

Consideration of Comments

Project Name:	2021-02 Modifications to VAR-002-4.1 Draft 1
Comment Period Start Date:	10/31/2022
Comment Period End Date:	1/13/2023
Associated Ballot(s):	2021-02 Modifications to VAR-002-4.1 Implementation Plan IN 1 OT

There were 67 sets of responses, including comments from approximately 180 different people from approximately 122 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the [project page](#).

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Director, Standards Development [Latrice Harkness](#) (via email) or at (404) 446-9728.

Questions

1. [Do you agree that dispersed power producing resource language and Facilities definition provides clarity to proposed VAR-002-5 applicability and better aligns to the BES definition terminology? If no, please explain and provide recommendations.](#)

Summary Response:

The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

The SDT has revised proposed VAR-002-5 for capitalization of Facilities when in lowercase.

The phrase "capable of controlling voltage" has been deleted in Draft Version II of proposed VAR-002-5.

Devices/equipment that control voltage either directly or indirectly through VAR changes are in scope for applicable Facilities.

This SDT will not endeavor to develop a definition of dispersed power producing resources, as this is out of scope of the current SAR; however this SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects.

Designation of controlling voltage specifically at the POI is not appropriate, as this could be interpreted to exclude devices/Facilities that directly control voltage at a different location (in accordance with voltage schedules).

The SDT has removed references to “generator” within the requirements and replace with “applicable Facilities.”

If inverters/battery do not have a documented capability of providing voltage/reactive power support for the Facility, then they are not subject to VAR-002.

2. Do you agree that the additional words, “mutually-agreeable format” in Requirements R3 and R4 will address ambiguities and provide a means to get the clarity needed for notification threshold and medium communication? If no, please explain and provide recommendations.

Summary Response:

The SDT agrees that the COM-001-3 interpersonal communication capability is most likely to be used to fulfill the notification requirement, but that additional details would be helpful to ensure the GOP and TOP are aligned on both how to notify and when the notification is necessary.

The SDT has added clarification in Requirement R4, “...that degrades or restores from degradation and exceeds the threshold for notification...”

Because the SDT determined that entirely including or excluding individual generating units of dispersed power producing resources was not appropriate and that some threshold should be established for Requirements R3 and R4, the SDT felt it necessary to add this language to specify the required coordination and definition of how and when these notifications should be made. The intention is to clarify what threshold, time period, and communication medium should be used for the GOP to make this notification to the TOP and to allow flexibility between those parties as to what method is most appropriate.

The SDT agrees that existing notification/communication methods should be leveraged, but finds that there is some ambiguity about what may constitute notification or what manner that should be provided (e.g., phone, messaging system, email, telemetry data point, or other means). The SDT believes the standard would benefit from providing direction to more formally establish this. This language was adopted based on the IRO-010 and TOP-003 requirements as an attempt to facilitate that sort of coordination. However, based on this feedback and other comments, the SDT has considered alternative language or mechanism for ensuring the GOP and TOP are aligned on when and how the Requirements R3 and R4 notifications should be made.

The proposed language in Measure M4 was intended to address the expectations for proof of the mutually-agreeable format. The intent is that the GOP and TOP will have flexibility on how to communicate the Requirements R3 and R4 notifications.

The SDT agrees that there is additional ambiguity inherent in this threshold determination. However, the SDT believes that the GOP and TOP mutually defining this will actually make the requirement clearer. The SDT did not think that entirely including or excluding individual

generating units of dispersed power producing resources was appropriate, so the intention is to create a mechanism whereby the GOP and TOP can agree on the required notification based on the actual Facility characteristics and potential system impacts.

The SDT has considered commenters' recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern.

The SDT has received feedback regarding the mechanism of coordinating notification requirements between GOP and TOP. The SDT has considered and agreed that revisions should be made to the proposed language to address the concern.

The degraded real and reactive capability is a valid concern and it is difficult to ascertain the corresponding reactive capability changes for both non-dispersed and dispersed power producing resources. One example scenario the SDT considered regarding a change in reactive capability that does not affect Real Power capability would be a low-side capacitor bank at the generation resource (owned by the GO and controlled by the GOP) which could be out of service and reduce the Reactive Power that could be delivered at the POI. Ultimately, the concern raised about knowing the reactive capability change existed prior to, and regardless of, the revisions proposed by this SDT.

Because the SDT decided not to entirely include or exclude individual generation units from Requirements R3 and R4, the intent was to allow for flexibility in how and when changes to the AVR status or functionality or reactive capability should be reported by the GOP to the TOP based on the characteristics of the System.

The SDT intended mutually-agreeable to allow the flexibility in reporting (see footnote explanation of "mutually agreeable"). Certainly this could be fulfilled by data specification in IRO-010 and TOP-003, but could also be established via other instruction from the TOP. Potential compliance approaches are contemplated by the SDT to draft the standard, but are not intended to be explicitly delineated within the standard. The SDT has revised proposed VAR-002-5 to add clarity based on this feedback and comments from industry.

IRO-010 and TOP-003 did serve as the model for this language and in SDT members' experience that information is not necessarily included in the TOP-003 data specification. The intent of the SDT is, indeed, to establish some threshold for notifications related to degraded AVR or reactive capability, rather than include or exclude individual generating units entirely.

3. Throughout proposed VAR-002-5, the Project 2021-02 SDT has replaced/changed the words “automatic voltage regulator (AVR)” with the more comprehensive “automatic voltage regulator (AVR) or volt/VAR controller(s)” to add clarity and to better align with expressions/wording used in other NERC Reliability Standards, such as MOD-026. Do you agree with this change? If no, please explain and provide recommendations.

Summary Response:

The SDT agrees that Section 4 needs to provide the clarity of applicable equipment and has revised Section 4. The SDT has reviewed other standards with similar terminology for consistency across the standards and has added footnotes, such as what’s shown in MOD-026 and other standards, to provide clarity specific to this standard.

4. The Project 2021-02 SDT has made revisions to the requirements for VAR-002-5 based on the recommendations resulting in Attachment 5 from the efforts of the Project 2016-EPR-02 Enhanced Periodic Review Team. Do you agree with these changes? If no, please explain and provide recommendations.

Summary Response:

Providing additional clarity to ambiguity in Requirements R3 and R4 reporting should be determined by Transmission Operator for system operation reliability impacts to support VAR-001 R2 and R5. The TOP should provide the threshold of notification for generating resource voltage control status changes and generating resource reactive changes along with voltage or reactive schedule. If TOP does not provide this information, the SDT suggest the GOP and TOP would collaborate to have a mutual agreed approach to reporting. Whether or not a voltage or reactive schedule is provided in VAR-002 R2, Requirement R4 is to provide notification of changes in generating resource reactive capability as defined by the Transmission Operator for the Generating resource in real time.

Providing a fixed percentage or metric to generating resource reactive capability changes may be problematic being that reactive resources are contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should determine what threshold of reactive capability change needs reported on a case by case basis.

The Technical Rationale document provided with VAR-002 draft provides a rundown of the recommendations reviewed in Attachment 5 of EPR. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations

The SDT SDT believes that TO owned assets are not in the scope of this SAR. Including TO owned step-up transformers in the scope would be unnecessary as the TO has authority over their own assets to provide to TOP and recommend this be addressed in VAR-001. VAR-002 would apply to GO/GOP only and to add TO would be outside the scope of SAR.

The SDT agrees and has revised Requirement R2, Part R2.1 for the additional clarity needed for alternative control. For Requirement R2, Part R2.3 there needs to be a conversion methodology to determine how to adjust voltage to maintain schedule at monitoring point.

The SDT has determined that the “Miscellaneous Corrections/Revisions” in Attachment 5 from the recommendations of Project 2016-EPR-02 merit consideration by the SDT since the standard has not changed since the time of the EPR review. Although the report is 5 years old, recommendations in the report remain unresolved and are normally expected to be considered in the next opportunity that the subject Standard is opened during a SAR and development of a project.

The 3 options outlined;

- 1) specify the “threshold for notification” as a fixed percentage of reactive capability (e.g. $\geq 10\%$ as in MOD-025 R2),
- 2) Modify R4 to include the TOP under VAR-002 and require the TOP to specify the “threshold for notification”,
- 3) Modify VAR-001 to require the TOP to specify the “threshold for notification”.

The SDT has reviewed the options and provide the following. Option 1 would be contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should consider what threshold of reactive capability change needs reported in VAR-001 R2 as to the metric of resource notification. Option 2 would be outside the scope of the SAR, and would suggest new SAR to make VAR-002 applicable to TOP. Option 3 would be outside the scope of the SAR, and would suggest new SAR to address in VAR-001. The SDT believes re-opening VAR-001 for this purpose may not be needed as the GOP and TOP would be mutually defining threshold and meeting the intent of reporting within VAR-002.

5. Do you believe that proposed Reliability Standard VAR-002-5 can be met in a cost-effective manner? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification. Please provide the reasoning or justification for your position in the comments.

Summary Response:

Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.

The SDT proposed revisions are intended to provide additional clarity and coordination improvements to the same standard requirements and not require additional monitoring equipment be installed for system reliability.

6. The Project 2021-02 SDT has proposed a one-year implementation period. Would this proposed timeframe provide for enough time to put into place process, procedures, or technology to meet the proposed language of the Implementation Plan? If you think an alternate timeframe is needed, please propose an alternate implementation time period and provide a detailed explanation of actions planned to meet the implementation deadline.

Summary Response:

Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.

7. The Project 2021-02 SDT believes that the language of proposed Reliability Standard VAR-002-5 addresses the issues outlined in the project SAR. Do you agree? If you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

Summary Response:

The SDT has considered all comments received and made revisions in Draft Version II of proposed Reliability Standard VAR-002-5 to clear up ambiguities.

The SDT did not think that entirely including or excluding individual generating units of dispersed power producing resources was appropriate, so the intention is to create a mechanism whereby the GOP and TOP can agree on the required notification based on the actual Facility characteristics and potential system impacts.

The suggested removal of Requirements R5 and R6 would be outside the scope of this project SAR.

SDT has reviewed and revised the standard for “or” as well as “and” to address ambiguities. The SDT has looked over the standard and, for consistency, reverted the word “shall” back into the Measures.

The SDT feels that additional clarity is needed with the bulleted item in Requirement R4 and creates ambiguity of reporting criteria within Requirements R3 and R4 for dispersed power producing resources. The revised language is intended to satisfy reporting clarity to the TOP when not provided by the TOP and to provide updates based on EPR recommendations.

The NERC Project 2014-01 stated the Requirement R4 exemption to individual generating units of dispersed power producing resources was allowed due to change in reactive capability due to removing and adding individual IBR or individual dispersed power producing resource was not the intent of Requirements R4, and R3 provides control status for voltage control which may include individual dispersed power producing resource.

The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability and ultimately the TOP needs to provide the threshold of notification for the clarity needed in Requirements R3 and R4 based reactive resource capability and configuration of facility voltage control.

8. Provide any additional comments on proposed Reliability Standard VAR-002-5 and technical rationale document for the standard drafting team to consider, if desired.

Summary Response:

The SDT agrees that eliminating the ambiguity in the standard will only improve the intent and provide the clarity needed to address the changing BES generator resource technology. The SDT has reviewed other standards with similar terminology for consistency across the standards and has added footnotes, such as what is shown in MOD-026 and other standards, to provide clarity specific to this standard.

While it's understood the resource will notify for voltage schedule deviation criteria from the TOP, the control of resource to meet schedule is a different type of notification and to be notified with deviation notifications.

The SDT feels that adding "monitored" and removing "becoming aware of" provides this clarity and agrees with comments submitted. The SDT agrees with VSL recommendation and have removed "Responsible Entity" since it is understood this would be the GOP.

The SDT has looked over the standard and, for consistency, reverted "shall" back into the Measures.

The intent of "degrade" is to accommodate the changes from full to partial voltage control regulation in ability to automatically control voltage. The SDT feels that the Generator Owner is the entity to maintain the facility, as defined in the NERC Glossary of Terms. The SDT feels the dispersed power producing resource may need to report at different levels for site configuration and what the TOP deems necessary reporting to assess reactive resources and capability to follow the TOP voltage schedule.

The SDT feels that while it's understood the resource will notify for voltage schedule deviation criteria from the TOP, the voltage control of resource to meet schedule is a different type of notification and to be notified with deviation notifications.

Retirement of Requirements R5 and R6 are outside of the scope of the SAR. The SDT would suggest that the commenter(s) can submit a SAR.

The SDT agrees and have made some changes to "restore" wording in VAR-002-5. The intent to degrade and restore from degradation is meant to address the site controllers that are partially degraded the ability to automatically control voltage to follow instruction or facility degraded reactive capability to TOP for assessing regional system reactive resource capability impacts.

The Responsible Entity has been removed. It is to be understood that entity would be the GOP. Section 4 has been revised to provide additional clarity. The purpose statement, footnotes, and VSL table have been updated to reflect the NERC Glossary of Terms.

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 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
- 10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
DTE Energy - Detroit Edison Company	Adrian Raducea	5		DTE Energy - DTE Electric	Karie Barczak	DTE Energy - Detroit Edison Company	3	RF
					Adrian Raducea	DTE Energy - Detroit Edison	5	RF
					patricia ireland	DTE Energy	4	RF
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group	3	RF
					Matthew Beilfuss	WEC Energy Group, Inc.	4	RF
					Clarice Zellmer	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
Public Utility District No. 1 of Chelan County	Diane E Landry	1		CHPD	Meaghan Connell	Public Utility District No. 1 of Chelan County	5	WECC

					Joyce Gundry	Public Utility District No. 1 of Chelan County	3	WECC
					Glen Pruitt	Public Utility District No. 1 of Chelan County	6	WECC
New York Independent System Operator	Gregory Campoli	2		ISO/RTO Standards Review Committee	Gregory Campoli	New York Independent System Operator	2	NPCC
					Helen Lainis	IESO	2	NPCC
					Michael Del Viscio	PJM	2	RF
					Charles Yeung	Southwest Power Pool, Inc. (RTO)	2	MRO
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Kathleen Goodman	ISO-NE	2	NPCC
Jennie Wike	Jennie Wike		WECC	Tacoma Power	Jennie Wike	Tacoma Public Utilities	1,3,4,5,6	WECC
					John Merrell	Tacoma Public Utilities (Tacoma, WA)	1	WECC
					Marc Donaldson	Tacoma Public Utilities (Tacoma, WA)	3	WECC
					Hien Ho	Tacoma Public Utilities (Tacoma, WA)	4	WECC

					Terry Gifford	Tacoma Public Utilities (Tacoma, WA)	6	WECC
					Ozan Ferrin	Tacoma Public Utilities (Tacoma, WA)	5	WECC
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Ryan Strom	Buckeye Power, Inc.	5	RF
					Dave Hartman	Arizona Electric Power Cooperative	1	WECC
					Scott Brame	NC Electric Membership Corporation	3,4,5	SERC
					Scott Berry	Wabash Valley Power Association	3	RF
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO

Christopher Bills	City of Independence Power & Light	3,5	MRO
Fred Meyer	Algonquin Power Co.	3	MRO
Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
Marc Gomez	Southwestern Power Administration	1	MRO
Matthew Harward	Southwest Power Pool, Inc.	2	MRO
Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
Terry Harbour	MidAmerican Energy	1,3	MRO
Jamison Cawley	Nebraska Public Power	1,3,5	MRO
Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
Michael Brytowski	Great River Energy	1,3,5,6	MRO
Shonda McCain	Omaha Public Power District	6	MRO
George Brown	Acciona Energy North America	5	MRO

					Jaimin Patel	Saskatchewan Power Corporation	1	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
					Jay Sethi	Manitoba Hydro	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
Santee Cooper	Marty Watson	1,3,5,6		Santee Cooper	Paul Camilletti	Santee Cooper	1,3,5,6	SERC
					Rene' Free	Santee Cooper	1,3,5,6	SERC
Michael Johnson	Michael Johnson		WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC

					Frank Lee	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern Company Services, Inc.	Pamela Frazier	1,3,5,6	MRO,RF,SERC,Texas RE,WECC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Jim Howell, Jr.	Southern Company - Southern Company Generation	5	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Sheraz Majid	Hydro One Networks, Inc.	1	NPCC
					Deidre Altobell	Con Edison	1	NPCC
					John Hastings	National Grid	1	NPCC
					Jeffrey Streifling	NB Power Corporation	1	NPCC

Michele Tondalo	United Illuminating Co.	1	NPCC
Chantal Mazza	Hydro Quebec	1	NPCC
Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
Quintin Lee	Eversource Energy	1	NPCC
Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
Dan Kopin	Vermont Electric Power Company	1	NPCC
James Grant	NYISO	2	NPCC
John Pearson	ISO New England, Inc.	2	NPCC
Harishkumar Subramani Vijay Kumar	Independent Electricity System Operator	2	NPCC
Nicolas Turcotte	Hydro-Quebec TransEnergie	1	NPCC
Randy MacDonald	New Brunswick Power Corporation	2	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
Michael Jones	National Grid	3	NPCC

David Burke	Orange and Rockland	3	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
David Kwan	Ontario Power Generation	4	NPCC
Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
Glen Smith	Entergy Services	4	NPCC
Sean Cavote	PSEG	4	NPCC
Jason Chandler	Con Edison	5	NPCC
Tracy MacNicoll	Utility Services	5	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
Vijay Puran	New York State Department of Public Service	6	NPCC

					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					David Kiguel	Independent	7	NPCC
					Joel Charlebois	AESI	7	NPCC
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	WECC	10	WECC
Associated Electric Cooperative, Inc.	Todd Bennett	3		AECI	Michael Bax	Central Electric Power Cooperative (Missouri)	1	SERC
					Adam Weber	Central Electric Power Cooperative (Missouri)	3	SERC
					Stephen Pogue	M and A Electric Power Cooperative	3	SERC
					William Price	M and A Electric Power Cooperative	1	SERC
					Peter Dawson	Sho-Me Power Electric Cooperative	1	SERC
					Mark Ramsey	N.W. Electric Power Cooperative, Inc.	1	NPCC
					John Stickley	NW Electric Power Cooperative, Inc.	3	SERC

					Tony Gott	KAMO Electric Cooperative	3	SERC
					Micah Breedlove	KAMO Electric Cooperative	1	SERC
					Kevin White	Northeast Missouri Electric Power Cooperative	1	SERC
					Skyler Wiegmann	Northeast Missouri Electric Power Cooperative	3	SERC
					Ryan Ziegler	Associated Electric Cooperative, Inc.	1	SERC
					Brian Ackermann	Associated Electric Cooperative, Inc.	6	SERC
					Brad Haralson	Associated Electric Cooperative, Inc.	5	SERC

1. Do you agree that dispersed power producing resource language and Facilities definition provides clarity to proposed VAR-002-5 applicability and better aligns to the BES definition terminology? If no, please explain and provide recommendations.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

Reactor and Capacitor Banks are capable of controlling voltage. By definition, would this capability invoke VAR-002 scope?

Additionally, dispersed power can be delivered onsite without the capability of controlling voltage. Does this equipment addition (inverters, battery) suggest it is within VAR-002 scope only if the capability is installed?

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT agrees and is making the revision to Draft Verision 2. If inverters/battery do not have a documented capability of providing voltage/reactive power support for the Facility, then they are not subject to VAR-002.

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name

Comment

In the applicability section 4.2

Facilities: “For the purpose of this standard, the term “generator” means a generator-owned facility capable of controlling voltage.”

The MRO NSRF is unclear if SDT means any size generator or any voltage level of the generator. Also, does this Standard apply to dispersed power producing resources?

Suggest using the NERC defined BES generator definition.

4.2. Facilities:

4.2.1 For the purpose of this standard, the term “generator” subject to these requirements means:

4.2.1.1 A BES generator with a gross individual nameplate rating greater than 20 MVA connected at 100 kV and greater: or

4.2.1.2: BES generating “plant” at the common Point of Interconnection meaning the transmission (high voltage) side of the main generator step-up transformer where more than 75 MVA of aggregate generation has been collected connected at 100 kV and greater.

4.2.1.3: Individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition are excluded from the Requirements of this Standard.

Likes 1

Wike Jennie On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any

generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Subsection 4.2.1 has been deleted in Draft Version II of proposed VAR-002-5.

Julie Hall - Entergy - 6, Group Name Entergy

Answer No

Document Name

Comment

This should align with the definitions as defined in the glossary of Terms and should refer to the various inclusions. Otherwise, there are no definitions in this standard regarding this.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Lindsey Mannion - ReliabilityFirst - 10

Answer No

Document Name

Comment

The addition of dispersed power producing resource language does provide clarity, but if the standard is to apply to all dispersed power producing resources, it should be noted under Facilities (4.2). Additionally, 4.2 should specify whether the applicability of the standard is limited to BES generators and BES dispersed power producing resources.

Using the term “generator” within VAR-002 more broadly than “generator” is used in other standards such as VAR-001 reduces clarity as it relates to how generator should be interpreted in other standards. If a definition of generator is needed, the RF Standard Review Team for this project recommends considering a proposed addition to the NERC Glossary of Terms.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5. The SDT has removed references to “generator” within the requirements and replace with “applicable Facilities.”

Marc Sedor - Seminole Electric Cooperative, Inc. - 3

Answer

No

Document Name

Comment

No, it could be clearer, in the revision, where to get the specific definition in the glossary. VAR-002 should state specifically where in glossary and/or which part of the definition. ie I4 in glossary definition

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any

generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Melanie Wong - Seminole Electric Cooperative, Inc. - 5

Answer No

Document Name

Comment

No, it could be clearer, in the revision, where to get the specific definition in the glossary. VAR-002 should state specifically where in glossary and/or which part of the definition. ie I4 in glossary definition

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1

Answer No

Document Name

Comment

AEPC has signed on to ACES comments below:

The facilities definition in Section 4.2 redefines the term generator and uses the term facility within the definition of facilities. It is our opinion that this section should be rewritten similar to the following:

"For the purpose of this standard, the terms, "Facility" or "applicable Facility" shall mean any BES generator (or group of BES generators) capable of controlling voltage at the point of interconnection (POI)."

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 "applicable Facility" to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, "For the purpose of this standard, 'applicable Facility' will mean any generating Facility as defined by the Bulk Electric System," and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5. Designation of controlling voltage specifically at the POI is not appropriate, as this could be interpreted to exclude devices/Facilities that directly control voltage at a different location (in accordance with voltage schedules).

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl

Answer No

Document Name

Comment

AECl supports comments submitted by the NAGF.

Likes 0

Dislikes 0

Response

Please see responses to NAGF comments.

Ryan Strom - Buckeye Power, Inc. - 5 - RF

Answer No

Document Name	
Comment	
We support the comments made by ACES Power Marketing.	
Likes 0	
Dislikes 0	
Response	
Please see responses to ACES comments.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	No
Document Name	
Comment	
AZPS supports the addition of “dispersed power producing resources” however recommends the Standard Drafting Team to consider expanding the Facilities definition to include individual traditional generation resources.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No

Document Name	
Comment	
WEC Energy Group supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Please see responses to MRO NSRF comments.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
<p>The term ‘dispersed power producing resource’, although used in other NERC documents (but notably not defined in the NERC Glossary of Terms), can still be misunderstood. Entities subject to compliance with NERC Reliability Standards would benefit in having an industry vetted, NERC Board adopted, and appropriate regulatory body approved definition that is added to the NERC Glossary of Terms. If developing a definition is beyond the scope of Project 2021-02, we believe adding the term ‘dispersed power producing resource’ to the VAR-002-5 version adds limited clarity.</p> <p>If the intent is to better align with the BES definition terminology, we suggest the following:</p> <p>Revise the ‘Purpose’ (A.3) to:</p> <p><i>“Purpose: To ensure generating resources [a term used in Inclusion I2 of the BES definition] and dispersed power producing resources [a term used in Inclusion I4 of the BES definition] supply or absorb Reactive Power, within their capabilities, to support the control of BES voltage within a specified operating range.”</i></p> <p>Revise the ‘Applicability’ (A.4), ‘Facilities’ (4.2) section to:</p>	

<i>“Facilities: Generating resources and dispersed power producing resources as described in Inclusion I2 and I4, respectively, of the Bulk Electric System (BES) definition that are capable of supporting voltage control.”</i>	
Likes 1	Wike Jennie On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry
Dislikes 0	
Response	
Thank you for your comments. This SDT will not endeavor to develop a definition of dispersed power producing resources, as this is out of scope of the current SAR, however this SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	No
Document Name	
Comment	
<p>Defining a "generator" as a "facility capable of controlling voltage" is ambiguous. All generators from major BES generators down to small portable generators have some voltage control capability. Does the SDT mean individual generators that are capable of changing voltage on the transmission system? If so, at what point on the transmission system? Also, is actual voltage variation required or do control circuits that can change VAR output or maintaining a specific power factor apply? Overall, we do not believe this is a clear definition.</p> <p>WECC questions whether it adds to or reduces clarity to "define" a generator on a standard by standard basis. While "generator" is not a NERC defined term, a standard by standard definition of the word deflates from the common understanding of the word "generator." WECC suggests that perhaps Section 4.2 (Applicability) should state what class, type, or capability of BES generators are applicable and if inverters, VAR controllers or other devices that are applicable be specified in Section 4.</p>	

If voltage control devices external to the generators are to be considered then a potential gap exists in any instances where those devices are owned by a TO.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised 4.2 “applicable Facilities” to specifically include BES definition aspects. Devices/equipment that control voltage either directly or indirectly through VAR changes are in scope for applicable Facilities. The SDT feels this standard applicable to generation Facilities as defined by BES definition requiring a registered GO and GOP.

Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments

Answer

No

Document Name

Comment

PG&E agrees with the input provided by EEI on the addition of the “term” “dispersed power producing resources” and the EEI concerns the modifications do not fully address the two (2) types of resources.

PG&E also agrees with the EEI proposed updates except for the use of the word “term”. In listening to industry comments and internal PG&E comments, the use of the word “term” has confused many that the SDT is creating a NERC Glossary Term which we do not believe is the case. PG&E recommends the word “term” be changed to “wording”.

Likes 0

Dislikes 0

Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to remove the reference to the word “term.”	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF does not agree with the Facilities definition as proposed. The NAGF recommends that the SDT consider using applicable BES Definition terminology and language for the Facilities definition.	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by EEI	
Likes 0	

Dislikes	0
Response	
Please see responses to EEI comments.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by EEI.	
Likes	0
Dislikes	0
Response	
Please see responses to EEI comments.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	No
Document Name	
Comment	
In the applicability section 4.2 “	
Facilities: For the purpose of this standard, the term “generator” means a generator-owned facility capable of controlling voltage.” It is unclear if they means any size or voltage generator. Also, does this also apply to dispered power producing resources.	
Suggest using the NERC defined BES generator definition.	

4.2. Facilities:

4.2.1 For the purpose of this standard, the term “generator” subject to these requirements means:

4.2.1.1 A BES generator with a gross individual nameplate rating greater than 20 MVA connected at 100 kV and greater;
 or

4.2.1.2: BES generating “plant” at the common Point of Interconnection meaning the transmission (high voltage) side of the main generator step-up transformer where more than 75 MVA of aggregate generation has been collected connected at 100 kV and greater. Individual generating resources below the common point of interconnection are excluded.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5. There are instances where voltage control could be conducted at the individual generating units (as opposed to a site level power plant controller) and, thus, be applicable under VAR-002.

Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez

Answer

No

Document Name

Comment

Dispersed power producing resource is not defined and could not be found in the Glossary of Terms Used in NERC Reliability Standards. Agree with Reliability First comment as well.

Likes 0

Dislikes 0

Response

Thank you for your comments. This SDT will not endeavor to develop a definition of dispersed power producing resources, as this is out of scope of the current SAR, however this SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Please see responses to ReliabilityFirst comments.

Russell Noble - Cowlitz County PUD - 3

Answer

No

Document Name

Comment

Agree with comments submitted by Tennessee Valley Authority.

Likes 0

Dislikes 0

Response

Please see responses to TVA comments.

Deanna Carlson - Cowlitz County PUD - 5

Answer

No

Document Name

Comment

Agree with comments submitted by Tennessee Valley Authority.	
Likes	0
Dislikes	0
Response	
Please see responses to TVA comments.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
<p>BC Hydro appreciates the opportunity to comment and thanks the drafting team for their efforts. While BC Hydro is in favor of the intended modifications, we are unable to support the proposed version as drafted.</p> <ul style="list-style-type: none"> The use of the term “dispersed power producing resource” as currently drafted could be interpreted to expand the scope of VAR-002 applicability beyond BES generating resources. BC Hydro noted that the Facility section of the Technical Rationale indicates that a “resource will have met the definition of inclusion to the Bulk Electric System”. <p>BC Hydro recommends that the Standard specifies whether it is limited to BES facilities, instead of relying on the Technical Rationale for additional clarity.</p> <ul style="list-style-type: none"> Also, the wording of Section 4.2 Applicability, i.e. “generator means generator-owned facility capable of controlling voltage” appears to expand beyond just active and reactive power generating units, and as drafted could be interpreted to expand the scope of VAR-002 applicability beyond BES generating units. Capacitor banks, shunt reactors, transformers, etc. are also capable of controlling voltage. 	

In addition, the term “generator-owned” could be open to interpretation as it is language inconsistent with the NERC Glossary of Terms, and it should be defined more clearly.

BC Hydro recommends that the wording be revised to better clarify which (BES if so clarified) equipment types VAR-002-5 would be applicable to.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer

No

Document Name

Comment

The addition of “or dispersed power generating resource” in all of the locations that it was added is not necessary. First, the word generator is already there. Secondly, a power generating resource is a generator. Thirdly, whether or not the resource is in one spot or is dispersed doesn’t really matter, because the NERC BES definition and the NERC Statement of Registry criteria specifies which resources must register with NERC and follow the NERC standards. Those generating resource types (dispersed) are already subject to VAR-002 if the aggregated facility MVA is large enough. We suggest using the NERC defined BES generator definition.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer No

Document Name

Comment

The facilities definition in Section 4.2 redefines the term generator and uses the term facility within the definition of facilities. It is our opinion that this section should be re-written similar to the following:

“For the purpose of this standard, the terms, “Facility” or “applicable Facility” shall mean any BES generator (or group of BES generators) capable of controlling voltage at the point of interconnection (POI).”

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5. Designation of controlling voltage specifically at the POI is not appropriate, as this could be interpreted to exclude devices/Facilities that directly control voltage at a different location (in accordance with voltage schedules).

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
<p>EEI supports the addition of “dispersed power producing resources” within the Purpose statement and elsewhere in this Reliability Standard and agree it adds meaning and clarity. However, we do not agree with the modifications to the Facilities section because it does not fully address the two types of resources (i.e., generators (<i>individual and aggregated</i>) and dispersed power producing resources). To address this concern, we offer the following:</p> <p>4.2. Facilities:</p> <p>4.2.1 For the purpose of this standard, the term “generator” subject to these requirements means:</p> <p>4.2.1.1 A BES generator with a gross individual nameplate rating greater than 20 MVA connected at 100 kV and greater; or</p> <p>4.2.1.2: BES generating “plant” at the common Point of Interconnection meaning the transmission (high voltage) side of the main generator step-up transformer where more than 75 MVA of aggregate generation has been connected at 100 kV and greater. Individual generating resources below the common point of interconnection are excluded.</p> <p>4.2.2 For the purpose of this standard, the term “distributed power producing resources” subject to these requirements means:</p> <p>4.2.2.1: Distributed power producing resources that are aggregated to a total gross nameplate value greater than 75 MVA designed primarily for delivering such capacity to a common point of connection at a voltage of 100 kV or above.</p>	
Likes	0
Dislikes	0
Response	

Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5. There are instances where voltage control could be conducted at the individual generating units (as opposed to a site level power plant controller) and, thus, be applicable under VAR-002.

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer No

Document Name

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #1.

Likes 0

Dislikes 0

Response

Please see responses to EEI comments.

Natalie Johnson - Enel Green Power - 5

Answer No

Document Name

Comment

Enel North America Inc. supports the MRO NSRF comments and suggested revisions.

Likes 0

Dislikes 0

Response	
Please see responses to MRO NSRF comments.	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Quebec Production, 1, 5; - Chantal Mazza	
Answer	No
Document Name	
Comment	
To provide a better alignment with the BES definition, “generators” shall be used as “generating resources” (as in the BES definition).	
Likes	0
Dislikes	0
Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Cyntia Doré - Hydro-Quebec Production - 5 - NPCC	
Answer	No
Document Name	
Comment	
To provide a better alignment with the BES definition, “generators” shall be used as “generating resources” (as in the BES definition).	
Likes	0

Dislikes	0
Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	No
Document Name	
Comment	
Applicability Section 4.2 Facilities does not appear to add clarity. Please consider removing Applicability Section 4.2 “Facilities: For the purpose of this standard, the term “generator” means a generator-owned facility capable of controlling voltage.”	
Likes	0
Dislikes	0
Response	
Thank you for your comments. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Casey Perry - PNM Resources - 1,3 - WECC	
Answer	No
Document Name	
Comment	

PNM agrees with EEI and supports EEI comments to distinguish between "generator" and "disturbance power producing resources" in section 4.2.

Likes 0

Dislikes 0

Response

Please see responses to EEI comments.

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer No

Document Name

Comment

OPG supports NPCC Regional Standards Committee's comments.

Likes 0

Dislikes 0

Response

Please see responses to NPCC RSC comments.

Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay

Answer No

Document Name

Comment

When it comes to the phrase “capable of controlling voltage” that is used in the revised Applicability section, we would request additional clarity. Renewable resource/dispersed generators are often capable of only providing a small amount of support to grid voltage. They aren’t always capable of “controlling” the voltage at the POI.

AES Clean Energy also supports comments submitted by NAGF.

Likes	0
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Dislikes	0
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Response

Thank you for your comments. After further review, the SDT feels the phrase "capable of controlling voltage" is understood in the Requirements and has been removed from section 4. Revised Section 4.2 “applicable Facility” to specifically include BES definition aspects.

Thomas Foltz - AEP - 5

Answer	Yes
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Document Name	
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Comment

While AEP agrees overall with the Applicability section, we recommend capitalizing “facilities” wherever it is used (including within 4.2) as it is currently lower case.

Likes	0
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Dislikes	0
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Response

Thank you for your support. The SDT has revised proposed VAR-002-5 for capitalization of Facilities when in lowercase.

Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	Yes
Document Name	
Comment	
<p>The addition of disbursed power producing resource language helps clarify the notification requirements for an entire facility vs individual units is acceptable under R3 and R4.</p> <p>Kristine Howie on behalf of Constellation Segments 5 and 6</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your support. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.</p>	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
<p>The addition of disbursed power producing resource language helps clarify the notification requirements for an entire facility vs individual units is acceptable under R3 and R4.</p>	

Kimberly Turco on behalf of Constellation Energy Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Secion 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
The addition of disbursed power producing resource language helps clarify the notification requirements for an entire facility vs individual units is acceptable under R3 and R4.	
Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	Yes

Document Name	
Comment	
Ameren supports the language in the requirement.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
<p>Texas RE appreciates the SDT’s efforts to address gaps in the Reliability Standards with regards to inverter-based resources. Texas RE noticed, however, that there is no official definition of dispersed power producing resources. Is the intent that the description in Inclusion I4 of the BES definition apply to the term in proposed standard VAR-002-4.1? If this is the case, Texas RE recommend specifying that in the standard. If the intent is not to use the description in the BES definition, Texas RE recommends creating a definition of dispersed power producing resources in order for the standard to be applied and studied consistently.</p> <p>Texas RE also recommends including more details in the Facility section similar to Reliability Standard PRC-019-2. This would provide more information and clarity around the applicability of VAR-002-4.1.</p>	
Likes	0
Dislikes	0
Response	
Thank you for your support and comments. This SDT will not endeavor to develop a definition of dispersed power producing resources, as this is out of scope of the current SAR, however this SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	

Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes 0	
Dislikes 0	
Response	
Please see responses to EEI RTC and NPCC RSC comments.	

2. Do you agree that the additional words, “mutually-agreeable format” in Requirements R3 and R4 will address ambiguities and provide a means to get the clarity needed for notification threshold and medium communication? If no, please explain and provide recommendations.

Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2

Answer No

Document Name

Comment

ERCOT has concerns about the "mutually agreeable format" language. If it intends to borrow a page from IRO-010 and TOP-003, it is already addressed there (assuming R3 and R4 is data and information for a TOP and RC, RTA/OPA/Real time monitoring). The main issue is that the mutually agreed “format” includes a “threshold” as connotated in the footnote for R3. A “threshold” goes beyond the original requirement to identify notification “requirements” or more to the point “when” a notification must be made. If those requirements or “thresholds” must be identified, including what is referred to in R4, the proper approach would be to require the TOP (and RC) to identify those requirements in a similar fashion to VAR-001 R5.2 and such a change should get a proper mixture of TOPs and RCs to represent and identify what those notification requirements should be.

The SDT did not add the “mutually agreeable” or “threshold” language to VAR-002 R1 and R2 because the clarity was adequately addressed in the subrequirements for R1 or in the notification requirements from the TOP(VAR-001 R5.2) for R2. If the clarity is insufficient for the GOP to know “when” or the “thresholds” are for those notifications, NERC should maintain the same constructs as VAR-001 R5.2 and have the TOP (and RC, actually) identify the notification requirement “thresholds” and let IRO-010 and TOP-003 establish the “format.”

Either the SDT should open up VAR-001 and ensure there is sufficient representation of TOPs and RCs or it should defer those changes to a future SDT to address that issue in a more coordinated fashion. ERCOT is not fundamentally opposed to a construct of allowing a TOP and RC to identify individualized needs, but it does not agree with “how” it is proposed to be done within the auspices of VAR-002 and varying from the current construct of TOP’s identifying notification requirements.

Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. The SDT understands and appreciates the feedback related to the proposed language. IRO-010 and TOP-003 did serve as the model for this language and in SDT members’ experience that information is not necessarily included in the TOP-003 data specification. The intent of the SDT is, indeed, to establish some threshold for notifications related to degraded AVR or reactive capability, rather than include or exclude individual generating units entirely. The SDT has considered your recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern.</p>	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
<p>NRG agrees that inclusion of mutually agreeable format will allow for flexibility in reporting R3 and R4 but seeks clarification into what will be considered accepted criteria. If units are equipped with telemetry as far as status of AVR/PSS, telemetry should be accepted criteria for notification of status change in a real time basis. NRG also seeks clarification as to what medium will be used for communication of the mutually agreeable format- will this be through data specifications through IRO-010 and TOP-003? If not, will communication of the format be required at some frequency? Finally, mutually agreeable format criteria should be similar between regions for consistency in execution.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. The SDT intended this language to allow the flexibility in reporting (see footnote explanation of “mutually agreeable”). Certainly this could be fulfilled by data specification in IRO-010 and TOP-003, but could also be established via other instruction from the TOP. Potential compliance approaches are contemplated by the</p>	

SDT to draft the standard, but are not intended to be explicitly delineated within the standard. The SDT has revised proposed VAR-002-5 to add clarity based on this feedback and comments from industry.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer No

Document Name

Comment

While the concept of a “mutually-agreeable” format is laudable, it is our opinion that it places the impetus on the GOP to determine such a format. Because VAR-002 is not applicable to the TOP, the TOP has no incentive to work with the GOP to determine a “mutually-agreeable format.” It is our recommendation to modify this section to either require the TOP to work with the GOP to determine the “mutually-agreeable format” or to modify VAR-001 to require the TOP to specify the required format for notifications.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has considered your recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern.

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer No

Document Name

Comment

The justification for why “mutually agreeable format” is needed in R3 and R4 is unclear. If this is being suggested so that the two parties acknowledge the TOP desired granularity for notifications, this can be covered in the TOP specified notification specification given within R2 of the existing standard version

Likes 0

Dislikes 0

Response

Thank you for your comments. Because the SDT decided not to entirely include or exclude individual generation units from Requirements R3 and R4, the intent of the intent was to allow for flexibility in how and when changes to the AVR status or functionality or reactive capability should be reported by the GOP to the TOP based on the characteristics of the system.

The SDT agrees one approach could be to include this in the VAR-001 requirement for TOP but did not want to explicitly limit or require a change to VAR-001. The SDT has considered your recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern.

Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper

Answer

No

Document Name

Comment

If you desire a requirement to have the GOP and the TOP mutually agree on a communication format you need to create a separate requirement to do so. It also seems to require the GOP and TOP to agree to a threshold for notification.

Please explain what can cause a non-dispersed application to have a degraded reactive capability change that does not also cause a degraded real power capability. Typically when a real power capability change occurs the GOP knows the

extent of the limitation to real power, but not the extent that it corresponds to reactive. This would require an extensive amount of testing to determine the effect for all cases.

Likes 0

Dislikes 0

Response

Thanks you for your comments. The SDT understands and appreciates this concern and has received similar feedback regarding the mechanism of coordinating notification requirements between GOP and TOP. The TOP is required to assess reactive capability and voltage control liabilities for system operation in real time per VAR-001, the TOP should provide the criteria for what constitutes reporting due to system impacts in order to maintain reliable operations. The threshold of notification is ultimately determined by the TOP since this information is provided for their assessment. The SDT intent is to provide the flexibility and reduce ambiguity to meet expectations.

The degraded real and reactive capability is a valid concern and it is difficult to ascertain the corresponding reactive capability changes for both non-dispersed and dispersed power producing resources. One example scenario the SDT considered regarding a change in reactive capability that does not affect Real Power capability would be a low-side capacitor bank at the generation resource (owned by the GO and controlled by the GOP) which could be out of service and reduce the Reactive Power that could be delivered at the POI. Ultimately, the concern raised about knowing the reactive capability change existed prior to, and regardless of, the revisions proposed by this SDT.

Deanna Carlson - Cowlitz County PUD - 5

Answer

No

Document Name

Comment

Agree with comments submitted by Arizona Electric Power Cooperative.

Likes 0

Dislikes	0
Response	
Please see responses to comments by Arizona Electric Power Cooperative.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
Agree with comments submitted by Arizona Electric Power Cooperative.	
Likes	0
Dislikes	0
Response	
Please see responses to comments by Arizona Electric Power Cooperative.	
Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez	
Answer	No
Document Name	
Comment	
Agree with Reliability First comment.	
Likes	0
Dislikes	0
Response	

Please see responses to comments by ReliabilityFirst.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF believes that the additional wording “mutually-agreeable format” in R3 and R4 is not necessary. Existing notification/communication methods currently in place for VAR-002 should be leveraged for dispersed energy resources.	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
Thank you for your comments. The SDT agrees that existing notification/communication methods should be leveraged, but finds that there is some ambiguity about what may constitute notification or what manner that should be provided (e.g., phone, messaging system, email, telemetry data point, or other means). The SDT believes the standard would benefit from providing direction to more formally establish this. This language was adopted based on the IRO-010 and TOP-003 requirements as an attempt to facilitate that sort of coordination.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	No
Document Name	
Comment	
The words "mutually-agreeable" are used in other standards (IRO-010) and the use here is acceptable but does not address ambiguity. WECC questions whether the words "Mutually-agreeable format" defined uniquely for this standard via a footnote is appropriate. The words are used in other standards without definition. WECC suggests the if some definition is required, it should be address via a glossary changes to it can be applied consistently. As it is now it	

implies and "agreement" is required between two parties, yet the terminology does not apply to the functions either requesting or receiving the data. Thus only one party (GO) is responsible to comply. WECC does not believe terms should be uniquely defined or used on a standard by standard basis unless used only in that single standard. WECC suggests eliminating the words from standards completely, but at a minimum it should not be further promoted in new standards or revisions. The issue is the communication, not the format.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT reviewed other Standards for consistency such as in providing footnotes to expand on terminology. This SDT will not endeavor to develop a glossary term as this is out of scope of the current SAR rather lean on the approach from previous projects. The TOP is required to assess reactive capability and voltage control liabilities for system operation in real time per VAR-001, the TOP should provide the criteria for what constitutes reporting due to system impacts in order to maintain reliable operations. The threshold of notification is ultimately determined by the TOP since this information is provided for their assessment. The SDT intent is to provide the flexibility and reduce ambiguity to meet expectations.

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group

Answer No

Document Name

Comment

WEC Energy Group supports the MRO NSRF comments.

Likes 0

Dislikes 0

Response

Please see responses to comments by MRO NSRF.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	No
Document Name	
Comment	
We support the comments made by ACES Power Marketing.	
Likes	0
Dislikes	0
Response	
Please see responses to comments by ACES Power Marketing.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl	
Answer	No
Document Name	
Comment	
AECl supports comments submitted by the NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to comments by NAGF.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No

Document Name	
Comment	
<p>AEPC has signed on to ACES comments below:</p> <p>While the concept of a “mutually-agreeable” format is laudable, it is our opinion that it places the impetus on the GOP to determine such a format. Because VAR-002 is not applicable to the TOP, the TOP has no incentive to work with the GOP to determine a “mutually-agreeable format.” It is our recommendation to modify this section to either require the TOP to work with the GOP to determine the “mutually-agreeable format” or to modify VAR-001 to require the TOP to specify the required format for notifications.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. The SDT has considered your recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern.</p> <p>The TOP is required to assess reactive capability and voltage control liabilities for system operation in real time per VAR-001, the TOP should provide the criteria for what constitutes reporting due to system impacts in order to maintain reliable operations. The threshold of notification is ultimately determined by the TOP since this information is provided for their assessment. The SDT intent is to provide the flexibility and reduce ambiguity to meet expectations.</p>	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	No
Document Name	

Comment

The general addition of “mutually-agreeable format” to R3 and R4 would require the GOP to obtain concurrence from the TOP that the communication medium used for notification is acceptable. This could help improve the usefulness of the notifications for the TOP.

VAR-001-5 R4 currently requires the TOP to specify criteria that will exempt generators 1) from following a voltage or Reactive Power schedule, 2) from having its automatic voltage regulator (AVR) in service or from being in voltage control mode, or 3) from having to make any associated notifications.

The “threshold for degradation” seems more appropriate for the TOP to address under the VAR-001-5 R4 criteria, rather than in the proposed “mutually-agreeable” format specified by footnote 5. As the TOP has broader-area visibility and responsibility we believe it is appropriate for the TOP to retain the right to specify this threshold itself, and negotiable thresholds introduce the potential for lack of clarity or disagreement.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has considered your recommended approach of potentially coordinating with VAR-001 requirements (submittal of a SAR for VAR-001) or revising the proposed draft language to otherwise address this concern. The SDT agree that VAR-001 R4 would be leveraged to gain the reporting criteria needed in VAR-002, but does not specifically state that TOP provide to GOP the threshold of degradation therefore it is the intent of the SDT to provide the flexibility in VAR-002 to seek out the criteria needed.

Julie Hall - Entergy - 6, Group Name Entergy

Answer

No

Document Name

Comment

The same wording should be used for R2, as well, however, replacing “Meet the conditions of notification for deviations” should be spelled out in the requirement or the Measure, not in a note. The proposed changes are silent on the expectations for proof of “mutually agreeable” format, or the process to document issues arising from disagreements on format. The format should be dictated by what technology is available to the GOP and how the GOP can make that communication. This should also be clarified that multiple methods can be used for communications.

Likes 0

Dislikes 0

Response

Thank you for your comments. The proposed language in Measure M4 was intended to address the expectations for proof of the mutually agreeable format. The intent is that the GOP and TOP will have flexibility on how to communicate the Requirements R3 and R4 notifications. R2 does not have ambiguity as stated in the SAR, whereas R3 and R4 do not provide any threshold of notification, R2 provides the voltage schedule with bandwidth to provide the fixed condition for notification from deviations.

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

No

Document Name

Comment

The MRO NSRF does not see the value in adding the additional language of “mutually agreeable format”.

Likes 0

Dislikes 0

Response

Thank you for your comment. The intention is to clarify what threshold, time period, and communication medium should be used for the GOP to make this notification to the TOP and to allow flexibility between those parties as to what method is most appropriate.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

The previous language provided greater clarity. The expectations for threshold determination introduces additional uncertainty and risk for compliance monitoring.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT agrees that there is additional ambiguity inherent in this threshold determination. However, the SDT believes that the GOP and TOP mutually defining this will actually make the requirement clearer. The SDT did not think that entirely including or excluding individual generating units of dispersed power producing resources was appropriate, so the intention is to create a mechanism whereby the GOP and TOP can agree on the required notification based on the actual Facility characteristics and potential system impacts.

Casey Perry - PNM Resources - 1,3 - WECC

Answer Yes

Document Name

Comment

PNM agrees.

Likes 0

Dislikes	0
Response	
Thank you for your support.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	
Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	

Kimberly Turco on behalf of Constellation Energy Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	
Kristine Howie on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Enel North America Inc. does not oppose the addition of “mutually-agreeable format”.	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #2.	
Likes	0
Dislikes	0
Response	
Thank you for your support. Please see responses to comments by EEI.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that “mutually-agreeable format” in Requirements R3 and R4 provide sufficient clarity needed for notifications regarding changes in generator/resource capability, as identified in these two Requirements.	
Likes	0
Dislikes	0

Response	
Thank you for your support.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	Yes
Document Name	
Comment	
SC: It is not justified why “mutually agreeable format” is needed in R3 and R4. Have there been disputes?	
Likes	0
Dislikes	0
Response	
Thank you for your comment. The SDT is not aware of any disputes, but there is perhaps a lack of clarity about what could constitute notification. Additionally, because the SDT determined that entirely including or excluding individual generating units of dispersed power producing resources was not appropriate and that some threshold should be established for Requirements R3 and R4, the SDT felt it necessary to add this language to specify the required coordination and definition of how and when these notifications should be made.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by EEI.	
Likes	0

Dislikes	0
Response	
Thank you for your support. Please see responses to comments by EEI.	
Kinte Whitehead - Exelon - 3	
Answer	Yes
Document Name	
Comment	
Exelon supports the comments submitted by EEI	
Likes	0
Dislikes	0
Response	
Thank you for your support. Please see responses to comments by EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E agrees that the “mutually-agreeable format” in the Requirements provide sufficient clarity.	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
AZPS agrees with the additional words “mutually-agreeable format” in R3 and R4, however, the Standard Drafting Team should consider clarification within R4 to state “that exceeds the threshold for notification as defined in R1”.	
Likes	0
Dislikes	0
Response	
Thank you for your support. The SDT has added clarification in Requirement R4, “...that degrades or restores from degradation and exceeds the threshold for notification...”	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP recommends that the text in R3 “which degrades/restores its ability” be revised to instead state “which degrades *or* restores its ability.”	
Likes	0
Dislikes	0
Response	

Thank you for your support and comment. The SDT has revised the language is retained in Draft Version II.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Yes, as technology changes, we need the parties working together to get the best result.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Quebec Production, 1, 5; - Chantal Mazza	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Melanie Wong - Seminole Electric Cooperative, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marc Sedor - Seminole Electric Cooperative, Inc. - 3	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes 0	
Dislikes 0	
Response	
Please see responses to comments by EEI RTC and NPCC RSC.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE understands that adding the phrase “mutually agreeable format” to Requirement R3 was a recommendation from the Enhanced Periodic Review. Texas RE inquires, however, as to why the EPR team (and the SDT) felt this revision is necessary. Reliability Standard COM-001-3 addresses having Interpersonal Communications capability which should encompass the communication described in proposed VAR-002.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT agrees that the COM-001-3 interpersonal communication capability is most likely to be used to fulfill this notification requirement, but that additional details would be helpful to ensure the GOP and TOP are aligned on both how to notify and when the notification is necessary.

3. Throughout proposed VAR-002-5, the Project 2021-02 SDT has replaced/changed the words “automatic voltage regulator (AVR)” with the more comprehensive “automatic voltage regulator (AVR) or volt/VAR controller(s)” to add clarity and to better align with expressions/wording used in other NERC Reliability Standards, such as MOD-026. Do you agree with this change? If no, please explain and provide recommendations.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC

Answer No

Document Name

Comment

I would prefer the use of "generation voltage control devices" as a catch-all. However, I assume that this may have been discussed at the SDT level, and will support the best language that the SDT has gotten consensus on.

Likes 0

Dislikes 0

Response

Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name

Comment

The MRO NSRF disagrees. The addition of ‘volt/VAR controller(s)’ will not meet its intended purpose, as it is not a defined term. The addition of this term further narrows the scope of equipment in which this Standard’s requirements are applicable to and will ultimately lead to the same situation that is being addressed in this SAR. The MRO NSRF

suggests removing both “automatic voltage regulator (AVR) or volt/VAR controller(s)” for the Standard’s language, replacing it with “Voltage Regulator” and then defining voltage regulator either within the Standard or the Glossary of Terms.

Voltage Regulator: the central or main piece of equipment at a generation Facility used to control the Reactive Power produced or consumed by Reactive Power supplying/consuming equipment, whether it be a generator, shunt equipment (capacitor/reactor), static/dynamic var compensators, synchronous condensers, and the like, that are used to control voltage or Reactive Power in the Steady State as specified by the Transmission Operator.

Likes 0

Dislikes 0

Response

Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard. This SDT will not endeavor to develop a glossary term as this is out of scope of the current SAR rather lean on the approach from previous projects.

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI

Answer No

Document Name

Comment

AECI supports comments submitted by the NAGF.

Likes 0

Dislikes 0

Response

Please see responses to NAGF’s comments.

Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Please see responses to MRO NSRF's comments.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF believes that the addition of the "or volt/VAR controller(s)" language is not necessary. The automatic voltage regulator (AVR) for the renewable plants is the Power Plant Controller (PPC). Just because AVR has been used for synchronous machines, doesn't mean that it is exclusively reserved for that type of unit.	
Likes 0	
Dislikes 0	
Response	
Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.	

Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	No
Document Name	
Comment	
<p>The MRO NSRF disagrees. The addition of ‘volt/VAR controller(s)’ will not meet its intended purpose, as it is not a defined term. The addition of this term further narrows the scope of equipment in which this Standard’s requirements are applicable to and will ultimately lead to the same situation that is being addressed in this SAR. The MRO NSRF suggests removing both “automatic voltage regulator (AVR) or volt/VAR controller(s)” for the Standard’s language, replacing it with “Voltage Regulator” and then defining voltage regulator either within the Standard or the Glossary of Terms.</p> <p>Voltage Regulator: the central or main piece of equipment at a generation Facility used to control the Reactive Power produced or consumed by Reactive Power supplying/consuming equipment, whether it be a generator, shunt equipment (capacitor/reactor), static/dynamic var compensators, synchronous condensers, and the like, that are used to control voltage or Reactive Power in the Steady State as specified by the Transmission Operator.</p>	
Likes	0
Dislikes	0
Response	
<p>Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard. This SDT will not endeavor to develop a glossary term as this is out of scope of the current SAR rather lean on the approach from previous projects.</p>	
<p>Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez</p>	

Answer	No
Document Name	
Comment	
AVR is a common industry term, and volt/VAR controller is not. Additionally it seems that the intent is to control the voltage, not VARs.	
Likes 0	
Dislikes 0	
Response	
Thanks for your comments. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
As applied to "dispersed power producing resource" the widely understood "AVR" which is usually associated with synchronous generators may create confusion. Support comments supplied by the North American Generator Forum.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF's comments.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	No

Document Name	
Comment	
As applied to "dispersed power producing resource" the widely understood "AVR" which is usually associated with synchronous generators may create confusion. Support comments supplied by the North American Generator Forum.	
Likes 0	
Dislikes 0	
Response	
Please see responses to NAGF's comments.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	No
Document Name	
Comment	
The addition of "or volt/VAR controller" is not needed where it has been added. Reasons being that the automatic voltage regulator (AVR) for the renewable plants is the PPC. People with these types of plants already know that. Second, just because AVR has been used for synchronous machines, doesn't mean that it is exclusively reserved for that type of unit.	
Likes 0	
Dislikes 0	
Response	
Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.	

Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
<p>Enel North America Inc. would like to recommend the SDT utilize the footnotes from MOD-026 for volt/VAR controllers (MOD-026, footnote 1.b: “For an aggregate generating plant, the volt/var control system includes the voltage regulator & reactive power control system controlling and coordinating plant voltage and associated reactive capable resources”).</p>	
Likes	0
Dislikes	0
Response	
<p>Thanks for your comments. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.</p>	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	No
Document Name	
Comment	
<p>ISO-NE supports the comments submitted by the IRC Standards Review Committee (SRC):</p> <p>“The IRC/SRC suggests removing both “automatic voltage regulator (AVR) or volt/VAR controller(s)” for the Standard’s language, replacing it with “Voltage Regulator” and then defining voltage regulator either within the Standard or the Glossary of Terms.</p>	

Voltage Regulator: the central or main piece of equipment at a generation Facility used to control the Reactive Power produced or consumed by Reactive Power supplying/consuming equipment, whether it be a generator, shunt equipment (capacitor/reactor), static/dynamic var compensators, synchronous condensers, and the like, that are used to control voltage or Reactive Power in the Steady State as specified by the Transmission Operator."

Likes 0

Dislikes 0

Response

Please see responses to IRO/SRC's comments.

Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee

Answer

No

Document Name

Comment

The IRC/SRC suggests removing both "automatic voltage regulator (AVR) or volt/VAR controller(s)" for the Standard's language, replacing it with "Voltage Regulator" and then defining voltage regulator either within the Standard or the Glossary of Terms.

Voltage Regulator: the central or main piece of equipment at a generation Facility used to control the Reactive Power produced or consumed by Reactive Power supplying/consuming equipment, whether it be a generator, shunt equipment (capacitor/reactor), static/dynamic var compensators, synchronous condensers, and the like, that are used to control voltage or Reactive Power in the Steady State as specified by the Transmission Operator.

Please note: PJM is not a party to the response to this Question.

Likes 0

Dislikes 0

Response	
Thanks for your comments. The SDT has revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and will add footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard. This SDT will not endeavor to develop a glossary term as this is out of scope of the current SAR rather lean on the approach from previous projects.	
Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay	
Answer	No
Document Name	
Comment	
AES Clean Energy also supports comments submitted by NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to NAGF's comments.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
WECC believes the wording a proposed is adequate, however, more clarity is required in the Facilities Section to clearly identify applicable equipment other than "generator."	
Likes	0
Dislikes	0
Response	
Thanks for your comments. The SDT agrees Section 4 needs to provide the clarity of applicable equipment. See Q1 responses.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports this modification.	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports this change.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #3.	
Likes	0
Dislikes	0
Response	
Thank you for your support. Please see responses to EEI's comments for Question No. 3.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	

Answer	Yes
Document Name	
Comment	
Constellation agrees with the consistency of language across standards..	
Kristine Howie on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Constellation agrees with the consistency of language across standards..	
Kimberly Turco on behalf of Constellation Energy Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation agrees with the consistency of language across standards..	
Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Casey Perry - PNM Resources - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marc Sedor - Seminole Electric Cooperative, Inc. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Melanie Wong - Seminole Electric Cooperative, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kinte Whitehead - Exelon - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Qu?bec Production, 1, 5; - Chantal Mazza	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes	0
Dislikes	0
Response	
Please see responses to EEI RTC and NPCC RSC's comments.	

4. The Project 2021-02 SDT has made revisions to the requirements for VAR-002-5 based on the recommendations resulting in Attachment 5 from the efforts of the Project 2016-EPR-02 Enhanced Periodic Review Team. Do you agree with these changes? If no, please explain and provide recommendations.

Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay

Answer No

Document Name

Comment

AES Clean Energy also supports comments submitted by NAGF.

Likes 0

Dislikes 0

Response

Please see responses to NAGF comments.

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer No

Document Name

Comment

OPG supports NPCC Regional Standards Committee’s comments.

Likes 0

Dislikes 0

Response

Please see responses to NPCC RSC comments.

Casey Perry - PNM Resources - 1,3 - WECC	
Answer	No
Document Name	
Comment	
PNM supports EEI comments for not including the Attachment 5 recommendations in VAR-002-5.	
Likes	0
Dislikes	0
Response	
Please see responses to EEI comments.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	No
Document Name	
Comment	
Please see question 1 and 8 comments for suggested improvements.	
Likes	0
Dislikes	0
Response	
Please see responses to Question 1 and Question 8.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	

Comment

Enel North America Inc. supports the MRO NSRF comments on points 2.3 and 2.5.

Likes 0

Dislikes 0

Response

Please see responses to MRO NSRF comments.

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer

No

Document Name

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #4.

Likes 0

Dislikes 0

Response

Please see responses to EEI comments.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

No

Document Name

Comment

As noted in EEI’s comments on the 2nd Draft of the project SAR, EEI does not support the inclusion of the “Miscellaneous Corrections/Revisions” in Attachment 5 from the Enhanced Periodic Review for the Project 2016-EPR-02 Report because the recommendations were considered non-substantive or insignificant quality. We further note the report is stale at nearly 5 years old. Moreover, while EEI supports some aspects of the recommendations cited in the Enhanced Periodic Review for Project 2016-EPR-02 Report, we disagree with their direct application because they are not clear and add ambiguity to the Standard. (See our comments to Questions 1, 7, & 8.)

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has reviewed EEI’s comments to Questions 1, 7 & 8 and has provided responses in the respective sections. The SDT has determined that the “Miscellaneous Corrections/Revisions” in Attachment 5 from the recommendations of Project 2016-EPR-02 merit consideration by the SDT since the standard has not changed since the time of the EPR review. Although the report is 5 years old, recommendations in the report remain unresolved and are normally expected to be considered in the next opportunity that the subject Standard is opened during a SAR and development of a project.

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators

Answer

No

Document Name

Comment

It is our opinion that Requirement R4 is too vague. Who defines the “threshold for notification”? Is this specified by the TOP?

VAR-001-5 R5.2 requires the TOP to provide the GOP with notification requirements for deviations from the voltage or Reactive Power schedule, but not both. Under the new verbiage, if the TOP only specifies a voltage schedule and does not also specify a Reactive Power schedule, then VAR- 002-5 R4 is rendered moot. Our recommendation is to either:

1. Specify the “threshold for notification” as a fixed percentage of reactive capability (e.g. >=10% as in MOD-025 R2).

2. Modify R4 to include the TOP under VAR-002 and require the TOP to specify the “threshold for notification”.
3. Modify VAR-001 to require the TOP to specify the “threshold for notification”.

It is our opinion that recommendation #1 is the best solution.

Likes 0

Dislikes 0

Response

Thanks for your comments. Providing additional clarity to ambiguity in Requirements R3 and R4 reporting should be determined by Transmission Operator for system operation reliability impacts to support VAR-001 R2 and R5. The TOP should provide the threshold of notification for generating resource voltage control status changes and generating resource reactive changes along with voltage or reactive schedule. If TOP does not provide this information, the SDT suggest the GOP and TOP would collaborate to have a mutual agreed approach to reporting. Whether or not a voltage or reactive schedule is provided in VAR-002 R2, Requirement R4 is to provide notification of changes in generating resource reactive capability as defined by the Transmission Operator for the Generating resource in real time.

The 3 options outlined;

- 1) specify the “threshold for notification” as a fixed percentage of reactive capability (e.g. $\geq 10\%$ as in MOD-025 R2),
- 2) Modify R4 to include the TOP under VAR-002 and require the TOP to specify the “threshold for notification”,
- 3) Modify VAR-001 to require the TOP to specify the “threshold for notification”.

The SDT has reviewed the options and provide the following. Option 1 would be contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should consider what threshold of reactive capability change needs reported in VAR-001 R2 as to the metric of resource notification. Option 2 would be outside the scope of the SAR, and would suggest new SAR to make VAR-002 applicable to TOP. Option 3 would be outside the scope of the SAR, and would suggest new SAR to address in VAR-001. The SDT believes re-opening

VAR-001 for this purpose may not be needed as the GOP and TOP would be mutually defining threshold and meeting the intent of reporting within VAR-002.

Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company

Answer No

Document Name

Comment

Southern Company does not support the inclusion of the “Miscellaneous Corrections/Revisions” in Attachment 5 from the Enhanced Periodic Review for the Project 2016-EPR-02 Report because the recommendations were considered non-substantive or insignificant quality and because the report is stale at nearly 5 years old.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has determined that the “Miscellaneous Corrections/Revisions” in Attachment 5 from the recommendations of Project 2016-EPR-02 merit consideration by the SDT since the standard has not changed since the time of the EPR review. Although the report is 5 years old, recommendations in the report remain unresolved and are normally expected to be considered in the next opportunity that the subject Standard is opened during a SAR and development of a project.

Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper

Answer No

Document Name

Comment

The proposed change to R6 does not address the Tap Settings recommendation in Attachment 5. Attachment 5 recommends that the requirement address both TOP and GOP owned Step Up Transformers. The requirement refers

to “generator owned.” This almost creates a new term that would need to be defined in the Glossary. The phrase generator owned creates confusion. This requirement should address two separate Step Up Transformers, GOP owned and TOP owned. The requirements should not differ based on the functional model.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT believes that TO owned assets are not in the scope of this SAR. Including TO owned step-up transformers in the scope would be unnecessary as the TO has authority over their own assets to provide to TOP and recommend this be addressed in VAR-001. VAR-002 would apply to GO/GOP only and to add TO would be outside the scope of SAR. The SDT has revised Section 4.2 “applicable Facility” to specifically include BES definition aspects. Proposed Section 4.2 has been revised to, “For the purpose of this standard, ‘applicable Facility’ will mean any generating Facility as defined by the Bulk Electric System,” and the proposed Section 4.2 subsections have been deleted in Draft Version II of proposed VAR-002-5.

Deanna Carlson - Cowlitz County PUD - 5

Answer No

Document Name

Comment

Although in agreement with the intent, please see comment to previous questions.

Likes 0

Dislikes 0

Response

Thank you. Please see responses in previous questions.

Russell Noble - Cowlitz County PUD - 3

Answer No

Document Name	
Comment	
Although in agreement with the intent, please see comment to previous questions.	
Likes 0	
Dislikes 0	
Response	
Thank you. Please see responses in previous questions.	
Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez	
Answer	No
Document Name	
Comment	
Agree with Reliability First comment.	
Likes 0	
Dislikes 0	
Response	
Please see responses to ReliabilityFirst comments.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	No
Document Name	
Comment	

The MRO NSRF does not agree with certain changes meet the intent of Project 2016-EPR-02.

Likes 0

Dislikes 0

Response

Thanks for your comments. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations.

Daniel Gacek - Exelon - 1

Answer No

Document Name

Comment

Exelon supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Please see responses to EEI comments.

Kinte Whitehead - Exelon - 3

Answer No

Document Name

Comment

Exelon supports the comments submitted by EEI

Likes	0
Dislikes	0
Response	
Please see responses to EEI comments.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
See the NAGF comments/responses to Questions 1,2,3,7, and 8.	
Likes	1
Dislikes	0
JEA, 1, McClung Joseph	
Response	
Please see responses to NAGF comments to Questions 1, 2, 3, 7, and 8.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E agrees with the input from EEI on not supporting the inclusion of “Miscellaneous Corrections/Revisions” in Attachment 5 because the recommendations were considered non-substantive or of insignificant quality, and the report is almost 5 years old making the information potentially no longer valid.	

Likes	0
Dislikes	0
Response	
Please see responses to EEI comments.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
"Shall" should be used instead of "Will"	
Likes	0
Dislikes	0
Response	
Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group supports the MRO NSRF comments.	
Likes	0
Dislikes	0

Response	
Please see responses to MRO NSRF comments.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	No
Document Name	
Comment	
We support the comments made by ACES Power Marketing.	
Likes	0
Dislikes	0
Response	
Please see responses to ACES Power Marketing comments.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl	
Answer	No
Document Name	
Comment	
AECl supports comments submitted by the NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to NAGF comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	

Answer	No
Document Name	
Comment	
<p>AEPC has signed on to ACES comments below:</p> <p>It is our opinion that Requirement R4 is too vague. Who defines the “threshold for notification”? Is this specified by the TOP? VAR-001-5 R5.2 requires the TOP to provide the GOP with notification requirements for deviations from the voltage or Reactive Power schedule, but not both. Under the new verbiage, if the TOP only specifies a voltage schedule and does not also specify a Reactive Power schedule, then VAR-002-5 R4 is rendered moot. Our recommendation is to either:</p> <ol style="list-style-type: none"> 1. Specify the “threshold for notification” as a fixed percentage of reactive capability (e.g. $\geq 10\%$ as in MOD-025 R2). 2. Modify R4 to include the TOP under VAR-002 and require the TOP to specify the “threshold for notification”. 3. Modify VAR-001 to require the TOP to specify the “threshold for notification”. <p>It is our opinion that recommendation #1 is the best solution.</p>	
Likes	0
Dislikes	0
Response	
<p>Thanks for your comments. Providing additional clarity to ambiguity in Requirements R3 and R4 reporting should be determined by Transmission Operator for system operation reliability impacts to support VAR-001 R2 and R5. The TOP should provide the threshold of notification for generating resource voltage control status changes and generating resource reactive changes along with voltage or reactive schedule. If TOP does not provide this information, the SDT suggest the GOP and TOP would collaborate to have a mutual agreed approach to reporting. Whether or not a voltage or reactive schedule is provided in VAR-002 R2, Requirement R4 is to provide notification of changes in generating resource reactive capability as defined by the Transmission Operator for the Generating resource in real time.</p>	

The 3 options outlined;

- 1) specify the “threshold for notification” as a fixed percentage of reactive capability (e.g. $\geq 10\%$ as in MOD-025 R2),
- 2) Modify R4 to include the TOP under VAR-002 and require the TOP to specify the “threshold for notification”,
- 3) Modify VAR-001 to require the TOP to specify the “threshold for notification”.

The SDT has reviewed the options and provide the following. Option 1 would be contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should consider what threshold of reactive capability change needs reported in VAR-001 R2 as to the metric of resource notification. Option 2 would be outside the scope of the SAR, and would suggest new SAR to make VAR-002 applicable to TOP. Option 3 would be outside the scope of the SAR, and would suggest new SAR to address in VAR-001. The SDT believes re-opening VAR-001 for this purpose may not be needed as the GOP and TOP would be mutually defining threshold and meeting the intent of reporting within VAR-002.

Melanie Wong - Seminole Electric Cooperative, Inc. - 5

Answer

No

Document Name

Comment

No, R4 (as mentioned in 2016-EPR-02 Attachment 5, 2.3) still does not have a threshold metric.

Likes 0

Dislikes 0

Response

Thank you for your comments. Providing a fixed percentage or metric to generating resource reactive capability changes may be problematic being that reactive resources are contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should determine what threshold of

reactive capability change needs reported on a case by case basis in support of VAR-001 R2 as to the metric of resource notification.

Marc Sedor - Seminole Electric Cooperative, Inc. - 3

Answer No

Document Name

Comment

No, R4 (as mentioned in 2016-EPR-02 Attachment 5, 2.3) still does not have a threshold metric.

Likes 0

Dislikes 0

Response

Thank you for your comments. Providing a fixed percentage or metric to generating resource reactive capability changes may be problematic being that reactive resources are contingent on system operation needs, considering geographical location, generating resource size, and reactive resources available to Transmission. One threshold to fit all cases may not be an accurate reflection of reporting needs to the TOP. The TOP should determine what threshold of reactive capability change needs reported on a case by case basis. in support of VAR-001 R2 as to the metric of resource notification.

Lindsey Mannion - ReliabilityFirst - 10

Answer No

Document Name

Comment

For 2.1, the addition of “or provide an explanation if control capability is limited” seems broad and may encourage reduced efforts from the GOP to implement alternative methods of controlling reactive output. It is also not specified which entity the GOP needs to provide the explanation to.

However, temporary technical limitations due to an abnormal AVR or volt/VAR controller equipment configuration should not automatically result in a violation, as discussed by the Enhanced Periodic Review Team.

The RF Standard Review Team for this project recommends the SDT consider requiring the GOP to “use an alternative method, to the extent technically and operationally possible, to control reactive output to meet the voltage or Reactive Power schedule provided by the Transmission Operator.” A documentation/explanation requirement could be imposed when an effective alternative method is not possible, resulting in a failure to meet the voltage schedule. Any such requirement should specify whether the explanation must be provided to the TOP or merely maintained for evidence of compliance.

A documentation/explanation exemption should not be needed for generators that are not equipped with an AVR or volt/VAR controller, since the ability or inability of generators to meet the voltage schedule under normal equipment configurations should be addressed through the interconnection process and accounted for in the Transmission Operator’s exemption criteria and/or criteria for notification for deviations from the voltage schedule.

For 2.3, the RF Standard Review Team for this project suggests the following reword (adapted from PRC-024-3 Attachment 2) to address the recommendation of the Enhanced Periodic Review Team:

“2.3 Generator Operators that do not monitor the voltage at the location specified in the generator voltage schedule provided by the Transmission Operator shall have a methodology to account for the voltage differences between where the voltage is monitored and the voltage at the location specified in the voltage schedule.”

Likes	0
Dislikes	0

Response

Thank you for your comments. The SDT agree that R2.1 should be revised for the additional clarity needed for alternative control. For 2.3, there needs to be a conversion methodology to determine how to adjust voltage to maintain schedule at monitoring point.

Julie Hall - Entergy - 6, Group Name Entergy

Answer	No
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Document Name	
Comment	
<p>2.3 should not be simply addressed in a note, nor is it fully addressed by that note</p> <p>2.5 is not addressed.</p> <p>2.6 is not addressed.</p> <p>10.1 is not addressed. There is no clarity on DER individual AVR's vs whole site AVR.</p> <p>10.2 is not addressed. There is no clarity on DER individual AVR's vs whole site AVR.</p> <p>14.1 is not addressed.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations.</p>	
<p>Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF</p>	
Answer	No
Document Name	
Comment	
<p>The MRO NSRF does not agree that certain changes made meet the intent of the Periodic Review Recommendations, Attachment 5 for Project 2016-EPR-02 as follows:</p> <p>Attachment 5: Other Miscellaneous Corrections/ Revisions</p>	

2 - Clarity

2.3. The MRO NSRF appreciates the additional language of “that exceeds the threshold for notification” however, without a requirement for the TOP to specify the Reactive Power magnitude required for coordination this additional language will not add to reliability or meet the intended purpose. Further, removing “Reporting of status or capability changes as stated in Requirement R4 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.”, does not meet the intent of Project 2016-EPR-02 “establishing the level of change that trigger “change in reactive capability”.

2.4. The drafting team did add the “mutually-agreeable format” language to R.4 but added clarification in a footnote. There is no other mention of the TOP or GOP actually defining a format for notification. There should be a requirement that they define a mutually agreeable format prior to notifications being sent.

2.5. The MRO NSRF does not believe that this has been addressed. The SDT Technical Rationale document comments on this recommendation point to Requirement R3, which does not contain language about “Reactive Power capability”. Requirement R3 refers to the equipment that controls Reactive Power supplying equipment. Reactive Power is derived from equipment: generators, shunts, dynamic/static VAR compensators, synchronous condensers, et cetera, id est, Reactive Power supplying equipment. The MRO NSRF recommends the SDT reevaluate Recommendation 2.5.

2.6. The MRO NSRF does not believe that this has been addressed, please MRO NSRF’s comments on 2.3 & 2.5.

2.7. Please see the MRO NSRF’s comments 2.3 & 2.9.

2.8. Entire exception struck, please see the MRO NSRF’s comments 2.3 & 2.9.

2.9. Entire exception struck & not addressed in applicability section. This still needs to be addressed in the Standard either by leaving the bullet or addressing in applicability section. Also, exception needs to be applied to Requirement R3, as it is aggregate/plant level controller that is considered a ‘Voltage Regulator’.

10 - Technical Accuracy

10.1. Not accomplished, please see the MRO NSRF’s response to question 3.

10.2. Not accomplished

14 - Technical Quality

14.1. Not accomplished

14.2. Not accomplished

16 - Related Regional Reliability Standards

16.1. Not accomplished or addressed.

Likes	0
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Dislikes	0
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Response

Thank you for your comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations. Providing additional clarity to ambiguity in Requirements R3 and R4 reporting should be determined by Transmission Operator for system operation reliability impacts to support VAR-001 R2 and R5. The TOP should provide the threshold of notification for generating resource voltage control status changes and generating resource reactive changes along with voltage or reactive schedule. If TOP does not provide this information, the SDT suggest the GOP and TOP would collaborate to have a mutual agreed approach to reporting. The SDT agree Requirement R4 is to provide notification of changes in generating resource reactive capability as defined by the Transmission Operator for the Generating resource in real time.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer	No
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Document Name	
Comment	
See comments above.	
Likes 0	
Dislikes 0	
Response	
Please see responses to comments.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren supports the language "mutually agreeable format." Ameren believes it is better to change the language as little as possible.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	

<p>Constellation agrees with the changes, however, does note that the addition of the language "degrades its ability to automatically control voltage voltage" could cause potential ambiguity.</p> <p>Kimberly Turco on behalf of Constellation Segments 5 and 6</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your support. The SDT has revised the language in Requirement R3.</p>	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
<p>Constellation agrees with the changes, however, does note that the addition of the language "degrades its ability to automatically control voltage voltage" could cause potential ambiguity.</p> <p>Kimberly Turco on behalf of Constellation Energy Segments 5 and 6</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your support. The SDT has revised the language in Requirement R3.</p>	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	Yes
Document Name	

Comment

Constellation agrees with the changes, however, does note that the addition of the language "degrades its ability to automatically control voltage voltage" could cause potential ambiguity.

Kristine Howie on behalf of Constellation Segments 5 and 6

Likes 0

Dislikes 0

Response

Thank you for your support. The SDT has revised the language in Requirement R3.

Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Cyntia Doré - Hydro-Québec Production - 5 - NPCC

Answer Yes

Document Name

Comment

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Qu?bec Production, 1, 5; - Chantal Mazza	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Sheila Suurmeier - Black Hills Corporation - 5

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Micah Runner - Black Hills Corporation - 1

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	

No comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Please see Texas RE's comment on #2.	
Likes	0
Dislikes	0
Response	
Please see reponses to Texas RE's comments in Question No. 2.	

5. Do you believe that proposed Reliability Standard VAR-002-5 can be met in a cost-effective manner? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification. Please provide the reasoning or justification for your position in the comments.

Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

DCS may not have inverter alarming and number count capability that may require hardwiring, etc.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT proposed revisions are intended to provide additional clarity and coordination improvements to the same Standard requirements. and not require additional monitoring equipment be installed for system reliability. If there is a reliability need for additional monitoring for system impacts, this would need to be addressed whether or not this Standard is revised.

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl

Answer No

Document Name

Comment

AECl supports comments submitted by the NAGF.

Likes 0

Dislikes	0
Response	
Please see responses to comments by NAGF.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
Until the modifications are completed, PG&E cannot make a determination on the cost-effectiveness.	
Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach.	
Likes	1
	JEA, 1, McClung Joseph
Dislikes	0
Response	

Thank you for your comment.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
This is primarily a coordination issue with certain generation types. Though there is a "process cost," it is minimal and better coordinates the operation of the interconnected BES. It also prevents bad players from leaning on the system and having others burdened with the cost of voltage support.	
Likes	0
Dislikes	0
Response	
Thank you for your comments.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
No comments.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	

Answer	Yes
Document Name	
Comment	
<p>Costs associated with these changes are minimal, and would mainly be the initial effort to determine the amount of reactive capability that impacts the BES and what thresholds the TOP would need reported.</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comment.</p>	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Quebec Production, 1, 5; - Chantal Mazza	
Answer	Yes
Document Name	
Comment	
<p>The proposed revisions seems to clarify elements of the standard but doesn't seem to engage great costs. However, there could be technological issues that would involve costs if the implementation time is short. We propose an implementation period of 24 months.</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thanks for your comments. Thank you for your support and comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.</p>	

Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	Yes
Document Name	
Comment	
The proposed revisions seems to clarify elements of the standard but doesn't seem to engage great costs. However, there could be technological issues that would involve costs if the implementation time is short.	
Likes	0
Dislikes	0
Response	
Thank you for your support. Thanks for your comments. Thank you for your support and comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.	
Casey Perry - PNM Resources - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marc Sedor - Seminole Electric Cooperative, Inc. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Melanie Wong - Seminole Electric Cooperative, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kinte Whitehead - Exelon - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Daniel Gacek - Exelon - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE does not have comments on this question.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Claudine Bates - Black Hills Corporation - 6	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Micah Runner - Black Hills Corporation - 1	
Answer	
Document Name	

Comment	
BHC will not respond to cost effectiveness.	
Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
WECC has no comment on this. We leave it to the applicable entities to comment.	

Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes	0
Dislikes	0
Response	
Please see responses to comments by EEI RTC and NPCC RSC.	
Russell Noble - Cowlitz County PUD - 3	
Answer	
Document Name	
Comment	
See answers to previous questions. It is difficult to assess in view of terms not adequately being defined.	
Likes	0
Dislikes	0
Response	

Thank you for your comment.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	
Document Name	
Comment	
See answers to previous questions. It is difficult to assess in view of terms not adequately being defined.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	
Document Name	
Comment	
Until the changes to the standard are solidified, this cannot be answered.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	

Answer	
Document Name	
Comment	
<p>Constellation has no additional comments.</p> <p>Kristine Howie on behalf of Constellation Segments 5 and 6</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thank you.</p> <p>Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF</p>	
Answer	
Document Name	
Comment	
<p>Constellation has no additional comments.</p> <p>Kimberly Turco on behalf of Constellation Energy Segments 5 and 6</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thank you.</p>	

Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation has no additional comments.	
Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you.	

<p>6. The Project 2021-02 SDT has proposed a one-year implementation period. Would this proposed timeframe provide for enough time to put into place process, procedures, or technology to meet the proposed language of the Implementation Plan? If you think an alternate timeframe is needed, please propose an alternate implementation time period and provide a detailed explanation of actions planned to meet the implementation deadline.</p>	
<p>David Jendras Sr - Ameren - Ameren Services - 3</p>	
<p>Answer</p>	<p>No</p>
<p>Document Name</p>	
<p>Comment</p>	
<p>Ameren suggests extending the implementation period to 18 months.</p>	
<p>Likes 0</p>	
<p>Dislikes 0</p>	
<p>Response</p>	
<p>Thank you for your comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.</p>	
<p>Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro</p>	
<p>Answer</p>	<p>No</p>
<p>Document Name</p>	
<p>Comment</p>	
<p>BC Hydro's assessment as a TOP is that the implementation will require more than 12 months. This is due to the need to engage all GO/GOP entities to review current agreements, complete gap analysis and implement (including all necessary approvals) any required changes. BC Hydro's current estimate is that this would require up to 36 months.</p>	
<p>Likes 0</p>	

Dislikes	0
Response	
Thank you for your comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
AEP recommends changing from a 12 month implementation period to an 18 month implementation period to allow entities to address the needed communication channels and to verify the data points required for monitoring.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
This standard should only allow a 6 month time period. This is not a standard that should take much effort to meet. Controls would take a little longer to implement, but coordination can be done immediatly.	
Likes	0

Dislikes	0
Response	
Thank you for your comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
Limited controls personnel are available to implement programming changes – a more reasonable period is two-years.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.	
Casey Perry - PNM Resources - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM agrees with the one year implementation period.	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	
Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	
Kimberly Turco on behalf of Constellation Energy Segments 5 and 6	
Likes	0
Dislikes	0

Response	
Thank you.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	Yes
Document Name	
Comment	
Constellation has no additional comments.	
Kristine Howie on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank your support.	
Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	Yes
Document Name	
Comment	
We propose an implementation period of 24 months.	
Likes	0
Dislikes	0
Response	

Thank you for your support and comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.

Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Qu?bec Production, 1, 5; - Chantal Mazza

Answer Yes

Document Name

Comment

No. We propose an implementation period of 24 months.

Likes 0

Dislikes 0

Response

Thank you for your support and comment. Based on the current draft revisions and the support by industry, to which the SDT agrees, the 12-month Implementation period is sufficient.

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer Yes

Document Name

Comment

Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #6.

Likes 0

Dislikes 0

Response

Please see response to EEI's comments in Question No. 6.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the 1 year implementation period.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Until the changes to the standard are solidified, this cannot be answered with certainty.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes

Document Name	
Comment	
The NAGF supports the proposed one-year implementation period.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the one (1) year implementation period.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl	
Answer	Yes
Document Name	
Comment	

AECl supports comments submitted by the NAGF.	
Likes	0
Dislikes	0
Response	
Please see response to NAGF's comments.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
No comments.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0

Response	
Thank you for your support.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Natalie Johnson - Enel Green Power - 5	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Daniel Gacek - Exelon - 1

Answer Yes

Document Name

Comment

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kinte Whitehead - Exelon - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Micah Runner - Black Hills Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Josh Combs - Black Hills Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Melanie Wong - Seminole Electric Cooperative, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marc Sedor - Seminole Electric Cooperative, Inc. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	

Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Kristine Ward - Seminole Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	
Document Name	
Comment	
Not able to answer since current draft could introduce uncertainty.	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Russell Noble - Cowlitz County PUD - 3	
Answer	
Document Name	
Comment	
Not able to answer since current draft could introduce uncertainty.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	

Document Name	
Comment	
WECC has no comment on this. We leave it to the applicable entities to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you.	

7. The Project 2021-02 SDT believes that the language of proposed Reliability Standard VAR-002-5 addresses the issues outlined in the project SAR. Do you agree? If you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	No
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Document Name	
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Comment

The SAR charged the drafting with this task:

NERC Project 2014-01 revised VAR-002 Requirement R4 to clarify that it is not applicable to individual generating units of dispersed power producing resources. The IRPTF did not identify any reason why Requirement R3 should be treated differently than Requirement R4 in this respect and recommended VAR-002-4.1 be modified to make this same clarification to Requirement R3.

Note the bulleted item in R4 of VAR-002-4 that addresses the individual generating unit (the inverter).

To meet this SAR directive for version -5, all the drafting team needed to do was add a similar bullet under R3.

The edits that have been made to R4 in the current redline actually remove this clarification that was made with a previous revision. The R4 bullet needs to be retained.

Further, the addition of all of the text in Requirements R3 and R4 make, is no clearer that R3 is not applicable to the individual generating units of the dispersed power producing resources. It appears that if the TOP says they want to know about individual inverters, then they can specify it and the GOP would then have to report them. The existing requirements of R2 are adequate to notify the TOP in cases where the GOP is unable to maintain the voltage schedule, se R2.2 of the existing VAR-002.

Likes	0
Dislikes	0
Response	
<p>Thanks for your comments. The SDT feels that additional clarity is needed with the bulleted item in Requirement R4 and creates ambiguity of reporting criteria within Requirements R3 and R4 for dispersed power producing resources. The revised language is intended to satisfy reporting clarity to the TOP when not provided by the TOP and to provide updates based on EPR recommendations.</p> <p>The NERC Project 2014-01 stated that the Requirement R4 exemption to individual generating units of dispersed power producing resources was allowed due to change in reactive capability due to removing and adding individual IBR or individual dispersed power producing resource was not the intent of Requirements R4, and R3 provides control status for voltage control which may include individual dispersed power producing resource. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability.</p>	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	No
Document Name	
Comment	
AECI supports comments submitted by the NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to NAGF's comments.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	

Answer	No
Document Name	
Comment	
WEC Energy Group supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Please see responses to MRO NSRF's comments.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E agrees with the input provided by EEI that the modifications align with the SAR, but additional modifications are still required per the EEI input to Question 1 and our additional input for Question 1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see responses to EEI's comments and PG&E comments in Question No. 1. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	

Answer	No
Document Name	
Comment	
<p>The NAGF does not believe that the proposed language for VAR-002-5 address the issues outlined in the project SAR. Specifically, the proposed changes to Requirement 3 and Requirement 4 do not clearly state that individual generating units of dispersed power producing resources are exempt from R3 and R4 reporting.</p>	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
<p>Thanks for your comments. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability, and ultimately the TOP needs to provide the threshold of notification for the clarity needed in Requirements R3 and R4 based reactive resource capability and configuration of facility voltage control.</p>	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	
Comment	
<p>Exelon supports the comments submitted by EEI</p>	
Likes 0	
Dislikes 0	
Response	
<p>Please see responses to EEI's comments.</p>	
Daniel Gacek - Exelon - 1	

Answer	No
Document Name	
Comment	
Exelon supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Please see responses to EEI's comments.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	No
Document Name	
Comment	
<p>SC: The SAR charged the drafting with this task:</p> <p><i>NERC Project 2014-01 revised VAR-002 Requirement R4 to clarify that it is not applicable to individual generating units of dispersed power producing resources. The IRPTF did not identify any reason why Requirement R3 should be treated differently than Requirement R4 in this respect and recommended VAR-002-4.1 be modified to make this same clarification to Requirement R3.</i></p> <p>Note the bulleted item in R4 of VAR-002-4 that addresses the individual generating unit (the inverter).</p> <p>To meet this SAR directive for version -5, all the drafting team needed to do was add a similar bullet under R3.</p>	

The edits that have been made to R4 in the current redline actually remove this clarification that was made with a previous revision. The R4 bullet needs to be retained.

Further, the addition of all of the text in R3 and R4 make, is no more clear that R3 is not applicable to the individual generating units of the dispersed power producing resources. It appears that if the TOP says he wants to know about individual inverters, that he can specify it and the GOP would then have to report them. The existing requirements of R2 are adequate to notify the TOP in cases where the GOP is unable to maintain the voltage schedule, se R2.2 of the existing VAR-002.

Likes 0

Dislikes 0

Response

Thanks for your comments. The SDT feels that additional clarity is needed with the bulleted item in Requirement R4 and creates ambiguity of reporting criteria within Requirements R3 and R4 for dispersed power producing resources. The revised language is intended to satisfy reporting clarity to the TOP when not provided by the TOP and to provide updates based on EPR recommendations.

The NERC Project 2014-01 stated the Requirement R4 exemption to individual generating units of dispersed power producing resources was allowed due to change in reactive capability due to removing and adding individual IBR or individual dispersed power producing resource was not the intent of Requirements R4, and R3 provides control status for voltage control which may include individual dispersed power producing resource. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability.

Marty Watson - Santee Cooper - 1,3,5,6, Group Name Santee Cooper

Answer

No

Document Name

Comment

Changing the word “shall” to “will” does not add or enhance reliability. Actually it seems to add confusion. Potentially that change will have a cascading effect on the other Standards to make the same change unless there is some explanation not covered in the Guidelines and Technical Basis that justifies this change.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures.

**Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF,
 Group Name Southern Company**

Answer

No

Document Name

Comment

The SAR charged the drafting with this task: NERC Project 2014-01 revised VAR-002 Requirement R4 to clarify that it is not applicable to individual generating units of dispersed power producing resources. The IRPTF did not identify any reason why Requirement R3 should be treated differently than Requirement R4 in this respect and recommended VAR-002-4.1 be modified to make this same clarification to Requirement R3.

Note the bulleted item in R4 of VAR-002-4 that addresses the individual generating unit (the inverter).

To meet this SAR directive for version -5, all the drafting team needs to do is add a similar bullet under R3.

The edits that have been made to R4 in the current redline actually remove this clarification that was made with a previous revision. The R4 bullet needs to be retained.

Furthermore, the additional language proposed in R3 and R4 make it no more clear that R3 is not applicable to the individual generating units of the dispersed power producing resources. It appears that the existing standard permits the TOP the flexibility to request information on individual inverters: that may be specified and the GOP would then have to report in that detail. The existing requirements of R2 are adequate to notify the TOP in cases where the GOP is unable to maintain the voltage schedule (see R2.2 of the VAR-002-4.1).

Likes 0

Dislikes 0

Response

Thanks for your comments. The SDT feels that additional clarity is needed with the bulleted item in Requirement R4 and creates ambiguity of reporting criteria within Requirements R3 and R4 for dispersed power producing resources. The revised language is intended to satisfy reporting clarity to the TOP when not provided by the TOP and to provide updates based on EPR recommendations.

The NERC Project 2014-01 stated the Requirement R4 exemption to individual generating units of dispersed power producing resources was allowed due to change in reactive capability due to removing and adding individual IBR or individual dispersed power producing resource was not the intent of Requirements R4, and R3 provides control status for voltage control which may include individual dispersed power producing resource. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

No

Document Name

Comment

While EEI agrees that the changes made to VAR-002 align with the SAR, there are still revisions that are needed. (See our comments in question 1.)

Likes 0

Dislikes	0
Response	
Thank you for your comments. Please see responses to EEI's comments Question No. 1.	
Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #7.	
Likes	0
Dislikes	0
Response	
Thank you for your comments. Please see responses to EEI's comments.	
Natalie Johnson - Enel Green Power - 5	
Answer	No
Document Name	
Comment	
Enel North America Inc. believes the requirement R3 SAR item is not addressed fully and comments provided in Question 1 would provide the required result.	
Likes	0
Dislikes	0
Response	

Thank you for your comments. Please see responses to Enel’s comments in Question No. 1.	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	No
Document Name	
Comment	
<p>ISO-NE supports the comments submitted by the IRC Standards Review Committee (SRC):</p> <p>The purpose of the SAR is to revise VAR-002-4.1 to address ambiguities ... [and] to add clarity...particularly with respect to operation of Inverter-Based Resources. The proposed draft does not achieve the goal; however, by using the word “or” (versus “and”) it fails to address ambiguities as it leaves it open as to which one (generators) or the other (dispersed power producing resources) must comply; not both. Its use should be limited to only those circumstances where it is appropriate to limit to one generator or another, as in measure M1.</p> <p>Recommendation: The SRC requests the SDT review the entire standard for use of the word “or,” including the VSL tables, and replace the word “or” with the word “and” where necessary to ensure all generators and dispersed power producing resources are subject to the standard.</p> <p>Sections where the SRC observed an incorrect use of the word “or” include: the Purpose statement, requirement R1, requirement R2 and measure M2 as illustrated below.</p> <p>3. Purpose: To ensure generators and or dispersed power producing resources provide reactive support and voltage control, within generating Facility capabilities, in order to protect equipment and maintain reliable operation of the Interconnection.</p> <p>R1. The Generator Operator shall operate each generator and or dispersed power producing resource connected to the interconnected transmission system in the automatic voltage control mode (with its automatic voltage regulator (AVR) or volt/VAR controller(s) in service and controlling voltage) or in a different control mode as instructed by the Transmission Operator...</p>	

R2. Unless exempted by the Transmission Operator, each Generator Operator shall maintain each the generator and or dispersed power producing resource voltage or Reactive Power schedule (within each generating Facility’s capabilities) provided by the Transmission Operator...

M2. ...The Generator Operator shall will have evidence to show that each the generator and or dispersed power producing resource maintained the voltage or Reactive Power schedule provided by the Transmission Operator...

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see responses to IRC SRC’s comments. The SDT has reviewed and revised the standard for “or” as well as “and” to address ambiguities.

Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2

Answer

No

Document Name

Comment

See comments, above.

Likes 0

Dislikes 0

Response

Thank you. Please see responses to ERCOT comments in the previous questions.

Casey Perry - PNM Resources - 1,3 - WECC

Answer

No

Document Name

Comment	
PNM supports EEI comments and recommends the changes to R1 described above.	
Likes	0
Dislikes	0
Response	
Thank you for your comments. Please see responses to EEI's comments and PG&E comments in Question No. 1. The SDT feel that Q1 comments and guidance will also allow for additional clarity to Section 4 and IBRs applicability.	
Sing Tay - Sing Tay On Behalf of: Ruchi Shah, AES - AES Corporation, 5; - Sing Tay	
Answer	No
Document Name	
Comment	
AES Clean Energy also supports comments submitted by NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to NAGF's comments.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	Yes
Document Name	
Comment	
None.	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP believes that the language of proposed Reliability Standard VAR-002-5 adequately addresses the issues outlined in the project SAR.	
Likes	0

Dislikes	0
Response	
Thank you for your support.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	Yes
Document Name	
Comment	
<p>Constellation agrees the scope of the SAR is addressed but makes the suggestion to look into R5 and R6 removal from VAR-002 as these requirements are now addressed through other NERC Standards such as MOD-026, MOD-032, PRC-019 and therefore duplicative to have in VAR-002.</p> <p>Kristine Howie on behalf of Constellation Segments 5 and 6</p>	
Likes	0
Dislikes	0
Response	
Thanks for your comments. The suggested removal of R5 and R6 would be outside the scope of this SAR and it is suggested to enter a new SAR to address the duplicative requirements.	
Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	

Constellation agrees the scope of the SAR is addressed but makes the suggestion to look into R5 and R6 removal from VAR-002 as these requirements are now addressed through other NERC Standards such as MOD-026, MOD-032, PRC-019 and therefore duplicative to have in VAR-002.

Kimberly Turco on behalf of Constellation Energy Segments 5 and 6

Likes 0

Dislikes 0

Response

Thanks for your comments. The suggested removal of R5 and R6 would be outside the scope of this SAR and it is suggested to enter a new SAR to address the duplicative requirements.

Kimberly Turco - Constellation - 6

Answer Yes

Document Name

Comment

Constellation agrees the scope of the SAR is addressed but makes the suggestion to look into R5 and R6 removal from VAR-002 as these requirements are now addressed through other NERC Standards such as MOD-026, MOD-032, PRC-019 and therefore duplicative to have in VAR-002.

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0

Dislikes 0

Response

Thanks for your comments. The suggested removal of R5 and R6 would be outside the scope of this SAR and it is suggested to enter a new SAR to address the duplicative requirements.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer Yes

Document Name

Comment

Please see questions 1 and 8 comments for suggested improvements.

Likes 0

Dislikes 0

Response

Thank you for your support. Please see responses to Questions 1 and 8 comments.

David Jendras Sr - Ameren - Ameren Services - 3

Answer Yes

Document Name

Comment

Ameren agrees with the language in the SAR, but there needs to be clarification on the responsibility the GOP has to report to the TOP when there has been a failure of an inverter based resource

Likes 0

Dislikes 0

Response

Thank you for your support. The SDT did not think that entirely including or excluding individual generating units of dispersed power producing resources was appropriate, so the intention is to create a mechanism whereby the GOP and TOP can agree on the required notification based on the actual Facility characteristics and potential system impacts.

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer Yes

Document Name

Comment

OPG supports NPCC Regional Standards Committee’s comments.

Likes 0

Dislikes 0

Response

Please see responses to NPCC RSC’s comments.

Diane E Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Jennie Wike - Jennie Wike On Behalf of: John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Kristine Ward - Seminole Electric Cooperative, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Nazra Gladu - Manitoba Hydro - 1

Answer Yes

Document Name

Comment

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Marc Sedor - Seminole Electric Cooperative, Inc. - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Melanie Wong - Seminole Electric Cooperative, Inc. - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Thank you for your support.	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
James Baldwin - Lower Colorado River Authority - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Harishkumar Subramani Vijay Kumar - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 1,3,5,6 - RF	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0

Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Qu?bec Production, 1, 5; - Chantal Mazza	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	Yes
Document Name	

Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thank you for your support.	
Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thank you for your support.	
Claudine Bates - Black Hills Corporation - 6	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Josh Combs - Black Hills Corporation - 3	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Micah Runner - Black Hills Corporation - 1	
Answer	

Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	
Document Name	
Comment	
BHC will not respond to cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	

Based on comments above, WECC does not believe the ambiguity has been eliminated.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has considered all comments received and made revisions in Draft Version II of proposed Reliability Standard VAR-002-5 to clear up ambiguities.

Tim Kucey - PSEG - PSEG Fossil LLC - 5

Answer

Document Name

Comment

Adopt responses of EEI RTC and NPCC RSC

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see responses to EEI RTC and NPCC RSC’s comments.

Russell Noble - Cowlitz County PUD - 3

Answer

Document Name

Comment

See answers pertaining to terms not being clearly defined.

Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see responses to your previous comments.	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	
Document Name	
Comment	
See answers pertaining to terms not being clearly defined.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see responses to your previous comments.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	
Document Name	
Comment	
The purpose of the SAR is to revise VAR-002-4.1 to address ambiguities ... [and] to add clarity...particularly with respect to operation of Inverter-Based Resources. The proposed draft does not achieve the goal; however, by using the word “or” (versus “and”) it fails to address ambiguities as it leaves it open as to which one (generators) or the other (dispersed power producing resources) must comply; not both. Its use should be limited to only those circumstances where it is appropriate to limit to one generator or another, as in measure M1.	

Recommendation: The SRC requests the SDT review the entire standard for use of the word “or,” including the VSL tables, and replace the word “or” with the word “and” where necessary to ensure *all* generators and dispersed power producing resources are subject to the standard.

Sections where the SRC observed an incorrect use of the word “or” include: the Purpose statement, requirement R1, requirement R2 and measure M2 as illustrated below.

3. Purpose: To ensure generators *and* dispersed power producing resources provide reactive support and voltage control, within generating Facility capabilities, in order to protect equipment and maintain reliable operation of the Interconnection.

R1. The Generator Operator shall operate each generator *and* dispersed power producing resource connected to the interconnected transmission system in the automatic voltage control mode (with its automatic voltage regulator (AVR) or volt/VAR controller(s) in service and controlling voltage) or in a different control mode as instructed by the Transmission Operator...

R2. Unless exempted by the Transmission Operator, each Generator Operator shall maintain *each* generator *and* dispersed power producing resource voltage or Reactive Power schedule (within each generating Facility’s capabilities) provided by the Transmission Operator...

M2. ...The Generator Operator *shall* have evidence to show that *each* generator *and* dispersed power producing resource maintained the voltage or Reactive Power schedule provided by the Transmission Operator...

Please note: IESO is not a party to the response to this Question.

Likes	0
Dislikes	0

Response

Thank you for your comments. The SDT has reviewed and revised the standard for “or” as well as “and” to address ambiguities.

8. Provide any additional comments on proposed Reliability Standard VAR-002-5 and technical rationale document for the standard drafting team to consider, if desired.	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	
Document Name	
Comment	
<p>Recommendation: Reduce the time allowed for notification from 30 to 15 minutes to allow TOPs time to address any potential voltage collapse issues (including those that may contribute to an IROL). In addition, the SRC believes the 30-minute window for notification of status or functionality changes as described in requirement R3 should be reduced to 15 minutes due to the growing change in resource mix and the obligation of operators to respond to system conditions within 30 minutes to avoid voltage collapse.</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thanks for your comments. This is outside of the scope of the SAR. The SDT would suggest that the commenter can submit a SAR for this suggestion.</p>	
Romel Aquino - Edison International - Southern California Edison Company - 3	
Answer	
Document Name	
Comment	
<p>See comments submitted by the Edison Electric Institute.</p>	
Likes 0	

Dislikes	0
Response	
Please see responses to EEI's comments.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
<p>OPG supports NPCC Regional Standards Committee's comments and has the following additional comments:</p> <p>Please provide clarification regarding the difference between Status and Functionality.</p> <p>In the Summary of "Technical Rationale for Reliability Standard VAR-002-5 - Generator Operation for Maintaining Network Voltage Schedule" it is stated that:</p> <p>Requirement R3 – Added “functionality” for computing functions or range of functions in a Technical Rationale for Reliability Standard VAR-002-5 NERC Project 2021-02 Modifications to VAR-002-4.1 October 2022 3 control system, such as the Power System Stabilizers or aggregated volt/VAR controller (EPR Attachment 5 Recommendation 14.1).</p> <p>However the Periodic Review Recommendations: VAR-002-4 – Generator Operation for Maintaining Network Voltage Schedules, Attachment 5 has the following unrelated recommendation: "Recommendation 14.1 - 14.1. Requirement R5, does not identify the Transmission Owner (TO) for cases where the TO owns the generator step-up transformer. Revise Requirement R6 to require the TO to communicate settings to the Transmission Operator"</p> <p>On the other hand Recommendation 14.2 talks about: "14.2. Requirement R3 require the Generator Operator to notify the Transmission Operator of power system stabilizer (PSS) unavailability. The operational requirements for initial state of PSS (on/off) clarity need to be assessed for inclusion within the VAR suite of standards (including expectations for startup, shutdown, or testing mode). Consider whether new requirements or alternative guidance is needed to identify the expected initial state for a PSS."</p>	

The Project 2021-02 SDT agreed that the operational requirements for initial state of PSS (on/off) clarity was needed for expectations on startup, shutdown, or testing mode. To clarify notification for PSS status change, the Project 2021-02 SDT proposes to add language of functionality changes that degrade or restore its ability to automatically control voltage.

Degraded PSS Functionality is not defined such that not to create noncompliance controversy, since there is no associated degradation threshold.

If the intent of this requirement is the notification related to status change for Volt/VAR controlling equipment then the status change is clear (ON or OFF). The potential misunderstanding is associated with the implied threshold (not specified) for the **functionality** change. Suggestion is made to remove word "functionality " which is related to the specific design intent and application (i.e. Grid condition at that specific moment) and stick to "status change" for Requirement R3.

Functionality change appears to be more suited to be covered by the capability change.

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see responses to NPCC's comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations

Casey Perry - PNM Resources - 1,3 - WECC

Answer

Document Name

Comment

PNM agrees with EEI comments regarding the phrase "degrades/restores".

Likes	0
Dislikes	0
Response	
Please see response to EEI's comments.	
Andrew Gallo - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	
Footnote 1 on page 4 appears to have left off "or dispersed power producing resource" in the second half of the sentence.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. The footnote has been revised.	
Kathleen Goodman - Kathleen Goodman On Behalf of: John Pearson, ISO New England, Inc., 2; - Kathleen Goodman	
Answer	
Document Name	
Comment	
ISO-NE supports the comments submitted by the IRC Standards Review Committee (SRC):	
Recommendation #1: Reduce the time allowed for notification from 30 to 15 minutes to allow TOPs time to address any potential voltage collapse issues (including those that may contribute to an IROL). In addition, the SRC believes the 30-minute window for notification of status or functionality changes as described in requirement R3 should be	

reduced to 15 minutes due to the growing change in resource mix and the obligation of operators to respond to system conditions within 30 minutes to avoid voltage collapse.

Likes 0

Dislikes 0

Response

Thanks for your comments. This is outside of the scope of the SAR. The SDT would suggest that the commenter can submit a SAR for this suggestion.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC

Answer

Document Name

Comment

Please consider clarifying Requirement R3 regarding “degrades/restore.” Should there be a threshold for Generator Operator notifications to the Transmission Operator? Please consider if R3, as written, may result in compliance disputes.

RE: Compliance Section C. Please consider removing “The Compliance Monitor shall retain any audit data for three years.” The requirement for the “Compliance Monitor” does not appear to be necessary for section 1.2 Evidence Retention. In addition, in Compliance section 1.1, please consider adding (CEA) as the abbreviation for Compliance Enforcement Authority. In section 1.2, please consider using the CEA abbreviation.

Likes 0

Dislikes 0

Response

Thanks for your comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations The SDT determined that Facility would need to communicate with the TOP to provide the clarity of notification for ambiguities

in instruction. Degrading and restoring from degradation its ability to automatically control voltage is intended to address control that can be partially impacted and affecting ability to follow instruction unless otherwise stated by the TOP in notification criteria. The SDT has considered the RE comments for clarity in Standard. For the Compliance Section, the SDT has removed “The Compliance Monitor shall retain any audit data for three years.” The SDT has updated it to, “The Generator Operator for each applicable Facility shall retain evidence of Requirements R1, R2, R3 and R4 for three calendar years.” CEA abbreviation is templated language.

Kimberly Turco - Constellation - 6

Answer

Document Name

Comment

Constellation has no additional comments.

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0

Dislikes 0

Response

Thank you.

Kim Turco - Constellation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name

Comment

Constellation has no additional comments.

Kimberly Turco on behalf of Constellation Energy Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you.	
Kristine Howie - Kristine Howie On Behalf of: Alison MacKellar, Constellation, 5, 6; - Kristine Howie	
Answer	
Document Name	
Comment	
Constellation has no additional comments.	
Kristine Howie on behalf of Constellation Segments 5 and 6	
Likes	0
Dislikes	0
Response	
Thank you.	
Cyntia Doré - Hydro-Québec Production - 5 - NPCC	
Answer	
Document Name	
Comment	
<ol style="list-style-type: none"> 1. “Responsible Entity” is capitalized in the R2 VSL, however this may lead to confusion as it is not defined anywhere in the standard. Consider adding a phrase similar to “For the purpose of the requirements contained 	

herein, the following list of functional entities will be collectively referred to as “Responsible Entities.” to section 4.1 in order to define “Responsible Entities” in the standard.

2. “Purpose” section: Reliable Operation shall be capitalized since its in the Glossary.
3. R1 : “Transmission” and “System” shall be capitalized since those terms are in the Glossary.
4. Footnote 1 and 2: Load shall be capitalized.
5. Footnote 4: System shall be capitalized.
6. Footnote 6: This footnote is probably not necessary. Interpretation of Inclusion I4 b) of the BES definition includes the DPPR step-up transformers. Including precisions on the BES definition in a Standard could lead to misinterpretation.
7. VSL table: All “Transmission” and “System” terms shall be capitalized

Likes 0

Dislikes 0

Response

Thanks for your comments. The Responsible Entity has been removed. It is to be understood that entity would be the GOP. Section 4 has been revised to provided additional clarity. The purpose statement, footnotes, and VSL table has been updated to reflect the NERC Glossary of Terms. The SDT agrees that Footnote 6 would not be needed if addressed in NERC Glossary of Terms and Section 4 of Standard.

Chantal Mazza - Chantal Mazza On Behalf of: Carl Pineault, Hydro-Qu?bec Production, 1, 5; - Chantal Mazza

Answer

Document Name

Comment

1. **“Responsible Entity” is capitalized in the R2 VSL, however this may lead to confusion as it is not defined anywhere in the standard. Consider adding a phrase similar to “For the purpose of the requirements contained herein, the following list of functional entities will be collectively referred to as “Responsible Entities.” to section 4.1 in order to define “Responsible Entities” in the standard.**
2. **“Purpose” section: Reliable Operation shall be capitalized since its in the Glossary.**
3. **R1 : “Transmission” and “System” shall be capitalized since those terms are in the Glossary.**
4. **Footnote 1 and 2: Load shall be capitalized.**
5. **Footnote 4: System shall be capitalized.**
6. **Footnote 6: This footnote is probably not necessary. Interpretation of Inclusion I4 b) of the BES definition includes the DPPR step-up transformers. Including precisions on the BES definition in a Standard could lead to misinterpretation.**
7. **VSL table: All “Transmission” and “System” terms shall be capitalized**

Likes 0

Dislikes 0

Response

Thanks for your comments. The Responsible Entity has been removed. It is to be understood that entity would be the GOP. Section 4 has been revised to provided additional clarity. The purpose statement, footnotes, and VSL table has been updated to reflect the NERC Glossary of Terms. The SDT agrees that Footnote 6 would not be needed if addressed in NERC Glossary of Terms and Section 4 of Standard.

Alan Kloster - Alan Kloster On Behalf of: Jennifer Flandermeyer, Evergy, 3, 6, 5, 1; Jeremy Harris, Evergy, 3, 6, 5, 1; Kevin Frick, Evergy, 3, 6, 5, 1; Marcus Moor, Evergy, 3, 6, 5, 1; - Alan Kloster

Answer

Document Name

Comment

Energy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) for question #8.

Likes 0

Dislikes 0

Response

Please see responses to EEI’s comments.

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer

Document Name

Comment

EEI does not agree with the use of the phrase “degrades/restores” within Requirement R3. This dual use phrase adds ambiguity to this requirement. While the industry understands what it means for a control system/application to be in service or out of service, the use of the term degrades is subjective and undefined. For this reason, this language should not be used. We also ask that the use of the term “restore” also not be used and replaced with the phrase “returned to service”, or something similar that is broadly understood.

Likes 0

Dislikes 0

Response

Thanks for your comments. The SDT agrees and have made some changes to “restore” wording in VAR-002-5. The intent to degrade and restore from degradation is meant to address the site controllers that are partially degraded the ability to automatically control voltage to follow instruction or facility degraded reactive capability to TOP for assessing regional system reactive resource capability impacts.

Natalie Johnson - Enel Green Power - 5

Answer	
Document Name	2021-02 Modifications to VAR 002 Unofficial_Comment_Form 102022_Enel Final Comments_01-11-2023.docx
Comment	
A copy of our comment form is attached.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	

Answer	
Document Name	
Comment	
<p>Changing “shall” to “will” in each measure is not necessary. Many other standards use shall.</p> <p>Changes proposed to R2.1 are not needed. R2 already says to maintain the voltage schedule and tell the TOP if you are having trouble by following his (the TOPs) notification instructions.</p> <p>We recommend that the proposed Requirement 5 be removed from the proposed VAR-002-5 in its entirety as TOP-003 and MOD-032 already provides the opportunity for the TOP and TP to obtain this information.</p> <p>The VSL Tables in the red-line version of -5 are illegible.</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures. Requirement R5 removal would be outside of the scope of the SAR. The SDT would suggest that the commenter can submit a SAR for this suggestion.</p>	
Deanna Carlson - Cowlitz County PUD - 5	
Answer	
Document Name	
Comment	
<p>No further comment</p>	
Likes 0	

Dislikes	0
Response	
Thank you.	
Russell Noble - Cowlitz County PUD - 3	
Answer	
Document Name	
Comment	
No further comment.	
Likes	0
Dislikes	0
Response	
Thank you.	
Israel Perez - Israel Perez On Behalf of: Jennifer Bennett, Salt River Project, 3, 5, 1, 6; Mathew Weber, Salt River Project, 3, 5, 1, 6; Sarah Blankenship, Salt River Project, 3, 5, 1, 6; Timothy Singh, Salt River Project, 3, 5, 1, 6; - Israel Perez	
Answer	
Document Name	
Comment	
<p>Agree with Reliability First comment: “Shall” has been replaced by “will” in the proposed language of the measures. While the measures of NERC Reliability Standards are not part of the FERC-approved enforceable language, the RF Standards Review Team for this project recommends against a one-off deviation from established conventions. If “shall” is inappropriate for measure language, this should be addressed in the Standard Process Manual and be uniformly applied in Standards projects.</p>	

Likes	0
Dislikes	0
Response	
Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures.	
Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO	
Answer	
Document Name	
Comment	
<p>SC: Changing “shall” to “will” in each measure is not necessary. Many other standards use shall. Why is it thought that this needs to change?</p> <p>The addition of “or volt/VAR controller” is not needed where it has been added.</p> <p>Here are reasons:</p> <ol style="list-style-type: none"> 1. The automatic voltage regulator (AVR) for the renewable plants is the PPC. People with these types of plants already know that. 2. Just because AVR has been used for synchronous machines, it doesn’t mean that it is exclusively reserved for that type of unit. <p>Changes proposed to R2.1 are not needed. R2 already says to maintain the voltage schedule and tell the TOP if you are having trouble by following his (the TOPs) notification instructions.</p>	

Likes	0
Dislikes	0
Response	
<p>Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures. The SDT has considered and revised language. The SDT has reviewed other standards with similar terminology for consistency across the standards and has added footnotes, as shown in MOD-026 and other standards, to provide clarity specific to this standard.</p> <p>Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations While it is understood the resource will notify for voltage schedule deviation criteria from the TOP, the control of resource to meet schedule is a different type of notification and to be notified with deviation notifications.</p>	
Tim Kucey - PSEG - PSEG Fossil LLC - 5	
Answer	
Document Name	
Comment	
Adopt responses of EEI RTC and NPCC RSC	
Likes	0
Dislikes	0
Response	

Please see responses to EEI and NPCC RSC's comments.

Daniel Gacek - Exelon - 1

Answer

Document Name

Comment

Exelon supports the comments submitted by EEI.

Likes 0

Dislikes 0

Response

Please see responses to EEI's comments.

Kinte Whitehead - Exelon - 3

Answer

Document Name

Comment

Exelon supports the comments submitted by EEI

Likes 0

Dislikes 0

Response

Please see responses to EEI's comments.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer

Document Name	
Comment	
<p>The NAGF provides the following additional comments for consideration:</p> <ul style="list-style-type: none"> - The NAGF believes that Requirement 2 should be a Transmission Operator responsibility. - Changes proposed to R2.1 are not needed. R2 currently requires maintaining the voltage schedule and communicating with the TOP if you are having trouble by following his (the TOPs) notification instructions. - Recommend that the Requirement 5 and Requirement 6 be removed from the proposed VAR-002-5 as MOD-026 provides the opportunity for sharing such information with the TO/TOP. 	
Likes 1	JEA, 1, McClung Joseph
Dislikes 0	
Response	
<p>Thanks for your comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations. The SDT feel that while it's understood the resource will notify for voltage schedule deviation criteria from the TOP, the voltage control of resource to meet schedule is a different type of notification and to be notified with deviation notifications. Retirement of Requirements R5 and R6 are outside of the scope of the project SAR. The SDT would suggest that the commenter can submit a SAR for this suggestion.</p>	
<p>Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments</p>	
Answer	
Document Name	
Comment	

PG&E agrees with the input provided by EEI related to the phrase “degrades/restores” and the use of the word “restore”, and the recommendation to replace “restore” with the phrase “returned to service”, or something similar.

As noted in Question 1, PG&E would like to reinforce our comment on the use of the word “term”. In listening to industry comments and internal PG&E comments, the use of the word “term” has confused many that the SDT is creating a NERC Glossary Term which we do not believe is the case. PG&E recommends the word “term” be changed to “wording”

Likes 0

Dislikes 0

Response

Please see responses to EEI’s comments. Please also see response to PG&E’s comments in Question No. 1.

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring

Answer

Document Name

Comment

No comment

Likes 0

Dislikes 0

Response

Thank you.

Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name	
Comment	
<p>The Draft 1 edits lack consistency with respect to incorporating the phrase “generator or dispersed power producing resource” (not clear if this was intentional). For instance, Requirement R2 (Part 2.1) and Measurement M2, (third paragraph) contain “a generator’s AVR or volt/VAR controller(s)”. Should this be “a generator or dispersed power producing resource’s AVR or volt/VAR controller(s)”? Similarly, footnote 1 uses “generator or dispersed power producing resource” in the first instance and just “generator” later in the footnote. By contrast, footnote 2 uses “generator or dispersed power producing resource” twice.</p>	
Likes	0
Dislikes	0
Response	
<p>Thanks for your comments. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations. The SDT agrees that the terminology should be consistent throughout. For additional clarity, the SDT has revised the Applicability section of the standard to remove references that you and others have noted.</p>	
<p>Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group</p>	
Answer	
Document Name	
Comment	
<p>WEC Energy Group supports the MRO NSRF comments.</p>	
Likes	0
Dislikes	0
Response	

Please see responses to MRO NSRF's comments.	
Jessica Lopez - APS - Arizona Public Service Co. - 3	
Answer	
Document Name	
Comment	
<ul style="list-style-type: none"> Throughout the proposed revisions in the VAR-002 standard, requirements that previously used the term “shall” were replaced with “will”. What is the rationale for the replacement of “shall” with “will”? For uniformity with multiple standards, the Standard Drafting Team should consider using/retaining the term “shall” throughout the VAR-002 standard and requirements. In R3, what is the extent of “degrades”? In R6, the use of “generator owned” and “Generator Owner” should be replaced with “Generator Operator”, as Generator Owners do not perform plant alterations whereas the Generator Operator does in relation to tap changes. Specific to the dispersed power producing resources, is the NERC Standard VAR-002, meant to be applied at an inverter level or Facility level to report status and/or functionality changes to the Transmission Operator? 	
Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures. The intent of “degrade” is to accommodate the changes from full to partial voltage control regulation in ability to automatically control voltage. The SDT feels that the Generator Owner is the entity to maintain the facility, as defined in the NERC Glossary of Terms. The SDT feels the dispersed power producing resource may need to report at different levels for site configuration and what the TOP deems necessary reporting to assess reactive resources and capability to follow the TOP voltage schedule.</p>	
Ryan Strom - Buckeye Power, Inc. - 5 - RF	
Answer	

Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Teresa Krabe - Lower Colorado River Authority - 5	
Answer	
Document Name	
Comment	
None at this time.	
Likes 0	
Dislikes 0	
Response	
Thank you.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	
Document Name	
Comment	

AECI supports comments submitted by the NAGF.	
Likes	0
Dislikes	0
Response	
Please see responses to NAGF’s comments.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment.	
Likes	0
Dislikes	0
Response	
Thank you.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE recommends removing the newly added “becoming aware of” in Requirement R3. The intent of the requirement is to notify the TOP of a status or functionality change within 30 minutes of a change, not necessarily when the operator in question identified the functionality change. In Texas RE’s experience, operators may receive status	

change alarms or other indications of a functionality change, but not recognize these alarms. The reliability issue is tied directly to when the status change occurred, not when a particular operator noticed the change. As such, Texas RE believes introducing an explicit scienter requirement into the standard is inappropriate. Alternatively, the SDT may wish to consider verbiage such as when the operator “was aware of or reasonably should have been aware of” the status change.

Texas RE noticed in the VSL for Requirement R2, the term “Responsible Entity” is used but not defined anywhere else in the standard.

Likes	0
Dislikes	0

Response

Thank you for your comments. The SDT feels that adding “monitored” and removing “becoming aware of” provides this clarity and agrees with comments submitted. The SDT agrees with VSL recommendation and have removed “Responsible Entity” since it is understood this would be the GOP.

For unmonitored equipment for situational awareness, if there is a need to notify TOP of this equipment status it reasonable that this equipment has monitoring capabilities. The SDT feels that adding “monitored” and removing “becoming aware of” provides this clarity and agrees with your comments. The SDT agrees with VSL recommendation and have removed “Responsible Entity” since it is understood this would be the GOP.

Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter

Answer

Document Name

Comment

N/A

Likes 0	
Dislikes 0	
Response	
Thank you.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	
Document Name	
Comment	
<p>“Shall” has been replaced by “will” in the proposed language of the measures. While the measures of NERC Reliability Standards are not part of the FERC-approved enforceable language, the RF Standards Review Team for this project recommends against a one-off deviation from established conventions. If “shall” is inappropriate for measure language, this should be addressed in the Standard Process Manual and be uniformly applied in Standards projects.</p>	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	
Document Name	
Comment	
The addition of “or volt/VAR controller” is not needed where it has been added.	

Here are reasons:

1. The automatic voltage regulator (AVR) for the renewable plants is the Power Plant Controller (PPC). Responsible entities with these types of plants already know this.
2. Just because AVR has been used for synchronous machines, it does not mean that it is exclusively reserved for that type of unit.

Changes proposed to R2.1 are not needed. R2 already says to maintain the voltage schedule and tell the TOP if you are having trouble by following the TOP's notification instructions.

Likes	0
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Dislikes	0
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Response

Thanks for your comments. The SDT has revised the language. The SDT has reviewed other standards with similar terminology for consistency across the standards and has added footnotes as shown in MOD-026 and other standards to provide clarity specific to this standard.

While it's understood the resource will notify for voltage schedule deviation criteria from the TOP, the control of resource to meet schedule is a different type of notification and to be notified with deviation notifications. Based on comments from industry, the SDT revised the draft. The Technical Rationale document has been updated to provide clarity of SDT response to the EPR Attachment 5 recommendations

Thomas Foltz - AEP - 5

Answer	
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Document Name	
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Comment	
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While admittedly outside the scope of the current SAR, AEP recommends that some of the terms and phrases proposed for VAR-002 be referenced in other standards as well, most notably within VAR-001. These terms would include “volt/VAR controller(s)” and “dispersed power producing resource.”

Likes 0

Dislikes 0

Response

Thanks for your comments. It may be suggested that a SAR be created by commenter to provide the clarity in terminology with VAR-001 and VAR-002 and other standards. The SDT has reviewed other standards for adopted terminology used in VAR-002-5.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6 - WECC

Answer

Document Name

Comment

This change has been long in coming. Though good players have coordinated voltage control and their obligation, there have been an number of entities that have only lived by the letter of the law. These companies have taken a minimum compliance threshold approach and have leaned on the interconnections long enough. This has burdened their neighbors and host utilities to burden the higher costs of voltage control.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT agrees that eliminating the ambiguity in the standard will only improve the intent and provide the clarity needed to address the changing BES generator resource technology.

Donna Wood - Tri-State G and T Association, Inc. - 1

Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
Shall was replaced with Will throughout the Standard. Recommend reverting language back to Shall.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has looked over the standard and, for consistency, reverted “shall” back to the Measures.	

End of Report