COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Karl A Bryan**	
Organization:	**US Army Corps of Engineers**	
Telephone:	**503-808-3894**	
Email:	**karl.a.bryan@usace.army.mil**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Instituting a process that verifies the data that also has a QA/QC aspect.**
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Sounds like you are trying to herd cats. Getting people to consistently fill out even the simplest form is a monumental task.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Staffing experts capable of performing the analysis that can pass a peer review.**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Getting competent personnel that can consistently measure the modelling parameter is one of the hurdles, the other is getting the system configured so that the testing can be performed.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Recommend the procedures be more performance based. You do not want to try and cover all the possible equipment types in a cook book type of testing document. Also, there should be a certification process for those that are gathering the modeling data.**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**How are you going to handle environmental limitations, short term operational constraints, seasonal constraints, etc? I think you need to be very concise on what you ask for.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**see comments above**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Again, recommend performance based requirements and a certification process for those gathering the data. Also recommend that the Transmission Service Provider be responsible for verifying the data when used in studies does converge, this would be a confidence check on the data.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**see comments above**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**see comments above**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Make sure you have concise enough instructions of what you are after so that the information you gather from those required to submit data results in useable data.**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**see comments above**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**see comments above**
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**This should be more of an administrative reporting process. The big problem is making sure that the reported information gets cranked into the studies and the outage coordination process.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**This should be easy for the generation owner to add to his equipment SCADA recording and then forwarding the information onto the TSP or BA.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**First issue would be to define what a violation of a voltage schedule is.**

☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**The difficulty will be in setting up a business process where changes in tap settings are forwarded to the appropriate people and in getting the data base updated.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**see comment above**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Getting a consensus amongst the equipment owners of what they will allow equipment to be stressed to and then getting schedulers/operators to understand the limitations. Plus some limitations are very dynamic.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Inner and outer loop controls on the water to wire equipment are not presently modelled, good luck on figuring a way to get information cranked into the powerflow simulation programs.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☒ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Be sure that no system is grandfathered in. It was grandfathering in that led to the Westwing substation problems that Arizona Public Service experienced recently.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**This will most likely be more of a bookkeeping excersize than an in depth analysis of misoperations. One of the benefits that could be realized by this endeavor would be sharing common modes of failure for certain protective devices, the impediment to this sharing of data would be the equipment vendors.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Be sure you build in the maintenance of the large database that this requirement will result in.**

☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**To what level are you going to test to? Also, I would recommend that the maintenance personnel be required to meet a minimum level of competency in order to work on protective relaying.**
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**The blackstarting of a facility is not the difficult part, it is actually charging up a dead transmission line and then connecting load to the line that is the proof that we should be striving for.**
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

Recommend serious consideration be given to a national certification program for operators (both transmission system and generating facility) as well as a certification program for maintenance personnel that work on some of the more critical components in the power train. The certification program should require continuing education credits and the certification program should meet a minimum level of accreditation.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **SERC EC Planning Standards Subcommittee**

Lead Contact: Kham Vongkhamchanh

Contact Organization: Entergy Services, Inc.

Contact Segment: 1

Contact Telephone: (504) 310-5812

Contact Email: kvongkh@entergy.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Arthur E. Brown	SCPSA	SERC	1
Bob Jones	Southern Company Services, Inc.	SERC	1
Pat Huntley	SERC	SERC	2
Brian Moss	Duke Power Company	SERC	1
Darrell Pace	Alabama Electric Coooperative	SERC	1
David Till	Tennessee Valley Authority	SERC	1

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments
III.C.M11 is not included in the 4 SARs, however III.C.M10 is listed twice.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments
Some of the standards may have very limited application and some may not be practical to implement, as indicated in the responses to Question 4.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments
Measurements III.C.M10 and M11 should both be in the Protection and Control SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**It may not be practical for the regions to maintain this database and is not needed since the data is maintained and available from members.**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Should be moved to Protection and Control SAR.**
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**This measurement should be deleted. It is already covered by the I.A standards.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Recommend changes to the measure: ENSURE MAXIMUM FLEXIBILITY rather than OPTIMIZE THE USE of generator reactive power capability. Also AGREEMENT ON rather than ENSURING FULL range of reactive power is available.**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**"Dependable capability" should be changed to "real power capability". The connotation of the the word "dependable" confuses the meaning of the statement. "Voltage regulator controls" and "excitation systems" should be combined to state "voltage regulator and excitation control systems". The required regional procedures shall also cover "generator characteristics".**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**"Annually test to verify…" should be changed to "validate by appropriate means". What is the basis for annual updates versus three years, five years, etc. In addition to testing, other appropriate validation methods should be defined. Validation may be achieved through simulation, operating data, field verification readings, engineering evaluations or reviews, and/or testing where appropriate. Validation requirements shall also vary depending upon the size and type of generating unit.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**What is the basis for the 5-year update? Regarding "testing", see comments provided for II.B.S1.M2.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**What is the basis for the 5-year update? Regarding "testing", see comments provided for II.B.S1.M2. "Voltage regulator controls" and "excitation systems" should be combined to state "voltage regulator and excitation control systems".**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**See comments provided for II.B.S1.M2 and M3.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**What is the basis for the 5-year update? Regarding "testing", see comments provided for II.B.S1.M2.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**There is no agreed upon or approved method to accomplish this. This is more appropriate for a research project than a standard.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**There is no agreed upon or approved method to accomplish this. This is more appropriate for a research project than a standard.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**This is difficult because M1 and M2 are impossible.**

☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**No challenges, but some clarifications:** **Need to make clear that the timeframe in which the Transmission Operator's procedures are due to the Regional Reliability council is "On request (five business days)".** **Need to make clear that the timeframe in the Transmission Operator's procedure that the Generator Operators are required to provide the required information is "on request (five business days)" or should this be "on request (thirty business days)" as specified in III.C.M2.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**Medium challenge with some clarifications:** **Need to make clear that the timeframe in the Transmission Operator's procedure that the Generator Operators are required to provide the required information is "on request (thirty business days)" or should this be "on request (five business days)" as specified in III.C.M1.** **Basing the levels of non-compliance on "X unit-hours, without permission from the Transmission Operator" may be difficult to achieve consensus (from Generator Operators) on X values for various levels. Basis for levels of non-compliance may need to account for the number and size of generators an entity operates.** **The standard and measurement should be revised to reflect the fact that generation stations must have the right to determine when continued operation in Automatic controls is not desirable (such as during regulator failures) to protect the unit. This requirement should be re-written to state that prior approval of the system operator is not required in pre-defined circumstances. In these circumstances the standard/measurement should provide requirements for a timely notification from the plant to the system operator that the switch to manual has occurred.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	

☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Medium challenge with some clarifications:** **Basing the levels of non-compliance on "X unit-hours, without permission from the Transmission Operator" may be difficult to achieve consensus (from Generator Operators) on X values for various levels. Basis for levels of non-compliance may need to account for the number and size of generators an entity operates.** **Recommend that the standard and measurement should be revised to reflect the fact that generation stations must have the right to determine when continued operation at a specified voltage or reactive output is not desirable to protect the unit.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**No challenges.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**No challenges.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Implementation will be a difficult challenge:** **SERC is working on a revision to the supplement for this measure. The challenge is the expertise to make good, well founded requirements. And then within the transmission planning entities, the processes that incorporate the necessary checks that validate meeting the requirements. The challenge to overcome is how to establish the requirement and how to test against the requirements. These are substantial efforts.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Concerns exist with what devices need to be included in this coordination study. IEEE is developing a guide on this. NERC should work with IEEE to develop guides or standards for this prior to making this a requirement.**

☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**Difficult challenge:** **Compare to II.B.M5. (Test results of speed/load governor controls) Can M.9-1(a) portion of this standard be combined with II.B? Does this address the issue of whether a control area can manage the response of units for an overall response or does every unit have to participate (which is implied, but may not be practical). III.C.M9-1 (b) requires some tuning of the control system, which most people will not understand how to do nor want to undertake (don't fix it if it aint broke). Generator Owners don't have the technical expertise to address this question, therefore will push back. M9-1 (a) should be in II.B, M9-1 (b) is the tough one, and M9-1 (c) is easy.** **The SERC Generation Subcommittee has developed a white paper on concerns with the standard, which does not recognize that there are other control systems in many generation plants that will override free governor response and impact generator MW response to frequency transients.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Recommend the measurement be revised by adding the following to the transmission or protection system owners requirements: "Documentation of the planned implementation of the redundancy requirements should be provided to NERC, the Regions, and those entities responsible for the reliability of the interconnected transmission systems on request."** **Recommend that parts A (transmission or protection system owners) and B (Regions) be split into two separate measurements / compliance templates.**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**This measure describes the planning process which is already required for all transmission elements (Standards I.A). The distinction between transmission control devices and other transmission elements seems insufficient to warrant a separate measurement. Recommend that this measurement be eliminated.**

☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M2, Transmission control device models and data	**This measure describes the modeling and data submittal process which is already required for all transmission elements (Standards I.A). The distinction between transmission control devices and other transmission elements seems insufficient to warrant a separate measurement. Recommend that this measurement be eliminated.**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**Recommend that this measurement be eliminated. See comments for III.B.M1 and M2.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**M1 asks for information from owners/operators of UVLS programs. M2 is a database of this information that is submitted to NERC. The information asked for in each of these Measurements is inconsistent. The data collected for M1 should at least include all the items required in M2 (e.g. type of equipment).**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**M1 asks for information from owners/operators of UVLS programs. M2 is a database of this information that is submitted to NERC. The information asked for in each of these Measurements is inconsistent. The data collected for M1 should at least include all the items required in M2 (e.g. type of equipment).**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**These diagrams are considered Critical Energy Infrasture Information. The measurement needs to recognize the confidential nature of this data.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

Although III.C.M11 is not listed in Question 4, we feel this measurement should be classified as Medium. We offer the following comments: The measurement should be revised to only require documentation of misoperations. Documentation of the analysis of all operations should not be required. The second paragraph of the measurement should be revised to:

Documentation of the analysis of misoperations and corrective actions shall be provided to the affected Regions and NERC on request (30 business days).

Nuclear plants have formal Problem Investigation processes with defined time guidelines and manage their resources accordingly. In some cases, this process may allow for more than 30 days to complete investigations into causes of trips. The NERC requirement should not impose unnecessary time requirements more restrictive than existing processes.

In developing these SARs, recognitation needs to be given to data requested that may be considered Critical Energy Infrasture Information. These SARs need to recognize the confidential nature of that data.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Christopher Schaeffer**	
Organization:	**Duke Energy**	
Telephone:	**704 382-3658**	
Email:	**ceschaef@duke-energy.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☒ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Recommend an effort to compare the proposed Planning Standards with existing Operating Standards in version 0 to assure that time is not spent developing redundant standards and to assure there are not inconsistant standard requirements developed. For example;

Operations Standard VAR-001-0 — Voltage and Reactive Control in the version 0 operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards (III.C.S1.M1 and M2) on this issue are apparrently redundent. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 standard, it would be more appropriate to revise that standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

Operating Standard 014 - Monitoring System Conditions already addresses the issues covered by III.C.S2.M3 & M4

Standard 017 - System Protection Coordination already addresses the issues covered by III.C.S6.M10 and III.C.S7.M12.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

To facilitite generation industry involvelment, group all the generator-applicable requirements in the Disturbance Monitoring and Reporting, Modelling and the Protection and Control SAR's to permit a team composed of industry generation and transmissions representitives to focus on those requirements.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Note that this is in Protection Section below as well.** **Many generation entities have processes in place to analyze and correct misoperations of protective relaying and believes this requirement is unnecessary. If kept in the SAR, it should allow for the use of existing problem investigation databases and not require additional documentation.**
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	

☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**In general, the II.B requirements have not been through a due process, so a translation to the new format without evaluating previously developed concerns is inappropriate. The SERC GS members have agreed to the guidelines developed in the SERC IIB Supplement, which was developed in response to the planning standards to develop a consensus approach to address generator model validation and there will likely not be significant resistance in by the SERC generation operators, as long as the new language in the NERC requirement does not invalidate the processes developed in the SERC supplement. Significant differences will likely require the SERC Generator Model Validation task force to be re-established to address.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**No concerns as long as the SERC IIB supplement guidelines are used.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**The SERC GS has concerns that the requirement to test a units reactive capability could lead to the grid being placed frequently into a condition where the ability to mitigate nuclear accidents could be compromised. In the SERC IIB supplement, the first step to verifying the reactive capability is to see if operating data is sufficient to validate numbers. If not, an evaluation is required prior to the commencement of MVAR validation testing at any generator, to assure testing at nearby plants will not adversly affect the ability of the grid to support emergency nuclear plant loads.** **For testing at a nuclear plant, concerns have not been addressed about how a test can be conducted due to NRC 10CFR50.59 regulations, which require the plant operator to assure testing will not impact plant safety. Also, an approach of basing MVAR support only on values demonstrated by test results would likely lead to underestimateing the amount of VAR support available from large plants, which will swing voltage.** **This requirement discusses using analysis to justify VAR capability beyond any capability validated through testing. There needs to be a guidence document developed showing acceptible methods for doing this analyses** **VAR testing activities need to be planned such that testing will not cause violation of other NERC requirments on maintaining voltage schedule.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**SERC IIB Guide allows for off-line testing and a Open Circuit Step Response test for regulator control and limit validation. We have no concerns as long as the SERC IIB supplement guidelines are used.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**It's not clear what testing could be done at a generation plant to accurately determine speed governor settings at typical unit operating MW. The SERC IIB supplement recognizes this and uses a new approach to model validation using generator operating data during frequency transients. This standard, along with the IIICM9 requirement should instead, require the Generator Owner/Operator and the Transmission Provider to work together as necessary to assure the frequency response characteritics of significant generating units are understood and modeled appropriately.**

☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**We do not have concerns, as long as the SERC II B supplement guidence is used, which uses an open circuit step response test to validate response.**
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. The SERC GS has expressed concerns that this standard has not been fully developed and does not address actions the transmission system operator must take to assure nearby generator operation in manual does not adversly affect the ablity of the grid to support nuclear switchyard voltage requirements.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. Believe a log should be maintained by the system operator stating when the report was made and that continued operation in manual does not affect system stability nor adversly affect nuclear switchyerd voltage requirements. If one of these is threatened, the operator should also document what actions were taken to address.**
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Not sure there is a reliability reason for the generator owner to log these events. It would make more sense for the grid operator to evaluate out of band operation and also document any actions taken to adjust.**
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**It's not clear what this is trying to accomplish.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**--CES-- Concerns were identified with what devices need to be included in a coordination study. IEEE is developing a guide on this. Should the standard require all or part of the IEEE guide?**
☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**The SERC GS has developed a white paper on concerns with the standard, which does not recognize that there are other control systems in many generation plants that will override free governor response and impact generator MW response to frequency transients. The new modelling method developed by the WECC and included in the SERC IIB supplement appears to address the GS concerns. This standard, along with the IIBM5 requirement should instead, require the Generator Owner/Operator and the Transmission Provider to work together as necessary to assure the frequency response characteritics of significant generating units are understood and modeled appropriately.**
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	

☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**Protection system testing and protection system maintenance need to be clearly defined and differentiated in Reliability Standard 065- R12-1. I would take testing to be functional testing and maintenance to be individual relay testing, calibration & maintenance. Define scope of generator protection system to include protective relays, instrument transformers and batteries.**
SAR – Black Start Capability		
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Kathleen Goodman**	
Organization:	**ISO New England Inc.**	
Telephone:	**(413) 535-4111**	
Email:	**kgoodman@iso-ne.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☒ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment," was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.

Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, should only be in the Protection and Control SAR.

Measurement I.F.S2.M6, "Use of Disturbance Data to Develop and Maintain Models," is missing and should be added.

IIIA S2 M2 is listed and was not part of the translation tables of Version 0 - was this intentional? What was the rationale and or the source document?

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:

II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR

II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR

III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR

I.F.S2.M5, "Use Database" - Move to Modeling SAR.

The following Measurements do not belong in the Modeling SAR:

III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR

III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Consider whether this better fits in the Protection and Control SAR

III.C.S1.M1-M2 "Generation Voltage Control" and III.C.S2.M3-M4 "Voltage Schedules" are more closely associated with VAR-001 in Version 0 than they are with modeling. They should be placed in VAR-001 as a Version 1 change rather than placed in this Modeling SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Applicable To entities may feel they could be suject to unreasonable Regional requirements for providing disturbance data**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**Compliance should not be measured only by whether or not changes to models were made. Disturbance data could verify models are OK**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Very difficult to measure whether the procedures are "complete" or "incomplete," for compliance or non-compliance**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "I.A" assessments**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by indivdual unit**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Load Serving Entities may not be equipped to determine dynamic demand characteristics**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Generation Owners/Operators may not be equipped to determine this information**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Each region should have analysis or specific requirements to make redundancy requirements clear.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**Requirements for UVLS should only be triggered on an Area's identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Requirements for UVLS should only be triggered on an Area's identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**Requirements for UVLS should only be triggered on an Area's identified need for such a program.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	

☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Confidentiality of these diagrams should be maintained. Is this really a requirement that NERC should have or the Areas or Regions? How will this help maintain reliability and what are the risks associated with having such documentation?**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Requirements for ALR should only be triggered on an Area's identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**Requirements for ALR should only be triggered on an Area's identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Requirements for ALR should only be triggered on an Area's identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**Requirements for ALR should only be triggered on an Area's identified need for such a program.**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

For periodic testing of generator capabilities, it could be problematic to determine how to consistently conduct tests. In addition, there are difficult financial issues to be dealt with.

The group should also consider the resource requirements to test and audit compliance. It would be beneficial to survey the industry to determine the level of current testing. This would provide some idea of the additional resources and implementation time for these new requirements.

Based on previous experience, determination of dynamic load modelling will be a challenge.

It is not clear why the System Restoration standards (IV.B….) are being included in this process. The importance of these particular standards does not seem to warrant fast tracking rather than going through normal due process. Version 0 already has requirements for restoration plans, so any standards developed here should be coordinated with existing Version 0 standards (EOP-005, R7 and R8) to assure consistency and, perhaps, even included in the exisitng Standards through a Version 1 iteration.

The SARS indicate that the resultant Standards are developed and approved in groups or "batches." Although the development of the Standards can be done in groups we suggest "individual ballots" for the resulting Standards.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**John Horakh - Jan. 4, 2005**	
Organization:	**MAAC**	
Telephone:	**609-625-6014**	
Email:	**john.horakh@conectiv.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☒ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment", was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.

Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, should only be in the Protection and Control SAR

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:

II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR

II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR

III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR

The following Measurements do not belong in the Modeling SAR:

III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR

III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Move to Protection and Control SAR

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**Applicable To entities may feel they could be subject to unreasonable Regional requirements for installing disturbance monitoring equipment**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Applicable To entities may feel they could be suject to unreasonable Regional requirements for providing disturbance data**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**Compliance should not be measured only by whether or not changes to models were made. Disturbance data could verify models are OK**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Very difficult to measure whether the procedures are "complete" or "incomplete", for compliance or non-compliance**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "I.A" assessments**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by indivdual unit**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Allow operational data to be used instead of a separate test, if adequate**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Five year test cycle is arbitrary. Allow operational data to be used instead of a separate test, if adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Load Serving Entities may not be equipped to determine dynamic demand characteristics**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Allow procedure to be only that Generation Owner/Operator reports when not in automatic voltage control mode, Transmission Operator keeps and analyzes data**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Generation Owners/Operators may not be equipped to determine this information**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Difficult to determine how much redundancy is required**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Automatic Load Restoration owners/operators may not be equipped to perform this assessment, which should be done on a Regional coordinated basis**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

See additional detailed comments on the II.B.S1.M1-M6 Measurements (System Modeling Data Requirements - Generation Equipment) in the separate document titled "MAAC Position Paper on Generator Testing to Verify Data Required for System Modeling", dated January 8, 2001. Although this document is four years old, the comments in the document are still applicable because these Measurements have not been field tested or changed.

The following quotes from this document are relevant:
"The MAAC Region endorses the intent of this Standard" (II.B.S1)
"The MAAC Region believes that these Measurements" (II.B.S1.M1-M6) "are very important to ensure that the necessary generator modeling data is verified and provided"
"However, MAAC believes the Measurements as currently written are overly restrictive".

Modification of these Measurements is desireable using the "open" Reliability Standards process which has been initiated with these SARs.

MAAC Position Paper on Generator Testing to Verify Data Required for System Modeling

Requirements as per NERC Planning Standards and Measurements in Section II. B. : System Modeling Data Requirements, Generation Equipment

MAAC Standards Compliance Task Force
January 8, 2001

Introduction

Section II. B. of the NERC Planning Standards specifies the System Modeling Data Requirements for Generation Equipment. More specifically, this Section has requirements for generator testing to verify the generator modeling data required in order to perform planning and operating studies used to ensure electric system reliability. The Standard that applies to this Section is as follows:

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

The MAAC Region endorses the intent of this Standard. The new competitive electricity environment has placed increased demands on transmission services, since the transmission system is increasingly used to support competitive electric power transfers. Prior to electricity deregulation, generating units were planned, designed and operated by vertically integrated utility companies, which had an overriding concern for the adequacy and security of their transmission systems. With the advent of deregulation and independent power producers (IPPs), the planning and testing of generating facilities is no longer under the direct control of transmission owners and operators. Therefore, it is necessary to establish modeling data standards for generating facilities in order to meet the increased demand for transmission services while maintaining system reliability.

There are six Measurements that implement the intent of the above Standard (see Appendix A). The first Measurement requires each Region to "establish and maintain procedures for generation equipment data verification and testing for all types of generating units in its Region". The remaining five Measurements require the Generation Equipment Owners to perform various tests and provide modeling data information derived from the tests to the Region. The MAAC Region believes that these Measurements are very important to ensure that the necessary generator modeling data is verified and provided.

However, MAAC believes the Measurements as currently written are overly restrictive. They do not allow enough flexibility for the Regions to establish and maintain their own procedures for generation equipment data verification and testing. They require specific tests to be performed and repeated at specific intervals on all types of generators. The Measurements do not seem to allow engineering judgement and/or manufacturers data to be used in lieu of tests where appropriate. They do not seem to recognize risk and safety concerns for these tests, especially since most generators in North America have not been subjected to most of these tests in the past.

NERC has recognized that these II. B. Measurements, as well as some others, raise somewhat difficult compliance issues, and therefore NERC has positioned them in the last phase (Phase 4) of the multi-year field testing and implementation program. Furthermore, NERC intends to review and revise, as necessary, the Phase 4 Measurements before they are released for field testing in 2002. MAAC is submitting its position on generator testing as an aid to refining, testing and implementing these Measurements.

The remainder of this paper contains the MAAC position on generator testing to verify data required for system modeling. It is organized as follows:

1. Guiding Principles – the overriding principles that the testing requirements must satisfy, and the reasons why these principles are essential
2. Comments on Measurements – based on an analysis of the currently written II. B. Measurements with the Guiding Principals applied, including suggestions for changes.
3. Appendix A – the Compliance Templates for the NERC Planning Standards and Measurements for Section II. B.: System Modeling Data Requirements, Generation Equipment

Guiding Principles

Following are the overriding principles that MAAC believes the testing requirements of the NERC Planning Standards and Measurements in Section II. B. must satisfy, and the reasons why MAAC believes these principles are essential:

1. **Testing requirements should be unit specific/event related, rather than all units/fixed periodic.**
   - Value of doing test varies by unit
   - Each test should have a sound technical basis
   - Tests must be practical. Each Region should determine what testing is meaningful, useful and practical. For example, complete reactive capability verification could be impossible within the voltage constraints of the system
   - Testing requirements should differentiate among the various types of generators; e.g., fossil steam, nuclear, hydro, combustion turbine, and combined cycle
   - Testing of existing units should be event driven rather than periodic
   - A six-year test cycle may be appropriate for all units, since it coordinates with nuclear units' 18-month or 24-month refueling cycles as well as maintenance cycles for other units
   - Testing of nuclear powered units may involve safety-related issues that require NRC review and approval
   - Safety related issues might override the need/value of performing certain tests
   - The Measurements should require model reconciliation whenever actual system response is significantly different than modeled response or when routine equipment maintenance indicates that equipment failure or replacement has occurred

2. **The use of engineering judgement should be allowed.**
   - Before starting any generator testing, the first step is to find out what data you have in place
   - The next step is to "sanity check" the existing data using in-house expertise and system knowledge to determine if the data is correct and adequate. Experienced generators owners and operators typically have a high degree of in-house expertise and system knowledge
   - Manufacturer data should be allowed where appropriate, in lieu of performing an actual test
   - There should be provision for using operational data instead of performing an actual test where appropriate
   - Recognize that there will never be a perfect fit between system modeling and actual system conditions

- The requirement for the accuracy of the machine data used in dynamic simulations should be consistent with the accuracy of the system and load model data used.
- Avoid using overly-complex models that require elaborate testing that adds little or no value to reliability and exposes generators to unwarranted damage risks
- The Measurements should allow a set of industry standard governor and exciter models that are appropriate for the various types of generators being modeled

3. **Testing should minimize the safety and economic risks to personnel and equipment.**
   - Generator testing is risky business--equipment, personnel and the power system are subjected to various testing mode conditions that are not typical
   - Generator testing requires risk mitigation measures
     - Need to recognize and avoid potential safety hazards
     - Need to build employee safety and equipment protection into test plan
     - Need to reduce the exposure to conditions that lead to equipment/system failures
     - Need to understand implications/consequences of tests
     - Requires training/communication
   - Testing should be done with minimum interference to the generator's ability to supply energy to the grid. The general rule should be to disturb the generating plant's operation as little as necessary

Comments on Measurements

Following are MAAC's comments on the NERC Planning Standards and Measurements in Section II. B. They are based on an analysis of the currently written Section II. B. Measurements with the Guiding Principles applied. Suggestions for changes are included where appropriate. Suggested changes are conceptual in nature, not exact wording changes.

II. B. M1.

Brief Description Regional procedures for generation equipment testing.

Measurement

M1. Each Region shall establish and maintain procedures for generation equipment data verification and testing for all types of generating units in its Region. These procedures shall address generator gross and net dependable capability, reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems (including power system stabilizers and other devices, if applicable). These procedures shall also address generating unit exemption criteria and shall require documentation of those generating units that are exempt from a portion or all of these procedures.

This Measurement requires Regional procedures to be established. It should be understood that every Region need not have exactly identical procedures. It should also be understood that the exemption criteria could be based on differences among the various types of generators; e.g., fossil steam, nuclear, hydro, combustion turbine, and combined cycle. In fact, exemption on a generator type basis is easier to justify than exemption on an individual unit basis, which may seem arbitrary.

II. B. M2.

Brief Description Verification of gross and net real power dependable capability of generators.

Measurement

M2. Generation equipment owners shall annually test to verify the gross and net dependable capability of their units. They shall provide the Regions with the following information on request:

- **a. Summer and winter gross and net capabilities of each unit based on the power factor level expected for each unit at the time of summer and winter peak demand, respectively.**
- **b. Active or real power requirements of auxiliary loads.**
- **c. Date and conditions during tests (ambient and design temperatures, generator loading, voltages, hydrogen pressure, high-side voltage, and auxiliary loads).**

Annual tests of the real power capability of generators in the MAAC region are required, but the annual requirement is needed because of the somewhat unique contractual capacity requirements in the MAAC region. An annual testing requirement might not be

needed absent such contractual obligations. Some sort of testing would still probably be required. There should be provision for using operational data instead of performing an actual test where appropriate. Provision of auxiliary load requirements would seem to be redundant if gross and net generator capability were provided. Conditions during the test need not be provided to the Region, but the generation owner should take test conditions into account so that the measured capability can be corrected to "normal" or "standard" conditions as specified by the Region. In this way, all generation capability will be stated on a consistent basis.

II. B. M3.

Brief Description Verification of gross and net reactive power capability of generators.

Measurement

M3. Generation equipment owners shall test to verify the gross and net reactive power capability of their units at least every five years. They shall provide the Regions with the following information on request:

- **a. Maximum sustained reactive power capability (both lagging and leading) as a function of real power output and generator terminal voltage. If safety or system conditions do not allow testing to full capability, computations and engineering reports of estimated capability shall be provided.**
- **b. Reason for reactive power limitation.**
- **c. Reactive power requirements of auxiliary loads.**
- **d. Date and conditions during tests (ambient and design temperatures, generator loading, voltages, hydrogen pressure, high-side voltage, and auxiliary loads).**

Periodic tests of the reactive capability for generators in the MAAC region are not currently required, although some generators have been tested voluntarily. Mandatory tests seem like a good idea, but the five-year periodic requirement seems arbitrary. It may not be necessary to test reactive capability over the whole range of real power output and voltage if minimum / maximum / break points on a calculated curve are verified. There should be provision for using operational data instead of performing an actual test where appropriate. Provision of auxiliary load requirements would seem to be redundant if gross and net generator capability were provided. Conditions during the test need not be provided to the Region, but the generation owner should take test conditions into account so that the measured capability can be corrected to "normal" or "standard" conditions as specified by the Region. In this way, all generation capability will be stated on a consistent basis.

II. B. M4.

Brief Description Test results of generator voltage regulator controls and limit functions.

Measurement

M4. Generation equipment owners shall test voltage regulator controls and limit functions at least every five years. Upon request, they shall provide the Regions with the status of voltage

regulator testing as well as information that describes how generator controls coordinate with the generator's short-term capabilities and protective relays. Test reports shall include minimum and maximum excitation limiters (volts/hertz), gain and time constants, the type of voltage regulator control function, date tested, and the voltage regulator control setting.

Periodic tests of the voltage regulator controls and limit functions for generators in the MAAC region are not currently required, although some generators may have been tested in conjunction with voluntary reactive capability testing. Mandatory tests may be a good idea, but the five-year periodic requirement seems arbitrary. A physical survey to verify the voltage regulating and limiting equipment that is installed and in service, and to note the settings, may be adequate in lieu of actual tests in some cases.

II. B. M5.

Brief Description

Test results of speed/load governor controls.

Measurement

M5. Generation equipment owners shall test speed/load governor controls at least every five years. Upon request, they shall provide the Regions with the status of governor tests as well as with information that describes the characteristics (droop and deadband) of the speed/load governing system.

Periodic tests of speed / load governor controls for generators in the MAAC region are not currently required, and it does not appear that any generators have been voluntarily tested. Mandatory tests may be a good idea, but the five-year periodic requirement seems arbitrary. A physical survey to verify the speed / load governing equipment that is installed and in service, and to note the settings, may be adequate in lieu of actual tests in some cases.

II. B. M6.

Brief Description

Verification of excitation system dynamic modeling data.

Measurement

M6. Generation equipment owners shall verify the dynamic model data for excitation systems (including power system stabilizers and other devices, if applicable) at least every five years. Design data for new or refurbished excitation systems shall be provided at least one year prior to the in-service date with updated data provided once the unit is in service. Open circuit test response chart recordings shall be provided showing generator field voltage and generator terminal voltage. (Brushless units shall include exciter field voltage and current.)

Periodic verification of excitation system dynamic modeling data for generators in the MAAC region is not currently required. Mandatory verification is a good idea, but the five-year periodic requirement seems arbitrary. If tests are required, a six-year test cycle is more appropriate because it fits in better with maintenance cycles. A physical survey to verify the excitation system equipment that is installed and in service, and to note the settings, may be adequate in lieu of actual tests in some cases. The "one year prior to the

in-service date" requirement for design data seems arbitrary. The design data is needed when the generator in question is being studied to determine how it can be reliably integrated into the system; that may or may not be one year prior to in-service. The manufacturer may have adequately tested a newly installed generator, so that the owner of a newly installed generator may not need to test it. The open circuit voltage step test may not be the best or only test required to verify the dynamic modeling data. Provision of test response chart recordings to the Region is not a very beneficial procedure, since this is "raw" data. The Region really wants to know that test response data was properly obtained and properly used to determine and verify the dynamic model. Verification should include simulation of the test using the dynamic model, to insure that the simulation can mimic the actual test.

APPENDIX A

The Compliance Templates for the NERC Planning Standards and Measurements for Section II. B. : System Modeling Data Requirements, Generation Equipment

System modeling is the first step toward reliable interconnected transmission systems. The timely development of system modeling data to realistically simulate the electrical behavior of the components in the interconnected networks is the only means to accurately plan for reliability. To achieve this purpose, the **NERC Planning Standards** on System Modeling Data Requirements (II) establishes a set of common objectives for the development and submission of necessary data for electric system reliability assessment.

The detail in which the various system components are modeled should be adequate for all intra- and interregional reliability assessment activities. This means that system modeling data should include sufficient detail to ensure that system contingency, steady-state, and dynamic analyses can be simulated. Furthermore, any qualified user should be able to recognize significant limiting conditions in any portion of the interconnected transmission systems.

The **NERC Planning Standards, Measurements, and Guides** pertaining to System Modeling Data Requirements (II) are provided in the following sections:

A. System Data
B. Generation Equipment
C. Facility Ratings
D. Actual and Forecast Demands
E. Demand Characteristics (Dynamic)

These **Standards, Measurements, and Guides** shall apply to all system modeling necessary to achieve interconnected transmission system performance as described in the Standards on System Adequacy and Security (I) in this report

Introduction

Validation of generator modeling data through field verification and testing is critical to the reliability of the interconnected transmission systems. Accurate, validated generator models and data are essential for planning and operating studies used to ensure electric system reliability.

Generating capability to meet projected system demands and provide the required amount of generation capacity margins is necessary to ensure service reliability. This generating capability must be accounted for in a uniform manner that ensures the use of realistically attainable values when planning and operating the systems or scheduling equipment maintenance.

Synchronous generators are the primary means of voltage and frequency control in the bulk interconnected electric systems. The correct operation of generator controls can be the crucial factor in whether the electric systems can sustain a severe disturbance without a cascading breakup of the interconnected network. Generator dynamics data is used to evaluate the stability of the electric systems, analyze actual system disturbances, identify potential stability problems, and analytically validate solutions for the identified problems.

Generator reactive capability is commonly derived from the generator real and reactive capability curves supplied by the manufacturer. Reactive power generation limits derived in this manner can be optimistic as heating or auxiliary bus voltage limits may be encountered before the generator reaches its maximum sustained reactive power capability. Manufacturer-provided design data may also not accurately reflect the characteristics of operational field equipment because settings can drift and components deteriorate over time. Field personnel may also change equipment settings (to resolve specific local problems) that may not be communicated to those responsible for developing a system modeling database and conducting system assessments. It is important to know the actual reactive power limits, control settings, and response times of generation equipment and to represent this information accurately in the system modeling data that is supplied to the Regions and those entities responsible for the reliability of the interconnected transmission systems.

Brief Description Regional procedures for generation equipment testing.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M1. Each Region shall establish and maintain procedures for generation equipment data verification and testing for all types of generating units in its Region. These procedures shall address generator gross and net dependable capability, reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems (including power system stabilizers and other devices, if applicable). These procedures shall also address generating unit exemption criteria and shall require documentation of those generating units that are exempt from a portion or all of these procedures.

Applicable to

Regions.

Items to be Measured

Procedures for validating generation equipment data.

Timeframe

On request (five business days).

Full (100%) Compliance Requirement

Each Region shall establish, maintain, and document procedures for generation equipment data verification and testing for all non-exempt generating units in its Region. The equipment to be tested and the data to be reported shall include, as a minimum, those items specified under Measurements M1, M2, M3, M4, M5, and M6 of this Standard II.B. S1. The schedule for the testing of the generation equipment, as defined in Measurements M2, M3, M4, M5, and M6, and the schedule for the submittal of the verification or test data to the Regions shall be included in the Regional procedures. Each Region shall also develop the criteria under which generation equipment may be exempt from a portion or all of the required testing procedures. A list of the exempt units shall be maintained by each Region. Documentation of verification and testing procedures shall be available to all reporting parties on request (five business days).

Levels of Non-Compliance

Level 1

Documentation of Regional procedures for generation equipment testing was provided on schedule, but was incomplete in one or more areas.

Level 2
Documentation of Regional procedures for generation equipment testing was not provided on schedule, but was complete when submitted.

Level 3
Documentation of Regional procedures for generation equipment testing was not provided on schedule, and was incomplete in one or more areas when submitted.

Level 4
Documentation of Regional procedures for generation equipment testing was not provided.

Compliance Monitoring Responsibility
NERC.

Reviewer Comments on Compliance Rating

Brief Description Verification of gross and net real power dependable capability of generators.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M2. Generation equipment owners shall annually test to verify the gross and net dependable capability of their units. They shall provide the Regions with the following information on request:

- **a. Summer and winter gross and net capabilities of each unit based on the power factor level expected for each unit at the time of summer and winter peak demand, respectively.**
- **b. Active or real power requirements of auxiliary loads.**
- **c. Date and conditions during tests (ambient and design temperatures, generator loading, voltages, hydrogen pressure, high-side voltage, and auxiliary loads).**

Applicable to

Generation equipment owners.

Items to be Measured

Verification of gross and net dependable capability of generators.

Timeframe

Annually.

Full (100%) Compliance Requirement

Generation equipment owners shall test annually all of their non-exempt generation equipment for summer and winter gross and net real power (MW) dependable capability according to the Regional procedures under Measurement M1 of this Standard II.B. S1. Operating data may be acceptable as test data providing it was obtained under test-like conditions.

Test conditions and test results shall be documented and all data requested by the Region shall be provided by the generation equipment owners in accordance with the Regional procedures in Measurement M1 of Standard II.B. S1. Exceptions to the schedules in the Regional procedures will need to be agreed to by the Region and the generation equipment owners.

Levels of Non-Compliance

Level 1

Verification of generator gross and net real power dependable capability was provided on schedule, but was incomplete in one or more areas.

Level 2
Verification of generator gross and net real power dependable capability was not provided on schedule, but was complete when submitted.

Level 3
Verification of generator gross and net real power dependable capability was not provided on schedule, and was incomplete in one or more areas when submitted.

Level 4
Verification of generator gross and net real power dependable capability was not provided.

Compliance Monitoring Responsibility
Regions.

Reviewer Comments on Compliance Rating

Brief Description Verification of gross and net reactive power capability of generators.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M3. Generation equipment owners shall test to verify the gross and net reactive power capability of their units at least every five years. They shall provide the Regions with the following information on request:

- **a. Maximum sustained reactive power capability (both lagging and leading) as a function of real power output and generator terminal voltage. If safety or system conditions do not allow testing to full capability, computations and engineering reports of estimated capability shall be provided.**
- **b. Reason for reactive power limitation.**
- **c. Reactive power requirements of auxiliary loads.**
- **d. Date and conditions during tests (ambient and design temperatures, generator loading, voltages, hydrogen pressure, high-side voltage, and auxiliary loads).**

Applicable to

Generation equipment owners.

Items to be Measured

Verification of gross and reactive power capability of generators.

Timeframe

At least every five years.

Full (100%) Compliance Requirement

Generation equipment owners shall test at least every five years all of their non-exempt generating units for reactive power capability according to the Regional procedures required under Measurement M1 of this Standard II.B. S1.

Test conditions and test results shall be documented and all data requested by the Region shall be provided by the generation equipment owners in accordance with the Regional procedures in Measurement M1 of Standard II.B. S1. Exceptions to the schedules in the Regional procedures will need to be agreed to by the Region and the generation equipment owners.

Levels of Non-Compliance

Level 1

Verification of generator gross and net reactive power capability was provided on schedule, but was incomplete in one or more areas.

Level 2

Verification of generator gross and net reactive power capability was not provided on schedule, but was completed when submitted.

Level 3

Verification of generator gross and net reactive power capability was not provided on schedule, and was incomplete in one or more areas when submitted.

Level 4

Verification of generator gross and net reactive power capability was not provided.

Compliance Monitoring Responsibility

Regions.

Reviewer Comments on Compliance Rating

Brief Description Test results of generator voltage regulator controls and limit functions.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M4. Generation equipment owners shall test voltage regulator controls and limit functions at least every five years. Upon request, they shall provide the Regions with the status of voltage regulator testing as well as information that describes how generator controls coordinate with the generator's short-term capabilities and protective relays. Test reports shall include minimum and maximum excitation limiters (volts/hertz), gain and time constants, the type of voltage regulator control function, date tested, and the voltage regulator control setting.

Applicable to

Generation equipment owners.

Items to be Measured

Test results of generator voltage regulator controls and limit functions.

Timeframe

At least every five years.

Full (100%) Compliance Requirement

Generation equipment owners shall test at least every five years all of their non-exempt voltage regulator controls and limit functions in accordance with Measurement M4 above and the Regional procedures required under Measurement M1 of this Standard II.B. S1.

All test data and status information requested by the Region shall be provided by the generation equipment owners in accordance with the Regional procedures in Measurement M1 of Standard II.B. S1. Exceptions to the schedules in the Regional procedures will need to be agreed to by the Region and the generation equipment owners.

Levels of Non-Compliance

Level 1

Test results of generator voltage regulator controls and limit functions were provided on schedule, but were incomplete in one or more areas.

Level 2

Test results of generator voltage regulator controls and limit functions were not provided on schedule, but were complete when submitted.

Level 3
Test results of generator voltage regulator controls and limit functions were not provided on schedule, and were incomplete in one or more areas when submitted.

Level 4
Test results of generator voltage regulator controls and limit functions were not provided.

Compliance Monitoring Responsibility
Regions.

Reviewer Comments on Compliance Rating

Brief Description Test results of speed/load governor controls.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M5. Generation equipment owners shall test speed/load governor controls at least every five years. Upon request, they shall provide the Regions with the status of governor tests as well as information that describes the characteristics (droop and deadband) of the speed/load governing system.

Applicable to

Generation equipment owners.

Items to be Measured

Test results of speed/load governor controls.

Timeframe

At least every five years.

Full (100%) Compliance Requirement

Generation equipment owners shall test at least every five years all of their non-exempt speed/load governor controls according to the Regional procedures required under Measurement M1 of this Standard II.B. S1. They shall also provide on request (within 30 days) information on the characteristics (droop and deadband) of the speed/load governing system.

All test data and status information requested by the Region shall be provided by the generation equipment owners in accordance with the Regional procedures in Measurement M1 of Standard II.B. S1. Exceptions to the schedules in the Regional procedures will need to be agreed to by the Region and the generation equipment owners.

Levels of Non-Compliance

Level 1

Test results of speed/load governor controls were provided on schedule, but were incomplete in one or more areas.

Level 2

Test results of speed/load governor controls were not provided on schedule, but were complete when submitted.

Level 3
Test results of speed/load governor controls were not provided on schedule, and were incomplete in one or more areas when submitted.

Level 4
Test results of speed/load governor controls were not provided.

Compliance Monitoring Responsibility
Regions.

Reviewer Comments on Compliance Rating

Brief Description Verification of excitation system dynamic modeling data.

Section II. System Modeling Data Requirements
B. Generation Equipment

Standard

S1. Generation equipment shall be tested to verify that data submitted for steady-state and dynamics modeling in planning and operating studies is consistent with the actual physical characteristics of the equipment. The data to be verified and provided shall include generator gross and net dependable capability, gross and net reactive power capability, voltage regulator controls, speed/load governor controls, and excitation systems.

Measurement

M6. Generation equipment owners shall verify the dynamic model data for excitation systems (including power system stabilizers and other devices, if applicable) at least every five years. Design data for new or refurbished excitation systems shall be provided at least one year prior to the in-service date with updated data provided once the unit is in service. Open circuit test response chart recordings shall be provided showing generator field voltage and generator terminal voltage. (Brushless units shall include exciter field voltage and current.)

Applicable to

Generation equipment owners.

Items to be Measured

Verification of excitation system dynamic modeling data.

Timeframe

At least every five years.

Full (100%) Compliance Requirement

Generation equipment owners shall provide at least every five years data to verify the dynamic model for excitation systems of non-exempt generator units in accordance with Measurement M6 above and the Regional procedures required under Measurement M1 of this Standard II.B. S1. They shall also provide design data for new or refurbished excitation systems in accordance with Measurement M6 above.

All data verification and test results requested by the Region shall be provided by the generation equipment owners in accordance with the Regional procedures in Measurement M1 of Standard II.B. S1. Exceptions to the schedules in the Regional procedures will need to be agreed to by the Region and the generation equipment owners.

Levels of Non-Compliance

Level 1

Verification of excitation system dynamic modeling data was provided on schedule, but was incomplete in one or more areas.

Level 2

Verification of excitation system dynamic modeling data was not provided on schedule, but was complete when submitted.

Level 3
Verification of excitation system dynamic modeling data was not provided on schedule, and was incomplete in one or more areas when submitted.

Level 4
Verification of excitation system dynamic modeling data was not provided.

Compliance Monitoring Responsibility
Regions.

Reviewer Comments on Compliance Rating

II. System Modeling Data Requirements
B. Generation Equipment

G1. The following guidelines should be observed during testing of the reactive power capability of a generator:

a. The reactive power capability curve for each generating unit should be used to determine the expected reactive power capability.

b. Units should be tested while maintaining the scheduled voltage on the system bus. Coordination with other units may be necessary to maintain the scheduled voltage.

c. Hydrogen pressure in the generating unit should be at rated operating pressure.

d. Overexcited tests should be conducted for a minimum of two hours or until temperatures have stabilized.

e. When the maximum sustained reactive power output during the test is achieved, the following quantities should be recorded: generator gross MW and Mvar output, auxiliary load MW and Mvar, and generator and system voltage magnitudes.

G2. Most modern voltage regulators have limiting functions that act to bring the generating unit back within its capabilities when the unit experiences excessive field voltage, volts per hertz, or underexcited reactive current. These limiters are often intended to coordinate with other controls and protective relays. Testing should be done that demonstrates correct action of the controls and confirms the desired set points.

G3. Generation equipment owners should make a best effort to verify data necessary for system dynamics studies. An “open circuit step in voltage” is an easy to perform test that can be used to validate the generating unit and excitation system dynamics data. The open circuit test should be performed with the unit at rated speed and voltage but with its breakers open. Generator terminal voltage, field voltage, and field current (exciter field voltage and current for brushless excitation systems) should be recorded with sufficient resolution such that the change in voltages and current are clearly distinguishable.

G4. More detailed test procedures should be performed when there are significant differences between “open circuit step in voltage” tests and the step response predicted with the model data. Generator reactance and time constant data can be derived from standstill frequency response tests.

G5. The response of the speed/load governor controls should be evaluated for correct operation whenever there is a system frequency deviation that is greater than that established by the Regional procedures.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **ISO/RTO Council**

Lead Contact: Karl Tammar

Contact Organization: NY-ISO

Contact Segment: 2

Contact Telephone: 518-356-6205

Contact Email: ktammar@nyiso.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Dale McMaster	AESO	WECC	2
Ed Riley	CAISO	WECC	2
Sam Jones	ERCOT	ERCOT	2
Peter Henderson	IESO	NPCC	2
Peter Brandien	ISO-NE	NPCC	2
Bill Phillips	MISO	MAIN	2
Karl Tammar	NYISO	NPCC	2
Bruce Balmat	PJM	MAAC	2
Charles Yeung	SPP	SPP	2

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment", was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.

Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, should only be in the Protection and Control SAR.

Measurement I.F.S2.M6, "Use of Disturbance Data to Develop and Maintain Models", is missing and should be added.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:

II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR

II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR

III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR

I.F.S2.M5, "Use Database" does not belong in the Disturbance Monitoring and Reporting SAR. - Move to Modeling SAR.

The following Measurements do not belong in the Modeling SAR:

III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR

III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Consider whether this better fits in the Protection and Control SAR

III.C.S1.M1-M2 "Generation Voltage Control" and III.C.S2.M3-M4 "Voltage Schedules" are more closely associated with VAR-001 in Version 0 than they are with modeling. They should be placed in VAR-001 as a Version 1 change rather than placed in this Modeling SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Applicable To entities may feel they could be suject to unreasonable Regional requirements for providing disturbance data**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**Compliance should not be measured only by whether or not changes to models were made. Disturbance data could verify models are OK**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Very difficult to measure whether the procedures are "complete" or "incomplete", for compliance or non-compliance**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "I.A" assessments**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by indivdual unit**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Allow operational data to be used instead of a separate test, if adequate**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Five year test cycle is arbitrary. Allow operational data to be used instead of a separate test, if adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Load Serving Entities may not be equipped to determine dynamic demand characteristics**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Allow procedure to be only that Generation Owner/Operator reports when not in automatic voltage control mode, Transmission Operator keeps and analyzes data**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Generation Owners/Operators may not be equipped to determine this information**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Each region should have analysis or specific requirements to make redundancy requirements clear.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Does not address the issue of security of such diagrams. Confidentiality of these diagrams should be maintained.**

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Automatic Load Restoration owners/operators may not be equipped to perform this assessment, which should be done on a Regional coordinated basis**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

For periodic testing of generator capabilities, it could be problematic to determine how to consistently conduct tests. In addition, there are difficult financial issues to be dealt with.

Based on previous experience, determination of dynamic load modelling will be a challenge.

It is not clear why the System Restoration standards (IV.B….) are being pushed through this process. The importance of these particular standards does not seem to warrant fast tracking rather than going through normal due process. Version 0 already has requirements for restoration plans, so any standards developed here should be coordinated with existing Version 0 standards (EOP-005, R7 and R8) to assure consistency.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**John Mulhausen**	
Organization:	**Florida Power & Light Co.**	
Telephone:	**561-694-5008**	
Email:	**john_j_mulhausen@fpl.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☒ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☐ No.

Comments

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☒ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**Item 4 requires a list of all quantities monitored. Compiling the list is highly labor intensive and adds no value. Likewise, the standard should not establish maintenance requirements at the channel level but only at the equipment or machine level.**
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	

☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Common communication channels, single battery banks and non-redundant potential transformers represent points of contention.**
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Doug Hils**	
Organization:	**Cinergy**	
Telephone:	**513-287-2149**	
Email:	**doug.hils@cinergy**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT	☒	1 - Transmission Owners
☒ ECAR	☐	2 - RTOs, ISOs, Regional Reliability Councils
☐ FRCC	☐	3 - Load-serving Entities
☐ MAAC	☐	4 - Transmission-dependent Utilities
☐ MAIN	☐	5 - Electric Generators
☐ MAPP	☐	6 - Electricity Brokers, Aggregators, and Marketers
☐ NPCC	☐	7 - Large Electricity End Users
☐ SERC	☐	8 - Small Electricity End Users
☐ SPP	☐	9 - Federal, State, Provincial Regulatory or other Government Entities
☐ WECC		
☐ NA - Not Applicable		

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☐ No.

Comments
Assumed the drafting team has compared the Version 0 list and this latest list to determine if complete.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Some of these proposed standards deal with reporting requirements and it is questionaable that there is a direct link to reliability for those standards. Some contain requirements covered in the Version 0 standards and should be eliminated.Given the short amout of time allotted to develop these new standards, every effort should be made to reduce the number of standards with the goal of concentrating on performance requirements instead of presciptive measures on how to achieve that performance.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

The term "modeling" is somewhat mis-leading considering the measures included in that group. Several of these measures include requirements for generator testing and a generator owner may not realize this and skip over reviewing them. A more descriptive name should be used such as "Modeling and generator testing and reporting".

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	**do we really need a standard to force entities to make use of a database? recommend eliminating this standard**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Recommend combining this with II.D.S1.M1 or eliminating it. Should be obvious that any reporting procedure should ensure against double counting so why make a standard?**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Recommend combining this with II.D.S1.M1 or eliminating it.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**If you meet Table I.A as required in this standard then why do you need a separate standard? Based on the wording of this standard there are no new requirements above I.A so delete this standard.**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**This standard appears vague and would be hard to measure. How do you measure "optimize"? The II.B standards on testing and verification of generator data and the III.C standards on procedures for reporting data already cover getting the required data.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	

☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Will require tests that are not routinely done today which will impose a cost every five years. Believe this data is important however.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Will require tests that are not routinely done today which will impose a cost every five years. Believe this data is important however.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Will require tests that are not routinely done today which will impose a cost every five years. Believe this data is important however.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Will require tests that are not routinely done today which will impose a cost every five years. Believe this data is important however.**
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☒ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Isn't this already covered in II.B.S1.M4?**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**The requirement for coordination of boiler controls was a confusing issue during audits that included this standard.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Recommend eliminating this standard. If performance requirements of Table I.A are not met then transmission owner should have flexibility to use any available solution and not be restricted to redundant system protection components.**
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**This measure requires submittal of data to model the transmission control device. Modeling data is covered in Version 0 standard 058.2 (Steady-state data) and 058.3 (Dynamics data) so this standard should be eliminated.**
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**This is a duplicate already listed. Assume this was meant to be III.C.S6.M11.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	

☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Ray Morella**	
Organization:	**FirstEnergy Corporation**	
Telephone:	**330.384.5686**	
Email:	**morellar@firstenergycorp.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT	☒	1 - Transmission Owners
☒ ECAR	☐	2 - RTOs, ISOs, Regional Reliability Councils
☐ FRCC	☐	3 - Load-serving Entities
☒ MAAC	☐	4 - Transmission-dependent Utilities
☐ MAIN	☐	5 - Electric Generators
☐ MAPP	☐	6 - Electricity Brokers, Aggregators, and Marketers
☐ NPCC	☐	7 - Large Electricity End Users
☐ SERC	☐	8 - Small Electricity End Users
☐ SPP	☐	9 - Federal, State, Provincial Regulatory or other Government Entities
☐ WECC		
☐ NA - Not Applicable		

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments
II.D.S1.M2 and II.D.S1-S2.M3 should be moved to the Modeling SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**The use of the term disturbance monitoring needs to be used consistently. For example, ECAR uses the term disturbance monitoring as an umbrella covering fault monitoring, sequence of events monitoring, and long-term disturbance monitoring. Many people in the industry use the term disturbance monitoring to imply only long-term disturbance monitoring. The SAR and the standards produced as a result of the SAR need to clearly define these terms.**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**The use of the term disturbance data needs to be used consistently. What data is required to be recorded? How will the data be captured - continuously or event triggered?**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**In the detailed description section there is a reference to planning standard IFS2M5. It is not clear what is meant by "Use database" and which data is involved.**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**How does the standard involving the double counting or omission of customer load data relate to this standard? This sounds more like something associated with UVLS or UFLS standards or operating guides. Should be put in Modeling SAR.**
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Should be put in Modeling SAR. Implementation of comment format.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Implementation of procedure (lack of expertise).**
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**No guideline to define the balance between static and dynamic.**

☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Ensuring full range reactive power capability under emergency voltage ranges will be hard to define. Voltage vs. duration curves would need to be agreed upon, potentially causing issues.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Procedures for providing the information is easily developed but actual data is difficult to aquire. Agreed upon methods may provide issues.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**The issues arise when the units can not reach the reactive power levels due to system conditions. The creation of an easy and accurate calculation method needs to be developed. This calculation can not predict issues of vibration , overheating and relay issues.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Issues related to testing procedures will arise and be difficult to resolve due to the wide varity of regulators in use. The intent of the standard will need to be defined to help with this issue.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Present methods are relatively easy to perform with some calling for the governor to be sent to a shop for testing. The validity of each method will need to be discussed. The ASME method of testing is extremely complicated and will be difficult to follow if required.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Standardized testing has not been developed and will be difficult to accomplish. The intended purpose of this standard needs to be clearly defined to help develop a proper testing method.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**How will this be accomplished? Extremely costly and time consumming. Is it worth it for all or just a defined few that studies indicated a need? Need special equipment to measure characteristics.**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Refer to comments given for II.E.S1.M1.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Refer to comments given for II.E.S1.M1.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	

☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**Present compliance levels puts a company into non-compliance if this standard is not met for a second. If the notification is not made before the event one could be in non-compliance. The standard should have some deadband in response time.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Present compliance levels puts a company into non-compliance if this standard is not met for a second. If the notification is not made before the event one could be in non-compliance. The standard should have some deadband in response time**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Defining and agreeing on the "temporary excursions" definitions will be difficult to reach agreement between transmission owners and generation operators. The possiblitiy of testing at these conditions will most likely not be probable.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**The reporting is not going to be an issue but the issue will be the methods used to obtain the test data as mentioned in the other standard requiring the testing of equipment.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**The reporting is not going to be an issue but the issue will be the methods used to obtain the test data as mentioned in the other standard requiring the testing of equipment.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Change the word Redundancy to Backup.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**What is considered to be included in transmission control devices? Are these devices that operate for non-fault conditions and are designed to keep the system in a normal stable condition such as FACTS devices, SVCs, transformer LTCs? Does this include automatic reclosing schemes for circuit breakers?**

☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M2, Transmission control device models and data	**What is considered to be included in transmission control devices? Are these devices that operate for non-fault conditions and are designed to keep the system in a normal stable condition such as FACTS devices, SVCs, transformer LTCs? Does this include automatic reclosing schemes for circuit breakers?**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**Response dependent on scope comment in previoius 2 questions.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Easy to develop standard but may be difficult to implement.**
☐ Easy ☐ Medium ☒ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**How do these UVLS standards differ from the existing standards for UVLS installations? Coordination among TX and generation companies and NERC regions may be difficult.**
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**How do these UVLS standards differ from the existing standards for UVLS installations?**
☐ Easy ☐ Medium ☒ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**How do these UVLS standards differ from the existing standards for UVLS installations?**
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**It seems like some of these standards are already included in ECAR's compliance program such as IIICS7M12. Will the new standard absorb or overlay similar existing standards.**
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**This should be easy as long as simualtion data remains acceptable.**
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**A good idea to have a coordinated effort with neighboring Control Areas involved to provide input and have an accurate diagram including knowledge of neighboring Control Areas cababilities.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**FE does not have any auto load restoration programs**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**FE does not have any auto load restoration programs**

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**FE does not have any auto load restoration programs**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**FE does not have any auto load restoration programs**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

Disturbance Monitoring and Reporting:
- The drafting team should include expertise from both the transmission and generation owners.

- It seems as though some of the standards referenced in the detailed description are outside of the Phase III/IV category resulting in some overlap with the Version 0 standards. Are all of the standards listed in the detailed description untested?

Protection and Control:
- The drafting team should include expertise from both the transmission and generation owners.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Ken Goldsmith**	
Organization:	**Alliant Energy**	
Telephone:	**319-786-4167**	
Email:	**kengoldsmith@alliantenergy.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☒ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

We question the need for all the data being requrested in II.E.S1.M1-M3. We are not sure if it is possible to get all the data from customers to that level of detail.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Many customers are not willing to share this type of data - may be difficult to document the customers' requirements.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**How is this to be gathered. Most customers do not have the level of telemetering required to gather the data.**
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**Why is this information needed? They are not modeled in most programs.**
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	

☐ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

While we agree that most of the functions are necesssary, we as stakeholders need some assurances that there will not be overlap, duplication by RRO's, and overly costly to implement.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Kenneth John Dresner**	
Organization:	**FirstEnergy Solutions**	
Telephone:	**330-384-7916**	
Email:	**kjdresner@firstenergycorp.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT	☐	1 - Transmission Owners
☒ ECAR	☐	2 - RTOs, ISOs, Regional Reliability Councils
☐ FRCC	☐	3 - Load-serving Entities
☒ MAAC	☐	4 - Transmission-dependent Utilities
☐ MAIN	☒	5 - Electric Generators
☐ MAPP	☐	6 - Electricity Brokers, Aggregators, and Marketers
☐ NPCC	☐	7 - Large Electricity End Users
☐ SERC	☐	8 - Small Electricity End Users
☐ SPP	☐	9 - Federal, State, Provincial Regulatory or other Government Entities
☐ WECC		
☐ NA - Not Applicable		

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Implementation of procedure (lack of expertise).**
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Ensuring full range reactive power capability under emergency voltage ranges will be hard to define. Voltage vs. duration curves would need to be agreed upon, potentially causing issues.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Procedures for providing the information is easily developed but actual data is difficult to aquire. Agreed upon methods may provide issues.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**The issues arise when the units can not reach the reactive power levels due to system conditions. The creation of an easy and accurate calculation method needs to be developed. This calculation can not predict issues of vibration , overheating and relay issues.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Issues related to testing procedures will arise and be difficult to resolve due to the wide varity of regulators in use. The intent of the standard will need to be defined to help with this issue.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Present methods are relatively easy to perform with some calling for the governor to be sent to a shop for testing. The validity of each method will need to be discussed. The ASME method of testing is extremely complicated and will be difficult to follow if required.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Standardized testing has not been developed and will be difficult to accomplish. The intended purpose of this standard needs to be clearly defined to help develop a proper testing method.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**How will this be accomplished? Extremely costly and time consumming. Is it worth it for all or just a defined few that studies indicated a need? Need special equipment to measure characteristics.**
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**Present compliance levels puts a company into non-compliance if this standard is not met for a second. If the notification is not made before the event one could be in non-compliance. The standard should have some deadband in response time.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	

☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Present compliance levels puts a company into non-compliance if this standard is not met for a second. If the notification is not made before the event one could be in non-compliance. The standard should have some deadband in response time**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Defining and agreeing on the "temporary excursions" definitions will be difficult to reach agreement between transmission owners and generation operators. The possiblitiy of testing at these conditions will most likely not be probable.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**The reporting is not going to be an issue but the issue will be the methods used to obtain the test data as mentioned in the other standard requiring the testing of equipment.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**The reporting is not going to be an issue but the issue will be the methods used to obtain the test data as mentioned in the other standard requiring the testing of equipment.**
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	

☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**It seems like some of these standards are already included in ECAR's compliance program such as IIICS7M12. Will the new standard absorb or overlay similar existing standards.**
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

Disturbance Monitoring and Reporting:
- The drafting team should include expertise from both the transmission and generation owners.

- It seems as though some of the standards referenced in the detailed description are outside of the Phase III/IV category resulting in some overlap with the Version 0 standards. Are all of the standards listed in the detailed description untested?

Protection and Control:
- The drafting team should include expertise from both the transmission and generation owners.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Ed Davis**	
Organization:	**Entergy Services**	
Telephone:	**504-310-5884**	
Email:	**edavis@entergy.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☒ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Some of the Phase III and Phase IV Planning Standards are superfluous. For example, the I.D measurements have been incorporated into the I.A measurements over the past several years. Flexibility must continue to exist to permit the Standards Drafting Team to eliminate those Standards which are no longer needed.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

III.C.M10 should be deleted from the Monitoring SAR. It is duplicated in the Protection SAR, which is where it should reside.

III.C.M11 should be added to the Protection SAR. It is not included on any SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	**Mostly a duplicate of M4, to provide disturbance data to the Region as defined by the Region. Could be pared down to only require Region to maintain a database of the data. Would be better to simply eliminate the requirement.**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Should be eliminiated, or added to II.D.M1.**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**II.D.M1 states that data must be consistent for I.B, II.A, and II.D. That covers the requirement of II.D.M3, and thus this measurement should be eliminated.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Should be relocated to Protection SAR. The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Measurement was captured in the I.A measurements during their development, and should be eliminated.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Applicability should be changed to the Planning Authority.**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**

☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
	SAR – Protection and Control	

☒ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**It is my understanding that this measurement no longer exists.**
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition. Also, the applicability may be better suited to someone in a planning role.**
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition. Also, the applicability may be better suited to someone in a planning role.**
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**Development of this standard will be viewed upon by many as a new requirement, and will likely face stiff opposition. Also, the applicability may be better suited to someone in a planning role.**
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**The III.C Measurements met stiff opposition in the SERC Region when they were first introduced during Phase III of the Compliance Program. Many felt that the requirements, themselves, were fundamentally flawed. Without significant rewrite, the III.C measurements will not easily reach consensus.**
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☒ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **CP9**

Lead Contact: Guy V. Zito

Contact Organization: Northeast Power Coordinating Council

Contact Segment: 2

Contact Telephone: 212-840-1070

Contact Email: gzito@npcc.org

Additional Member Name	Additional Member Organization	Region*	Segment*
Kathleen Goodman	ISO-New England	NPCC	2
Ralph Rufrano	New York Power Authority	NPCC	1
Greg Campoli	NYISO	NPCC	2
Peter Lebro	National Grid US	NPCC	1
Khaqan Khan	IESO, Ontario	NPCC	2
Al Adamson	New York State Reliability Coun.	NPCC	2
David Kiguel	HydroOne Networks Inc, Ontario	NPCC	1
Roger Champagne	TransEnergie, Quebec	NPCC	1
Robert Pelligrini	United Illuminating	NPCC	1
David Little	Nova Scotia Power	NPCC	1
Brian Hogue	NPCC	NPCC	2
Jerry Mosier	NPCC	NPCC	2
Guy Zito	NPCC	NPCC	2

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments
III C S6 M10 Is listed twice once in Disturbance Monitoring and once in the Protection and Control

IIIC S6 M11 appears to be missing from the SARs perhaps these were a typo?

IIIA S2 M2 is listed and was not part of the translation tables of Version 0- was this intentional what was the rationale.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

NPCC Has concerns that the grouping is disjointed. There are groupings done that place standards together that don't appear to have anything in common. We would suggest that for the purposes of development-the standards regrouped into the four categories and the technical drafting teams then be formed.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	

☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☒ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Not in the Translation of Version 0 -**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of UVLS**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of UVLS**
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of UVLS**
☐ Easy ☐ Medium ☒ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of ALR**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of ALR**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of ALR**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**Yes but only where it exists--Documentation of such a program would be considered easy but this should not be considered as an endorsement of the use of ALR**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

Blackstart Capability SAR;

1. NPCC participating members fully support the need to develop the remaining planning standards regarding black-start (IV.A.M2 and M3) in this SAR group to complement the 2 (IV.A.M1 & M4) translated in version 0 (EOP-007 & EOP-009).
2. It should be stressed that these 2 black-start standards must be developed with due consideration of the version 0 standard EOP-005 "System Restoration Plan" R7 and R8 to ensure consistency, eliminate duplication and incorporated as additional requirements to standard EOP-005. In other words these 2 black-start planning standards should form part of the overall system restoration plan.
3. In translating these particular standards, there may be a need to expand this SAR to include the Version 0 existing planning standards associated with Restoration and Blackstart during the open comment process since they have never been fully field tested and to capture issues of physical security regarding the diagrams identifying locations of Black-start facilities.
4. NPCC questions the emphasis being placed on the development of the Automatic Load Restoration standards (IV.B.M1-M4), for May 2005. These particular Phase IV standards have never been field tested and will require more time than is being afforded to appropriately develop. In addition NPCC does not employ automatic load restoration.

Several of the SAR groups have standards that could be better severed as separate SARs to align with the version 0 standards already developed. As an example III.C.M1 to M4 (part of modelling SAR) address standards to maintain reactive resources and voltage level and are related to Version 0 standard VAR-001. These could be grouped as a separate SAR to ensure consistency, eliminate duplication and incorporated as additional requirements to standard Version 0 standard VAR-001.

General Comment;
Different standards of related measures currently appear under different SARs.

The SARS indicate that the resultant Standards are developed and approved in groups or "batches". Although the development of the Standards can be done in groups we suggest "individual ballots" for the resulting Standards.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Peter Henderson**	
Organization:	**IESO**	
Telephone:	**905 855 6258**	
Email:	**peter.henderson@theIMO.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☒ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment", was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.

Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, it should only be in the Protection and Control SAR.

Measurement I.F.S2.M6, "Use of Disturbance Data to Develop and Maintain Models", is missing and should be added to the Modeling SAR.

Measurement III.A.S2.M2 is listed in the Protection SAR, however it was not part of translation tables of Version 0, draft 1. While this may be appropriate to include it in Protection SAR, please provide the rationale for its inclusion.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:

II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR

II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR

III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR

The following Measurements do not belong in the Modeling SAR:

III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR

III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Consider whether this better fits in the Protection and Control SAR

III.C.M1 to M4 these could be better severed as a separate SARs to align with the version 0 standard already developed instead of as part of the modeling SAR. They specify requirements to maintain reactive resources and voltage level and are closer aligned to Version 0 standard VAR-001. These should be grouped as a separate SAR to ensure consistency, eliminate duplication and incorporated as additional requirements to standard Version 0 standard VAR-001

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Very difficult to measure whether the procedures are "complete" or "incomplete", for compliance or non-compliance**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "I.A" assessments**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by indivdual unit**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Allow operational data to be used instead of a separate test, if adequate**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Five year test cycle is arbitrary. Allow operational data to be used instead of a separate test, if adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Load Serving Entities may not be equipped to determine dynamic demand characteristics**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Allow procedure to be only that Generation Owner/Operator reports when not in automatic voltage control mode, Transmission Operator keeps and analyzes data**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☒ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Generation Owners/Operators may not be equipped to determine this information**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Each region should have analysis or specific requirements to make redundancy requirements clear.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**Documentation of such program would be easy but this should be applicable where such schemes already exists.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Documentation of such program would be easy but this should be applicable where such schemes already exists.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**Documentation of such program would be easy but this should be applicable where such schemes already exists.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Does not address the issue of security of such diagrams. Confidentiality of these diagrams should be maintained.**

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Documentation of such program would be easy but this should be applicable where such schemes already exists.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**Documentation of such program would be easy but this should be applicable where such schemes already exists.**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Automatic Load Restoration owners/operators may not be equipped to perform this assessment, which should be done on a Regional coordinated basis**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

For periodic testing of generator capabilities, it could be problematic to determine how to consistently conduct tests. In addition, there are difficult financial issues to be dealt with.

Based on previous experience, determination of dynamic load modelling will be a challenge.

It is not clear why the System Restoration standards (IV.B….) are being pushed through this process. The importance of these particular standards does not seem to warrant fast tracking rather than going through normal due process. Version 0 already has requirements for restoration plans, so any standards developed here should be coordinated with existing Version 0 standards (EOP-005, R7 and R8) to assure consistency.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Michael C. Calimano**	
Organization:	**New York Independent System Operator**	
Telephone:	**518-356-6129**	
Email:	**mcalimano@nyiso.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☒ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

Measurement III.C.S6.M11, "Analysis of misoperations of generator protection equipment", was removed from Version 0, but does not appear in any of the four SARs. It should be included in the Protection and Control SAR.

Measurement III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" is duplicated in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR, should only be in the Protection and Control SAR.

Measurement I.F.S2.M6, "Use of Disturbance Data to Develop and Maintain Models", is missing and should be added.

IIIA S2 M2 is listed and was not part of the translation tables of Version 0- was this intentional what was the rationale and or the source document.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

The following Measurements do not belong in the Disturbance Monitoring and Reporting SAR:

II.D.S1.M2, "Reporting procedures that ensure against double counting or omission of customer demand data" - Move to Modeling SAR

II.D.S1-S2.M3, "Procedures requiring consistency of data reported for reliability purposes and to gvt agencies" - Move to Modeling SAR

III.C.S6.M10, "Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment" - Move to Protection and Control SAR

I.F.S2.M5, "Use Database" does not belong in the Disturbance Monitoring and Reporting SAR. - Move to Modeling SAR.

The following Measurements do not belong in the Modeling SAR:

III.C.S3.M7, "Requirements for withstanding temporary excursions in frequency, voltage, etc" - Move to Protection and Control SAR

III.C.S4.M8, "Info on generator controls coordination with unit's short-term capabilities & protective relays" - Consider whether this better fits in the Protection and Control SAR

III.C.S1.M1-M2 "Generation Voltage Control" and III.C.S2.M3-M4 "Voltage Schedules" are more closely associated with VAR-001 in Version 0 than they are with modeling. They should be placed in VAR-001 as a Version 1 change rather than placed in this Modeling SAR.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Applicable To entities may feel they could be suject to unreasonable Regional requirements for providing disturbance data**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**Compliance should not be measured only by whether or not changes to models were made. Disturbance data could verify models are OK**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Very difficult to measure whether the procedures are "complete" or "incomplete", for compliance or non-compliance**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Unclear if this requires procedures for consistency, as in Full Compliance, or consistent data, as in Levels of Non-Compliance**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**NOTE: DUPLICATE ENTRY. REMOVE FROM THIS LOCATION, LEAVE IN PROTECTION AND CONTROL SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Implies that a separate reactive assessment must be made, but it is possible, and probably better, to do reactive assessment in the "I.A" assessments**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**Coordination of the use of generator reactive capability can be measured, very difficult to measure if completely "optimized"**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Allow Regional procedures to vary. Allow exemptions to be made by type of generator, not just by indivdual unit**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Allow operational data to be used instead of a separate test, if adequate**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Five year test cycle is arbitrary. Allow operational data to be used instead of a separate test, if adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Five year test cycle is arbitrary. A physical survey to verify the equipment installed and in service, and to note settings, may be adequate. Open circuit test may not be the best or only test needed**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Unclear how the Regional determination of dynamic demand characteristics (II.E.S1.M1) fits in with the Interconnections' determination of dynamic demand characteristics (II.E.S1.M2)**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Load Serving Entities may not be equipped to determine dynamic demand characteristics**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Allow procedure to be only that Generation Owner/Operator reports when not in automatic voltage control mode, Transmission Operator keeps and analyzes data**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**There is an incentive not to report, and penalties for a larger number of reported incidents**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Generation Owners/Operators may not be equipped to determine this information**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Each region should have analysis or specific requirements to make redundancy requirements clear.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**"Transmission Control Devices" needs to be clearly defined**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Needs to be clear that the focus is to find and correct misoperations. NOTE; INSERT III.C.S6.M11 AFTER THIS MEASUREMENT**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**Requirements for UVLS should only be triggered on an areas identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Requirements for UVLS should only be triggered on an areas identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**Requirements for UVLS should only be triggered on an areas identified need for such a program.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Need to address the issue of security of such diagrams. Confidentiality of these diagrams should be maintained.**

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Requirements for ALR should only be triggered on an areas identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**Requirements for ALR should only be triggered on an areas identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Requirements for ALR should only be triggered on an areas identified need for such a program.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**Requirements for ALR should only be triggered on an areas identified need for such a program.**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

For periodic testing of generator capabilities, it could be problematic to determine how to consistently conduct tests. In addition, there are difficult financial issues to be dealt with.

The group should also consider the resource requirements to test and audit compliance. It would be beneficial to survey the industry to determine the level of current testing. This would provide some idea of the additional resources and implementation time for these new requirements.

Based on previous experience, determination of dynamic load modelling will be a challenge.

It is not clear why the System Restoration standards (IV.B….) are being pushed through this process. The importance of these particular standards does not seem to warrant fast tracking rather than going through normal due process. Version 0 already has requirements for restoration plans, so any standards developed here should be coordinated with existing Version 0 standards (EOP-005, R7 and R8) to assure consistency.

The SARS indicate that the resultant Standards are developed and approved in groups or "batches". Although the development of the Standards can be done in groups we suggest "individual ballots" for the resulting Standards.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Lance Hall**	
Organization:	**Cinergy**	
Telephone:	**513-287-5323**	
Email:	**lhall2@cinergy.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☒ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☐ No.

Comments
Assumed the drafting team has compared the Version 0 list and this latest list to determine if complete.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Some of these proposed standards deal with reporting requirements and it is questionaable that there is a direct link to reliability for those standards. Some contain requirements covered in the Version 0 standards and should be eliminated.Given the short amout of time allotted to develop these new standards, every effort should be made to reduce the number of standards with the goal of concentrating on performance requirements instead of presciptive measures on how to achieve that performance.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

The term "modeling" is somewhat mis-leading considering the measures included in that group. Several of these measures include requirements for generator testing and a generator owner may not realize this and skip over reviewing them. A more descriptive name should be used such as "Modeling and generator testing and reporting".

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	**do we really need a standard to force entities to make use of a database? recommend eliminating this standard**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Recommend combining this with II.D.S1.M1 or eliminating it. Should be obvious that any reporting procedure should ensure against double counting so why make a standard?**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Recommend combining this with II.D.S1.M1 or eliminating it.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**If you meet Table I.A as required in this standard then why do you need a separate standard? Based on the wording of this standard there are no new requirements above I.A so delete this standard.**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**This standard appears vague and would be hard to measure. How do you measure "optimize"? The II.B standards on testing and verification of generator data and the III.C standards on procedures for reporting data already cover getting the required data.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Will require tests that are not routinely done today which will impose a cost every five years**

☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Will require tests that are not routinely done today which will impose a cost every five years.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Will require tests that are not routinely done today which will impose a cost every five years.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Will require tests that are not routinely done today which will impose a cost every five years.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Will require tests that are not routinely done today which will impose a cost every five years.**
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☒ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Isn't this already covered in II.B.S1.M4?**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**The requirement for coordination of boiler controls was a confusing issue during audits that included this standard.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**This is a duplicate already listed. Assume this was meant to be III.C.S6.M11.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Alan Adamson**	
Organization:	**New York State Reliability Council (NYSRC)**	
Telephone:	**518-355-1937**	
Email:	**aadamson@nycap.rr.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☒ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☒	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments
Measurement III.C.M10 is listed twice in the four SARs, while Measurement III.C.M11 is missing from these SARs.

A Measurement III.A.M2 is included in Protection & Control SAR. We could not find this measurement on any NERC document listing Phase III & IV Measurements.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Except for Measurement III.A.M2 (discussed in our response to Question 1), we agree the there is a reliability need for all the standards proposed in the four SARs.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

The NYSRC believes that four proposed SAR measurement groups are disjointed. Certain SAR groups presently contain unrelated measurements. For example, the Black Start Capability SAR includes Automatic Restoration of Load measurements IV.B.M1-4, which are unrelated to black start; and the Modeling SAR includes several non-modeling measurements, i.e., Generation Protection & Control measurements III.C.M1-9. Also, certain related measurements are spread into different SAR groups. For example, the Phase III & IV measurements related to Generation Control and Protection (III.C) are separated into three different SAR groupings.

Therefore, we suggest that the Phase III & IV measurement groupings be reorganized recognizing the above concerns. This reorganization should include more appropriate measurement groupings for the Black Start Capability, System Modeling, Disturbance Monitoring, and Protection & Control SARs, with possibly a new SAR to include Voltage and Reactive standards. Such a reorganization would not only make the SAR and Standard review process easier, but the final standards would be developed on a more consistent basis.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**Development of this standard and the next one should recognize and be coordinated with the Version 0 VAR standards.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	

☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**See our comment on this measurement under Question 1.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☒ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**Development of this standard and the next standard should recognize and be coordinated with the Version 0 EOP Standards**
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

The drafting teams have been tasked to recommend whether the Phase III-IV standards should be balloted individually or in groupings. We suggest that each standard to individually balloted, as is done with other proposed standards. If instead the standards were balloted in groups, a problem with one or two standards could result in a NO vote on the entire group.

Each proposed Phase III-IV standard sould reference related Version 0 standards.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Tom Mielnik**	
Organization:	**MidAmerican Energy Company**	
Telephone:	**563-333-8129**	
Email:	**tcmielnik@midamerican.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☒ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☒	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

I.F.S2.M5 is a vague enough measure that there is not a reliability reason for it. Also, II.B.S1.M1, II.B.S1.M4, II.B.S1.M5, and II.B.S1.M6 require expensive and possibly damaging testing that requires the Standards Drafting Team to balance the benefits of the standards against the costs generated by the standards. At a minimum, a statement should be added to these standards that "if safety and system conditions warrant, an alternative to testing should be allowed such as computations or engineering study." These standards require major rework and therefore, there is not a realibility reason for these to proceed similar to their present form. There is realibility reason for significantly revised versions of these standards. Also, II.E.S1.M1, II.E.S1.M2, and II.E.S1.M3 require extensive analysis. The Standards Drafting Team should balance the benefits of these standards against the costs generated by these standards. At a minimum, a statement should be added to these standards that "the load characteristic requirements are mandatory only for stability susceptible systems."

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

III.C.S6.M10 should be in the SAR-Protection and Control Group. A System Planning SAR group should have been formed for planning standards such as II.D.S1.M2, II.D.S1-S2.M3, II.D.S1.M1, II.E.S1.M1, II.E.S1.M2, II.E.S1.M3, and III.A.S2.M2.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	**The measure is not suitable for a standard because it requires regional members to "use recorded data" when, in fact, what is required is "use of recorded data" which results in "improved" models, etc. But how can that be meaningfully measured? MidAmerican recommends a major change in the standard or else deleting it altogether.**
☐ Easy ☒ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**This standard should be field tested first. Five business days is not reasonable.**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**This standard should be field tested first.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Revisions need to be made based upon comments generated by field testing the standard. Five business days is not reasonable.**
SAR - Modeling		
☒ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**This standard should be field tested first.**
☒ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**This standard should be field tested first.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Realistic testing requirements for "gross and net reactive power capability, voltage regulatory controls, speed/load governor controls, and excitation systems" needs to be fleshed out before this standard is adopted. Five business days is not an appropriate response time. In addition, prior to putting it into practice, this standard should be field tested first. Perhaps a qualification that "if safety or system conditions warrant, computations and engineering reports shall be provided in lieu of testing" will help get this standard approved.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**This standard should be field tested first. Perhaps a qualification that "if safety or system conditions warrant, computations and engineering reports shall be provided" is appropriate.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**The qualification that "if safety or system conditions do not allow testing to full capability, computations and engineering reports of estimated capability shall be provided" must be retained to get this standard approved. It would help if realistic testing is detailed for gorss and net reactive power capability. This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Realistic testing requirements for voltage regulatory controls needs to be fleshed out before this standard is adopted. Perhaps a qualification that "if safety or system conditions warrant, computations and engineering reports shall be provided in lieu of testing" will help get this standard approved.This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Realistic testing requirements for speed/load governor controls needs to be fleshed out before this standard is adopted. Perhaps a qualification that "if safety or system conditions warrant, computations and engineering reports shall be provided in lieu of testing" will help get this standard approved.This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Realistic testing requirements for excitation system dynamic modeling data needs to be fleshed out before this standard is adopted. Perhaps a qualification that "if safety or system conditions warrant, computations and engineering reports shall be provided in lieu of testing" will help get this standard approved. This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Needs to have the qualification that this is not required for systems not susceptible to instability. This standard should be field tested first.**

☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Needs to have the qualification that this is not required for systems not susceptible to instability. This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Needs to have the qualification that this is not required for systems not susceptible to instability. This standard should be field tested first.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**Revisions need to be made based upon comments generated by field testing the standard.**
	SAR – Protection and Control	
☒ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**This standard should be field tested first. It is important that this standard retain the limitations that the specific redundancy reqauirements only apply to new or upgraded system protection and that existing protection systems are reviewed at a regional level.**
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**This standard should be field tested first.**

☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**This standard should be field tested first.**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**This standard should be field tested first. A qualification should be added to allow an initial 10 year transition to fully implementation of the standard.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**Revisions need to be made based upon comments generated by field testing the standard.**
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**Five business days is not a realistic lead time. Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**Revisions need to be made based upon comments generated by field testing the standard.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**Revisions need to be made based upon comments generated by field testing the standard.**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Peter Burke [on behalf of ATC's System Planners]**	
Organization:	**American Transmission Company (ATC)**	
Telephone:	**262-506-6863**	
Email:	**PBurke@atcllc.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☒ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments
Measure III.C.M11 is missing from the four SARs; also, III.C.M10 is listed in two SARs.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Scope of measurement I.D.M1 is implicitly covered by the intent of I.A. standards. It may be more useful to enhance the I.A. standards to explicitly state additional measures pertaining to reactive power assessment within the system performance assessment process. These measures should also address the relative mix of static and dynamic reactive reserves/margins.

Scope of measurement III.B.M1 is implicitly covered by the intent of I.A. and II.A. standards. If necessary, it may be more useful to enhance the I.A. standards to explicitly state that both transmission elements and transmission control devices must be considered in the system performance assessment process.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

1. Disturbance Monitoring SAR:
i) Remove measurement III.C.M10 since it is already listed in the Protection and Control SAR (where it rightfully belongs).
ii) Remove measurements II.D.M2-M3 since they do not pertain to disturbance monitoring. Suggest including them in a separate group along with measurements II.E.M1-M3; this may be within the Modeling SAR (see Customer Demand Data group 3e proposed below), or it may be a new SAR on Customer Demand Data.

2. Protection and Control SAR:
i) Add missing measurement III.C.M11 to complete the set of generator protection measures.
ii) Remove measurement III.B.M1 from this SAR since it is weakly related to protection & control. Suggest that III.B.M1 be included in the same SAR that addresses I.D.M1 (see comments to Q.2) since they both pertain to system performance assessment.
iii) Move measurement III.B.M2 to the Modeling SAR since it pertains to modeling of transmission control devices.

3. Modeling SAR:
Would organize work into smaller groups and suggest following grouping for modeling standards development:
a) Generator Capability:
I.D.S1.M2, Generation reactive power capability.
II.B.S1.M1, Procedures for validating genration equipment data.
II.B.S1.M2, Verification of gross & net dependable capability.
II.B.S1.M3, Verification of gross & reactive power capability of generators.
b) Generator Control/Regulation:
II.B.S1.M4, Test results of generator voltage regulator controls & limit functions.
II.B.S1.M5, Test results of speed/load governor controls.
II.B.S1.M6, Verification of excitation system dynamic modeling data.
III.C.S3.M8, Information on generator controls coordination with unit's short-term capabilities & protective relays
III.C.S3.M9, Information on speed/load governoring system.
c) Generator Transformation:
III.C.S2.M5, Reporting Procedures for tap settings of generator step-up & auxilliary transformers.
III.C.S2.M6, Tap settings Data of generator step-up & auxilliary transformers.
d) System Operations Regulation:
III.C.S1.M1, Procedure by Sys Operator for reporting operation without automatic voltage control mode.
III.C.S1.M2, Log of operation without automatic voltage control mode by gen owner.
III.C.S2.M3, Documentation of schedule for maintaining network voltage.

III.C.S2.M4, Log operation not maintaining network voltage schedules.
III.C.S3.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.
e) Customer Demand Data:
II.E.S1.M1, Plans for the evaluation and reporting of voltage & frequency characteristics of customer demands.
II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands.
II.E.S1.M3, Customer (dynamic) demand data.
plus the following two measures moved from the Disturbance Monitoring SAR
II.D.S1.M2, Reporting Procedures that ensure against double counting or omission of customer demand data.
II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to government agencies.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**In some cases, there may be three or four levels at which customer demand could be reported (e.g. TP/TO, LSE, DP). Deciding who should and who is willing to collect the data is not a trivial task.**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Remove -- belongs in Protection and Control SAR**
SAR - Modeling		
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**May be better addressed by enhancing I.A. standards; please see comments to Q.2.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Capability information may not be available for older and smaller units.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**May be costly and time consuming if testing is being considered.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Previously done for real power capability on an annual basis for MAIN region.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**System operation may limit the ability for testing . Need to define real power level unit output coincident with verification process.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**May be costly and time consuming if testing is being considered.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**May be costly and time consuming if testing is being considered.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**May be costly and time consuming if testing is being considered.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**Information not be readily available and difficult to obtain. May be able to make generalizations of load characteristics.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**Information not be readily available and difficult to obtain. May be able to make generalizations of load characteristics.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Information not be readily available and difficult to obtain. May be able to make generalizations of load characteristics.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**Development of procedure should not be difficult.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**Getting generator owner to record the information may be the difficult task.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**Documentation of such schedule should be simple task.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Getting system operator to record the information may be the difficult task.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**Data easy to document.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**Information easy to get if not already available.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Simulation of system may be means to determine requirements, but actual testing may be difficult.**

☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Information on older and smaller units may not be readily available or difficult to obtain.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	**Information on older and smaller units may not be readily available.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**May be better addressed by enhancing I.A. standards; please see comments to Q.2.**
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**Challenge is to arrive at a consensus on the frequency of review/validation.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**Entities within MAIN are already doing it.**
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Entities within MAIN are already doing it.**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Brandon Snyder**	
Organization:	**Duke Energy**	
Telephone:	**704-373-3825**	
Email:	**cbsnyder@duke-energy.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☒ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☒	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments
III.C.M11 is not included in the 4 SARs, however III.C.M10 is listed twice.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

Recommend an effort to compare the proposed Planning Standards with existing Operating Standards in version 0 to assure that time is not spent developing redundant standards and to assure there are not inconsistant standard requirements developed. For example, Operations Standard VAR-001-0 — Voltage and Reactive Control in the version 0 operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards (III.C.S1.M1 and M2) on this issue are apparrently redundent. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 standard, it would be more appropriate to revise that standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

III.C.S6.M10 - Generator owners have an economic incentive to analyze and correct generator protective relay misoperations and thus, this standard is not necessary.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

To facilitite generation industry involvelment, group all the generator-applicable requirements in the Disturbance Monitoring and Reporting, Modelling and the Protection and Control SAR's to permit a team composed of generation and transmissions representitives to focus on those requirements.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**No Comments**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**No Comments**
☐ Easy ☒ Medium ☒ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**The amount of work cannot be completed with in one year.**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**There are many questions and issues around DDR locations and how to use the data. If there is great latitude on how much of this we do, then approve. This also doesn't specifically allow other data souces (that are not DDR).**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**No Comments**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Generation has processes in place to analyze and correct misoperations of protective relaying and believes this requirement is unnecessary. If kept in the SAR, it should allow for the use of existing problem investigation databases and not require additional documentation.**
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**The concern would be the 5yr repeat requirement.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**No Comments**

☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**In general, the II.B requirements have not been through a due process, so a translation to the new format without evaluating previously developed concerns is inappropriate. The SERC GS has agreed to the guidelines developed in the SERC IIB Supplement addressing generator model validation and there will likely not be significant resistance in by the SERC generation operators, as long as the new language in the NERC requirement is written consistent with the SERC supplement. Significant differences will likely require the Generator Model Validation task force to be re-established to address.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**No concerns as long as the SERC IIB supplement guidelines are used.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**The GS has expressed concerns that the requirement to test a units reactive capability could lead to the grid being placed frequently into a condition where the ability to mitigate nuclear accidents could be compromised. In the SERC IIB supplement, the first step to verifying the reactive capability is to see if operating data is sufficient to validate numbers. If not, an evaluation is required prior to the commencement of MVAR validation testing at any generator, to assure testing at nearby plants will not adversly affect the ability of the grid to support emergency nuclear plant loads.** **For testing at a nuclear plant, concerns have not been addressed about how a test can be conducted due to NRC 10CFR50.59 regulations, which require the plant operator to assure testing will not impact plant safety. Also, an approach of basing MVAR support only on values demonstrated by test results would likely lead to underestimateing the amount of VAR support available from large plants, which will swing voltage.** **This requirement discusses using analysis to justify VAR capability beyond any capability validated through testing. There needs to be a guidence document developed showing acceptible methods for doing this analyses** **Tom Pruitt has expressed concerns with VAR testing from a Grid OPS perspective. These concerns touch on the need to have a team effort to assure VAR testing will not cause violation of other NERC requirments on maintaining voltage schedule.**
☒ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**SERC IIB Guide allows for off-line testing and a Open Circuit Step Response test for regulator control and limit validation. We have no concerns as long as the SERC IIB supplement guidelines are used.**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**It's not clear what testing could be done at a generation plant to accurately determine speed governor settings at typical operating MW. The SERC IIB supplement recognizes this and uses a new approach to model validation using generator operating data during frequency transients. This standard should instead require the Generator Owner/Operator and the Transmission Provider to work together as necessary to assure the frequency response characteritics of significant generating units are understood and modeled appropriately.**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**We do not have concerns, as long as the SERC II B supplement guidence is used, which uses an open circuit step response test to validate response.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**As long as these are just providing plans - then this may be ok to approve. Duke does not currently have any plans, but does have some ideas about how to do this with new/existing equipment**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**The challenge is to keep the flexibility in how the values are determined - as written- could be by load classification (study), by measurement, or by event validation at the system level.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**The challenge is to keep the flexibility in how the values are determined - as written- could be by load classification (study), by measurement, or by event validation at the system level.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. The SERC GS has expressed concerns that this standard has not been fully developed and does not address actions the transmission system operator must take to assure nearby generator operation in manual does not adversly affect the ablity of the grid to support nuclear switchyard voltage requirements.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. We believe a log should be maintained by the system operator stating when the report was made and that continued operation in manual does not affect system stability nor adversly affect nuclear switchyerd voltage requirements. If one of these is threatened, the operator should also document what actions were taken to address.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**No Comments**

☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Not sure there is a reliability reason for the generator owner to log these events. It would make more sense for the grid operator to evaluate out of band operation and also document any actions taken to adjust.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**No Comments**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**SERC is working on a revision to the supplement for this measure. The challenge is the expertise to make good, well founded requirements. And then within the transmission planning entities, the processes that incorporate the necessary checks that validate meeting the requirements. The challenge to overcome is how to establish the requirement and compare against it.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**This will require adequate numbers of skilled and trained engineers to review generation realy settings meet required criteria.** **Concerns were identified with what devices need to be included in a coordination study. IEEE is developing a guide on this. Should the standard require all or part of the IEEE guide?**
☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**Compare to II.B.M5. Challenges; can it be combined with II.B? Address the issue of if a control area can manage the response of units for an overall response or does every unit have to participate (which is implied, but may not be practical). M9-1b requires some tuning of the control system, which most people will not understand how to do nor want to undertake (don't fix it if it aint broke). Gen Owners don't have the technical expertise to address this question, therefore will push back. a) should be in II.B, b) is the tough one and c) is easy** **The SERC GS has developed a white paper on concerns with the standard, which does not recognize that there are other control systems in many generation plants that will override free governor response and impact generator MW response to frequency transients. The new modelling method developed by the WECC and included in the SERC IIB supplement appears to address the GS concerns.**
	SAR – Protection and Control	

☐ Easy ☐ Medium ☒ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**No Comments**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**What is the definition of control devices? We would normally review settings and the impact on interconnections.**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M2, Transmission control device models and data	**No Comments**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**This will be extremely difficult. We do not have a program in place to periodically review and validate settings. We only review settings on misoperations or in association with system upgrades. If there is a requirement to perform this every five years we will not be able to comply given the present staffing restrictions. This will be quite labor intensive and costly from an O&M perspective.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**Protection system testing and protection system maintenance need to be clearly defined and differentiated in Reliability Standard 065- R12-1. I would take testing to be functional testing and maintenance to be individual relay testing, calibration & maintenance. Define scope of generator protection system to include protective relays, instrument transformers and batteries.**
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**No Comments**
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**These diagrams are considered Critical Energy Infrasture Information. The measurement needs to recognize the confidential nature of this data.**

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**No Comments**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**No Comments**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☒ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☒	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:	**Southern Company - Transmission, Operations, Planning & EMS Services**
Lead Contact:	Marc M. Butts
Contact Organization:	Southern Company
Contact Segment:	1
Contact Telephone:	205.257.4839
Contact Email:	mmbutts@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Keith Calhoun	Southern Company Services	SERC	1
Mike Miller	Southern Company Services	SERC	1
Bryan Hill	Southern Company Services	SERC	1
Butch Kimble	Southern Company Services	SERC	1
Bobby Jones	Southern Company Services	SERC	1
Raymond Vice	Southern Company Services	SERC	1
Jonathan Glidewell	Southern Company Services	SERC	1
Chuck Chakravarthi	Southern Company Services	SERC	1
Jim Griffith	Southern Company Services	SERC	1
Larry Smith	Alabama Power Company	SERC	3
Doug McLaughlin	Southern Company Services	SERC	1
Lee Taylor	Southern Company Services	SERC	1

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

While we agree that there is a reliability need for reasonably accurate information and standards that are practical and reasonably implementable, there is not a reliability need for these standards in the exact form as they currently exist. Further comments to this effect are included in more detail in the Challenges to Achieving Consensus section of this document.

We are not sure all of them should be sent through this "accelerated" standard development process. Examples of the standards which fit this category are:

II.E.M.1-3 - Do not believe these 3 Standards are vital to the Blackout recommendation and could be developed under the normal NERC process.

III.C.S6.M10 - Generator owners already have an incentive to analyze and correct generator protective relay misoperations.

II.D.M.3- Should not be included in these SARs. It should be developed under the normal NERC process.

III.C.S1.M1 and M2 -Voltage and Reactive Control in the Version 0 Operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards on this issue are apparently redundant. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 Standard, it would be more appropriate to revise that Standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Several referenced standards seem to be in the incorrect SAR grouping and one is double counted in both the Disturbance Montitoring and Reporting SAR and the Protection and Control SAR.

-II.D.S1.M1 and II.D.S1-S2.M3 need to be moved from the Disturbance Monitoring and Reporting SAR to the Modeling SAR.
-III.C.S6.M10 is listed in both the Disturbance Monitoring and Reporting SAR and the Protection and Control SAR. It needs to be removed from the Disturbance Monitoring and Reporting SAR.
-III.C.S1.M1, III.C.S1.M2, III.C.S2.M3, III.C.S2.M4, III.C.S2.M5, and III.C.S2.M6 need to be moved from the Modeling SAR to the Disturbance Monitoring and Reporting SAR.

Recommend comparing and collating the proposed Planning Standards with existing Operating Standards in Version 0 before moving forward with these SARs to assure that time is not spent developing redundant standards and to ensure inconsistent Standard requirements are not developed. Where duplications occur, it is recommended the Version 0 Standard be removed, and transferred to the Phase III/IV Planning Standards.

Operations Standard VAR-001-0 — Voltage and Reactive Control in the Version 0 Operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards (III.C.S1.M1 and M2) on this issue are apparently redundant. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 Standard, it would be more appropriate to revise that Standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**The Regions should be very clear in specifying the type of data being required.**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**Same as above**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Same as above**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	**There is a lack of clarity concerning enhancement of steady state models in reference to disturbance data. It may be impractical for the region to maintain this database and is not needed since the data is maintained and available from members.**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**Recommend deleting or listing as a bullet item under an existing II.D. measure. If left in, this needs to be moved to the Modeling SAR.**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Recommend deleting or listing as a bullet item under an existing II.D. measure. If left in, this needs to be moved to the Modeling SAR.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**This needs to be removed from this SAR. A correct duplicate listing is already included in the Protection and Control SAR. Should be easy to pass as a part of the Protection and Control SAR.**
SAR - Modeling		
☒ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**Recommend changes to the measure: ENSURE MAXIMUM FLEXIBILITY rather than OPTIMIZE THE USE of generator reactive power capability. Also AGREEMENT ON rather than ENSURING FULL range of reactive power is available.**

☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Required testing for two seasons annually will prove difficult to pass industry consensus. "Annually test to verify…" should be changed to "validate by appropriate means". What is the basis for annual updates versus three years, five years, etc.? In addition to testing, other appropriate validation methods should be defined. Validation may be achieved through simulation, operating data, field verification readings, engineering evaluations or reviews, and/or testing where appropriate. Validation requirements will also vary depending upon the size and type of generating unit.** **Version 0 standard TOP-002-0 R13 already addresses verification of generating plant real power capability. Therefore, the need for translation of II.B.S1.M2 into this standard without including TOP-002-0 R13 should be assessed. No one needs two standards.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**It will be difficult to reach industry consensus on generator testing. See comments provided for II.B.S1.M2 for Testing comments.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**It will be difficult to reach industry consensus on generator testing. See comments provided for II.B.S1.M2 for Testing comments.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**It will be difficult to reach industry consensus on generator testing. See comments provided for II.B.S1.M2 for Testing comments.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**It will be difficult to reach industry consensus on generator testing. See comments provided for II.B.S1.M2 for Testing comments.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**There is no agreed upon or approved method to accomplish this. This is more appropriate for a research project than a standard.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**This would be expensive and take longer to complete than the measure allows due to the infrequent nature of abnormal frequency conditions.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**There is no agreed upon or approved method to accomplish this. This is more appropriate for a research project than a standard.**

☐ Easy ☐ Medium ☒ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**This must take into account extensive comments received in Phase III field testing.** **May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**This must take into account extensive comments received in Phase III field testing.** **May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**This measure relies upon III.C.S2.M5 to determine the time period for changing tap settings and would therefore be difficult to get industry consensus.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**Excursions in voltage that generators can ride through are extremely difficult to determine.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**This must take into account extensive comments received in Phase III field testing.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Parts A and B should be split into separate measures and templates, one applicable to transmission owners and one to regions.**
☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**This measure describes the planning process which is already required for all transmission elements (Standards I.A). The distinction between transmission control devices and other transmission elements seems insufficient to warrant a separate measurement. Recommend that this measurement be eliminated.**

☐ Easy ☐ Medium ☒ Difficult	III.B.S1.M2, Transmission control device models and data	**This measure describes the modeling and data submittal process which is already required for all transmission elements (Standards I.A). The distinction between transmission control devices and other transmission elements seems insufficient to warrant a separate measurement. Recommend that this measurement be eliminated.**
☒ Easy ☐ Medium ☒ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**Recommend that this measurement be eliminated. See comments for III.B.M1 and M2.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Suggest this requirement be addressed at Regional level.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**The data collected as a part of this measure should at least include all of the items required in III.E.S1.M2.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**See comment for III.E.S1-S2.M1 above.**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☒ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**This will be difficult without addressing potential security concerns around submitting this confidential data to NERC.**
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

To have any Standard go through the SAR and Standard development process and be adopted by the Board in less than six months is almost an impossible task without being an Urgent Action Standard. To think that all the Standards contained in the Phase III/IV Planning Standards can go through the ANSI Standard Process and the NERC Process Manual procedures and be adopted in less than six months is even a larger (if that is possible) task to accomplish. We are concerned that errors and/or technically unsound requirements will occur. Additionally, if no field testing occurs or if Industry consensus is not reached may result in doing the wrong thing for the right reason and could result in increasing the chances for a system disturbance rather than preventing one.

Although III.C.M11 is not listed in Question 4, we feel this measurement should be classified as Medium. We offer the following comments: The measurement should be revised to only require documentation of misoperations. Documentation of the analysis of all operations should not be required. The second paragraph of the measurement should be revised.

Documentation of the analysis of misoperations and corrective actions shall be provided to the affected Regions and NERC on request (30 business days).

Nuclear plants have formal Problem Investigation processes with defined time guidelines and manage their resources accordingly. In some cases, this process may allow for more than 30 days to complete investigations into causes of trips. The NERC requirement should not impose unnecessary time requirements more restrictive than existing processes.

In developing these SARs, recognition needs to be given to data requested that may be considered Critical Energy Infrasture Information. These SARs need to recognize the confidential nature of that data.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**William J. Smith**	
Organization:	**Allegheny Power**	
Telephone:	**(724) 838-6552**	
Email:	**wsmith1@alleghenypower.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☒ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☒ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☒ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	

☐ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☒ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☒ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☒ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**The difficulty in achieving industry consensus will depend how "simulation or testing" clarified. The definition of this phrase can have financial impact.**
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☒ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☒	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **Southern Co. Generation & Energy Marketing**

Lead Contact: Roman Carter

Contact Organization: Southern Company

Contact Segment: 6

Contact Telephone: 205.257.6027

Contact Email: jrcarter@southernco.com

Additional Member Name	Additional Member Organization	Region*	Segment*
Roman Carter	SCGEM	SERC	6
Roger Green	Southern Generation	SERC	5
Terry Crawley	Southern Generation	SERC	5
Thomas Higgins	Southern Generation	SERC	5
Lucius Burris	SCGEM	SERC	6
Joel Dison	SCGEM	SERC	6
Tony Reed	SCGEM	SERC	6
Lloyd Barnes	SCGEM	SERC	6
Clifford Shepard	SCGEM	SERC	6

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments

However, it is believed the list of Standards contained in the Phase III/IV Planning Standards go beyond what was intended to be developed by the U.S and Canada Blackout Investigation Task Force. Only those that address the Blackout recommendations and are significant in terms of improving reliability should be included in the subject SARs. This will promote the best utilization of Industry resources and enable them to focus on the more critical standards and issues.

Some of the Phase III and IV Planning Standards are similar or redundant to Version 0 Standards that were extracted from the original NERC Operating Policies. These Planning Standards should either be excluded from the subject SARs or the Version 0 Standards should be included in the new SARs to avoid confusing or conflicting requirements.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

It is agreed these Standards are reliability related but not sure all of them should be sent through this "accelerated" standard development process. See our response to question 1 above.
Some examples of the standards which fit this category are:

II.E.M.1-3 - Do not believe these 3 Standards are vital to the Blackout recommendation and could be developed under the normal NERC process.

III.C.S6.M10 - Generator owners already have an incentive to analyze and correct generator protective relay misoperations.

II.D.M.3- Should not be included in these SARs. It should be developed under the normal NERC process.

II.B.S1.M5- Work on this standard should be posponded until better technical direction has been developed.

III.C.S1.M1 and M2 -Voltage and Reactive Control in the Version 0 Operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards on this issue are apparently redundant. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 Standard, it would be more appropriate to revise that Standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

Recommend comparing and collating the proposed Planning Standards with existing Operating Standards in Version 0 before moving forward with these SARs to assure that time is not spent developing redundant standards and to ensure inconsistent Standard requirements are not developed. Where duplications occur, it is recommended the Version 0 Standard be removed, and transferred to the Phase III/IV Planning Standards.

To facilitate Generation Industry involvement, it is recommended NERC bundle the generator-applicable requirements in the Disturbance Monitoring and Reporting, Modeling, and the Protection and Control SAR's into one Standard to best utilize the generation representative's expertise in focusing on those requirements.

Operations Standard VAR-001-0 — Voltage and Reactive Control in the Version 0 Operating standards already addresses the issue of reporting generating unit AVR status. Thus, the Planning standards (III.C.S1.M1 and M2) on this issue are apparently redundant. If there are concerns associated with AVR status reporting that are not addressed by the Version 0 Standard, it would be more appropriate to revise that Standard as opposed to developing a new standard on that issue to avoid the potential for inconsistancies between two standards on the same issue.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☒ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**The Regions should be very clear in specifying the type of data being required.**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**Same as above**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**same as above**
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M5, Use Database	**There are many questions and issues around Digital Disturbance Recorder (DDR) locations and how to use the data. Industry approval will depend on how much lattitude regional members will have. Does the Standard specifically allow other data sources (that are not DDR)? This Standard should be field tested before being adopted.**
☐ Easy ☒ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**This Standard should be field tested before being adopted.**
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**This Standard should be field tested before being adopted.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Suggest this requirement be addressed at the Regional Level.** **If not, we suggest removing from this SAR and placing in the Modeling SAR. Also, the Standard should allow for the use of existing problem investigation databases and not require additional documentation.** **This Standard should be field tested before being adopted.**
SAR - Modeling		

☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	**What guidelines are used for making sure static and dynamic are balanced? How will it be decided if a new assessment is warranted by system conditions. Some regions may look at system conditions and make the call that new assessments are not required when other regions may say it does require a new assessment. Will there be consistency measurements for making this decision?** **This Standard should be field tested before being adopted.**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**The acceptable methods by which the full range reactive capability of the generator is made known should be made clear up front. Current methodologies should continue to be accepted. Recommend changes to the measure: ENSURE MAXIMUM FLEXIBILITY rather than OPTIMIZE THE USE of generator reactive power capability. Also AGREEMENT ON rather than ENSURING FULL range of reactive power is available.** **This Standard should be field tested before being adopted.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**The scope of generating standards within the II.B category should be limited to those that are already being addressed at the regional level in response to the Blackout recommondations. It is important to note that the II.B standards have not been through a proper development and field testing process to achieve industry consensus. This may be difficult due to the nature of the standards and measurements as currently written. The potential impacts of some of the proposed testing on generating plants have not been fully threshed out, and there are concerns that compliance with portions of these standards could impact safety, equipment, or regulatory requirements. Furthermore, much industry experience has been gained in these areas by some regions, and their lessons learned need to be factored into the procedures for validating generation equipment data. Development of these standards should not be expedited at the expense of creating other problems or issues that could result in unnecessary tripping or even damage to generating plant equipment.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**Version 0 standard TOP-002-0 R13 already addresses verification of generating plant real power capability. Therefore, the need for translation of II.B.S1.M2 into this standard without including TOP-002-0 R13 should be assessed. No one needs two standards.** **Required testing for two seasons annually will prove difficult to pass industry consensus. "Annually test to verify…" should be changed to "validate by appropriate means". What is the basis for annual updates versus three years, five years, etc.** **In addition to testing, other appropriate validation methods should be defined. Validation may be achieved through simulation, operating data, field verification readings, engineering evaluations or reviews, and/or testing where appropriate. Validation requirements shall also vary depending upon the size and type of generating unit.** **This Standard should be field tested before being adopted.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**Version 0 standard TOP-002-0 R13 already addresses verification of generating plant reactive power capability. Therefore, the need for translation of II.B.S1.M2 into this standard without including TOP-002-0 R13 should be assessed. No one needs two standards.** **The amount of testing described in the current version of this measurement will place a strain on generating plant resources and frequently place the grid into an abnormal state during the subject tests. For example, it will create concerns if capacitors must be switched off to test the reactive capability of a large generator in an isolated area during summer-type load demand periods. This is especially true if the testing is on a generator at or near a nuclear plant.** **Many of the Regions have recognized the problems with performing these tests and have established task forces to address the generator owner/operator concerns along with the transmission system planners and operators need to know plant reactive capabilities. It is recommended that the new standard direct each region to establish its own requirements and not establish one set of rules for all regions.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Version 0 standards MOD-010-0, MOD-011-0, and MOD-012-0 already contain requirements for Generator Owners to provide appropriate equipment data for modeling purposes in accordance with Regional requirements. Therefore, the need for translation of II.B.S1.M4 into this standard without including the operating standards should be assessed. No one needs multiple standards.** **This Standard should be field tested before being adopted.**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**How to comply with this requirement has been the focus of much debate within the Power Generation community. At present it is unclear what type of testing could and should be done to accurately determine speed governor settings and response characteristics. It is also recognized that the governor response along does not represent the how the unit may respond to system frequency excersion.** **Some Regional IIB supplements recognize this fact and have proposed a new approach to model validation using generator operating data during system transients. Work on this standard should be posponded until better technical direction has been developed.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Version 0 standards MOD-010-0, MOD-011-0, and MOD-012-0 already contain requirements for Generator Owners to provide appropriate equipment data for modeling purposes in accordance with Regional requirements. Therefore, the need for translation of II.B.S1.M6 into this standard without including the operating standards should be assessed. No one needs multiple standards.** **The magnitude of work required to comply with this standards is also a factor. It will take many years to perform all the work required to comply with it. Thus, it is very important that the methods for accomplishing this requirement be technically sound and will provide the desired results.**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	**This Standard is better suited to be handled separately from the Phase III/IV blackout-recommendation Standards. More appropriate for a research project.** **This Standard should be field tested before being adopted.**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	**This Standard is better suited to be handled separately from the Phase III/IV blackout-recommendation Standards.** **It would take longer to complete than the measure allows.** **Also, this Standard should be field tested before being adopted.**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	**Is this Standard better suited to be handled separately (maybe with M1 and M2) from the Phase III/IV blackout-recommendation Standards.** **Also, This Standard should be field tested before being adopted.**

☐ Easy ☐ Medium ☒ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. There are concerns that this standard has not been fully developed and does not address actions the transmission system operator must take to assure nearby generator operation in manual does not adversly affect the ability of the grid to support nuclear switchyard voltage requirements.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	**May be redundant with Operations Standard VAR-001-0 — Voltage and Reactive Control. Not sure there is a reliability reason for the generator owner to log these events. It would make more sense for the Transmission Operator to log and evaluate these events and also document if any actions was required or taken to protect the transmission system reliability.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Not sure there is a reliability reason for the generator owner to log these events. It would make more sense for the Transmission Operator to evaluate out of band operations and also document any actions taken to adjust.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	**This must take into account extensive comments received in Phase III field testing.**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**N/C**
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**The standard as written is rather vague. Both Transmission and Generator protection expertise are required to work with the system modeling experts to develop meaningful requirements that can applied.**
☐ Easy ☐ Medium ☒ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	**Some concerns have been identified with what devices need to be included in the coordination study. While in most cases, following manufacturer's setting recommendations assures proper coordination and protection, development of formal coordination studies for the large number of existing generators will take a significant amount of time and resources.**

☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**A SERC Regional white paper has been developed to address concerns with the standard: The Standard does not recognize there are other control systems in many generation plants that will override free governor response and impact generator MW response to frequency transients. The new modeling method developed by the WECC and included in the SERC IIB supplement appears to address the concerns.**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**Suggest this requirement be addressed at Regional level.**
☐ Easy ☒ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**N/C**
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	**N/C**
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	**This standard needs to better define the criteria for determining which generation equipment protection systems are to be included within the standard scope. Also, it needs to better define or differentiate between the terms testing and maintenance, which can mean the same thing or different things.**
SAR – Black Start Capability		
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	**N/C**

☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**N/C**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**N/C**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	**N/C**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	**N/C**
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	**N/C**

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

To have any Standard go through the SAR and Standard development process and be adopted by the Board in less than six months is almost an impossible task without being an Urgent Action Standard. To think that all the Standards contained in the Phase III/IV Planning Standards can go through the ANSI Standard Process and the NERC Process Manual procedures and be adopted in less than six months is even a larger (if that is possible) task to accomplish. We are concerned that errors and/or technically unsound requirements will occur. Additionally, if no field testing occurs or if Industry consensus is not reached may result in doing the wrong thing for the right reason and could result in increasing the chances for a system disturbance rather than preventing one.

Unlike the standards included in the Version 0 effort, many of the key components in these Planning Standards that apply to generation have not been field tested. Due to the importance of these standards and their potentially significant impact on generating plant operation and safety, time should be allowed to work through the issues to produce standards that are practical, have a sound technical basis, and effectively contribute to improved system reliability.

Nuclear plants have formal Problem Investigation processes with defined time guidelines and manage their resources accordingly. In some cases, this process may allow for more than 30 days to complete investigations into causes of trips. NERC requirements should not impose unnecessary time requirements more restrictive than existing processes.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **NERC Transmission Issues Subcomittee (TIS)**

Lead Contact: Kirit S. Shah

Contact Organization:

Contact Segment:

Contact Telephone: (314) 554-3542

Contact Email: kshah@ameren.com

Additional Member Name	Additional Member Organization	Region*	Segment*
See TIS Roster			

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☒ Yes.

☐ No.

Comments
TIS has no additional comments.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

TIS believes that the requirements of NERC Planning Standard I.D, System Adequacy and Secruity and Voltage Support and Reactive Power, are adequately addressed in other NERC Reliability Standards (Planning Standard I.A, System Adequacy and Secruity, Transmission Systems, and its equivalents in the NERC Version 0 Reliability Standards). Standard I.D is therefore redundant. A proper "balance" between static and dyanmic characteristics is dependant on integrated design and practices of the distribution, transmission and generation systems. Thus the balance between static and dynamic characteristics can be different, but at the same time compliant with all NERC Standards (including Table I of Standard I.A).

TIS believes that the guidelines that are currently part of Standard I.D are useful and important in the transmission planning process. These guidelines, considered as best practices, should be retained and incorporated in the NERC standards.

TIS supports and recommends verification and benchmarking of data and models for voltage control and reactive planning. Verification should include real and reactive capility of generators, generator characteristics incorporated into models, generator step up transformer characteristics, load power factor, and load models. TIS will follow and comment on the development of any NERC Reliability Standards that are to replace the Phase III and Phase IV Planning Standards that relate to this recommendation.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments

TIS agrees with the four groups for the proposed standards, however some TIS members have commented on the possible duplication of standards in more than one group. A number of TIS members will comment on this subject separately.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**As commented in response to Question 2, I.D.S1.M1 is redundant and should be eliminated. The guidelines are useful and should be incorporated in other standards.**
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	**I.D.S1.M2 is ambiguous. Again, if the compliance test is satisfactory performance under categories A, B, and C of Standard I.A, then I.D.S1.M2 is not required. The guidelines are useful and should be incorporated in other standards.**
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**For all the remaining standards in this group, TIS has the general comment that obtaining industry concensus on implementation will be difficult.**

☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	

☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	
☐ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

TIS has no additional comments.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Gerald Rheault**	
Organization:	**Manitoba Hydro**	
Telephone:	**204-487-5423**	
Email:	**gnrheault@hydro.mb.ca**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☒ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☒	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☒	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

The standards listed in these four SARs form the bulk of what is required to complete the translation but a couple (IIIC.M10 and IIIC.M11) were not included and should be. Further comments relative to these two standards are included in comment of question 3.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

The grouping in the Modelling Sar includes a number of standards related to generator performance which do not belong in this Modelling Standard. These are IIIC.M1 to IIIC.M4, IIIC.M7, andIIIC.M8. These standards should be in a separate new Standard.
Standard IIIC. M10 is located in two different Standards and IIIC.M11 and IIIC.M12 are not included in any of the Standards and should be included in a generator performance grouping.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☒ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☒ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☒ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**The cost implication for this item is a concerm for many entities.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	**same as above**

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**same as above**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**same as above**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**same as above**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**same as above**
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☒ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**The requirements in different parts of the US and Canada may be very different based on the load concentration in each region.**

☐ Easy ☒ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☒ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**Cost implications of this requirement may cause problems in obtaining concensus on this issue.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☒ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☐ Medium ☒ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☒ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	

☒ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☒ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☐	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name: **BPA**

Lead Contact: Marv Landauer

Contact Organization: BPA

Contact Segment: 1

Contact Telephone: 503-230-4105

Contact Email: mjlandauer@bpa.gov

Additional Member Name	Additional Member Organization	Region*	Segment*
Chuck Matthews	BPA	WECC	
Kyle Kohne	BPA		

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☒ No.

Comments

I do not believe that the Version 0 standards with these four new SARs is an complete translation of the existing planning standards. I support the changes to the Planning Standards suggested by the Planning Standards Task Force that they submitted, especially pages 1-4. I have attached these comments verbatim below.

Errata on Version 0 Planning Standards
Recommended by the Planning Committee and the
Planning Standards Task Force
(November 22, 2004)

TPL-001-0 (051.1)

1. Title: Remove the word "Assessments." (This 051.1 standard, like standards 051.2, 051.3, and 051.4, is intended to describe system performance, not assessments. The assessments are a means to measure compliance with the standards. All four standards in this group need to have similar titles. Removing the word "assessments" will accomplish the needed consistency.)

3. Purpose: The standard defines the system performance that the transmission systems should be capable of achieving under a wide variety of system conditions while continuing to operate reliably within equipment and electric system thermal, voltage, and stability limits. This standard describes the required system performance under normal (no contingency) conditions. (The purpose as now stated in Version 0 is a compliance requirement, not the purpose of the standard. The purpose of the standard is specific system performance under specific conditions as mentioned at the November 9, 2004, PC meeting.)

This comment also applies to TPL-002-0 (051.2) and TPL-003-0 (051.3) with appropriate rewording in the last sentence.

4. Applicability

4.1 Add Transmission Owner (This standard, as pointed out at the November 9, 2004, PC meeting, was intended for the Transmission Owner who has ultimate responsibility for the planning, design, and construction of the transmission systems. Check the responsibility of transmission ownership in the functional model. See also the original planning standard, which specifically mentions the Transmission Owner.)

4.2 Transmission Planner (May be appropriate for the planning portion of this standard. Note that in the functional model the Transmission Planner needs to coordinate with the Transmission Owner and others, but is not responsible for the implementation of the plan. The Transmission Owner and Transmission Planner may be one and the same in the vertically integrated utility. The RTO or ISO may be the Transmission Planner in a deregulated open environment and must also meet the requirements of this standard.)

4.3 Planning Authority (May be appropriate for ensuring that a long-term plan is available for adequate resources and transmission within a Planning Authority Area, but does not have responsibility for the implementation of the plan. The Planning Authority could also be the Compliance Monitor depending on the organization structure.)

R.1 Requirements

The Transmission Owners, Transmission Planners, and Planning Authorities shall ensure that their portions of the interconnected transmission systems are planned, designed, and constructed such that, with ……., the network can deliver generator unit output to meet projected customer demands and …….in Category A of Table I. (The standard is to ensure that system performance is planned and built into the systems by the Transmission Owners ¾ the responsible entities. The intent of "delivering generator unit output" is to avoid bottled generator capacity. These elements have been eliminated in the Version 0 standard and should be reinstated. These comments also apply to TPL-002-0 (051.2) and TPL-003-0 (051.3)).

The Transmission Owners, Transmission Planners, and Planning Authorities also shall ensure that their transmission system capability and configuration, reactive power resources, protection systems, and control devices are adequate to ensure the system performance prescribed in Category A of Table I. (This sentence needs to be reinstated in TPL-001-0 (051.1) as well as TPL-002-0 (051.2) and TPL-003-0 (051.3).)

(Its inclusion in the original standard resulted in the elimination of a number of standards in other sections of the planning standards. For example, this sentence covers configuration and eliminates the need to address substation bus configurations ¾ straight bus, ring bus, breaker and a half, etc. The standard applies to all substation configurations.)

R1.3.9 in TPL-001-0 (051.1), TPL-002-0 (051.2), and TPL-003-0 (051.3) should read as follows:

Include the effects of existing and planned reactive power resources to ensure that adequate reactive resource are available to meet system performance. (This item needs to have parallel construction to the other items in the list of requirements. Also, the effects of reactive power are related to voltage.)

R1.3.12 Expand the requirement for TPL-002-0 (051.2) and TPL-003-0 (051.3) as follows.

Include the planned (including maintenance) outage of any bulk electric equipment (including protection systems or their components) at those demand levels for which planned (including maintenance) outages are performed and be able to continue to operate within thermal,

voltage, and stability limits under contingency conditions in Category B of Table I. (Category C of Table I for TPL-003-0 (051.3).)

(When planned or maintenance outages are performed, the clarification needs to be retained that with certain system elements removed, the system must be able to operate within defined limits for the contingencies of Categories B and C. All of the other conditions in the requirements being addressed involve planned additions to transmission facilities. It is important to make this distinction.)

R2.2 This section is confusing as rewritten. It is not clear what "(where sufficient lead time exists)" is intended to modify ¾ the assessments or the identified system facilities. Also, "Detailed implementation plans are not needed," as written appears to contradict R2-1. (The following original wording is again recommended to replace R2.2, "For identified system facilities for which sufficient lead times exist, detailed implementation plans are not needed. These system facilities shall be reviewed for continuing need in subsequent annual assessments." This comment also applies to TPL-002-0 (051.2) and TPL-003-0 (051.3).)

Table I Reinstate the "cascading outage" definition. (The definition of cascading outages was specifically developed for this standard and table and needs to be reinstated so that the table can be self-sustaining as originally intended, approved, and implemented. This cascading outage definition was critical in a recent detailed review of WECC bus section breaker failures and needs to be retained as are the other footnotes that are specific to the implementation of the table. There are many slight variations to the definition for cascading outage, which is why this one is important to this standard. Definitions that are specific to a standard and its implementation must be retained with the standard. The definition may also be included as one of the definitions in the glossary of terms, as appropriate. However, in general, the terms and their definitions in the glossary must emanate from the standards and not vice versa. A term may have more than one definition but its definition and specific intent and use in a standard are what is important, mandatory, and must be complied with and therefore retained with the standard. These comments apply to Table I in TPL-001-0 (051.1), TPL-002-0 (051.2), TPL-003-0 (051.3), and TPL-004-0 (051.4).)

The cascading definition in the Glossary is incorrect as it has been modified from the definition that appeared in Table I. Cascading is the successive loss (not necessarily failure) of system elements triggered by an incident at any location (within the Interconnection ¾ remove. There are three Interconnections and this is not relevant to the definition.). Cascading results in widespread electric service interruption that cannot be restrained form sequentially spreading beyond an area predetermined by appropriate studies. All wording in parentheses are not part of the original definition and should not be included.

TPL-004-0 (051.4)

3. Purpose: Incorrect as stated. Needs to be modified. (The purpose must be changed. It is not the same as TPL-001, 002, or 003, where reliable systems are to be developed. TPL-004 only evaluates the risks and consequences of a number of extreme contingencies. There are no requirements for planned upgrades or corrective plans.)

The following purpose is proposed:

Extreme but less probable contingencies measure the robustness of the electric systems and should be evaluated for risks and consequences. Actions to mitigate or eliminate the risks and consequences are at the discretion of the responsible entities. This standard identifies a number of extreme contingencies that are to be evaluated.

R1. The Transmission Owners, Transmission Planners, and Planning Authorities shall ensure that their portions of the interconnected transmission systems are evaluated for the risks and consequences of a number of each of the extreme contingencies listed under Category D of Table I. To ensure this evaluation, they shall assess and document the performance of their systems through valid assessments that shall include the following attributes:

(The standard is to ensure that the Transmission Owners ¾ the responsible entities ¾ are aware of the performance of their systems under a number of extreme contingencies as they are the ones that will make investments to alleviate the risks. Transmission Planners and Planning Authorities may also perform these assessments and coordinate and review the results with the Transmission Owners.)

R1.3.6 Requirement is incorrect and needs to be modified. ("To ensure that adequate reactive resources are available" needs to be removed. Reactive resources are not required to meet some level of system performance. Only the effects of existing or planned reactive resources need to be considered for the extreme contingencies. Corrective actions or plans are not required.)

The following R1.3.6 is proposed:

"Include the effects of existing and planned reactive resources."

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☐ Yes.

☒ No.

Comments

We believe that the requirements of NERC Planning Standard I.D, System Adequacy and Secruity and Voltage Support and Reactive Power, are adequately addressed in other NERC Reliability Standards (Planning Standard I.A, System Adequacy and Secruity, Transmission Systems, and its equivalents in the NERC Version 0 Reliability Standards). Standard I.D is therefore redundant. A proper "balance" between static and dyanmic characteristics is dependant on integrated design and practices of the distribution, transmission and generation systems. Thus the balance between static and dynamic characteristics can be different, but at the same time compliant with all NERC Standards (including Table I of Standard I.A).

We believe that the guidelines that are currently part of Standard I.D are useful and important in the transmission planning process. These guidelines, considered as best practices, should be retained and incorporated in the NERC standards.

We recommend verification and benchmarking of data and models for voltage control and reactive planning. Verification should include real and reactive capility of generators, generator characteristics incorporated into models, generator step up transformer characteristics, load power factor, and load models.

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☐ Yes.

☒ No.

Comments

Although it is hard to fit these diverse standards within four SARs, the following groupings do not seem appropriate.

Standards III.E.S1.M1, M2, M3 are now included in the Protection and Control Standards but they do not seem to fit since they refer to UVLS programs.
Standards III.C seem to be more operationally oriented rather than the modelling group they were put in. For example, reporting requirements for operation in automatic voltage control mode is does not seem to fit with modelling.
Standards II.D.S1.M2 and II.D.S1-S2.M3 are related more to modelling than disturbance monitoring.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☐ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	
☐ Easy ☐ Medium ☐ Difficult	I.F.S2.M5, Use Database	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	
☐ Easy ☐ Medium ☐ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
SAR - Modeling		
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M1, Assessment of reactive power resources	
☐ Easy ☐ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M5, Test results of speed/load governor controls	
☐ Easy ☐ Medium ☐ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☐ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☐ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	
☐ Easy ☐ Medium ☐ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	

☐ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☐ Difficult	III.C.S5.M9, Information on speed/load governing system	
	SAR – Protection and Control	
☐ Easy ☐ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☐ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☐ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	
☐ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☐ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	
☐ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	

☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☐ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

COMMENT FORM
Phase III-IV Planning Standards Not Developed in Version 0 Reliability Standards

This form is to be used to submit comments on the four SARs to translate the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards project. Comments must be submitted by **January 7, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Phase III-IV Planning Standards" in the subject line. If you have questions please contact Gerry Cauley at gerry.cauley@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	**Raj Rana - Coordinator**	
Organization:	**AEP**	
Telephone:	**6140716-2359**	
Email:	**raj_rana@AEP.com**	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☒	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☒	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☒	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

This questionnaire refers to the four SARs proposing to develop reliability standards to replace the Phase III-IV Planning Standards that were not developed in the Version 0 Reliability Standards. The scope of work is focused on translating the existing planning standards that were not included in Version 0, not on developing new standards. The four SARs are as follows:

Disturbance Monitoring and Reporting

Modeling

Protection and Control

Black Start Capability

Question 1: Scope of Work

Do you agree that the list of planning standards and measures indicated in the four SARs, taking in to consideration the standards already developed in Version 0, would complete the translation of all existing planning standards?

☐ Yes.

☐ No.

Comments
It is assumed that the sum total of the effort would be a complete translation of Phases 3 and 4.

Question 2: Reliability Need

Do you agree there is a reliability need for all of the standards proposed in these four SARs? If you have any concerns regarding reliability need, please note them in your comments.

☒ Yes.

☐ No.

Comments

Question 3: Grouping of the Standards for Development Purposes

Because the proposed scope of work is large, the requester has grouped the proposed standards into four SARs. Do you agree this is an appropriate way to organize the work? What improvements would you suggest to grouping the development work?

☒ Yes.

☐ No.

Comments
Subdividing the task is necessary. The approach is reasonable.

Question 4: Challenges to Achieving Consensus

Some of the proposed standards may require more work than others to reach industry consensus on approving the standards. Please rate each proposed standard below by indicating the level of difficulty you foresee in achieving consensus on the standard. Please indicate specific challenges you think must be overcome to complete the standard and achieve industry consensus.

Difficulty Reaching Consensus	Topic	Challenges to Overcome to Achieve Consensus
SAR- Disturbance Monitoring and Reporting		
☒ Easy ☐ Medium ☐ Difficult	I.F.S1.M2, List of monitoring equipment installations & operating status	**Listing of equipment should not be a major hurdle.**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M3, Disturbance monitoring data reporting Requirements	**Only requires that regions have a disturbance reporting requirement**
☒ Easy ☐ Medium ☐ Difficult	I.F.S2.M4, Recorded fault and disturbance Data	**Only requires that disturbance data be supplied according to regional requirements**
☐ Easy ☐ Medium ☒ Difficult	I.F.S2.M5, Use Database	**the Measure is unmeasurable and should not be translated to a Version 0 Standard**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1.M2, Reporting procedures that ensure against double counting or omission of customer demand data	**This is a subset of Measure 1 and is not required in a Version 0 Standard.**
☐ Easy ☐ Medium ☒ Difficult	II.D.S1-S2.M3, Procedures requiring consistency of data reported for reliability purposes and to gvt agencies	**Measure requires consistency of demand data reported to government entities and to reliability entities, how can this be measurable?**
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	**This only requires a regional procedure document**
SAR - Modeling		
☐ Easy ☐ Medium ☒ Difficult	I.D.S1.M1, Assessment of reactive power resources	**These requirements are implicit in the System Assessment Standards and therefore redundant with Table 1.**
☐ Easy ☒ Medium ☐ Difficult	I.D.S1.M2, Generator reactive power capability	**transmission owners and generation owners likely have different perspectives of "optimum"**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M1, Procedures for validating generation equipment data	**Probable disagreement on equipment that needs testing for reliability purposes**
☐ Easy ☒ Medium ☐ Difficult	II.B.S1.M2, Verification of gross and net dependable capability	

☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M3, Verification of gross and reactive power capability of generators	**This data is essential; however the demonstration can be labor intensive and generators have been relunctant to perform these test. NPPs create a special consieration.**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M4, Test results of generator voltage regulator controls and limit functions	**Generator reluctance to undertake the tests**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M5, Test results of speed/load governor controls	**Generator reluctance to undertake the tests**
☐ Easy ☐ Medium ☒ Difficult	II.B.S1.M6, Verification of excitation system dynamic modeling data	**Generator reluctance to undertake the tests**
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M1, Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands	
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M2, Documentation of requirements for determining dynamic characteristics of customer demands	
☐ Easy ☐ Medium ☒ Difficult	II.E.S1.M3, Customer (dynamic) demand data	
☒ Easy ☐ Medium ☐ Difficult	III.C.S1.M1, Procedure by system operator for reporting operation without automatic voltage control mode	
☐ Easy ☒ Medium ☐ Difficult	III.C.S1.M2, Log of operation without automatic voltage control mode by generator owner	
☒ Easy ☐ Medium ☐ Difficult	III.C.S2.M3, Documentation of schedule for maintaining network voltage	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M4, Log operation not maintaining network voltage schedules	**Determination of non-compliance may be an issue**
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M5, Reporting procedures for tap settings of generator step-up and auxiliary transformers	
☐ Easy ☒ Medium ☐ Difficult	III.C.S2.M6, Tap settings data of generator step-up and auxiliary transformers	**Generator may not agree with the need for a tap change, or the scheduling of the outage to perform the change**

☐ Easy ☐ Medium ☒ Difficult	III.C.S2.M7, Requirements for withstanding temporary excursions in frequency, voltage, etc.	**It is not possible to measure the complaince to this Measurement because it is vague and subject to varied interpretation. Therefore, NERC IDWG did not assess Regions' compliance to this Measure, as part of the 2001 Compliance Enforcement Program.**
☒ Easy ☐ Medium ☐ Difficult	III.C.S4.M8, Information on generator controls coordination with unit's short-term capabilities and protective relays	
☐ Easy ☐ Medium ☒ Difficult	III.C.S5.M9, Information on speed/load governing system	**Measurability may be difficult**
	SAR – Protection and Control	
☐ Easy ☒ Medium ☐ Difficult	III.A.S2M2, Redundancy requirements for transmission system protection	**What specific facilities require redundancy may be difficult to explicitly define.**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M1, Assessment of reliability impact of transmission control devices	**This appears redundant with table 1 . Is this needed?**
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M2, Transmission control device models and data	
☐ Easy ☒ Medium ☐ Difficult	III.B.S1.M3, Periodic review & validation of settings & operating strategies	
☐ Easy ☒ Medium ☐ Difficult	III.C.S6.M10, Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment	
☒ Easy ☐ Medium ☐ Difficult	III.E.S1-S2.M1, Documentation of undervoltage load shedding program	
☐ Easy ☒ Medium ☐ Difficult	III.E.S1.M2, UVLS Regional Database	**May have difficulty defining the parameters of the database**
☒ Easy ☐ Medium ☐ Difficult	III.E.S1.M5, Analysis & documentation of UVLS event	
☐ Easy ☒ Medium ☐ Difficult	III.C.S7.M12, Maintenance / testing Program of generation equipment protection systems	
SAR – Black Start Capability		
☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M2, Demonstrate by simulation and testing blackstart unit can perform its function	

☒ Easy ☐ Medium ☐ Difficult	IV.A.S1.M3, Diagram blackstart units and initial switching	**Question value of simply requiring a map of the location of the BS units**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M1, Document automatic load restoration (ALR) programs including database	**Parameters of data base could be an issue.**
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M2, Document auto load restoration program with regional requirements	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M3, Assess effectiveness of automatic load restoration programs	
☐ Easy ☒ Medium ☐ Difficult	IV.B.S1.M4, Document auto load restoration equipment testing and maintenance program	

Question 5:

Please provide any additional comments you have regarding the proposed development of Phase III-IV planning standards that were not developed in Version 0.

I.F.M1-M5 need to be revised. The deficiencies of these Measurements were identified by NERC IDWG in its report to NERC PC at PC's 7/20/04 meeting in Vancouver.

COMMENT FORM
Proposed System Personnel Training Standard

This form is to be used to submit comments on the proposed System Personnel Training Standard Authorization Request. Comments must be submitted by **January 07, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "System Personnel Training SAR Comments" in the subject line. If you have questions please contact Mark Ladrow at mark.ladrow@nerc.net on 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:	Alan Gale	
Organization:	City of Tallahassee	
Telephone:	(850) 891-3025	
Email:	galea@talgov.com	
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☒ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	3 - Load-serving Entities
	☐	4 - Transmission-dependent Utilities
	☒	5 - Electric Generators
	☐	6 - Electricity Brokers, Aggregators, and Marketers
	☐	7 - Large Electricity End Users
	☐	8 - Small Electricity End Users
	☐	9 - Federal, State, Provincial Regulatory or other Government Entities

Group Comments (Complete this page if comments are from a group.)

Group Name:

Lead Contact:

Contact Organization:

Contact Segment:

Contact Telephone:

Contact Email:

Additional Member Name	Additional Member Organization	Region*	Segment*

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information:

Posted for comments is the first posting of the System Personnel Training Standard Authorization Request. The US-Canada Power System Outage Task Force identified training as one of several initiatives that should be undertaken to enhance the reliability of the bulk interconnected grid. In their report on the August 14, 2003, outage the task force stated "Any person with access to a control room should be trained so that he or she understands the basic functions of the control room … under any conditions." This Standard Authorization Request was initiated, in part, to address this recommendation.

The requestor would like to gauge the level of consensus regarding the scope of this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, your comments included on this form, emailed with the subject "System Personnel Training SAR Comments" by January 07, 2005, would be appreciated.

Question 1: Do you agree there is a reliability need for the proposed training standard?

☒ Yes

☐ No

Comments

Although the industry has survived without one for several years, the investigation of the August 14th blackout has pretty much dictated that this be yes.

Question 2: Regarding the applicability of the SAR:

Indicate which of the following you believe the proposed standard should apply:

Reliability Authority/Coordinator	☒ Yes ☐ No
Balancing Authority	☒ Yes ☐ No
Interchange Authority	☒ Yes ☐ No
Planning Authority	☒ Yes ☐ No
Resource Planner	☐ Yes ☒ No
Transmission Service Provider	☒ Yes ☐ No
Transmission Planner	☐ Yes ☒ No
Transmission Service Provider	☒ Yes ☐ No
Transmission Owner	☐ Yes ☒ No
Transmission Operator	☒ Yes ☐ No
Distribution Provider	☐ Yes ☒ No
Generator Owner	☐ Yes ☒ No
Generator Operator	☒ Yes ☐ No
Purchasing-Selling Entity	☒ Yes ☐ No
Market Operator	☒ Yes ☐ No
Load-Serving Entity	☒ Yes ☐ No

Comments

Question 3: Do you believe the content as outlined in the Standard Authorization Request is adequate?

Are additional elements that should be included in this proposed standard?

☐ Yes

☒ No

If yes, please explain.

Are there existing elements that should be excluded in this proposal?

☒ Yes

☐ No

If yes, please explain.

Certification preparation
Progression Training
Learning management system (LMS)
Number of hours
Advanced system operations training

Comments

Certification Preparation - Each candidate must prepare for the exam and the measure is passing the test. A formal program to say what needs to be trained on before you can take the test is unnecessary. Would this preclude an individual from taking the test on his own, being hired, and then be non-compliant because he did not complete the "certification preparation" training but yet is certified?

Progression Training - The training requirements for a company to advance an employee should be dictated by that company. The reliability of the grid should address the position, not the advancement to that position. If the "higher" position has additional training requirements, address those requirements, not what is needed to move up to that position.

LMS - What is this intended to be? I do not recall seeing this in a list of definitions. Is this a "buzz word" that a particular vendor uses in describing their system? What would be in it that would not fall under Documentation or Record Retention?

Number of hours - This contradicts the "Competency-based" objectives. Is the goal competent operators or having enough hours. You can have one with or without the other. Since this SAR does not address CEH's or Certification maintenance a specific number of hours would be easier to budget for, but may not yield the intended reliable operations.

Advanced system operations training - How advanced is this intended to be? How much greater than basic? How much more "reliable" than "reliable"? The Detailed Description states "The goal would be to promote the reliability of the Interconnection through the setting of appropriate MINIMUM training requirements for system personnel." Having advanced training sounds like more than the minimum requirements.

Question 4: Do you believe there are any regional differences that should exist in the proposed standard?

☐ Yes

☒ No

If yes, please list the region-specific differences.

Minimum standards should be minimum standards. If a region needs something beyond that , it should become a regional requirement.

Comments

Question 5: Do you believe it is practical to implement the proposed standard with the existing staffing levels?

☐ Yes

☒ No

If no, please explain what staffing changes might be needed.

- We anticipate that at least 2 additional "trainers" will be needed. In addition to the additional work load to support the training, and the research, and the administration required to become a NERC Certified CEH provider, the qualifications of these personnel is not yet known. There is no clarification as to what "competent in both knowledge of the subject and instructional capabilities" really means.
These words seem to lead to the conclusion that we will have to hire outside agencies of ex-utility workers that have become trainers.

- Additional System Operators will be needed to adequately support the targeted hours and still be able to cover minimum vacation and sick time.

- Additional trainers and Operators will be needed each year to satisfy Item 6 "Staffing level adequacy needed to improve the quality and quantity of training." This statement also seems to go beyond the goal of setting minimum standards. It also goes beyond the Purpose/Industry need of "adequate". We will need more and more every year?

Comments

Question 6: How and how often should training programs be reviewed for compliance with the standard?

Reviews should be consistant with other standards.

Comments

Question 7: Please enter any additional comments you have regarding the proposed SAR below.

Comments
5a. "support staff" needs to be clarified. If the position does not need to be certified, why do they need to fall under this requirement. Are we saying that the training requirements of their respective professional certification (i.e. PE) is inadequate? The same can be said of "management".

8a. Why does a companies training plan have to adhere to the CE program? There is no discussion here of how to maintain certification. In fact it is patently obvious that it was intentionally avoided. Is the goal of this to have quality training or further the CE programs viability? Why can't all the training requirements be in one place?

8b. Approval and revocation processes for what? Being a CEH provider or certifying my training program? Compliance monitoring should be sufficient. Why is a separate process neeeded? The CEH process already contains a system for approval and revocation, it's duplication here will increase administrative work load unnecessarily.

Phase III-IV Planning Standards Drafting Team Nomination Form

Please return this form to sarcomm@nerc.com by **December 21, 2005**. For questions, please contact Gerry Cauley at 609-452-8060 or gerry.cauley@nerc.net.

Please note this drafting team will likely meet initially in January 2005 and will work on an expedited schedule through April 2005. Nominees should be prepared to meet approximately once per month from January to April 2005, for one to three days each time, to develop the proposed standards and respond to industry comments. Additionally, the drafting team may meet by conference call or web cast one or two times per month for a few hours. **All candidates should be prepared to participate actively at these meetings and to complete work between meetings.**

Proposed Standard: Phase III-IV Planning Standards. The SARs are provided at:

http://www.nerc.com/~filez/standards/Phase-III-IV.html

Name:	Randy Jones
Organization:	Calpine
Address:	4100 Underwood Pasadena, TX 77507
Office Telephone:	832-476-4450
Mobile Telephone:	832-385-3322
Fax:	
Email:	rajones@calpine.com

Please briefly describe your experience and qualifications to serve on the Phase III-IV Planning Standards Drafting Team. Candidates should have expertise in one or more of the following areas: disturbance monitoring and reporting, system modeling (including dynamic modeling), system and generator protection and controls, reactive power and voltage control, generator capabilities and testing, black start capability, under-frequency and under-voltage load shedding. Previous experience working on or applying NERC standards is beneficial, but not a requirement.

I have some background in both reactive power and voltage control as well as under frequency load shedding.

Please check the existing planning standards for which you have expertise:

☐	I.F.S1.M2	List of monitoring equipment installations and operating status
☐	I.F.S2.M3	Disturbance monitoring data reporting requirements
☐	I.F.S2.M4	Recorded fault and disturbance data
☐	I.F.S2.M5	Use database
☐	II.D.S1.M2	Reporting procedures that ensure against double counting or omission of customer demand data
☐	II.D.S1-S2.M3	Procedures requiring consistency of data reported for reliability purposes and to government agencies
☐	III.C.S6.M10	Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment
☐	I.D.S1.M1	Assessment of reactive power resources
☒	I.D.S1.M2	Generator reactive power capability
☐	II.B.S1.M1	Procedures for validating generation equipment data
☐	II.B.S1.M2	Verification of gross and net dependable capability
☐	II.B.S1.M3	Verification of gross and reactive power capability of generators
☐	II.B.S1.M4	Test results of generator voltage regulator controls and limit functions
☐	II.B.S1.M5	Test results of speed/load governor controls
☐	II.B.S1.M6	Verification of excitation system dynamic modeling data
☐	II.E.S1.M1	Plans for the evaluation and reporting of voltage and frequency characteristics of customer demands
☐	II.E.S1.M2	Documentation of requirements for determining dynamic characteristics of customer demands
☐	II.E.S1.M3	Customer (dynamic) demand data
☐	III.C.S1.M1	Procedure by system operator for reporting operation without automatic voltage control mode
☐	III.C.S1.M2	Log of operation without automatic voltage control mode by generator owner
☐	III.C.S2.M3	Documentation of schedule for maintaining network voltage
☐	III.C.S2.M4	Log operation not maintaining network voltage schedules
☐	III.C.S2.M5	Reporting procedures for tap settings of generator step-up and auxiliary transformers
☐	III.C.S2.M6	Tap settings data of generator step-up and auxiliary transformers
☐	III.C.S2.M7	Requirements for withstanding temporary excursions in frequency, voltage, etc.
☐	III.C.S4.M8	Information on generator controls coordination with unit's short-term capabilities and protective relays
☐	III.C.S5.M9	Information on speed/load governing system
☐	III.A.S2M2	Redundancy requirements for transmission system protection
☐	III.B.S1.M1	Assessment of reliability impact of transmission control devices

☐	III.B.S1.M2	Transmission control device models and data
☐	III.B.S1.M3	Periodic review & validation of settings & operating strategies
☐	III.C.S6.M10	Procedure to monitor/ review/ analyze/ correct trip operations of generator protection equipment
☐	III.E.S1-S2.M1	Documentation of under-voltage load shedding program
☐	III.E.S1.M2	UVLS Regional Database
☐	III.E.S1.M5	Analysis & documentation of UVLS event
☐	III.C.S7.M12	Maintenance / testing Program of generation equipment protection systems
☐	IV.A.S1.M2	Demonstrate by simulation and testing blackstart unit can perform its function
☐	IV.A.S1.M3	Diagram blackstart units and initial switching
☐	IV.B.S1.M1	Document automatic load restoration (ALR) programs including database
☐	IV.B.S1.M2	Document auto load restoration program with regional requirement**s**
☐	IV.B.S1.M3	Assess effectiveness of automatic load restoration programs
☐	IV.B.S1.M4	Document auto load restoration equipment testing and maintenance program

I represent the following NERC Reliability Region(s) (check all that apply):	**I represent the following Industry Segment (check one):**	
☒ ERCOT	☐	1 - Transmission Owners
☐ ECAR	☐	2 - RTOs, ISOs, Regional Reliability Councils
☐ FRCC	☒	3 - Load-serving Entities
☐ MAAC	☐	4 - Transmission-dependent Utilities
☐ MAIN	☐	5 - Electric Generators
☐ MAPP	☐	6 - Electricity Brokers, Aggregators, and Marketers
☐ NPCC	☐	7 - Large Electricity End Users
☐ SERC	☐	8 - Small Electricity End Users
☐ SPP	☐	9 - Federal, State, and Provincial Regulatory or other Government Entities
☐ WECC		
☐ Not Applicable		

Which of the following Function(s)[1] do you have expertise or responsibilities:

☒ Reliability Authority	☒ Transmission Service Provider
☒ Balancing Authority	☐ Transmission Owner
☒ Interchange Authority	☒ Load Serving Entity
☐ Planning Authority	☒ Distribution Provider
☒ Transmission Operator	☐ Purchasing-selling Entity
☒ Generator Operator	☒ Generator Owner
☐ Transmission Planner	☐ Resource Planner
	☒ Market Operator

Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group.

[1] These functions are defined in the NERC Functional Model, which is downloadable from the NERC website.

Name:	James Stanton	Office Telephone:	832-476-4400
Organization:	Calpine	Email:	jstanton@calpine.com
Name:	Gerald Mooney	Office Telephone:	281-337-6589
Organization:	Texas-New Mexico Power Company	Email:	gmooney@tnpe.com