

## Consideration of Comments

<b>Project Name:</b>	2021-04 Modifications to PRC-002-2   Glencoe Light SAR
<b>Comment Period Start Date:</b>	6/14/2021
<b>Comment Period End Date:</b>	7/13/2021
<b>Associated Ballots:</b>	

There were 23 sets of responses, including comments from approximately 56 different people from approximately 50 companies representing 7 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, please 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, you can contact the Vice President of Engineering and Standards, [Howard Gugel](#) (via email) or at (404) 446-9693.

## Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

2. Provide any additional comments for the SAR drafting team to consider, if desired.

### 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
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Jennifer Bray	Arizona Electric Power Cooperative, Inc.	1	WECC
					Ryan Strom	Buckeye Power, Inc.	5	RF
					Susan Sosbe	Wabash Valley Power Association	3	RF
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	4	MRO
Fred Meyer	Algonquin Power Co.	1	MRO
Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
Jodi Jensen	Western Area Power Administration - Upper Great Plains East (WAPA)	1,6	MRO
John Chang	Manitoba Hydro	1,3,6	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

					LaTroy Brumfield	American Transmission Company, LLC	1	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
					Jeremy Voll	Basin Electric Power Cooperative	1,3,5	MRO
					Joe DePoorter	Madison Gas and Electric	4	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					Bill Shultz	Southern Company Generation	5	MRO
Duke Energy		1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC

	Kim Thomas				Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Ann Carey	FirstEnergy - FirstEnergy Solutions	6	RF
					Mark Garza	FirstEnergy-FirstEnergy	4	RF

**1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.**

**Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 - WECC**

**Answer** No

**Document Name**

**Comment**

We believe that the notified interconnecting entity should have the FR/SER coverage on the notified BES Element(s) jointly owned by the interconnecting entities, which connect to the applicable bus owned by the notifying entity. We do not agree that the requirement calls for FR/SER monitoring on the lines, buses, transformers, and breakers on the bus owned by the notified entity, if the interconnecting BES element is only the line connecting to the bus owned by the notifying entity, as stipulated in the SAR proposal.

Likes 0

Dislikes 0

**Response**

Thank you for your comment. This comment appears to agree with the intent of the SAR, so the "No" vote is confusing. One of the SAR DT members reached out to commenting entity to clarify the intent of this SAR. The revised SAR states that the standard should clearly define the terms "directly connected" versus "connected" as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements. This should clarify requirements for the Responsible Entities.

**Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6**

**Answer** No

**Document Name**

**Comment**

The existing language of the standard defines only that the individual entities must provide notification and have data available. Under this language the entities are still free to collaborate in providing SER and FR data. The full submission from Glencoe Light and Power Goes on to stipulate: Requirement R1, Part 1.2 should be modified such that only the directly connected BES Element owner to the identified BES bus at the same voltage level within the same physical location sharing a common ground grid of the identified BES bus shall have FR data.

Following this more prescriptive language recommended by Glencoe limits the opportunity for collaboration.

Likes	0
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Dislikes	0
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### Response

Thank you for your comment. One of the SAR drafting member explained in the BHE cross-platform meeting why this SAR was necessary and that it would not limit collaboration, only clarify required data. Among other things, one of the goal of this SAR is to revise the standard so that requirements are clear and that it eliminates unnecessary and administrative compliance burden for the Responsible Entities.

**Maryanne Darling-Reich - Black Hills Corporation - 1,3,5,6 - MRO,WECC**

Answer	Yes
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Document Name	
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### Comment

Black Hills Corporation would also recommend including more clarification on which party (BES bus owner or BES element owner) is responsible for installing FR and/or SER equipment.

Likes	0
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Dislikes	0
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### Response

Thank you for your comment. The SAR DT will recommend that the standards drafting team consider providing this clarification.

**Thomas Foltz - AEP - 3,5,6**



<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
<p>AEP agrees with the proposed scope, direction, and intended purpose and goals of the proposed SAR as drafted by Glencoe Light and Power. We recommend it be pursued, as we believe the effort would provide clarity and that the resulting efficiencies would benefit industry.</p> <p>While both the IRPTF SAR and the Glencoe Power and Light SAR each focus on revising PRC-002, their perceived needs and expressed goals are quite different. Because only one single SAR governs a project at any point in time, and because the unique efforts for the IRPTF SAR will likely be met with much more resistance than the Glencoe SAR, AEP recommends breaking this project into multiple phases, each with its own SAR governance. The Glencoe SAR will likely encounter less resistance from industry than the IRPTF SAR, so we recommend that the Glencoe SAR govern the first phase of the project. Once that phase is complete, the second phase could then begin with the IRPTF SAR governing Phase 2. Pursuing Project 2021-04 this way would be much more efficient, allowing progress to be made more quickly on the purpose and goal on the Glencoe SAR, and without potential delay associated to any resistance to efforts related to the IRPTF SAR.</p>	
Likes	0
Dislikes	0
<b>Response</b>	
Thank you for your support. SAR DT recommends a multi-phased approach with Glencoe Light SAR being addressed first.	
<b>Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
The notification and data responsibility requirements in PRC-002 R1 and R3 needs clarification.	

When identifying BES buses for monitoring bus in this standard is defined as a physical bus with breakers connected at the same voltage level within the same physical location sharing a common ground grid. For the sake of this standard, the BES Elements identified for monitoring should be defined in the same way avoiding including BES Elements that are remote to the identified BES bus-like transmission lines and their remote terminals.

The original intent of the standard drafting team was to make sure that the SER and FR data was available at the identified buses, so the connected BES Elements should be limited to BES Elements local to the identified BES buses and not include transmission lines and their remote breakers.

Likes 0

Dislikes 0

### Response

Thank you for your comment. The SAR DT will recommend that the standards drafting team consider providing this clarification. The revised SAR states that the standard should clearly define the terms “directly connected” versus “connected” as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements. Clarification using these terms should also address clarifying elements local to the identified BES bus versus remote breakers.

**Carl Pineault - Hydro-Qu?bec Production - 1,5**

Answer Yes

Document Name

### Comment

No comments

Likes 0

Dislikes 0

### Response

<b>Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
Duke Energy does not have comments at this time.	
Likes 0	
Dislikes 0	
<b>Response</b>	
<b>Leonard Kula - Independent Electricity System Operator - 2</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
N/A.	
Likes 0	
Dislikes 0	
<b>Response</b>	
<b>Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6</b>	
<b>Answer</b>	Yes

<b>Document Name</b>	
<b>Comment</b>	
AZPS supports the scope of the SAR submitted by Glencoe Light.	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your support.	
<b>Anthony Jablonski - ReliabilityFirst - 10</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
As noted by SAR written by Glencoe Light, the existing standard needs to be clarified as to whether it applies to directly connected versus remote buses indirectly connected. Pages 3 & 4 of the Glencoe Light SAR describe cases where ownership, notification, and compliance applicability for SER and/or FR data need to be clarified.	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your comment. The revised SAR states that the standard should clearly define the terms “directly connected” versus “connected” as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements.	
<b>William Steiner - Midwest Reliability Organization - 10</b>	
<b>Answer</b>	Yes

<b>Document Name</b>	
<b>Comment</b>	
<p>MRO agrees with the SAR that, in situations where the identified BES bus owner has the capability to measure and record the required FR data, the notification required by R1.2 and the possession of data required by R3 create compliance burdens for the entities subject to those requirements but may not be the best way to ensure that the data will be available for analysis. However, the solutions proposed in the SAR do not appear to ensure that the obligation to have data will be assigned clearly to one equipment owner. The SAR suggests that the owner of a BES Element connected to an identified BES bus should only be made responsible for having FR data in situations where the owner of the identified BES bus lacks the capability to obtain the data. This, however, would constitute a sort of cascading applicability scheme where the failure of one entity (the bus owner) to meet the data requirement would kick the obligation back to the connected BES Element owner. This approach seems difficult to enforce and does not fully mitigate the issue of uncooperative neighboring entities.</p> <p>While not fully supportive of the proposed solutions in the SAR, MRO does support revision of the standard to mitigate the dependency of one equipment owner on another to meet the data possession requirement in R3. Other applicability schemes could likely be utilized to make the applicability of each requirement clear to all entities.</p>	
Likes	0
Dislikes	0
<b>Response</b>	
<p>Thank you for your comment. Some examples are added in the revised SAR to illustrate why standard should be revised to clarify the intent of R1.2 and R3. Revisions made to standard clarifying responsibilities for each entity would ensure that adequate FR and SER data is available for analysis.</p>	
<b>Richard Jackson - U.S. Bureau of Reclamation - 1,5</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	

Reclamation recommends the owner of the required equipment be the evaluating entity. Criteria to determine what Facilities require SER/FR and DDR equipment should be provided to remove ambiguity. Reclamation recommends the scope of the SAR also include the items described in the response to Question 2.

Likes 0

Dislikes 0

**Response**

Thank you for your comment. The criteria to determine which facilities require SER/FR and DDR data/equipment is provided in Attachment 1 (referred in R1.1) and R5 respectively. The evaluating entity for SER/FR data/equipment is Transmission Owner, an entity responsible for short circuit model which is necessary to evaluate based on criteria in the Attachment 1. The evaluating entity for R5 is Responsible Entity as defined in 4.1., entity with all necessary data needed for evaluation.

Also, please refer to response to Question 2.

**Alan Kloster - Great Plains Energy - Kansas City Power and Light Co. - 1,3,5,6 - MRO**

**Answer** Yes

**Document Name**

**Comment**

Eergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1.

Likes 0

Dislikes 0

**Response**

Thank you for your comment. Please see response to EEI's comment.

**Shannon Ferdinand - Decatur Energy Center LLC - 5**

**Answer** Yes

<b>Document Name</b>	
<b>Comment</b>	
In general Capital Power (on behalf of Decatur Energy Center and other Group 80 MRRE assets) agrees with the proposed scope. Please see additional comments in response 2.	
Likes	0
Dislikes	0
<b>Response</b>	
Thank you for your support. Also, please see response to question #2.	
<b>Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
EEI supports the concern identified in the Glencoe Light SAR that Requirement R1, Subpart 1.2 does not clearly identify under what conditions notified owners of BES Elements connected to BES busses, identified under Part 1.2 of PRC-002-2; are obligated to install sequence of events recording (SER) and fault recording (FR) equipment. Additionally, given the parallel posting of both the IRPTF and Glencoe Light SARs, consideration should be given to addressing these two SAR under a single project but through a multi-phased approach with the Glencoe Light scope SAR being addressed in the first phase.	
Likes	0
Dislikes	0
<b>Response</b>	
Thank you for your comment and support. SAR DT recommends a multi-phased approach, with Glencoe Light SAR likely being addressed first.	

**Donna Wood - Tri-State G and T Association, Inc. - 1,3,5**

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

**Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter**

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

**David Jendras - Ameren - Ameren Services - 1,3,6**

Answer Yes

Document Name

Comment



Likes	0
Dislikes	0
<b>Response</b>	
<b>Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations</b>	
Answer	Yes
Document Name	
<b>Comment</b>	
Likes	0
Dislikes	0
<b>Response</b>	
<b>Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,RF</b>	
Answer	Yes
Document Name	
<b>Comment</b>	
Likes	0
Dislikes	0
<b>Response</b>	
<b>Rachel Coyne - Texas Reliability Entity, Inc. - 10</b>	

<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
Likes	0
Dislikes	0
<b>Response</b>	
<b>Brad Harris - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE</b>	
<b>Answer</b>	Yes
<b>Document Name</b>	
<b>Comment</b>	
Likes	0
Dislikes	0
<b>Response</b>	
<b>Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
BPA supports the project scope to modify Requirement R1, Part 1.2 to clarify notifications – it’s been unclear both what to expect in return when we send out a notification as well as what to do with a notification when we receive one. Because of this, we have done SER and DFR	

reviews on stations that were identified to us by other entities on top of completing reviews of our PRC-002-2 identified stations. More clarity is needed on what specifically must happen when you receive a notification.

The standard also states that the owner must supply the data upon request, but BPA has worked with other utilities to ensure we don't have gaps. There needs to be some leeway on allowing two or more utilities to have a formal, pre-established agreement if they choose to do so. It helps save utilities on cost if they can.

Likes	0
Dislikes	0
<b>Response</b>	
Thank you for your comment and support. The SAR DT will recommend that the standards drafting team consider providing this clarification.	

**2. Provide any additional comments for the SAR drafting team to consider, if desired.**

**Rachel Coyne - Texas Reliability Entity, Inc. - 10**

**Answer**

**Document Name**

**Comment**

While Texas RE generally supports the scope of the proposed SAR and the overall intent of the proposed project, Texas RE proposes two additional areas for consideration in the upcoming project to improve the proposed PRC-002 Standard’s overall effectiveness. First, the SDT should move periodic requirements set forth in the PRC-002 Implementation Plan directly in the Standard Requirement language contained in PRC-002-2 R1.3. Second, the SDT should review the “Median Method Excel Workbook” for potential anomalies. Texas RE provides additional details on each of these items below.

Periodic Requirements in the PRC-002-2 Implementation Plan

Texas RE is concerned there is a periodic requirement in the Implementation Plan for PRC-002-2, rather than in the requirement itself. Consistent with Standard Processes Manual, Section 4.4.3, implementation plans are intended to describe the proposed effective date, identify new or modified definitions, specify any prerequisite actions that need to be accomplished before entities are held responsible for compliance with the requirements, describe whether any conforming changes to other Reliability Standards will occur, and finally the Functional Entities that will be required to comply with the requirements.

In contrast to these core implementation plan elements, the PRC-002-2 implementation plan sets forth an explicit compliance periodicity that is not solely associated with registered entities’ transition to compliance with the PRC-002-2 requirements. In particular, PRC-002-2, R1.3 states that TOs shall “re-evaluate buses at least once every five years and notify other owners...**and implement the re-evaluated list of BES buses as per the Implementation Plan.**” The current PRC-002-2 implementation plan in turn provides that “Entities shall be 100 percent compliant with a re-evaluated list from Requirement R1 or R5 within three (3) years following the notification by the TO or the Responsible

Entity that re-evaluated that list.” When read together, therefore, the PRC-002-2 Registered Entities must continue to reference the current PRC-002-2 implementation plan in order to understand the requirement to implement the re-evaluated list of BES buses on a three-year cycle.

Texas RE recommends moving the three-year requirement from the PRC-002-2 implementation plan to the requirement language itself, as it is essentially a periodic requirement for TOs and is no longer associated with the prerequisite actions that need to be accomplished before Registered Entities are held responsible for PRC-002-2 R1.3. Such a change will provide additional clarity to registered entities as well as reduce the number of extraneous documents needed to comply with the standard.

#### Workbook Anomalies

In addition to explicitly incorporating the three-year BES bus re-evaluation language directly into the PRC-002-2 R1.3 requirement language, Texas RE also recommends the drafting team conduct a general re-evaluation of the “Median Method Excel Workbook” (located on the [original project page](#)) to ensure accurate evaluations. During the course of its ongoing compliance engagements, Texas RE staff discovered several potential anomalies and possible incorrect calculations throughout the Workbook. For example, Texas RE noticed the use of “SOER” (Sequence of Events Recording) within the Workbook, which had been removed from a Rationale dialog box in a [May 2014 redline](#):

([https://www.nerc.com/pa/Stand/Project%20200711%20Disturbance%20Monitoring%20DL/PRC-002-2\\_Disturbance\\_Monitoring\\_2014May09\\_redline.pdf](https://www.nerc.com/pa/Stand/Project%20200711%20Disturbance%20Monitoring%20DL/PRC-002-2_Disturbance_Monitoring_2014May09_redline.pdf)).

Texas RE staff also determined the same number of bus placements based on the example data but that number **differed** from the example provided within the Workbook. When using real world data, it was discovered that there may not be enough guidance to determine bus placement in a repeatable fashion as Workbook instructions appeared to not consider repeat values for three phase short circuit (e.g. multiple busses having the same short circuit values).

Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your comment. The SAR is revised to move periodic requirements set forth in the PRC-002 Implementation Plan in the standard as a requirement language.	
Review of "median method excel workbook" is not in the scope of this SAR. Revision to standard in response to IRPTF SAR may revise the methodology in attachment 1, and if so, SDT may review of the "median method excel workbook" and revise as necessary.	
<b>Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
EEI looks forward to reviewing a future Project 2021-04 SAR, which contains elements of both SARs.	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your support. Additionally, SAR DT recommends a multi-phased approach, with Glencoe Light SAR likely being addressed first.	
<b>Shannon Ferdinand - Decatur Energy Center LLC - 5</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
Capital Power (on behalf of Decatur Energy Center and other Group 80 MRRE assets) appreciates any opportunity to reduce the administrative burden related to certain Reliability Standards. However, in this case, the notification of only the impacted entities may result	

in instances where, due to an administrative error, a potentially in-scope entity is not notified and assumes it is out of scope because no notification was received. To mitigate this risk, Capital Power recommends one of the following solutions:

- Comprehensive, easily accessible list of all in-scope buses as well as what data is required
  - This will allow all entities, including those who may not have received a direct notification, to ensure that the lack of notification was not due to an administrative error
  - Ideally this list should be stored and/or facilitated on/via a centralized system such as NERC’s Align system.
- Positive confirmation of out of scope – TOs should notify all entities of their in-scope or out of scope status
- Develop selection criteria specific to generators (inclusive of synchronous and inverter-based resources). Based on these criteria generators would be accountable and have the mechanism to make their own determination re. which assets require SER and FR.

Likes 0

Dislikes 0

**Response**

Thank you for your comment.

In regards to R1, TO is in ideal position to develop a list of buses in scope. If not notified by TO, then R2 and R3 does not apply and hence there is no risk of non-compliance. R2 and R3 includes details of data. The SAR DT does not agree that list of in-scope buses should be stored/facilitated via a centralized system such as NERC's align system.

Requiring TOs to notify entities whose BES elements are not in scope of R1 is unnecessary burden on the TO.

Criteria inclusive of sychornous and inverter-based resources is outside the scope of this SAR. The impact of growing penetration of IBRs is addressed by the NERC IRPTF SAR.

**Alan Kloster - Great Plains Energy - Kansas City Power and Light Co. - 1,3,5,6 - MRO**

<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
Energy supports and incorporates by reference Edison Electric Institute’s (EEl) response to Question 2.	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your comment. Please see response to EEI's comment.	
<b>Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
In general PRC-002 is loosely written. BPA has submitted questions to WECC for clarification. R4.3 states “Trigger settings for at least the following: 4.3.1 Neutral (residual) over current. 4.3.2 Phase undervoltage or overcurrent”; this can be interpreted that the XFMR can have a phase undervoltage trigger even though R3 states: “3.1 phase- to neutral voltage for each phase of each specified BES bus. 3.2 Each phase current and the residual or neutral current for the following BES Elements: 3.2.1 Transformers that have a low-side operating voltage of 100kV or above. 3.2.2 Transmission Lines.”	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your comment. R4.3 specifies trigger settings to record electrical quantities specified in R3. The SAR DT feels these comments are not in scope for this SAR effort. The Guideline section for R4 provides some clarification for the triggering minimum requirements. The	



drafting team feels this is sufficient at this time, however the standard does not restrict owners from employing other triggering mechanisms in addition to the minimum requirements.

**Richard Jackson - U.S. Bureau of Reclamation - 1,5**

**Answer**

**Document Name**

**Comment**

Reclamation recommends the PRC-002 SAR include provisions to modify Section 4.1, Requirement R1, Requirement R5, and Requirement R12 to address the following items:

- In the Western Interconnection, entities also receive notifications from the Planning Coordinator. Therefore, Section 4.1.3 should be revised to include Planning Coordinators.
- Requirement R1.3 should be modified to state the timeframe within which entities must be compliant with R2, R3, R4, R10, and R11 for any equipment added as a result of the TO's re-evaluation (i.e., within 3 years following the notification by the TO).
- Requirement R5.4 should be modified to state the timeframe within which entities must be compliant with R6, R7, R8, R9, R10, and R11 for any equipment added as a result of the Responsible Entity's re-evaluation (i.e., within 3 years following the notification by the Responsible Entity that re-evaluated the list). Alternatively, each requirement (R6 through R11) should state the time period after notification within which the required activity must be completed as a result of changes to the TO's or Responsible Entity's list.
- Reclamation recommends adding the sharing of protection system data when requested by the entity performing the R1 evaluation.
- Requirement R12 should be modified to add a required time limit within which to notify the Regional Entity(ies) of a failure of the recording capability. Regional Entities need to know as soon as the failure occurs or is discovered, not up to 90 days later.

Likes 0

Dislikes 0

**Response**

Thank you for your comment. SAR is revised and recommends the Standard DT to consider adding Planning Coordination to the Western Interconnection Responsible Entities, if appropriate.

The time limit for notified entity per R1.3 and R5.4 is included in the implementation plan. The implementation plan states that entities shall be 100 percent compliant within three (3) years following the notification. This requires PRC-002-2 Registered Entities to continue to reference the current PRC-002-2 implementation plan. The SAR is revised to move the three-year requirement from the PRC-002-2 implementation plan to the standard as a requirement language itself.

The SAR DT disagrees with recommendation to add the sharing of protection system data with entity performing R1 evaluation. Not sure why protection system data is necessary to do re-evaluation in R1.3.

SAR DT disagrees with need to revise Requirement R12 to reduce allowable time from 90 day period. Although it does not take a long time to replace or fix failed equipment, 90 day time period is necessary for unforeseen circumstances. The regional entity is only needed to be informed with a corrective action plan for information in case responsible entity is audited and does not have data available from the location where equipment failed.

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

**Answer**

**Document Name**

**Comment**

Thank you for the opportunity to comment.

Likes 0

Dislikes 0

**Response**

<b>William Steiner - Midwest Reliability Organization - 10</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
<p>- MRO has noted that the standard is complicated and difficult to interpret. Proper interpretation requires a nuanced understanding of various terms including "BES bus", "BES Element", "connected", and "directly connected." These terms are defined by a combination of the NERC Glossary of Terms and the standard itself. The uses of these terms in the standard provide further insight into how the terms should be understood. A more straightforward approach to defining terms in the standard would likely help to clarify the locations where recording is required as well as the delineation of responsibilities for obtaining data.</p> <p>- The SAR includes the statement "the current standard could be interpreted that generation, transformer and transmission line owners could have FR data that is recorded at a location remote to the identified BES bus" and implies that this is somehow an unnecessary or undesirable interpretation. However, it is MRO's opinion that this is the proper interpretation as R3 does not dictate the exact location of current measurement, only that the entity must have current data for the applicable transmission lines and transformers. If, for some reason, the only location where current sensing and recording equipment was installed was at the remote end of a transmission line or transformer, it would make sense to utilize that equipment rather than require installation of new equipment nearer to the identified BES bus.</p> <p>- Clarifications regarding the current version of the standard and MRO's interpretation:</p> <ul style="list-style-type: none"> <li>• R1.2 notifications do not obligate entities to have data, only R3 does that. The notifications ensure that BES Element owners with R3 obligations are aware of those obligations. An overreaching notification from the identified BES bus owner to an adjacent owner of equipment that does not meet the criteria given in R3 would not create any compliance obligation for the adjacent owner.</li> <li>• R1.2 and R3 are consistent with each other in addressing BES Elements "connected to the BES buses identified in Requirement R1."</li> </ul>	
Likes	0
Dislikes	0

**Response**

Thank you for your comment. SAR is revised and now states that terms such as such as “connected” and “directly connected” BES Elements should be clarified and as necessary, ensure consistent usage of terms such as “BES bus” and “BES Element” in the standard.

Some examples are added in the revised SAR to illustrate why standard should be revised to clarify the intent of R1.2 and R3.

**Anthony Jablonski - ReliabilityFirst - 10**

**Answer**

**Document Name**

**Comment**

Process question, with two different SAR write-ups (IRPTF from June 2020 and Glencoe Light from April 2021) out for comment, would the Standards Committee assign one SDT to both of these SARs or would the SARs be combined into one SAR?

Likes 0

Dislikes 0

**Response**

Thank you for your comment. SAR DT recommends a multi-phased approach, with Glencoe Light SAR likely being addressed first.

**Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6**

**Answer**

**Document Name**

**Comment**

None

Likes 0

Dislikes 0

**Response**

**Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 - WECC**

**Answer**

**Document Name**

**Comment**

The proposal by Glencoe light does not address following issues, which should be addressed by the Standards Drafting Team on Requirement R1.

- The Requirement R1.2 obligates the notifying entity to notify the interconnecting entity about the FR or SER monitoring requirement on the interconnecting BES element(s) within 90 days of the determination of the BES buses. But it does not say anything about the obligation of the notified interconnecting entity in terms of time limits on their response or confirmation about implementing the FR/SER monitoring. There is provision to notify interconnecting FR/ER monitoring for the interconnecting BES element(s), but thereafter standard leaves it open. There is no follow-up on actual implementation of the FR/SER monitoring. The requirement should set some time limit on the notified entity to confirm/ or resolve issues if any towards implementing the FR/SER requirement. It should also address issues, when the applicable buses list of the notified interconnecting entity does not include the bus to which the interconnecting BES element in question is connecting.
- In the requirement R5, the Reliability Coordinator (RC) notifies the entities about DDR requirement. The RC should provide more details with the notification. Currently the RC notification merely includes the requirement no in the columns. It does not include why or how the requirement number was applied. For example If a notification of DDR monitoring goes to an entity under R5.1.5 (UVLS) or 5.1.2 (Stability of System Operating limits), then the standard does not clarify RC responsibility to notify other participating entities. The RC notification does not provide the details. What about the FR/SER monitoring requirement on those interconnections between entities if the buses do not figure in the 20% applicable buses list of the concerned entities?). The standard should address this.

- The requirement R1.1 should address step 8 of the algorithm in attachment 1 of the standard. For example, step 8 does not necessarily include the case of growing inverter-based resource monitoring. It has been noticed that while applying step 1-step7, the applicable buses tend to concentrate in the high MVA zones and distributed monitoring across the network does not occur. The standard or the algorithm need to be tweaked to address this issue.

Likes 0

Dislikes 0

**Response**

Thank you for your comment.

The time limit for notified entity is in the implementation plan. This is also true for re-evaluated list from R1 and R5, where the implementation plan states that entities shall be 100 percent compliant within three (3) years following the notification. This requires PRC-002-2 Registered Entities to continue to reference the current PRC-002-2 implementation plan. The SAR is revised to move the three-year requirement from the PRC-002-2 implementation plan to the standard as a requirement language itself.

The SAR DT recognizes that details might be helpful to notified entity. However, Requirements R6, R7 and R8 are regardless of a reason (UVLS, SOLs etc.) for which entity is notified by the Responsible Entity to have DDR data. Hence, it is not necessary to require the notifying entity to provide details.

The impact of growing penetration of IBRs is addressed by the NERC IRPTF SAR.

**Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter**

**Answer**

**Document Name**

**Comment**

N/A

Likes 0

Dislikes 0	
<b>Response</b>	
<b>Leonard Kula - Independent Electricity System Operator - 2</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
N/A.	
Likes 0	
Dislikes 0	
<b>Response</b>	
<b>Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
Duke Energy does not have comments at this time.	
Likes 0	
Dislikes 0	
<b>Response</b>	

<b>Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF</b>	
<b>Answer</b>	
<b>Document Name</b>	
<b>Comment</b>	
R1.2 should be further clarified to reduce needless administrative burden and state that notifications are only required when the Transmission Owner at the local bus needs data from the owner of the connected BES Element. Notifications stating that no data is required are an unnecessary administrative burden for the sender and recipient.	
Likes 0	
Dislikes 0	
<b>Response</b>	
Thank you for your support and comment. The SAR DT will recommend that the standards drafting team consider providing this clarification.	

**“Comments received from Jamie Johnson – California ISO”**

**Question 1**

Yes

**Comments:** Any clarifications to the scope of NERC registered entities responsibilities promote clarity and add to reliability activities.

**Response:** Thank you for your comment and support. The intent of this SAR is to provide clarity for responsible entities. The SAR DT will recommend that the standards drafting team consider revision such that responsibilities for all entities is clearly stated.

**Question 2 (no additional comments)**

**“Comments received from Wayne Sipperly – NAGF”**

**Question 1**



Yes

**Comments:**

The NAGF agrees with the proposed scope to clarify the notification and data responsibility requirements in PRC-002 R1 and R3. The BES Elements identified for monitoring should be defined as “a physical bus with breakers connected at the same voltage level within the same physical location sharing a common ground grid” to avoid including BES Elements that are remote to the identified BES bus (e.g. transmission lines and their remote terminal equipment).

Where the intent is to ensure that the SER and FR data is available at the identified buses, the connected BES Elements should be limited to BES Elements local to the identified BES buses and not include transmission lines and their remote breakers

**Response:** Thank you for your comment. The SAR DT will recommend that the standards drafting team consider providing this clarification. The revised SAR states that the standard should clearly define the terms “directly connected” versus “connected” as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements. Clarification using these terms should also address clarifying elements local to the identified BES bus versus remote breakers.

**Question 2 (additional comments)**

**Comments:**

PRC-002 R1.2 should be further clarified to reduce needless administrative burden and state that notifications are only required when the Transmission Owner at the local bus needs data from the owner of the connected BES Element. Notifications stating that no data is required are an unnecessary administrative burden for the sender and recipient.

The NAGF notes that the existing PRC-002-2 Rational section regarding R3 states that an FR exception exists for “Generator step-up transformers GSUs) and leads that connect the GSU transformer(s) to the Transmission System that are used exclusively to export energy directly from a BES generating unit or generating plant”. This needs to be clarified with regard to PRC-002-2 Requirement 1. TOs should be required to send separate SER and FR notifications, taking into account the exception for generator interconnection facilities.

**Response:** Thank you for your comment. Some examples are added in the revised SAR to illustrate why standard should be revised to clarify the intent of R1.2 and R3. The revised SAR states that obligation for FR data per requirement R3 needs clarification as to if the Generator

Owner is required or not to have FR data with examples shown in figures 7 and 8. Depending on clarification of this, the notification requirement in R1.2 may be revised and one alternative is to require TO to send separate SER and FR notifications.

**“Comments received from Pamela Hunter – Southern Company”**

**Question 1**

**Yes**

**Comments:**

The notification and data responsibility requirements in PRC-002 R1 and R3 needs clarification.

The BES Elements identified for monitoring should be defined as “a physical bus with breakers connected at the same voltage level within the same physical location sharing a common ground grid” to avoid including BES Elements that are remote to the identified BES bus (e.g. transmission lines and their remote terminal equipment).

Where the intent is to make sure that the SER and FR data is available at the identified buses, the connected BES Elements should be limited to BES Elements local to the identified BES buses and not include transmission lines and their remote breakers.

**Response:** Thank you for your comment. The SAR DT will recommend that the standards drafting team consider providing this clarification. The revised SAR states that the standard should clearly define the terms “directly connected” versus “connected” as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements. Clarification using these terms should also address clarifying elements local to the identified BES bus versus remote breakers.

**Question 2 (additional comments)**

**Comments:**

R1.2 should be further clarified to reduce needless administrative burden and state that notifications are only required when the Transmission Owner at the local bus needs data from the owner of the connected BES Element. Notifications stating that no data is required are an unnecessary administrative burden for the sender and recipient.

The usual order of precedence for NERC standards is that the Rationale section only explains the requirements and does not modify them.

PRC-002-2 breaks this rule by treating SER and FR in a one-size-fits-both fashion in R1, then saying in the Rationale section that an FR exception exists for, ‘Generator step-up transformers (GSUs) and leads that connect the GSU transformer(s) to the Transmission System that are used exclusively to export energy directly from a BES generating unit or generating plant.’ It is awkward to have a letter from the TO saying that FR is required, and having to point-out to auditors that the Rationale section of PRC-002-2 overrules. PRC-002-3 should have TOs send separate SER and FR notifications, taking into account the exception for generator interconnection facilities.

**Response:** Thank you for your comment. Some examples are added in the revised SAR to illustrate why standard should be revised to clarify the intent of R1.2 and R3. The revised SAR states that obligation for FR data per requirement R3 needs clarification as to if the Generator Owner is required or not to have FR data with examples shown in figures 7 and 8. Depending on clarification of this, the notification requirement in R1.2 may be revised and one alternative is to require TO to send separate SER and FR notifications.

#### “Comments received from Daniel Gacek – Exelon”

##### Question 1

Yes

**Comments:** Exelon agrees that the BES element owner should be responsible for data required for PRC-002-2. The BES Elements identified for monitoring should be defined as “a physical bus with breakers connected at the same voltage level within the same physical location sharing a common ground grid” to avoid including BES Elements that are remote to the identified BES bus (e.g. transmission lines and their remote terminal equipment).

**Response:** Thank you for your comment. The SAR DT will recommend that the standards drafting team consider providing this clarification. The revised SAR states that the standard should clearly define the terms “directly connected” versus “connected” as it relates to determining which elements are required to have the SER and FR data. A few examples are added to illustrate the difference between "directly connected" and "connected" elements. Clarification using these terms should also address clarifying elements local to the identified BES bus versus remote breakers.

##### Question 2 (additional comments)

###### Comments:

Receiving notifications from a TO that data is not required for a BES Element is beneficial and such notifications should not be eliminated by changes to the standard.

**Response:** Thank you for your comment. Notifications when SER/FR/DDR data is not required places an unnecessary administrative compliance burden on the Responsible Entity. One of the goal of this SAR is to revise the standard to eliminate unnecessary and administrative compliance burden for the Responsible Entities.