ 58,200	$ 1,700	3.0%	$ 59,900	$ 1,700	2.9%
Conference Calls	$ 3,200	$ 3,300	$ 100	3.1%	$ 3,400	$ 100	3.0%
Total Meeting Expenses	**$ 142,800**	**$ 147,100**	**$ 4,300**	**3.0%**	**$ 151,400**	**$ 4,300**	**2.9%**
Operating Expenses							
Consultants & Contracts	$ 100,000	$ 100,000	$ -	0.0%	$ 100,000	$ -	0.0%
Office Rent	-	-	-	-	-	-	-
Office Costs	-	-	-	-	-	-	-
Professional Services	-	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-
Total Operating Expenses	**$ 100,000**	**$ 100,000**	**$ -**	**0.0%**	**$ 100,000**	**$ -**	**0.0%**
Total Direct Expenses	**$ 721,100**	**$ 744,500**	**$ 23,400**	**3.2%**	**$ 768,700**	**$ 24,200**	**3.3%**
Indirect Expenses	**$ 534,100**	**$ 555,400**	**$ 21,300**	**4.0%**	**$ 577,700**	**$ 22,300**	**4.0%**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	-	**$ -**	**$ -**	-
TOTAL BUDGET (B)	**$ 1,255,200**	**$ 1,299,900**	**$ 44,700**	**3.6%**	**$ 1,346,400**	**$ 46,500**	**3.6%**
CHANGE IN WORKING CAPITAL (=A-B)[1]	**$ (268,300)**	**$ (17,400)**	**$ 250,900**	**-**	**$ 9,300**	**$ 26,700**	**-**
FTEs	5.00	5.00	-	0.0%	5.00	-	0.0%

[1] Fixed Assest included in Indirect Expenses.

Table B-3. Budget 2020 Compared with 2020-2022 Projections.

WIRAB projects a 3.6% increase to its annual budgets in 2021 and 2022. These increases reflect expected cost-of-living adjustments to personnel expenses for employees working in Denver, Colorado and increased costs for meetings and travel.

Section C – Non-Statutory Activities

2020 Business Plan and Budget

Section C – Non-Statutory Activities

WIRAB does not engage in non-statutory activities.

Section D – Additional Consolidated Financial Statements

2020 Business Plan and Budget

Section D – Additional Consolidated Financial Statements

Statement of Financial Position

Table D-1 provides WIRAB's Statement of Financial Position as of the following dates:

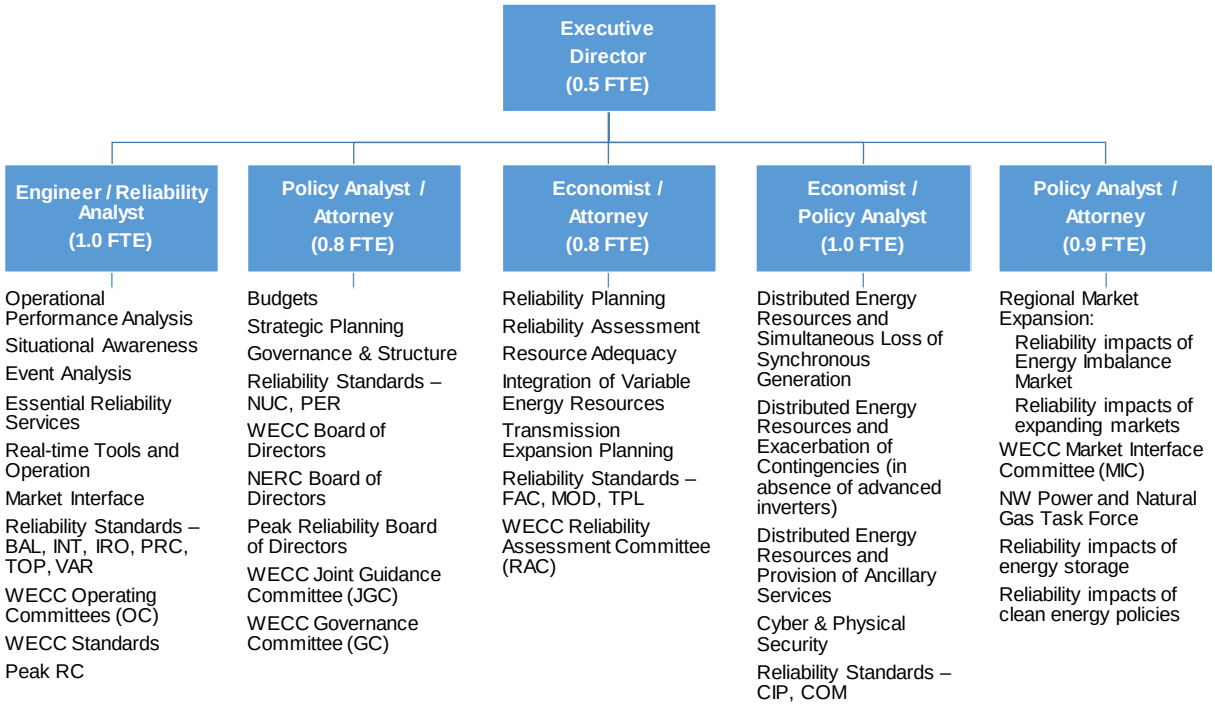
- As of June 30, 2018, per audit
- As of December 31, 2019, projected
- As of December 31, 2020, as budgeted

WIRAB - Statement of Financial Position			
STATUTORY			
	As of June 30, 2018 (Audit)	As of December 31, 2019 (Projected)	As of December 31, 2020 (Budgeted)
Assets			
Cash and Investments	$ 1,369,826	$ 545,700	$ 277,400
Total Assets	**$ 1,369,826**	**$ 545,700**	**$ 277,400**

Table D-1. Statement of Financial Position, Three-Year Comparison

Appendix A Organization Chart

The WIRAB Organization Chart is shown below.



NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 5

NERC MANAGEMENT'S RESPONSES

TO STAKEHOLDER COMMENTS SUBMITTED

ON DRAFT #1 AND DRAFT #2 OF NERC'S

2020 BUSINESS PLAN AND BUDGET

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Andy Sharp
Interim Chief Financial Officer and Controller

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.

- **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 6

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

	2020 NERC Budget	AESO NEL Share (2018) 1.391%	2020 Compliance FTEs Total	Credit	% Credit	AESO Credit	Costs Paid by 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 IESO Assessment Adjustment

Credit for NERC Compliance Costs

Includes adjustment for 2018 Actual v Budgeted Costs

	2020 NERC Budget	IESO NEL Share (2018) 2.994%	2020 Compliance FTEs Total	Credit	% Credit	IESO Credit	Costs Paid by IESO
NERC Compliance Program Budget							
Compliance Assurance	$ 9,756,389	$ 292,084	16.92	14.08	83.2%	$ 243,014	$ 49,070
Registration and Certification	2,535,712	75,913	4.70	4.47	95.0%	72,118	3,796
Enforcement	6,725,572	201,348	12.22	12.22	100.0%	201,348	-
Total Compliance Costs, including Fixed Assets	**$ 19,017,673**	**$ 569,345**	**33.84**	**30.76**		**$ 516,479**	**$ 52,866**
True-up 2018 Actual						10,319	
Additional Non-Compliance Costs							
Event Analysis	$ 4,733,857	$ 141,721	9.40	0.94	10.0%	$ 14,172	$ 127,549
SAFNR v3 support and maintenance	454,500	13,607			100.0%	13,607	-
2020 Total Compliance, Event Analysis and SAFNR	**$ 24,206,030**	**$ 724,672**	**43.24**	**31.70**		**$ 554,577**	**$ 180,414**
2019	**$ 26,633,919**	**$ 790,487**	**46.53**	**34.13**		**$ 642,604**	**$ 187,511**
Change from 2019	**$ (2,427,889)**	**$ (65,815)**	**(3.29)**	**(2.43)**		**$ (88,027)**	**$ (7,096)**

2020 Assessment	
2020 NERC Assessment	$ 1,601,276
2020 RE Assessment	2,160,683
Total 2020 Assessment	**$ 3,761,960**
2019 Assessment	
2019 NERC Assessment	$ 1,418,177
2019 RE Assessment	2,164,350
Total 2019 Assessment	**$ 3,582,527**
Change in Total ERO Assessment	**$ 179,433**
	5.0%
Change in NERC Assessment	**$ 183,099**
	12.9%

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 Total	Credit	% Credit	NB Credit	Costs Paid by 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%

2020 Quebec Assessment Adjustment
Credit for NERC Compliance Costs
Includes adjustment for 2018 Actual v Budget

	2020 NERC Budget	Quebec NEL Share (2018) 3.766%	2020 Compliance FTEs Total	Credit	% Credit	Quebec Credit	Costs Paid by Quebec	Payment Allocation Regie	Hydro Quebec
NERC Compliance Program Budget									
Compliance Assurance	$ 9,756,389	$ 367,450	16.92	6.09	36.0%	$ 132,282	$ 235,168		$ 235,168
Registration and Certification	2,535,712	95,501	4.70	4.47	95.0%	90,726	4,775	$ 2,312	2,463
Enforcement	6,725,572	253,302	12.22	12.22	100.0%	253,302	-		
Total Compliance Costs, including Fixed Assets	**$ 19,017,673**	**$ 716,254**	**33.84**	**22.78**		**$ 476,310**	**$ 239,943**	**$ 2,312**	**$ 237,631**
True-up 2018 Actual						(12,558)			
Additional Non-Compliance Costs									
Event Analysis	$ 4,733,857	$ 178,289	9.40	0.94	10.0%	$ 17,829	$ 160,460		$ 160,460
SAFNR v3 support and maintenance	454,500	17,118			100.0%	17,118			
2020 Total Compliance, Event Analysis and SAFNR	**$ 24,206,030**	**$ 911,660**	**43.24**	**23.72**		**$ 498,699**	**$ 400,403**	**$ 2,312**	**$ 398,091**
2019 Budget	**$ 26,633,919**	**$ 1,021,558**	**46.53**	**26.36**		**$ 658,216**	**$ 403,862**	**$ 18,485**	**$ 385,377**
Change from 2019	**$ (2,427,889)**	**$ (109,897)**	**(3.29)**	**(2.65)**		**$ (159,517)**	**$ (3,458)**	**$ (16,173)**	**$ 12,715**
2020 Assessment (including Compliance credit)									
2020 NERC Assessment	$ 2,213,431							$ 2,312	$ 2,211,119
2020 RE Assessment	2,994,921							1,223,831	1,771,090
Total 2020 Assessment	**$ 5,208,353**							**$ 1,226,143**	**$ 3,982,210**
2019 Assessment (including Compliance credit)									
2019 NERC Assessment	$ 2,004,960							$ 18,485	$ 1,986,475
2019 RE Assessment	3,058,277							1,134,411	1,923,866
Total 2019 Assessment	**$ 5,063,237**							**$ 1,152,896**	**$ 3,910,341**
Change in Total Assessment	**$ 145,116**							**$ 73,247**	**$ 71,869**
	2.9%							**6.4%**	**1.8%**
Change in NERC Assessment	**$ 208,471**								
	10.4%								

NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

2020 BUSINESS PLAN AND BUDGET FILING

ATTACHMENT 7

METRICS COMPARING

REGIONAL ENTITY OPERATIONS

BASED ON

THE 2020 BUDGETS

2020 Metrics for Budget Submissions

	Budget Metrics	MRO	NPCC[6]	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.)

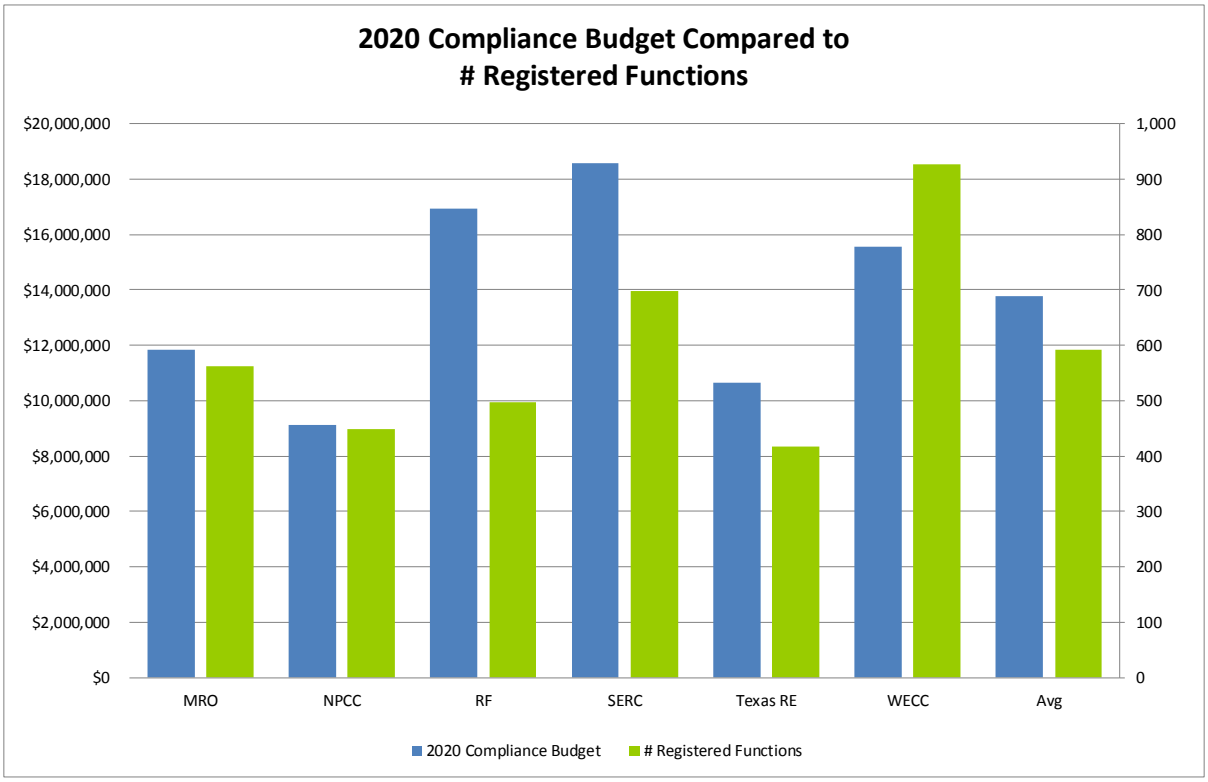
[3] Total Budget is the sum of Total Expenses and the Increase/(Decrease) in Fixed Assets.

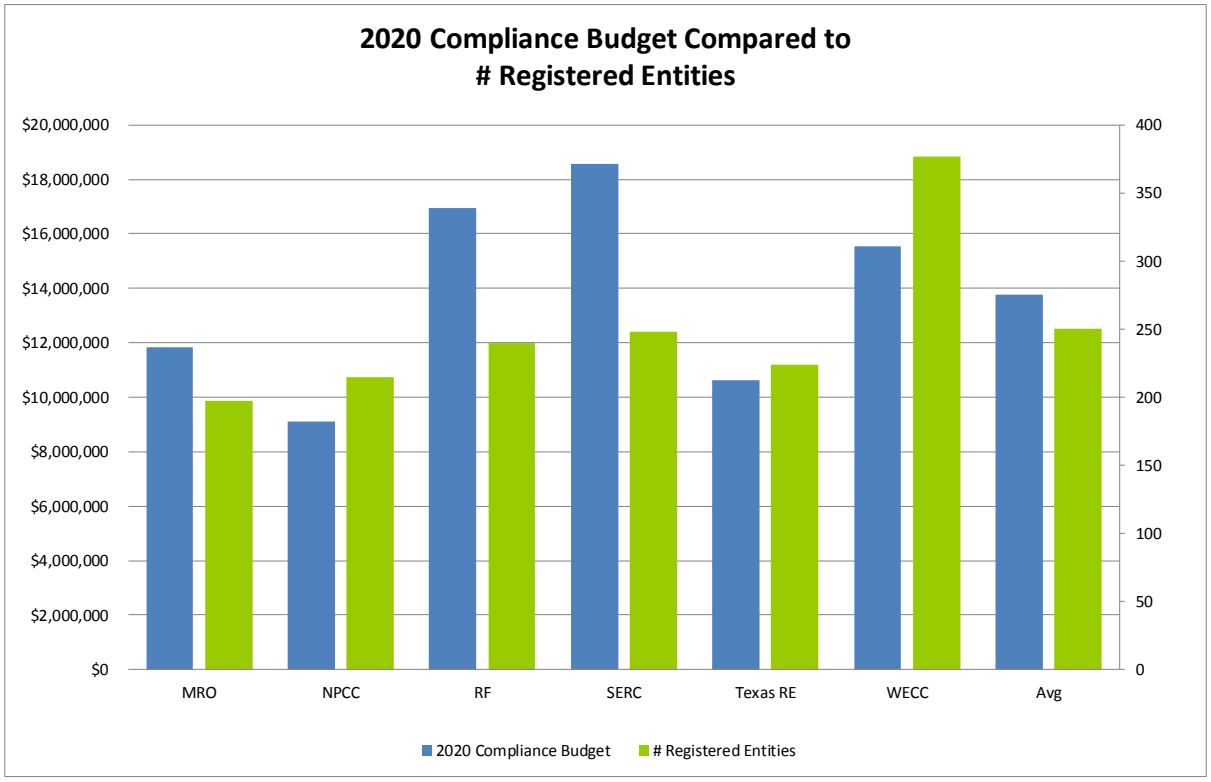
[4] Each FTE that works 2,080 hours per year is counted as one FTE. An FTE working less than the 2,080 hours per year is counted as a fractional FTE.

[5] Total Compliance Budget is a sum of Direct Expenses, Indirect Expenses, and Capital Expenditures.

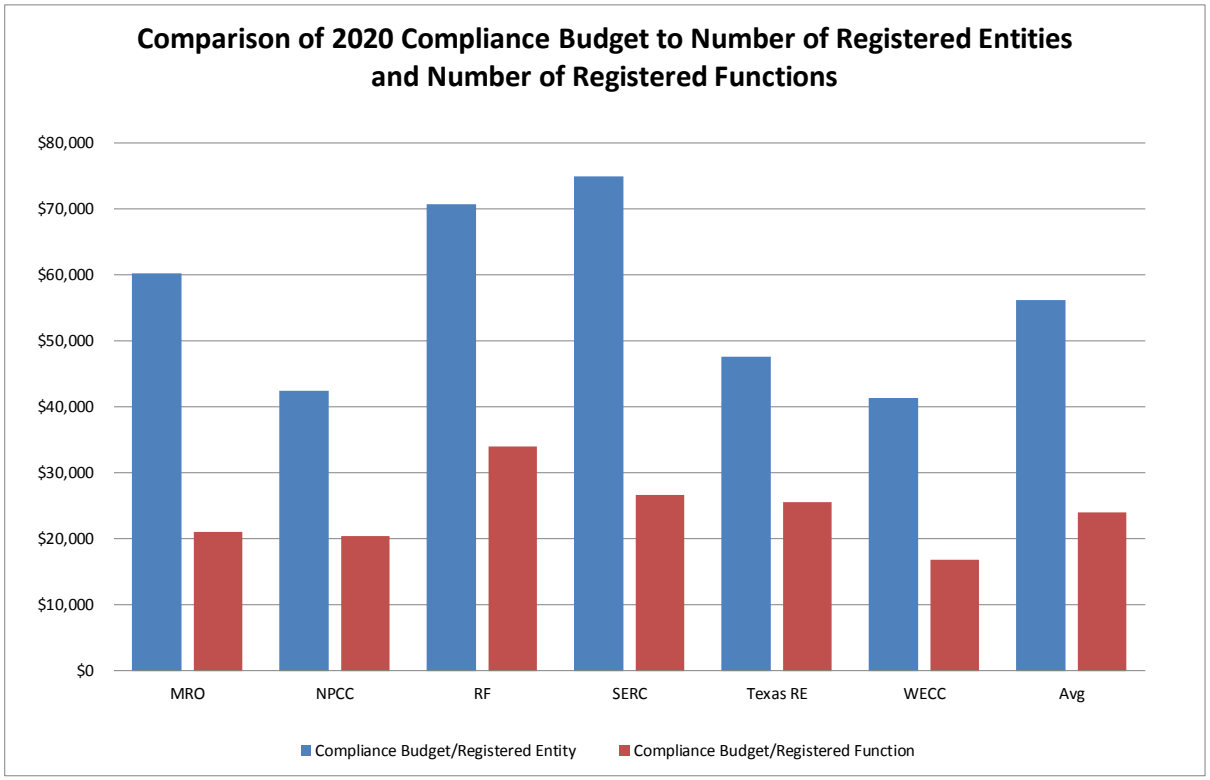
[6] Due to the specifics of the compliance program included in the individual provincial MOUs for cross-border regional entities, some of these metrics are not directly comparable.

	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

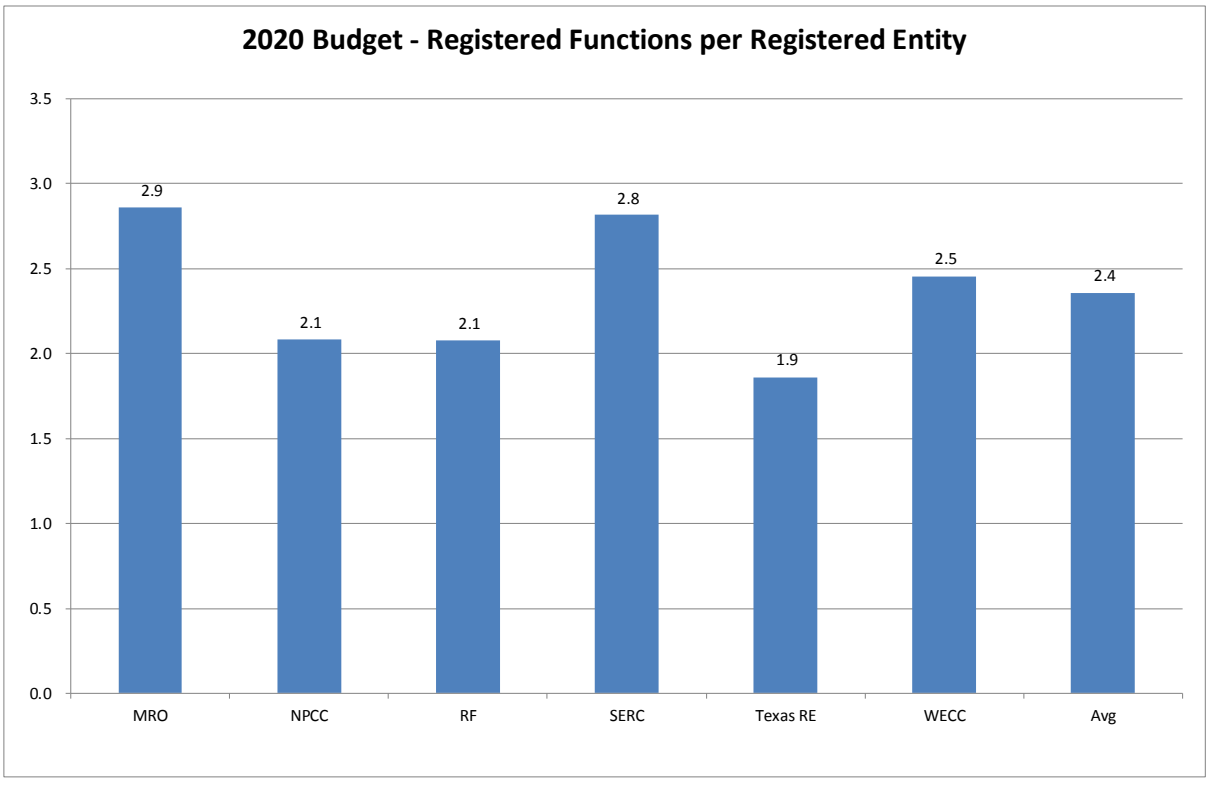


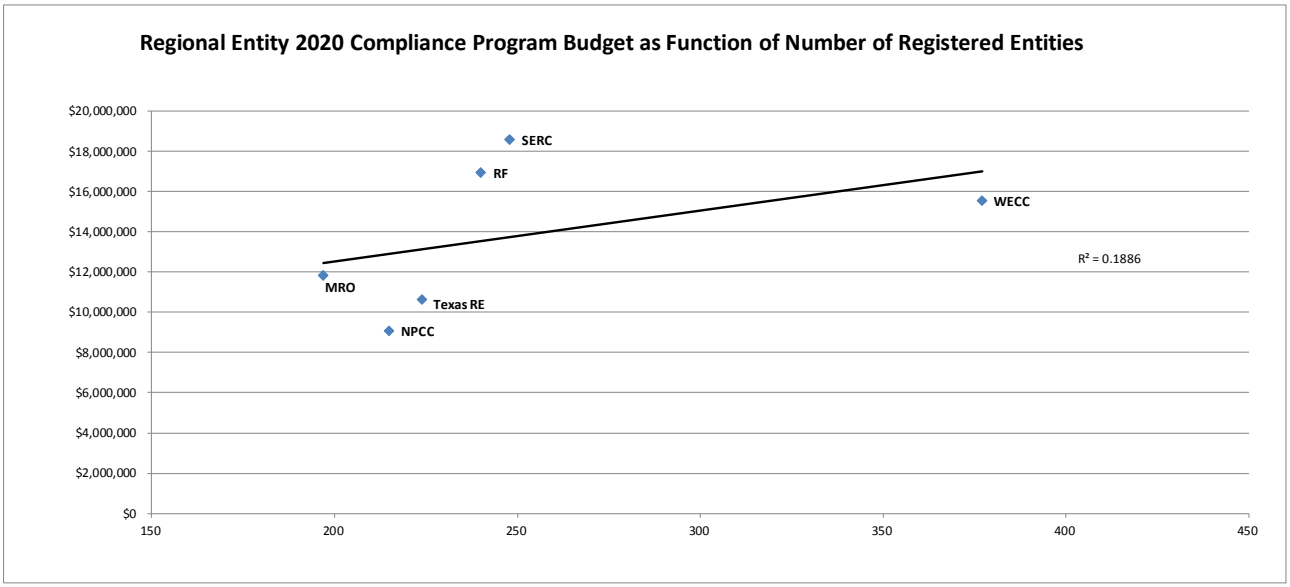


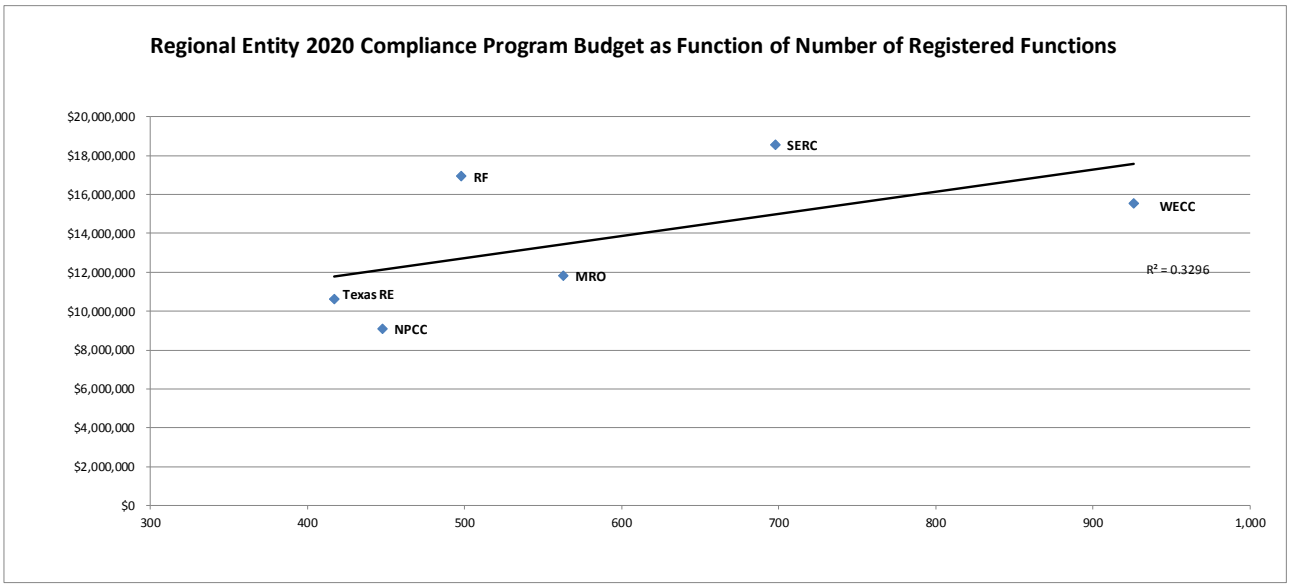
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
Compliance Budget/Registered Entity	$60,141	$42,370	$70,608	$74,942	$47,489	$41,270	$56,137
Compliance Budget/Registered Function	$21,044	$20,334	$34,028	$26,627	$25,510	$16,802	$24,058



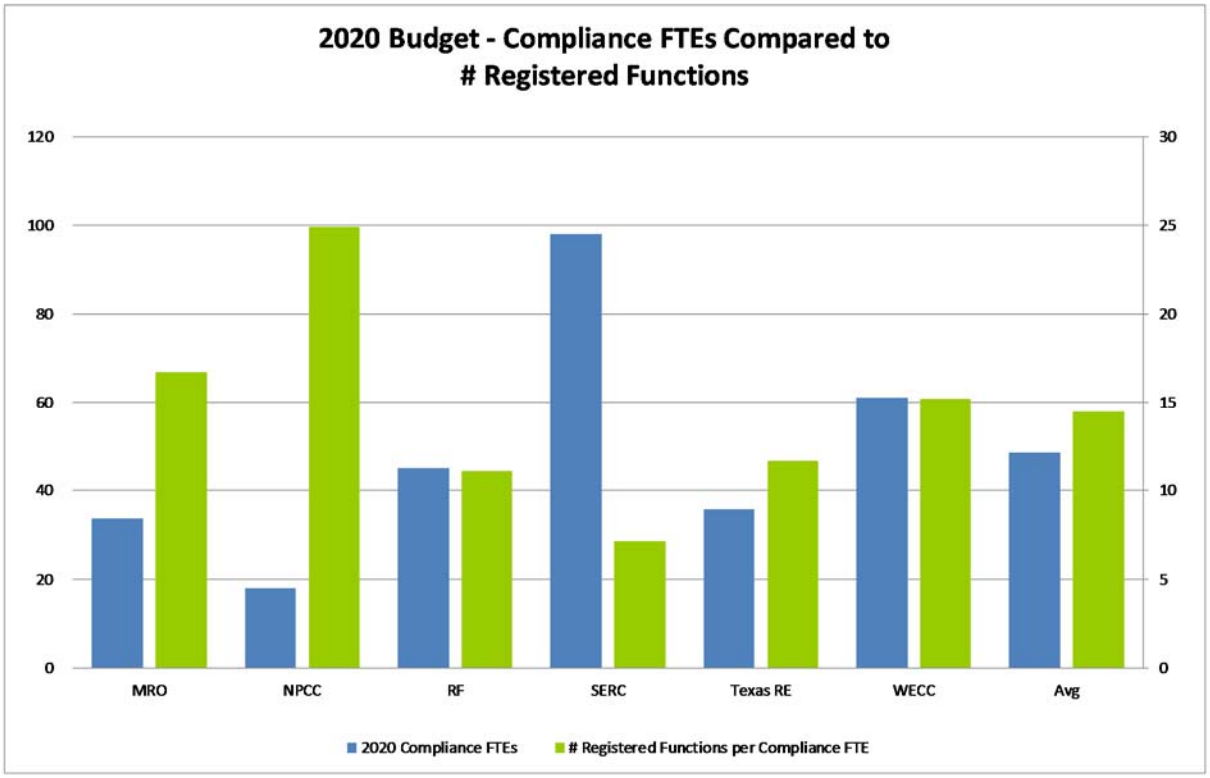
	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
Registered Functions per Registered Entity 2020 Budget	2.9	2.1	2.1	2.8	1.9	2.5	2.4

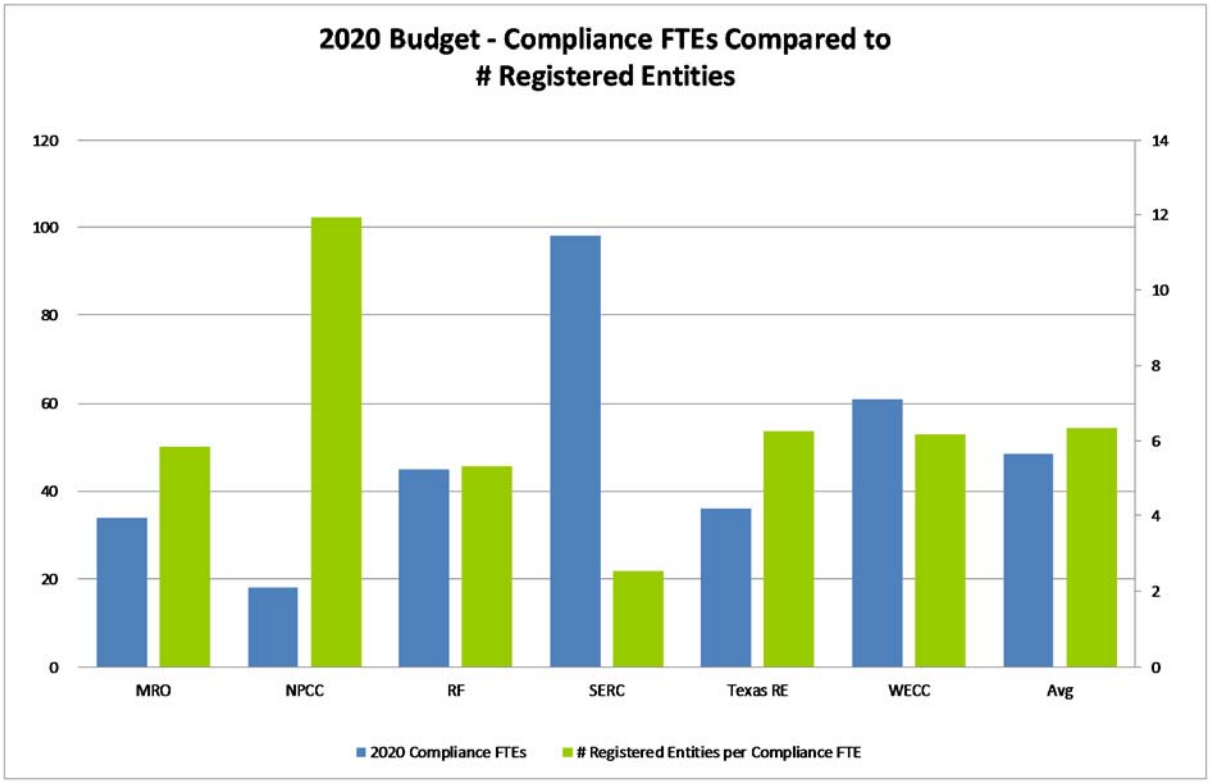



Regional Entity 2020 Compliance Program Budget as Function of Number of Registered Entities
$20,000,000
$18,000,000
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
150
200
250
300
350
400
450
SERC
RF
WECC
MRO
Texas RE
NPCC
R² = 0.1886

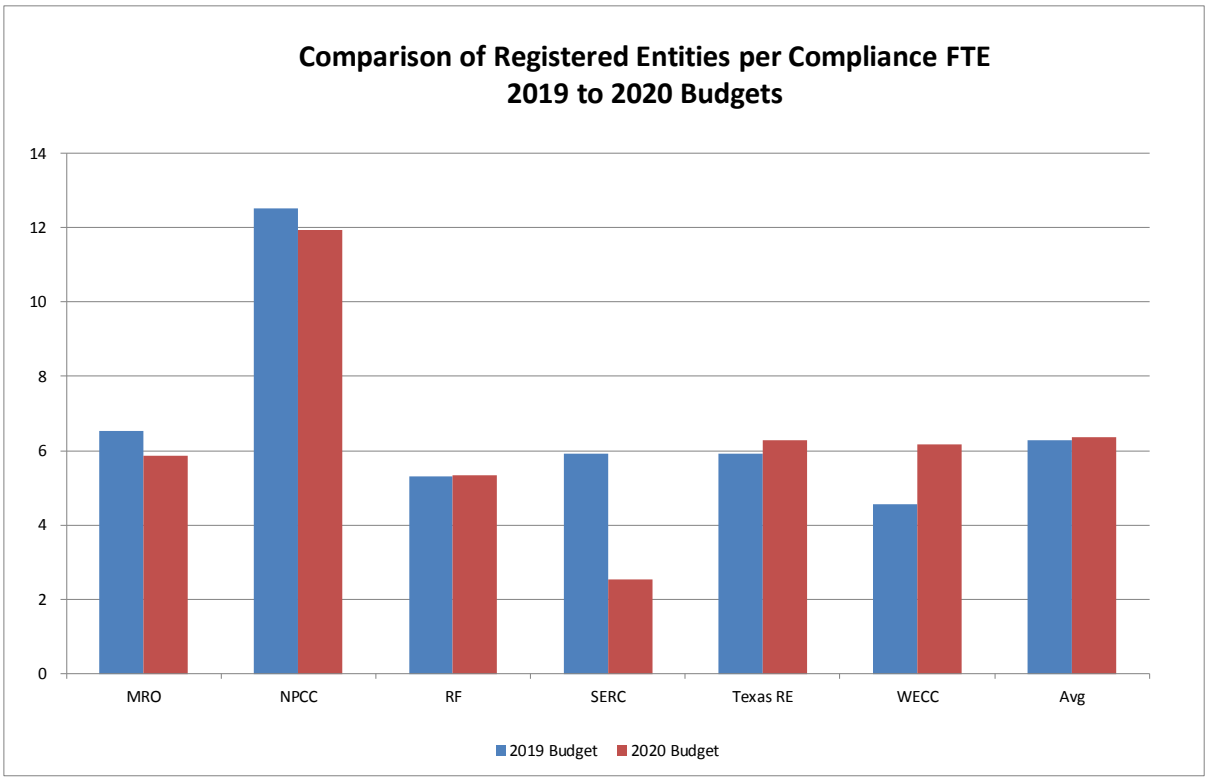

Regional Entity 2020 Compliance Program Budget as Function of Number of Registered Functions
$20,000,000
$18,000,000
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
300
400
500
600
700
800
900
1,000
SERC
RF
WECC
MRO
Texas RE
NPCC
R² = 0.3296

	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

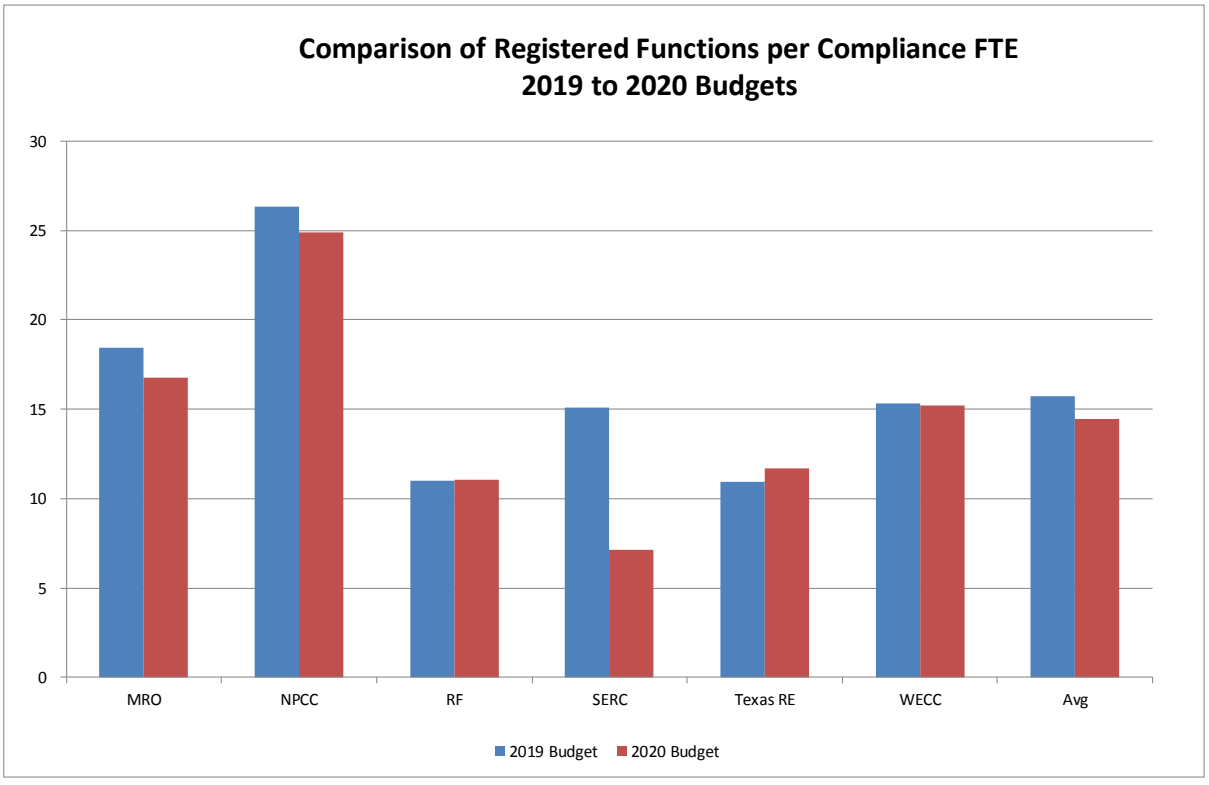




	MRO	NPCC	RF	SERC	Texas RE	WECC	Avg
2019 Budget	6.5	12.5	5.3	5.9	5.9	4.6	6.3
2020 Budget	5.9	11.9	5.3	2.5	6.3	6.2	6.4



	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 8

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