

Consideration of Comments

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| Project Name: | 2020-04 Modifications to CIP-012 Draft 3 |
| Comment Period Start Date: | 10/3/2022 |
| Comment Period End Date: | 11/29/2022 |
| Associated Ballots: | 2020-04 Modifications to CIP-012 CIP-012-2 AB 3 ST 2020-04 Modifications to CIP-012 CIP-012-2 Non-Binding Poll AB 3 NB 2020-04 Modifications to CIP-012 Implementation Plan AB 3 OT |

There were 71 sets of responses, including comments from approximately 164 different people from approximately 110 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, 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, [Soo Jin Kim](#) (via email) or at (404) 446-9742.

Questions

1. The SDT revised CIP-012-1 R1 to address the comments received during previous ballots and to meet the directives outlined in FERC Order No. 866 seeking to provide for the availability of Real-time Assessment and Real-time monitoring data while in transit between Control Centers. Do you agree that the proposed language in R1 addresses the mitigation of risk as identified in FERC Order No. 866? If not please provide comments and suggested requirement language.

2. Does the language in R1.2 adequately reflect the need to mitigate the loss of the ability to transmit Real-time Assessment and Real-time monitoring data? If not please provide comments and suggested requirement language.

3. Does the language in R1.4 provide Responsible Entities with clarity on the need to identify physically or logically where they have applied the methods required in R1.1 and R1.2? If not please provide comments and suggested requirement language.

4. The SDT received multiple requests to provide more possible mitigation methods. Do you agree that the expanded measures section of the standard adequately demonstrates examples of methods that could be used to mitigate the risk posed by loss of Real-time assessment and Real-time monitoring data while in transit?

5. The SDT proposes that the modifications in CIP-012-2 meet the FERC directives in a cost effective manner. Do you agree? 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.

6. The last ballot showed industry approval of the proposed 24-month implementation plan. Do you still agree the proposed timeframe is appropriate in light of the proposed revisions to the standard language? If you think an alternate timeframe is needed,

[please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.](#)

[7. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale and implementation guidance document, 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 |
|------------------------------|-----------------|------------|--------|------------------|------------------------|----------------------------------|-------------------------|---------------------|
| 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 |
| Chris Carnesi | Chris Carnesi | | WECC | NCPA | Marty Hostler | Northern California Power Agency | 4 | WECC |
| | | | | | Dennis Sismaet | Northern California Power Agency | 6 | WECC |
| Santee Cooper | Chris Wagner | 1 | | Santee Cooper | Christine Pope | Santee Cooper | 1,3,5,6 | SERC |
| | | | | | Rene' Free | Santee Cooper | 1,3,5,6 | SERC |
| 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 |

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| | | | | | David Boeshaar | WEC Energy Group, Inc. | 6 | RF |
| 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 |
| Eversource Energy | Joshua London | 1 | | Eversource | Joshua London | Eversource Energy | 1 | NPCC |
| | | | | | Vicki O'Leary | Eversource Energy | 3 | NPCC |
| Public Utility District No. 1 | Joyce Gundry | 3 | | CHPD | Meaghan Connell | Public Utility District No. 1 of Chelan County | 5 | WECC |

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| of Chelan County | | | | | Glen Pruitt | Public Utility District No. 1 of Chelan County | 6 | WECC |
| | | | | | Joyce Gundry | Public Utility District No. 1 of Chelan County | 3 | WECC |
| | | | | | Diane Landry | Public Utility District No. 1 of Chelan County | 1 | WECC |
| DTE Energy - Detroit Edison Company | Karie Barczak | 3 | | DTE Energy - DTE Electric | Adrian Raducea | DTE Energy - Detroit Edison Company | 5 | RF |
| | | | | | Patricia Ireland | DTE Energy - DTE Electric | 4 | RF |
| | | | | | Karie Barczak | DTE Energy - DTE Electric | 3 | RF |
| MRO | Kendra Buesgens | 1,2,3,4,5,6,7 | 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 |

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|-------------------|---|---------|-----|
| 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 |
| David Heins | Omaha Public Power District | 1,3,5,6 | MRO |
| George Brown | Acciona Energy North America | 5 | MRO |

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|---------------------------------------|-----------------|---|------|-------------------|------------------|---------------------------------------|-----------|------|
| | | | | | Jaimin Patel | Saskatchewan Power Corporation | 1 | MRO |
| | | | | | Kimberly Bentley | Western Area Power Administration | 1,6 | 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 |
| 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 |

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|--------------------------------------|---------------|----------------------|------|--|------------------|--------------------------------------|----|------|
| | | | | | James Mearns | Pacific Gas and Electric Company | 5 | WECC |
| California ISO | Monika Montez | 2 | WECC | ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4 | Monika Montez | CAISO | 2 | WECC |
| | | | | | Bobbi Welch | Midcontinent ISO, Inc. | 2 | RF |
| | | | | | Kathleen Goodman | ISO-NE | 2 | NPCC |
| | | | | | Gregory Campoli | New York Independent System Operator | 2 | NPCC |
| | | | | | Helen Lainis | IESO | 2 | NPCC |
| | | | | | Elizabeth Davis | PJM | 2 | RF |
| | | | | | Charles Yeung | Southwest Power Pool, Inc. (RTO) | 2 | MRO |
| | | | | | | | | |
| 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 |

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|--------------------------------------|---|---|------|
| 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 |

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| 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 |

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| | | | | | 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 |
| Tim Kelley | Tim Kelley | | WECC | SMUD / BANC | Nicole Looney | Sacramento Municipal Utility District | 3 | WECC |
| | | | | | Charles Norton | Sacramento Municipal Utility District | 6 | WECC |
| | | | | | Wei Shao | Sacramento Municipal Utility District | 1 | WECC |

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| | | | | | Foung Mua | Sacramento Municipal Utility District | 4 | | WECC |
| | | | | | Nicole Goi | Sacramento Municipal Utility District | 5 | | WECC |
| | | | | | Kevin Smith | Balancing Authority of Northern California | 1 | | WECC |

1. The SDT revised CIP-012-1 R1 to address the comments received during previous ballots and to meet the directives outlined in FERC Order No. 866 seeking to provide for the availability of Real-time Assessment and Real-time monitoring data while in transit between Control Centers. Do you agree that the proposed language in R1 addresses the mitigation of risk as identified in FERC Order No. 866? If not please provide comments and suggested requirement language.

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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

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| Answer | No |
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| Document Name | |
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Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

1.2. Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers

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| Likes | 0 |
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| Dislikes | 0 |
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Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

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| Answer | No |
| Document Name | |
| Comment | |
| <p>BC Hydro appreciates the drafting team’s efforts to address BC Hydro's previous comments on Draft 2. After reviewing the Standard and Technical Rationale revisions in conjunction with this Draft 3, BC Hydro offers the following comments.</p> <p>Although the wording in Requirement R2 of Draft 3 of CIP-012-2 has been removed, it appears that the wording of the Requirement 2 from Draft 1 and Draft 2 has only been moved or merged into Requirement R1 of Draft 3. BC Hydro's previous concerns raised on CIP-012-2 Draft 1 and Draft 2 appear to have not been materially addressed, and BC Hydro continues to believe still hold valid grounds.</p> <p>The changes in Requirement R1 in Draft 3 of CIP-012-2 still imply a possible reliance on redundancy, which does not align with the approach taken in the other existing CIP standards, particularly CIP-002-5.1a. As availability is the purview of operations, BC Hydro believes that it would be better suited to other Mandatory Reliability Standards (MRS) within the Operations and Planning (O&P) domains (e.g., IRO-010, TOP-003, TOP-001).</p> <p>BC Hydro recommends removing the 'availability' requirement from CIP-012-2 and revising other MRS standards to address this need as appropriate.</p> <p>Alternatively, similar to our comments on Draft 2, BC Hydro suggests that the drafting team provide a clear definition of the term 'availability', and clarity that it does not imply the use of redundant setups. For most of the entities, 'availability' of communication networks depends on third party telecommunication providers and, in the event of a line or telecommunication equipment failure, the entity is reliant on the third party telecommunication providers to fix the problems. BC Hydro suggests that SDT add an exemption for the links and equipment used by third party telecommunication providers, as changing or enhancing the third party telecommunication infrastructure to support 'availability' may not be feasible for many entities.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your comment. Please see the updated Measures section within the standard and the Technical Rationale regarding redundancy as a *potential* method to mitigate the cyber risks addressed in CIP-012. Regarding the ability of an entity to use redundancy to meet the cyber security objectives of the requirements, FERC Order 866 clearly indicates in the Commission Determination that redundancy is an acceptable method of achieving part of the cyber security objective of the standard. In Order 866, in the Commission Determination, they state, “We (the Commission) recognize that the redundancy of communication links cannot always be guaranteed; responsible entities should therefore plan for both recovery of compromised communication links and use of backup communication capability should it be needed for redundancy (i.e., satellite or other alternate backup communications).”¹

While CIP-002-5.1a does mention redundancy in the “Real-time Operations” section, it is mentioned in a context specific to BES Cyber Assets and BES Cyber Systems. The controls for CIP-012 are scoped via R1 specifically to the transmission of RTA and RTM data while in transit *between* Control Centers. Should an entity choose not to employ redundancy as part of their plan to meet the CIP-012 requirements, other measures are also available for consideration.

The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive (emphasis added), “...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk.

Please see the updated Measures in the standard, the Technical Rationale, and the Implementation Guidance regarding a definition for availability and examples of controls that may be implemented as part of the Responsible Entity’s plan.

Justin Kuehne - AEP - 6

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| Answer | No |
| Document Name | |
| Comment | |

¹ FERC Order 866 P 35

While AEP agrees that the proposed language addresses the mitigation of risk identified in FERC Order No. 866, we believe the language is too vague and allows for different interpretations of the requirement. AEP recommends more prescriptive language of what is required to meet compliance for R1.

Additionally, AEP recommends more explicit reference to the CIA (Confidentiality, Integrity, and Availability) triad of information security in the requirement language. The current language only specifically refers to and preserves the "availability" portion of the triad. AEP believes the standard would benefit from including all three parts.

Furthermore, AEP recommends the addition of language referring to "data exchange capabilities" similar to TOP-001-5 R20 and R21 to bring consistency between Transmission Operations standard/requirement language and that of CIP-012.

As such, AEP recommends inclusions to the R1 language regarding the CIA triad and Transmission Operations standards. Suggested requirement language for R1 reads as follows:

*"R1. The Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate the risks **to data exchange capabilities** posed by **loss of confidentiality, loss of integrity, and loss of availability of data used for Real time Assessment and Real-time monitoring while such data is being transmitted between any applicable Control Centers.** The Responsible Entity is not required to include oral communications in its plan. The plan shall include: [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]"*

*1.1. Identification of method(s) used to mitigate the risks **to data exchange capabilities** posed by **loss of confidentiality and integrity of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;**"*

Likes 0

Dislikes 0

Response

Thank you for your comment and suggested modifications to the draft language. Please see the updated Measures section within the standard and the Technical Rationale regarding examples of evidence that may be used to meet the mitigation objectives of CIP-012. The SDT agrees that more clarity in the scoping of the standard language was needed regarding the risks and a loss of data transmission capability. As

such, please see the revised language of the draft standard. While the loss of data communication capability may accompany a loss of confidentiality and integrity, this may also occur independently.

Jack Stamper - Clark Public Utilities - 3 - WECC

Answer No

Document Name

Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

*1.2. Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;*

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly.

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

PPL NERC Registered Affiliates do not support the proposed changes. Specifically, the proposed R1.3 is overly broad.

PPL NERC Registered Affiliates propose the following revisions to R1.3: “Identification of method(s) used to recover in the recovery of Responsible Entity owned or operated communication links used to transmit Real-time Assessment and Real-time monitoring data between Control Centers;”

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that additional clarity was needed in part 1.3 and has modified the language accordingly. Please see the revised draft standard language.

John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway

Answer

No

Document Name

Comment

ISO-NE is in support of comments developed by ISO-RTO council and NPCC.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the responses to ISO-RTO council and NPCC.

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

Request more specifics on what the elements of this plan must contain to assist the entity in meeting compliance obligation

Request a clearer definition of “availability”

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the revised standard language, the Measures section of the standard and the Implementation Guidance regarding examples of how an entity may document and meet the security objectives. Please see the Technical Rationale and Implementation Guidance regarding the concept of availability.

Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh

Answer No

Document Name

Comment

NST believes the latest proposed changes to CIP-012, as well as the latest proposed implementation guidance, fail to clarify the limits of a Responsible Entity's CIP-012 "availability" obligations. We believe the intent of FERC's Order was to focus on protecting the availability of inter- Control Center communications links. Doing so would, by extension, protect the availability of in-transit data. We do not believe FERC intended for CIP-012 revisions to add data availability requirements that extend to sending and receiving Cyber Assets, which in most if not all instances are BES Cyber Systems in Control Centers, and therefore subject to an array of requirements that support availability (including several CIP Standards and EOP-008-2 R1). This is something NERC made note of in its comments to FERC (June 24, 2019) and that FERC acknowledged in its CIP-012 NOPR and Order, even while disagreeing that existing Standards address the availability of communication links and data between Control Centers.

NST notes that R1's proposed language fails to directly address the availability of communication links while, at the same time, including a part (R1.3) that requires Responsible Entities to identify methods to recover them. This omission should be addressed.

NST believes requirements addressing the availability of in-transit data, which in this context, as explained above, is dependent on the availability of functioning communication links between Control Centers, should be set forth in a separate, top-level Requirement, as it was in the SDT's first draft of proposed CIP-012 revisions.

NST suggests a top-level availability Requirement that includes language similar to, "The Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate availability risks to communications links between Control Centers and, by extension, to in-transit Real-time Assessment and Real-time monitoring data communicated between Control Centers."

Likes 0

Dislikes 0

Response

Thank you for your comment and suggested modifications. The SDT has considered this and has revised the language to better reflect the scoping. Please see the revised language, Technical Rationale, and Implementation Guidance for more details.

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer No

Document Name

Comment

MP believes the proposed revisions address the FERC Order, but doesn't feel that CIP-012 is the appropriate standard to address availability. CIP-012 should be focused on providing protection for the data and availability of the data defined in other Ops and Planning Standards.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive (emphasis added), "...the Commission directs NERC to develop modifications to the **CIP Reliability Standards**

to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk.

Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4

Answer No

Document Name

Comment

The SRC supports a risk-based approach to protecting the availability of data used for Real-time Assessment (RTA) and Real-time monitoring (RTM). That said, we propose a revision to the language in Part 1.2 to clarify and better align with the intent of FERC Order 866 by placing the emphasis on the desired action of **“mitigating the loss of data”** as opposed to “mitigating the [resultant] risks posed [to the BES]” following a loss of data which could be interpreted to be a much broader task.

1.2. Identification of method(s), **tailored according to the risk posed**, used to mitigate the loss of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment and suggested modifications. The SDT has modified the language to better reflect the scoping of CIP-012, while maintaining the risk-based approach.

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; - Israel Perez

Answer No

Document Name

Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

1.2. Identification of method(s) used to mitigate the risk(s) posed by loss OF THE AVAILABILITY of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC

Answer

No

Document Name

Comment

Southern Company proposes the following wording: Identification of method(s) used to mitigate the cyber security risk(s) posed by loss of ability to transmit data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Center;

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in subpart R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

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

Answer No

Document Name

Comment

Although the FERC order uses “availablitiy” We suggest using “and loss of data used for ...” in R1. We feel by removing “availability”, it addresses the overall picture of availability without directly using availability and relieves the need to define it. The new measures describe what the requirement is aiming to mitigate, making it clearer for Regional Entities to construct their plans.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in subpart R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Deanna Carlson - Cowlitz County PUD - 5

Answer No

Document Name

Comment

Cowlitz PUD (District) has concern with poor word usage in part 1.1 which misdirects risk mitigation towards after-the-fact unauthorized disclosure and unauthorized modification of data used for Real-time Assessment/monitoring. Risk mitigation should be focused on preventive methods to reduce the risk of unauthorized access to the data. As written, the “methods” would include actions that must be taken to mitigate the impact of unauthorized disclosure. The focus of the requirement should be limited to prevention of unauthorized access. If the

SDT desires action to be taken if unauthorized access to the data occurs, this must be limited to improvements on the protective measures upon discovery of the protective measures' failure.

Suggested R1 Part 1.1 edit (emphasis added to denote change):

Identification of method(s) used to mitigate the risks **posed by of** unauthorized disclosure and unauthorized modification of data used for Realtime Assessment and Real-time monitoring while such data is being transmitted between Control Centers.

Likes 0

Dislikes 0

Response

Thank you for your comments. Please review R1 regarding the requirement to implement a CIP-012 plan to mitigate the risks in part 1.1.

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

Answer

No

Document Name

Comment

AEPCO suggests changing the language to "**the unavailability of** instead of *loss of availability of data used for*" and adding **data** after Real-time monitoring to help clear up the confusion over the wording of "loss of availability of data":

R1. The Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate the risks posed by unauthorized disclosure , unauthorized modification, and **the unavailability of** Real-time Assessment and Real-time monitoring **data** while such data is being transmitted between any applicable Control Centers. The Responsible Entity is not required to include oral communications in its plan. The plan shall include: [Violation Risk Factor: Medium] [Time Horizon: Operations Planning]

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. After consideration, the SDT agrees that more clarity was needed for the language and modified the language in subpart R1.2. Please see the revised standard language regarding data transmission capability.

Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your response.

Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your response.

Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF

Answer No

Document Name

| | |
|--|-----|
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your response. | |
| Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC | |
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| | |
| 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 the revised language of Requirement R1 meets the directives outlined in FERC Order 866 on providing the availability of Real-time Assessment and Real-time monitoring data while in transit between Control Centers. | |

| | |
|---|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comments | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No Comment | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your support.

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer Yes

Document Name

Comment

AZPS agrees that the proposed language in R1 addresses the mitigation of risk as identified in FERC Order No. 866.

Likes 0

Dislikes 0

Response

Thank you for your support.

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

Answer Yes

Document Name

Comment

The NAGF supports the proposed language for Requirement 1.

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 agrees the revised language in CIP-012-1, Requirement R1 meets the directives outlined in FERC Order No. 866 seeking to provide for the availability of Real-time Assessment and Real-time monitoring data while in transit between Control Centers. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Kinte Whitehead - Exelon - 3 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. Please see the response to EEI. | |
| Daniel Gacek - Exelon - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |

| | |
|--|-----|
| Exelon has elected to align with EEI in response to this question. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see the response to EEI. | |
| Kimberly Turco - Constellation - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Kimberly Turco on behalf of Constellation Segments 5 and 6 | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see the response to Exelon Corporation. | |
| Alison MacKellar - Constellation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |

Constellation aligns with Exelon Corporation in response to this question.

Alison Mackellar on behalf of Constellation Segments 5 and 6.

Likes 0

Dislikes 0

Response

Thank you for your support. Please see the response to Exelon Corporation.

Summer Esquerre - NextEra Energy - 5

Answer Yes

Document Name

Comment

please reference EEI's comments

Likes 0

Dislikes 0

Response

Thank you for your support. Please see the response to EEI.

Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

| | |
|--|-----|
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Martin Sidor - NRG - NRG Energy, Inc. - 6 | |
| 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. | |
| Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO | |
| 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. | |
| John Daho - MEAG Power - 1,3 - SERC | |
| 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. | |
| Glen Farmer - Avista - Avista Corporation - 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. | |
| Steven Rueckert - Western Electricity Coordinating Council - 10 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |

| | |
|--|-----|
| Thank you for your support. | |
| Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF | |
| Answer | Yes |

| | |
|---|-----|
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD | |
| 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. | |
| Claudine Bates - Black Hills Corporation - 1,3,5,6 | |
| 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. | |
| 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 - 1,3,5,6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your support.

Jesus Sammy Alcaraz - Imperial Irrigation District - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric

Answer Yes

Document Name

Comment

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE | |
| 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. | |

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Patricia Ireland - DTE Energy - 4

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. | |
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Joshua London - Eversource Energy - 1, Group Name Eversource | |

| | |
|---|-----|
| 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. | |
| James Baldwin - Lower Colorado River Authority - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |

| | |
|--|-----|
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Teresa Krabe - Lower Colorado River Authority - 1,5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA | |
| 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.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO

Answer Yes

Document Name

Comment

| | |
|---|--|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Sheraz Majid - Hydro One Networks, Inc. - 1 | |
| Answer | |
| Document Name | |
| Comment | |
| Additional clarification and/or consistency is required between “loss of availability of data” used in R1, “loss of data” used in Part 1.2, and “loss of data transmission capability” used in the technical rationale. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly. | |

2. Does the language in R1.2 adequately reflect the need to mitigate the loss of the ability to transmit Real-time Assessment and Real-time monitoring data? If not please provide comments and suggested requirement language.

Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO

Answer No

Document Name

Comment

MGE supports the comments of the MRO NSRF.

Likes 0

Dislikes 0

Response

Thank you for your response. Please see response to MRO NSRF.

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

Answer No

Document Name

Comment

AEPCO suggests changing the language to "**the unavailability of** instead of *loss of availability of data used for*" and adding **data** after Real-time monitoring to help clear up the confusion over the wording of "loss of availability of data":

1.2. Identification of method(s) used to mitigate the risk(s) posed by **the unavailability of** Real-time Assessment and Real-time monitoring **data** while such data is being transmitted between Control Centers.

Likes 0

| | |
|--|----|
| Dislikes | 0 |
| Response | |
| Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly. | |
| Deanna Carlson - Cowlitz County PUD - 5 | |
| Answer | No |
| Document Name | |
| Comment | |
| The District agrees with comment provided by Tacoma Power concerning Part 1.2. Again, the focus should not be on after-the-fact data leaks or loss. As written, the responsible entity must provide restoration of lost data; this is of no value since it would no longer be Real-time in nature. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. | |
| Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC | |
| Answer | No |
| Document Name | |
| Comment | |

Southern Company proposes the following wording: Identification of method(s) used to mitigate the cyber security risk(s) posed by loss of ability to transmit data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

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; - Israel Perez

Answer

No

Document Name

Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

1.2. Identification of method(s) used to mitigate the risk(s) posed by loss OF THE AVAILABILITY of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA

Answer No

Document Name

Comment

Data loss is too broad and does not specifically address availability as it relates to the FERC order. Wording should include mitigating loss of availability of data while being transmitted between applicable Control Centers and not just data loss.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4

Answer No

Document Name

Comment

As described in our response to Question 1, the SRC supports a risk-based and tailored approach to addressing protections for data availability. That said, we propose the below revision in Part 1.2 to better clarify this intent by placing the emphasis on the desired action of

“mitigating the loss of data” as opposed to “mitigating the [resultant] risks posed [to the BES]” following a loss of data which could be interpreted to be a much broader task.

1.2. Identification of method(s), **tailored according to the risk posed**, used to mitigate the loss of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has modified the language to better address the scoping of CIP-012 while maintaining the risk-based approach.

Teresa Krabe - Lower Colorado River Authority - 1,5

Answer

No

Document Name

Comment

LCRA is concerned with what level of risk reduction will be deemed sufficient to meet compliance. This could lead to inconsistent auditing of the standard across the ERO.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the associated VSL for Requirement R1. Please also see the expanded measure section for ways in which the responsible entity may demonstrate compliance. Additionally, the implementation guidance has additional details regarding risk mitigation.

James Baldwin - Lower Colorado River Authority - 1

Answer

No

| | |
|---|----|
| Document Name | |
| Comment | |
| LCRA is concerned with what level of risk reduction will be deemed sufficient to meet compliance. This could lead to inconsistent auditing of the standard across the ERO. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. Please see the associated VSL for Requirement R1. Please also see the expanded measure section for ways in which the responsible entity may demonstrate compliance. Additionally, the implementation guidance has additional details regarding risk mitigation. | |
| Jamie Monette - Allete - Minnesota Power, Inc. - 1 | |
| Answer | No |
| Document Name | |
| Comment | |
| MP agrees with the NSRF's comments. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment, please see response to MRO NSRF. | |
| Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh | |
| Answer | No |
| Document Name | |

Comment

R1.2, which in NST's opinion should be a part of a separate top-level Requirement, should require Responsible Entities to identify the methods used to mitigate availability risks to communication links between Control Centers and, by extension, the in-transit data they are carrying.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO

Answer

No

Document Name

Comment

While the MRO NSRF acknowledges that FERC Order 866 directed NERC to modify CIP Standards to address availability, the proposed language in CIP-012-2 does not clearly demonstrate how the objectives of the Requirements are different from some other NERC Standard Requirements already in effect. Specifically, EOP-008-2 R1 appears to require addressing the same risks. Our concern is that a single incident could result in multiple violations. The MRO NSRF requests that the SDT provide greater clarity in the proposed CIP-012-2 Requirement language to demonstrate the differences between the cyber-focused Requirement and other operational requirements, such as EOP-008-2 R1. The MRO NSRF requests the SDT address the aforementioned concern in the technical rationale.

The MRO NSRF supports a risk-based approach to protecting the availability of data used for Real-time Assessment (RTA) and Real-time monitoring (RTM). That said, we propose a revision to the language in Part 1.2 to clarify and better align with the intent of FERC Order 866 by placing the emphasis on the desired action of “**mitigating the loss of data**” as opposed to “mitigating the [resultant] risks posed [to the BES]” following a loss of data which could be interpreted to be a much broader task.

1.2. Identification of method(s), tailored according to the risk posed, used to mitigate the risk(s) posed by loss of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see response to MRO NSRF 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

Request alignment between the Requirement and Measures. R1 requires a plan which is a strategic deliverable while the Measures focus on tactical deliverables. Measures should not be pseudo-requirements.

Request clarification of this question since Part 1.2 does not include the language “adequately reflect the need to mitigate the loss.”

How are IRO and TOP Standards deficient in mandating availability? Does CIP-012 create double jeopardy with IRO and TOP Standards?

Request that availability require the same level of detail as version 1’s confidentiality and integrity

Request clarification of “availability” vs “loss of data.”

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive, “...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk. The TOP and IRO standards do address availability, but are focused on data exchange infrastructure **within** the primary control center and do not address data in motion **between** other Control Centers. The revisions to CIP-012 will address elements that TOP and IRO do not address. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer No

Document Name

Comment

MPC supports comments submitted by the MRO NERC Standards Review Forum.

Likes 0

Dislikes 0

Response

Thank you for your comment, please see response to MRO NSRF.

John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway

Answer No

| | |
|---|----|
| Document Name | |
| Comment | |
| ISO-NE is in support of comments developed by ISO-RTO council and NPCC. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment, please see response to NPCC and the ISO-RTO council. | |
| Patricia Ireland - DTE Energy - 4 | |
| Answer | No |
| Document Name | |
| Comment | |
| DTE Energy agrees with SOuthern Company's comment: | |
| <p><i>R1.2 currently is about mitigating the loss of data between control centers, and we think that is way too broad and will be suggesting that this wording change to get it back into the realm of communications and things like redundant circuits. So we'll be voting no and suggesting that it say "mitigate the loss of the ability to transmit data" which we believe does that. Otherwise, it can get into this being applied to processes WITHIN control centers that are producing the data, and that's really not the scope of CIP-012 – so we want the words around the risk to be mitigated to be tightened up.</i></p> | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |

Thank you for your comment, the team does not see this as Southern Company’s comment from this ballot. However, the SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC

| | |
|----------------------|----|
| Answer | No |
| Document Name | |

Comment

The proposed language in CIP-012-2, Requirement R1, Part 1.2, would now require Responsible Entities to mitigate risk(s) posed by loss of data used for RTA and RTM while such data is being transmitted between Control Centers. What specific risk(s) is in scope? Per the current technical rationale for CIP-012-2, Requirement R1, Part 1.2, “the focus of CIP-012 remains cyber protections around maintaining availability”. However, there appears to be a potential gap between the proposed language drafted and the intent of the proposed language. The proposed language in CIP-012-2, Requirement R1, Part 1.2, does not explicitly state “cyber security risk” or “cyber risk”, so one could argue that an entity may be asked to show evidence of mitigating risks beyond cyber security, which does not appear to be the intent of the proposed language.

In addition, the language of CIP-012-2, Requirement R1, Part 1.2, leads to ambiguity in the intent. The change to the last phrase “such data is” results in a conflicting sentence requirement. Please notice the contradiction in this requirement. “Identification of method(s) used to mitigate the risk(s) posed by the loss of data [...] while such data is being transmitted” (i.e., the data is being transmitted and therefore has not been lost).

Recommend the following proposed language for CIP-012-2 Requirement R1, Part 1.2, to scope the risk(s) associated with CIP-012-2 to cyber security and remove the contradictory ambiguity:

Identification of method(s) used to mitigate cyber security risk(s) to data transmission capability between Control Centers that is used for Real-time Assessment and Real-time monitoring;

| | |
|------------|--|
| Likes 0 | |
| Dislikes 0 | |

Response

Thank you for your comment. The SDT agrees that more clarity was needed. Please see the revised Technical Rationale and draft standard language for additional clarity.

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

Thank you for your comment, please see response to MRO-NSRF.

Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE

Answer No

Document Name

Comment

PNMR agrees with the proposed language submitted by both Tacoma Power and SMUD for R1.2: "Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers." This more closely aligns with FERC Order 866, which is focused on the availability of data over the loss of data.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has revised the language based on the suggestions.

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric

Answer No

Document Name

Comment

The scope needs more definition

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has modified the language to better address the scoping of CIP-012 while maintaining the risk-based approach.

Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper

Answer No

Document Name

Comment

Santee Cooper recommends rewording R1.2 to read as “1.2. Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers”. Order 866 focused on the availability of data, this is why we are requesting the wording “of the availability” be included.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Jesus Sammy Alcaraz - Imperial Irrigation District - 1

Answer No

Document Name

Comment

The language as drafted in 1.2 focuses on the loss of data not the loss of the ability to transmit data. Proposed adding “of the availability” to 1.2 language.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer No

Document Name

Comment

AZPS does not believe the language in R1.2 is stated clearly. Does this include data at rest?

AZPS proposes using the language within Question 2:

CURRENT: “mitigate the risk(s) posed by loss of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers.

PROPOSED: “mitigate the loss of the ability to transmit Real-time Assessment and Real-time monitoring data between Control Centers”

Does the language in R1.4 provide Responsible Entities with clarity on the need to identify physically or logically where they have applied the methods required in R1.1 and R1.2? If not please provide comments and suggested requirement language.

Likes 0

Dislikes 0

Response

Thank you for your comment. Regarding data at rest, please see R1 which states “while such data is being transmitted” which scopes the requirement to data in motion.

Jack Stamper - Clark Public Utilities - 3 - WECC

Answer No

Document Name

Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

*1.2. Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;*

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Justin Kuehne - AEP - 6

Answer No

Document Name

Comment

While AEP agrees that the proposed language in R1.2 reflects the need to mitigate the risk of the loss of ability to transmit data, we have concerns similar to those mentioned in our comments on Question #1. AEP recommends more prescriptive language to ensure Responsible Entities are able to meet the sub-requirement.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has updated the language in both the parent requirement for R1 as well as sub part R1.2 to provide better clarity in the risk that this cyber security standard is addressing.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

Although the wording in Requirement R2 of Draft 3 of CIP-012-2 is removed, it appears that the wording of the Requirement 2 from Draft 1 and Draft 2 has only been moved or merged into Requirement 1 of Draft 3. BC Hydro's previous concerns raised on CIP-012-2 Draft 1 and Draft 2 appear to have not been materially addressed, and BC Hydro continues to believe still hold valid grounds.

The changes in Requirement R1 in Draft 3 of CIP-012-2 still implies a possible reliance on redundancy, which does not align with the approach taken in the other existing CIP standards, particularly CIP-002-5.1a. As availability is the purview of operations, BC Hydro believes that it

would be better suited to other Mandatory Reliability Standards (MRS) within the Operations and Planning (O&P) domains (e.g., IRO-010, TOP-003, TOP-001).

BC Hydro recommends removing the 'availability' requirement from CIP-012-2 and revising other MRS standards to address this need as appropriate.

Alternatively, similar to our comments on Draft 2, BC Hydro suggests that the drafting team provide a clear definition of the term 'availability', and clarify that it does not imply the use of redundant setups. For most of the entities, 'availability' of communication networks depends on third party telecommunication providers and, in the event of a line or telecommunication equipment failure, the entity is reliant on the third party telecommunication providers to fix the problems. BC Hydro suggests that SDT add an exemption for the links and equipment used by third party telecommunication providers, as changing or enhancing the third party telecommunication infrastructure to support 'availability' may not be feasible for many entities.

| | |
|-------|---|
| Likes | 0 |
|-------|---|

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|----------|---|
| Dislikes | 0 |
|----------|---|

Response

Thank you for your comment. The SDT has updated the language in both the parent requirement for R1 as well as sub part R1.2 to provide better clarity in the risk that this cyber security standard is addressing. Please see the updated Measures section within the standard and the Technical Rationale regarding redundancy as a potential method to mitigate the cyber risks addressed in CIP-012. Regarding the ability of an entity to use redundancy to meet the cyber security objectives of the requirements, FERC Order 866 clearly indicates in the Commission Determination that redundancy is an acceptable method of achieving part of the cyber security objective of the standard. In Order 866, in the Commission Determination, they state, “We (the Commission) recognize that the redundancy of communication links cannot always be guaranteed; responsible entities should therefore plan for both recovery of compromised communication links and use of backup communication capability should it be needed for redundancy (i.e., satellite or other alternate backup communications).” Please see the revised Requirement R1 language reinforcing the cyber aspect of this Requirement.

Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

| | |
|--------|----|
| Answer | No |
|--------|----|

| | |
|---------------|--|
| Document Name | |
|---------------|--|

Comment

Southern Indiana Gas & Electric (SIGE) believes the phrase “risk(s) posed by **loss of data**” is not clear and may be misinterpreted to include a broader scope of data loss scenarios. SIGE believes the scope of R1.2 should clearly refer to the loss of data transmission capability (communication links). SIGE proposes the following revision to Requirement R1.2:

“Identification of method(s) used to mitigate the risk(s) **posed by a loss of data transmission capability** used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;”

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|-------|---|
| Likes | 0 |
|-------|---|

| | |
|----------|---|
| Dislikes | 0 |
|----------|---|

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC

| | |
|--------|----|
| Answer | No |
|--------|----|

| | |
|---------------|--|
| Document Name | |
|---------------|--|

Comment

BPA feels that as currently written, R1.2 is about mitigating risks arising from loss of data, not mitigating loss of data transmission capabilities. Further, this risk is already required to be mitigated in standard EOP-008-2 R1.

The discussion of physical media breaks in current Technical Rationale further complicates the ability to interpret R1.2.

| | |
|-------|---|
| Likes | 0 |
|-------|---|

| | |
|----------|---|
| Dislikes | 0 |
|----------|---|

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Regarding EOP-008-2, the SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive, “...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk. Also, in Section 29 of FERC order 866, FERC states: *“The contention in NERC’s comments that Reliability Standard EOP-008-2 could also help maintain the availability of communication links between bulk electric system Control Centers, rests on the same reasoning that the ancillary benefits of an existing Reliability Standard addresses the reliability gap identified by the Commission and concomitant availability directive in Order No. 822. While we agree that a requirement to maintain a backup Control Center arguably provides a level of redundancy for a responsible entity’s overall operations, it does not require redundant and diversely routed communication paths between either the primary and backup Control Centers or third- party Control Centers.”*

Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC

| | |
|----------------------|----|
| Answer | No |
| Document Name | |
| Comment | |

SMUD and BANC do not feel that the existing language in CIP-012-2 Draft 3 changes the intent of the requirement part, or that the controls that would be put in place to mitigate the risk posed by loss of data or availability used for RTA and RTM would be any different; however, from a consistency perspective, we agree with Tacoma Power that the language should be changed to align with the following language used in R1:

“...one or more documented plan(s) to mitigate the risks posed by unauthorized disclosure , unauthorized modification, **and loss of availability of data** used for Real-time Assessment and Real-time monitoring while such data is being transmitted **between any applicable**

Control Centers."

SMUD and BANC propose the following new language for R1 Part R1.2:

1.2. Identification of method(s) used to mitigate the risk(s) posed by **loss of availability of data** used for Real-time Assessment and Real-time monitoring while such data is being transmitted between **any applicable** Control Centers;

Likes 1

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

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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

No

Document Name

Comment

As worded in CIP-012 Draft 3, it appears that R1 Part R1.2 is focused on a different security concern than FERC Order 866. FERC Order 866 is focused on the availability of data, while the proposed wording of R1 Part 1.2 is focused on the loss of data, which could be interpreted as data loss as a result of a breach, as opposed to the loss of data availability. Data Availability is a very different concern, with a very different impact and risk profile.

Suggested R1 Part 1.2 edit (emphasis added to denote change):

1.2. Identification of method(s) used to mitigate the risk(s) posed by loss **OF THE AVAILABILITY** of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.

Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer No

Document Name

Comment

CenterPoint Energy Houston Electric, LLC (CEHE) believes the phrase “risk(s) posed by **loss of data**” is not clear and may be misinterpreted to include a broader scope of data loss scenarios. CEHE believes the scope of R1.2 should clearly refer to the loss of data transmission capability (communication links). CEHE proposes the following revision to Requirement R1.2:

“Identification of method(s) used to mitigate the risk(s) **posed by a loss of data transmission capability** used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;”

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly.

| | |
|---|----|
| Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO | |
| Answer | No |
| Document Name | |
| Comment | |
| <p>The requirement specifically addresses: risk(s) posed by loss of data. To address the requirement the RE could list the risks, or negative outcomes that could occur, if there was a loss of data. The RE could then list mitigations to those negative outcomes. This does not involve an analysis of potential causes of data loss, for example the ability to transmit data. Although MH has no issue with the proposed wording for R1.2, the SDT could consider the following wording to specifically address the ability to transmit: Identification of method(s) used to mitigate the risk(s) posed by the loss of data in transit or the loss of the primary method used to transmit or receive Real-time Assessment and Real-time monitoring data.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| <p>Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability.</p> | |
| Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC | |
| Answer | No |
| Document Name | |
| Comment | |
| <p>Suggest revise language to focus on the risk of losing the data rather than the risk posed by the loss of data.</p> | |
| Likes | 0 |
| Dislikes | 0 |

| | |
|---|----|
| Response | |
| Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. Please see the revised standard language regarding data transmission capability. | |
| Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC | |
| Answer | No |
| Document Name | |
| Comment | |
| NA | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |
| Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF | |
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |
| Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6 | |
| Answer | No |

| | |
|--|--|
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |
| Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF | |
| Answer | Yes |
| Document Name | MRO-NSRF_2020-04_UCF_Final_11-16-2022.docx |
| Comment | |
| Please see the attached file to view MRO NSRF response to this question. | |
| (Inserted from document) | |
| <p>While the MRO NSRF acknowledges that FERC Order 866 directed NERC to modify CIP Standards to address availability, the proposed language in CIP-012-2 does not clearly demonstrate how the objectives of the Requirements are different from some other NERC Standard Requirements already in effect. Specifically, EOP-008-2 R1 appears to require addressing the same risks. Our concern is that a single incident could result in multiple violations. The MRO NSRF requests that the SDT provide greater clarity in the proposed CIP-012-2 Requirement language to demonstrate the differences between the cyber-focused Requirement and other operational requirements, such as EOP-008-2 R1. The MRO NSRF requests the SDT address the aforementioned concern in the technical rationale.</p> <p>The MRO NSRF supports a risk-based approach to protecting the availability of data used for Real-time Assessment (RTA) and Real-time monitoring (RTM). That said, we propose a revision to the language in Part 1.2 to clarify and better align with the intent of FERC Order 866 by placing the emphasis on the desired action of "mitigating the loss of data" as opposed to "mitigating the [resultant] risks posed [to the BES]" following a loss of data which could be interpreted to be a much broader task.</p> | |

1.2. Identification of method(s), tailored according to the risk posed, used to mitigate the ~~risk(s) posed by~~ loss of data used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;

Likes 0

Dislikes 0

Response

Thank you for your comment. To further clarify the distinction between CIP-012 and Operation and Planning Standards, the Standard Drafting Team has updated language in the parent requirement and language in R1.2 to better reflect the focus on the cyber risk to include the risk of the loss of the ability to communicate RTA and RTM data between Control Centers.

The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive, “...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk. Also, in Section 29 of FERC order 866, FERC states: *“The contention in NERC’s comments that Reliability Standard EOP-008-2 could also help maintain the availability of communication links between bulk electric system Control Centers, rests on the same reasoning that the ancillary benefits of an existing Reliability Standard addresses the reliability gap identified by the Commission and concomitant availability directive in Order No. 822. While we agree that a requirement to maintain a backup Control Center arguably provides a level of redundancy for a responsible entity’s overall operations, it does not require redundant and diversely routed communication paths between either the primary and backup Control Centers or third- party Control Centers.”*

While the SDT asserts that CIP-012 Cyber Security Requirements pertain only to communications between Control Centers, the SDT cannot offer specific guidance on how to comply with the Requirement and would refer questions of compliance guidance back to the ERO or respective Regional Entities.

Summer Esquerre - NextEra Energy - 5

Answer

Yes

| | |
|--|-----|
| Document Name | |
| Comment | |
| please reference EEI's comments | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. Please See response to EEI's comment. | |
| Alison MacKellar - Constellation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Alison Mackellar on behalf of Constellation Segments 5 and 6. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. Please see response to EEI's question. | |
| Kimberly Turco - Constellation - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |

Constellation aligns with Exelon Corporation in response to this question.

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0

Dislikes 0

Response

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

Daniel Gacek - Exelon - 1

Answer Yes

Document Name

Comment

Exelon has elected to align with EEI in response to this question.

Likes 0

Dislikes 0

Response

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

Kinte Whitehead - Exelon - 3

Answer Yes

Document Name

Comment

| | |
|---|-----|
| Exelon has elected to align with EEI in response to this question. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI's question. | |
| Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable | |
| Answer | Yes |
| Document Name | |
| Comment | |
| <p>EEI agrees that Requirement R1, subpart 1.2 addresses the need to mitigate the loss of the ability to transmit Real-time Assessment and Real-time monitoring data, however, the technical rationale provides stronger language as to the intent of this requirement by including the phrase "transmission capability" to describe exactly what this requirement is intending to address. For this reason, consideration should be given to modifying subpart 1.2 as follows:</p> <p>"Identification of method(s) used to mitigate the risk(s) posed by a loss of data transmission capability used for Real-time Assessment and Real-time monitoring while such data is being transmitted between Control Centers;"</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly. | |
| Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF | |
| Answer | Yes |

| | |
|--|-----|
| Document Name | |
| Comment | |
| The NAGF supports the proposed language for Requirement 1.2. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comment | |
| 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 agrees that Requirement R1, Part 1.2 adequately reflects the need to mitigate the “loss of the ability to transmit Real-time Assessment and Real-time monitoring data”.

As noted in the EEI input for Q2, the Technical Rationale document provides stronger language on the intent of Requirement R1, Part 1.2 by the inclusion of “transmission capability” to describe exactly what the Requirement is intended to address. PG&E concurs with the EEI suggested modification of Part 1.2 to include this language in the Requirement. PG&E does not see this as a substantial modification, just a clarification.

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

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. | |
| Joshua London - Eversource Energy - 1, Group Name Eversource | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |
| 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. | |
| Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Micah Runner - Black Hills Corporation - 1,3,5,6 | |
| 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. | |
| Sheila Suurmeier - Black Hills Corporation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

| | |
|---|-----|
| Thank you for your support. | |
| Claudine Bates - Black Hills Corporation - 1,3,5,6 | |
| 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. | |
| Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD | |
| Answer | Yes |
| Document Name | |
| Comment | |

| | |
|--|-----|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |

Steven Rueckert - Western Electricity Coordinating Council - 10

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.

Glen Farmer - Avista - Avista Corporation - 5

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. | |
| John Daho - MEAG Power - 1,3 - SERC | |
| 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.

Patricia Lynch - NRG - NRG Energy, Inc. - 5

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Martin Sidor - NRG - NRG Energy, Inc. - 6

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 recommends revising the phrase “posed by” in Requirement R1.2 to “of”. This would more accurately reflect the need to mitigate the loss of the ability to transmit Real-time Assessment and Real-time monitoring data. As written, CIP-012 R1.2 applies to mitigating the risk posed by the loss of data communications, rather than the method used to mitigate the loss itself. An example of the risk posed by the loss of Real-time Assessment or Real-time monitoring data is not having up to date information used to perform reliability functions. An example of how to mitigate this risk is to create a set of procedures that would allow operators to make a “best guess” as to what actions they should take based on the most recently available Real-time Assessment or Real-time monitoring data.</p> <p>Texas RE also recommends including “communication links” in the parent Requirement R1. Requirement R1 states the Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate the risks posed by unauthorized disclosure, unauthorized modification, and loss of availability of data...”. Requirement Part 1.1 refers to unauthorized disclosure, Requirement Part 1.2 refers to loss of data, and Requirement Part 1.4 refers to communication links. While unauthorized disclosure and loss of data are mentioned in the parent requirement, communication links are not. In order to ensure Parts 1.2 and 1.3 are both documented and implemented consistently; Texas RE recommends that R1 is modified to include the following, The Responsible Entity shall implement, except under CIP Exceptional Circumstances, one or more documented plan(s) to mitigate the risks posed by unauthorized disclosure, unauthorized modification, and loss of availability of data and communication links...”</p> | |
| Likes | 0 |

Dislikes 0

Response

Thank you for your comment. The Standard Drafting Team has updated R1.2 to better reflect the focus on the cyber risk to include the risk of the loss of the ability to communicate RTA and RTM data between Control Centers.

3. Does the language in R1.4 provide Responsible Entities with clarity on the need to identify physically or logically where they have applied the methods required in R1.1 and R1.2? If not please provide comments and suggested requirement language.

Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer No

Document Name

Comment

The requirement itself does not provide clarity. It only becomes clear by reading the examples of evidence in the measures section. Additionally, it seems that R1.4 should not be needed since this would inherently be included in R1.1 and R1.2 by themselves. The measures in R1.1 include examples of where protections are applied, which is repetitive to R1.4.

Likes 0

Dislikes 0

Response

Thank you for your comment. The Standard Drafting Team has reviewed your recommendation. Requirements R1.1. and R1.2 as demonstrated in Measures M1.1 and M1.2 are required to be identified in the CIP-012 plan, whereas Requirement R1.4 is meant to be demonstrated through separate documentation as identified in M1.4. In CIP-012-1, the question of “Where” was addressed as a separate element that needed to be covered in its own part. Please see the technical rationale and implementation guidance; specifically, page three (3) of the NERC endorsed guidance for CIP-0012-1 and the currently proposed standard language of R1.4 provides clarity with respect to these concerns. The SDT has updated the language in Measure 1 Part 1.1 to provide clarity around the types of evidence that may be used to demonstrate compliance.

Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer No

Document Name

Comment

The requirement itself does not provide clarity. It only becomes clear by reading the examples of evidence in the measures section. Additionally, it seems that R1.4 should not be needed since this would inherently be included in R1.1 and R1.2 by themselves. The measures in R1.1 include examples of where protections are applied, which is repetitive to R1.4.

Likes 0

Dislikes 0

Response

Thank you for your comment. The Standard Drafting Team has reviewed your recommendation. Requirements R1.1. and R1.2 as demonstrated in Measures M1.1 and M1.2 are required to be identified in the CIP-012 plan, whereas Requirement R1.4 is meant to be demonstrated through separate documentation as identified in M1.4. In CIP-012-1, the question of “Where” was addressed as a separate element that needed to be covered in its own part. Please see the technical rationale and implementation guidance; specifically, page three (3) of the NERC endorsed guidance for CIP-0012-1 and the currently proposed standard language of R1.4 provides clarity with respect to these concerns. The SDT has updated the language in Measure 1 Part 1.1 to provide clarity around the types of evidence that may be used to demonstrate compliance.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

Although the wording in Requirement R2 of Draft 3 of CIP-012-2 is removed, it appears that the wording of the Requirement 2 from Draft 1 and Draft 2 has only been moved or merged into Requirement 1 of Draft 3. BC Hydro's previous concerns raised on CIP-012-2 Draft 1 and Draft 2 appear to have not been materially addressed, and BC Hydro continues to believe still hold valid grounds.

The changes in Requirement R1 in Draft 3 of CIP-012-2 still implies a possible reliance on redundancy, which does not align with the approach taken in the other existing CIP standards, particularly CIP-002-5.1a. As availability is the purview of operations, BC Hydro believes that it

would be better suited to other Mandatory Reliability Standards (MRS) within the Operations and Planning (O&P) domains (e.g., IRO-010, TOP-003, TOP-001).

BC Hydro recommends removing the 'availability' requirement from CIP-012-2 and revising other MRS standards to address this need as appropriate.

Alternatively, similar to our comments on Draft 2, BC Hydro suggests that the drafting team provide a clear definition of the term 'availability', and clarify that it does not imply the use of redundant setups. For most of the entities, 'availability' of communication networks depends on third party telecommunication providers and, in the event of a line or telecommunication equipment failure, the entity is reliant on the third party telecommunication providers to fix the problems. BC Hydro suggests that SDT add an exemption for the links and equipment used by third party telecommunication providers, as changing or enhancing the third party telecommunication infrastructure to support 'availability' may not be feasible for many entities.

| | |
|-------|---|
| Likes | 0 |
|-------|---|

| | |
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| Dislikes | 0 |
|----------|---|

Response

Thank you for your comments. The SDT has been charged with addressing the FERC directive which states in P3 “develop modifications to the CIP Reliability Standards to require protections regarding the availability of communication links and data communicated between Bulk Electric System Control Centers.” The SDT understands that the directives are seeking that we address availability from a cyber-perspective. Please see the updated Measures section within the standard and the Technical Rationale regarding redundancy as a potential method to mitigate the cyber risks addressed in CIP-012. Regarding the ability of an entity to use redundancy to meet the cyber security objectives of the requirements, FERC Order 866 clearly indicates in the Commission Determination that redundancy is an acceptable method of achieving part of the cyber security objective of the standard. In Order 866, in the Commission Determination, they state, “We (the Commission) recognize that the redundancy of communication links cannot always be guaranteed; responsible entities should therefore plan for both recovery of compromised communication links and use of backup communication capability should it be needed for redundancy (i.e., satellite or other alternate backup communications).” Please see the revised Requirement R1 language reinforcing the cyber aspect of this Requirement.

David Jendras Sr - Ameren - Ameren Services - 3

| | |
|--------|----|
| Answer | No |
|--------|----|

| | |
|---------------|--|
| Document Name | |
|---------------|--|

Comment

Ameren believes that R1.4 doesn't include the terms physical or logical, so the need to identify physically or logically is not clear.

Likes 0

Dislikes 0

Response

Thank you for your comment. In staying consistent with CIP-012-1, the Requirement language does not prescribe how an Entity may choose to demonstrate compliance. The Measures, as well as the updated Implementation Guidance and Technical Rationale, provide clarity regarding the types of physical and logical controls that may be implemented.

John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway

Answer No

Document Name

Comment

ISO-NE is in support of comments developed by ISO-RTO council and NPCC.

Likes 0

Dislikes 0

Response

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

Request clarification of “availability” vs “loss of data.”

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive, “...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers”. As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk. The TOP and IRO standards do address availability, but are focused on data exchange infrastructure **within** the primary control center and do not address data in motion **between** other Control Centers. The revisions to CIP-012 will address elements that TOP and IRO do not address. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh

Answer

No

Document Name

Comment

NST believes it is neither practical nor necessary to compel Responsible Entities to identify the “where” of its availability protections, and we therefore recommend that it be removed from R1.4. We believe R1.2’s requirement to identify and describe availability protections is sufficient.

Likes 0

Dislikes 0

Response

Thank you for your comment. The question about identifying “where” protections are addressed has been included in the revised Measures section 1.4 and described in the updated implementation guidance and technical rationale.

James Baldwin - Lower Colorado River Authority - 1

Answer No

Document Name

Comment

R1.4 could be included in R1.1 and R1.2, which would make the standard read easier.

Likes 0

Dislikes 0

Response

Thank you for your comment. The Standard Drafting Team has reviewed your recommendation. Looking back at Version 1 of the CIP-012 language, the question of “Where” was addressed as a separate element that needed to be covered in its own part. Please see the technical rationale and implementation guidance for more information about this topic.

Teresa Krabe - Lower Colorado River Authority - 1,5

Answer No

Document Name

Comment

R1.4 could be included in R1.1 and R1.2, which would make the standard read easier.

Likes 0

Dislikes 0

Response

Thank you for your comment. The Standard Drafting Team has reviewed your recommendation. Looking back at Version 1 of the CIP-012 language, the question of “Where” was addressed as a separate element that needed to be covered in its own part. Please see the technical rationale and implementation guidance for more information about this topic.

Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your response.

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your response.

Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC

Answer No

| | |
|--|-----|
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| 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 Requirement R1, Part 1.4 provides clarity along with the Measures for Requirement R1 on the need to identify the physical or logical methods applied for Requirement R1, Parts 1.1 and 1.2. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| John Daho - MEAG Power - 1,3 - SERC | |
| Answer | Yes |
| Document Name | |
| Comment | |

| | |
|--|-----|
| The newly updated Measures section includes examples of physical and logical evidence for R1.4 | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment. | |
| Steven Rueckert - Western Electricity Coordinating Council - 10 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| While it is clear for R1.1 and R1.2 to be included in R1.4, it is not clear why R1.3 would not also be included. Suggest adding R1.3 to the scope of R1.4 scope. | |
| <i>Identification of where the Responsible Entity implemented method(s) as required in Parts 1.1, 1.2 and 1.3</i> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment. The SDT has updated the language of R1.3 to provide additional clarity. | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |

| Comment | |
|---|-----|
| No comment | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Marcus Bortman - APS - Arizona Public Service Co. - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| AZPS agrees that the language in R1.4 provides clarity on the need to identify physically or logically where they have applied the methods required in R1.1 and R1.2. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF | |
| Answer | Yes |
| Document Name | |
| Comment | |

| | |
|--|-----|
| The NAGF supports the proposed language for Requirement 1.4. | |
| 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 agrees that R1.4 provides Responsible Entities with clarity on the need to identify physically or logically where they have applied the methods required in R1.1 and R1.2. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Kinte Whitehead - Exelon - 3 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Daniel Gacek - Exelon - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Kimberly Turco - Constellation - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Kimberly Turco on behalf of Constellation Segments 5 and 6 | |

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Alison MacKellar - Constellation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Alison Mackellar on behalf of Constellation Segments 5 and 6. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Summer Esquerre - NextEra Energy - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| please reference EEI's comments | |
| Likes | 0 |
| Dislikes | 0 |

| | |
|--|-----|
| Response | |
| Thank you for your support. | |
| Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Martin Sidor - NRG - NRG Energy, Inc. - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Thank you for your support. | |
| 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. | |
| Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO | |
| 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.

Mike Magruder - Avista - Avista Corporation - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Glen Farmer - Avista - Avista Corporation - 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. | |
| Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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. | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |

| | |
|--|-----|
| Response | |
| Thank you for your support. | |
| Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF | |

| | |
|---|-----|
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Justin Kuehne - AEP - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |

| | |
|---|-----|
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Jack Stamper - Clark Public Utilities - 3 - WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Claudine Bates - Black Hills Corporation - 1,3,5,6 | |
| 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. | |
| 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 - 1,3,5,6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |

| | |
|---|-----|
| Response | |
| Thank you for your support. | |
| Jesus Sammy Alcaraz - Imperial Irrigation District - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6 | |
| Answer | Yes |
| Document Name | |

| | |
|--|-----|
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE | |
| 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.

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Patricia Ireland - DTE Energy - 4

Answer Yes

Document Name

Comment

| | |
|---|-----|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF | |
| 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. | |

| | |
|--|-----|
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Joshua London - Eversource Energy - 1, Group Name Eversource | |
| 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. | |
| Jamie Monette - Allete - Minnesota Power, Inc. - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4 | |

| | |
|--|-----|
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA | |
| 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; - Israel Perez | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |

| | |
|--|-----|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC | |
| 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. | |

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

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.

Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO

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 notes that Part 1.4, states the following, “Identification of where the Responsible Entity implemented method(s) as required in Parts 1.1 and 1.2; and”. Texas RE seeks clarification on why Part 1.3 was not added as an applicable Part needed for “Identification”. As where the Responsible Entity has implemented method(s) used to recover communication links is just as important from an availability and enforceable perspective.</p> <p>Additionally, Texas RE seeks clarification on why Part 1.3 was not added as an applicable Part needed for “Identification” for Part 1.5. As where each Responsible Entity has implemented method(s) used to recover communication links is just as important from an coordination, availability, and enforceable perspective.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment. With regards to including 1.3 as one of the requirements that are identified in R1.4 “where the Responsible Entity implemented methods...”, the Standard Drafting Team assets the “where” of R1.3 is identified in the parent Requirement of R1 where it states: “The Responsible Entity shall implement... one or more documented plan(s)...”. The identification of where the physical location exists | |

only applies to R1.1 and R1.2 because those methods will exist in a real-world location whereas 1.3 would only be identified in a written document.

4. The SDT received multiple requests to provide more possible mitigation methods. Do you agree that the expanded measures section of the standard adequately demonstrates examples of methods that could be used to mitigate the risk posed by loss of Real-time assessment and Real-time monitoring data while in transit?

Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4

Answer No

Document Name

Comment

The SRC appreciates the SDT’s effort to modify Measure M1 to provide more examples of mitigation methods; however, we’re uncertain how one example of evidence, M1, Part 1.2, bullet #3, may be shared with an auditor as CIP-013, R2 explicitly states:

“the following issues are beyond the scope of Requirement R2: (1) the actual terms and conditions of a procurement contract; and (2) vendor performance and adherence to a contract.”

Therefore, the IRC SRC requests clarification on how an entity may demonstrate evidence of the measure below if it would violate an NDA that a Responsible Entity may have signed.

- service level agreements with carriers containing high availability provisions

Likes 0

Dislikes 0

Response

Thank you for your comment. Please keep in mind that the stated measures are a way in which a Registered Entity may demonstrate compliance, they are not Requirements in and of themselves. A Registered Entity may choose to use any of the measures, all of the measures, or none of the measures at all in demonstrating compliance.

Teresa Krabe - Lower Colorado River Authority - 1,5

Answer No

| | |
|--|----|
| Document Name | |
| Comment | |
| More clarity on what redundancy means and what level of contingency is required. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. Please see revised Technical Rationale and Implementation Guidance documents. | |
| James Baldwin - Lower Colorado River Authority - 1 | |
| Answer | No |
| Document Name | |
| Comment | |
| More clarity on what redundancy means and what level of contingency is required. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. Please see revised Technical Rationale and Implementation Guidance documents. | |
| Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh | |
| Answer | No |
| Document Name | |
| Comment | |

NST believes the SDT's well-intentioned attempt to provide mitigation method examples has resulted in measures and guidance ideas that blur where an entity's CIP-012 obligations would begin and end. Examples include, "procedures explaining the use of alternative systems or methods for providing for the availability of the data," and "Methods for the recovery of links such as standard operating procedures, CIP-009 recovery plan(s), or similar technical recovery plans."

Likes 0

Dislikes 0

Response

Thank you for the comment. Please refer to the NERC ROP Standard Processes Manual App'x 3A section 2.5 -- "Measure: Provides identification of the evidence or types of evidence that *may* demonstrate compliance with the associated requirement." (emphasis added)

Joshua London - Eversource Energy - 1, Group Name Eversource

Answer

No

Document Name

Comment

Understand that the SDT is providing flexibilities in terms of documentations for support responsibilities and restoration assignments – but we think clear prescriptive methods would help to avoid finger pointing.

Likes 0

Dislikes 0

Response

Thank you for the comment. The Standard Drafting Team asserts the standard language and measures were created to be objective based rather than perspective. This provides Registered Entities the latitude to implement controls specific to their programs to meet the objectives of the standards.

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 | |
| <p>Do not agree these new Measures are consistent with a plan. Recommend the Requirements need to set clearer expectations. The Requirements want “methods.” Request updates that address this feedback.</p> <p>Request clarification on unavailable third-party infrastructure information.</p> <p>What are the entity's responsibilities/expectations regarding third parties and their infrastructure?</p> <p>Request clarification of how inadequate infrastructure availability impacts CIP-012 and the TOP-003-4/IRO-010-4 Standards. Because CIP-012 R1 mandates a plan.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| <p>Thank you for the comment. The SDT asserts that the Requirement language sets clear expectations to develop and implement a plan to mitigate the risks posed by unauthorized disclosure or modification of real-time assessment and monitoring data, and inability to communicate that data. This is additionally supported by the updated measures, Implementation Guidance, and Technical Rationale. Please see updates made to measure Part 1.4 addressing third parties.</p> | |
| John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway | |
| Answer | No |
| Document Name | |

Comment

ISO-NE is in support of comments developed by ISO-RTO council and NPCC.

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see response to the NPCC comments above. NPCC (Ruida Shu will reach out to TFIST for clarification then get back to the SDT).

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC

Answer

No

Document Name

Comment

The proposed language in CIP-012-2, Measure M1, Part 1.2, does not seem to meet the intent of the technical rationale or the SDT proposed language for CIP-012-2, Requirement R1, Part 1.2. For example, a report indicating uptime does not support mitigation of a risk that data might be lost due to the scenarios listed in the technical rationale.

Recommend the SDT review the proposed language for CIP-012-2 Requirement R1, Part 1.2; Measure M1, Part 1.2; and the technical rationale to ensure they are all consistent.

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see the updated Measures section within the standard and the Technical Rationale regarding potential methods to mitigate the cyber risks addressed in CIP-012. Please refer to the NERC ROP Standard Processes Manual App'x 3A section 2.5 -- "Measure: Provides identification of the evidence or types of evidence that *may* demonstrate compliance with the associated requirement."

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

Although the wording in Requirement R2 of Draft 3 of CIP-012-2 is removed, it appears that the wording of the Requirement 2 from Draft 1 and Draft 2 has only been moved or merged into Requirement 1 of Draft 3. BC Hydro's previous concerns raised on CIP-012-2 Draft 1 and Draft 2 appear to have not been materially addressed, and BC Hydro continues to believe still hold valid grounds.

The changes in Requirement R1 in Draft 3 of CIP-012-2 still implies a possible reliance on redundancy, which does not align with the approach taken in the other existing CIP standards, particularly CIP-002-5.1a. As availability is the purview of operations, BC Hydro believes that it would be better suited to other Mandatory Reliability Standards (MRS) within the Operations and Planning (O&P) domains (e.g., IRO-010, TOP-003, TOP-001).

BC Hydro recommends removing the 'availability' requirement from CIP-012-2 and revising other MRS standards to address this need as appropriate.

Alternatively, similar to our comments on Draft 2, BC Hydro suggests that the drafting team provide a clear definition of the term 'availability', and clarify that it does not imply the use of redundant setups. For most of the entities, 'availability' of communication networks depends on third party telecommunication providers and, in the event of a line or telecommunication equipment failure, the entity is reliant on the third party telecommunication providers to fix the problems. BC Hydro suggests that SDT add an exemption for the links and equipment used by third party telecommunication providers, as changing or enhancing the third party telecommunication infrastructure to support 'availability' may not be feasible for many entities.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT has been charged with addressing the FERC directive which states in P3 “develop modifications to the CIP Reliability Standards to require protections regarding the availability of communication links and data communicated between Bulk

Electric System Control Centers.” The SDT understands that the directives are seeking that we address availability from a cyber-perspective. Please see the updated Measures section within the standard and the Technical Rationale regarding redundancy as a potential method to mitigate the cyber risks addressed in CIP-012. Regarding the ability of an entity to use redundancy to meet the cyber security objectives of the requirements, FERC Order 866 clearly indicates in the Commission Determination that redundancy is an acceptable method of achieving part of the cyber security objective of the standard. In Order 866, in the Commission Determination, they state, “We (the Commission) recognize that the redundancy of communication links cannot always be guaranteed; responsible entities should therefore plan for both recovery of compromised communication links and use of backup communication capability should it be needed for redundancy (i.e., satellite or other alternate backup communications).” Please see the revised Requirement R1 language reinforcing the cyber aspect of this Requirement.

Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC

| | |
|----------------------|----|
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |

Response

NA

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

| | |
|----------------------|----|
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |

Response

| | |
|---|-----|
| NA | |
| Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6 | |
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |
| Summer Esquerre - NextEra Energy - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| please reference EEI's comments | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI comments. | |
| Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 | |
| Answer | Yes |
| Document Name | |

Comment

BHE recommends removing the measure “availability or uptime reports” as an applicable measure for P1.2. Reports detailing uptime or availability metrics are not applicable for the mitigation of risk posed by loss of data. The SDT should consider removing this measure in order to clarify that availability targets are not required by P1.2.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the updated Measures section within the standard and the Technical Rationale regarding potential methods to mitigate the cyber risks addressed in CIP-012. Please refer to the NERC ROP Standard Processes Manual App'x 3A section 2.5 -- "Measure: Provides identification of the evidence or types of evidence that *may* demonstrate compliance with the associated requirement." (emphasis added). Keep in mind that each individual bullet in the measures may or may not fully address demonstration of compliance with each sub-part.

Alison MacKellar - Constellation - 5

Answer Yes

Document Name

Comment

Constellation aligns with Exelon Corporation in response to this question.

Alison Mackellar on behalf of Constellation Segments 5 and 6.

Likes 0

Dislikes 0

Response

Thank you for your support. Please see response to Exelon comment

| | |
|--|-----|
| Kimberly Turco - Constellation - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Kimberly Turco on behalf of Constellation Segments 5 and 6 | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to Exelon comment | |
| Daniel Gacek - Exelon - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI comment | |

| | |
|--|-----|
| Kinte Whitehead - Exelon - 3 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. Please see response to EEI comment | |
| Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable | |
| Answer | Yes |
| Document Name | |
| Comment | |
| EEI agrees that M1 provides adequate examples for entities for each subpart. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6 | |
| Answer | Yes |
| Document Name | |

Comment

BHE recommends removing the measure “availability or uptime reports” as an applicable measure for P1.2. Reports detailing uptime or availability metrics are not applicable for the mitigation of risk posed by loss of data. The SDT should consider removing this measure in order to clarify that availability targets are not required by P1.2.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the updated Measures section within the standard and the Technical Rationale regarding potential methods to mitigate the cyber risks addressed in CIP-012. Please refer to the NERC ROP Standard Processes Manual App'x 3A section 2.5 -- "Measure: Provides identification of the evidence or types of evidence that *may* demonstrate compliance with the associated requirement." (emphasis added). Keep in mind that each individual bullet in the measures may or may not fully address demonstration of compliance with each sub-part.

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

Answer

Yes

Document Name

Comment

The NAGF supports the addition of examples of methods to mitigate risk posed by loss of Real-time assessment and monitoring data while in transit.

Likes 0

Dislikes 0

Response

Thank you for your support.

Marcus Bortman - APS - Arizona Public Service Co. - 6

| | |
|---|-----|
| Answer | Yes |
| Document Name | |
| Comment | |
| AZPS agrees that the expanded measures section of the standard adequately demonstrates examples of methods that could be used to mitigate the risk posed by loss of Real-time assessment and Real-time monitoring data while in transit | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Micah Runner - Black Hills Corporation - 1,3,5,6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Black Hills Corporation (BHP) agrees and supports EEI comments. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. Please see response to EEI comments | |
| Josh Combs - Black Hills Corporation - 3 | |
| Answer | Yes |
| Document Name | |

| | |
|---|-----|
| Comment | |
| Black Hills Corporation (BHP) agrees and supports EEI comments. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI comments | |
| Sheila Suurmeier - Black Hills Corporation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Black Hills Corporation (BHP) agrees and supports EEI comments. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI comments | |
| Claudine Bates - Black Hills Corporation - 1,3,5,6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Black Hills Corporation (BHP) agrees and supports EEI comments. | |

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. Please see response to EEI comments | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comment | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Steven Rueckert - Western Electricity Coordinating Council - 10 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| <p>There is still confusion related to acceptable controls "other than encryption" to meet the security objectives. While each measure may not meet the security objective in and of itself, could collectively be considered a measure to mitigate the risk and should be included.</p> <p>WECC suggests:</p> | |

Consider adding the following additional Measures to Part 1.1

- Own, operate, and manage the communication link
- Monitor, detect, alert and response

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see the revised language Requirement R1 M1.1.

Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer Yes

Document Name

Comment

No comments

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 agrees that the Requirement R1 Measures (M1) provide adequate examples on the mitigation of risks posed by the loss of Read-time assessment and Real-time monitoring data while in transit..

PG&E also agrees with the EEI suggestion that the text “Examples of evidence may include, but are not limited to the following examples (by subpart):” be added above the actual examples.

Likes 0

Dislikes 0

Response

Thank you for the comments. Please see modified languages in the Requirement R1 Measures (M1).

Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO

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 | |
| Rachel Coyne - Texas Reliability Entity, Inc. - 10 | |
| 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 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC

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; - Israel Perez

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA

Answer Yes

Document Name

| | |
|---|-----|
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Jamie Monette - Allete - Minnesota Power, Inc. - 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 | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| 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 | |
| Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Patricia Ireland - DTE Energy - 4 | |
| 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

Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric

Answer Yes

Document Name

Comment

| | |
|---|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jesus Sammy Alcaraz - Imperial Irrigation District - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jack Stamper - Clark Public Utilities - 3 - WECC | |

| | |
|--|-----|
| 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 | |
| Justin Kuehne - AEP - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |

| | |
|---|-----|
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF | |
| Answer | Yes |

| | |
|--|-----|
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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 | |
| Robert Follini - Avista - Avista Corporation - 3 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Glen Farmer - Avista - Avista Corporation - 5 | |
| 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 | |
| John Daho - MEAG Power - 1,3 - SERC | |
| 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 | |

Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO

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

Martin Sidor - NRG - NRG Energy, Inc. - 6

Answer Yes

Document Name

Comment

Thank you for your support

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Sheraz Majid - Hydro One Networks, Inc. - 1 | |
| Answer | |
| Document Name | |
| Comment | |
| It is unclear how fourth bullet in the measures of Part 1.2 related to availability/uptime reports would be beneficial in demonstrating compliance. Suggest to remove. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your comment. Please see the updated Measures section within the standard and the Technical Rationale regarding potential methods to mitigate the cyber risks addressed in CIP-012. Please refer to the NERC ROP Standard Processes Manual App'x 3A section 2.5 -- "Measure: Provides identification of the evidence or types of evidence that **may** demonstrate compliance with the associated requirement." (emphasis added). Keep in mind that each individual bullet in the measures may or may not fully address demonstration of compliance with each sub-part.

5. The SDT proposes that the modifications in CIP-012-2 meet the FERC directives in a cost effective manner. Do you agree? 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.

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 cannot determine if the proposed modifications meet the FERC directive in a cost effective manner until the Standard has been approved and then determine the actual impact on our operations.

Likes 0

Dislikes 0

Response

Thank you for your comment. The standard drafting team recommends entities consider the cost of implementation to be balanced against the cost of the risk of loss of availability.

Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC

Answer No

Document Name

Comment

Implementation and maintenance of redundant links to all facilities within scope of the CIP-012-2 standard would be extremely costly. Dedicated equipment and personnel would be required to maintain and preserve the integrity of the links to comply with the standard.

Likes 0

Dislikes 0

Response

Thank you for your comment. While the standard does not impose a requirement for redundancy to meet its objectives, some entities may choose to use redundancy to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability. The revised language is focused now on identification of methods for recovery and examples of those methods are now in the Measures section of the draft Standard.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

Please refer to BC Hydro comments in response to Question #1. BC Hydro has not yet implemented a solution for CIP-012-1, therefore it is not in a position to identify the additional costs related to the Project 2020-04 CIP-012-2 changes.

Likes 0

Dislikes 0

Response

Thank you for your comment. The standard drafting team recommends entities consider the cost of implementation to be balanced against the cost of the risk of loss of availability.

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 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. The standard drafting team recommends entities consider the cost of implementation to be balanced against the cost of the risk of loss of availability. | |
| Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper | |
| Answer | No |
| Document Name | |
| Comment | |
| See comments on question 2. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. Please see response to question 2. | |
| Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC | |
| Answer | No |
| Document Name | |
| Comment | |

An expectation from the ERO to comply with this new Standard, which would drive Responsible Entities to increase SLA levels, could result in cost-prohibitive roadblocks to implementation

Likes 0

Dislikes 0

Response

Thank you for your comment. While the standard does not impose a requirement for service level agreement (SLA) to meet its objectives, some entities may choose to use SLA to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability. The revised language is focused now on identification of methods for recovery and examples of those methods are now in the Measures section of the draft Standard.

Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh

Answer No

Document Name

Comment

Absent clarity about what CIP-012-2 would require a Responsible Entity to do, NST cannot comment on the cost-effectiveness of its latest proposed modifications.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT has updated language in the Standard and associated Measure to provide greater clarity on ways to meet objectives of the Requirements.

James Baldwin - Lower Colorado River Authority - 1

Answer No

| | |
|--|----|
| Document Name | |
| Comment | |
| It is uncertain the cost to implement due to the SLAs with Internet Service Providers (ISPs) to achieve adequate risk mitigation. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. While the standard does not impose a requirement for service level agreement (SLA) to meet its objectives, some entities may choose to use SLA to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability. The revised language is focused now on identification of methods for recovery and examples of those methods are now in the Measures section of the draft Standard. | |
| Teresa Krabe - Lower Colorado River Authority - 1,5 | |
| Answer | No |
| Document Name | |
| Comment | |
| It is uncertain the cost to implement due to the SLAs with Internet Service Providers (ISPs) to achieve adequate risk mitigation. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. While the standard does not impose a requirement for service level agreement (SLA) to meet its objectives, some entities may choose to use SLA to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability. The revised language is focused now on identification of methods for recovery and examples of those methods are now in the Measures section of the draft Standard. | |

| | |
|---|----|
| Summer Esquerre - NextEra Energy - 5 | |
| Answer | No |
| Document Name | |
| Comment | |
| NextEra Energy does not provide feedback on cost-effectiveness. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your comment. | |
| Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6 | |
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF | |
| Answer | No |
| Document Name | |
| Comment | |

| | |
|---|-----|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comments | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comment | |
| Likes 0 | |
| Dislikes 0 | |

Response

Thank you for your support

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer Yes

Document Name

Comment

AZPS agrees that the proposed modifications in CIP-012-2 meet the FERC directives in a cost-effective manner.

Likes 0

Dislikes 0

Response

Thank you for your support

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer Yes

Document Name

Comment

BHE feels the question is difficult to answer due to the inherent dependency of inter-entity coordination as prescribed by this standard. Costs incurred by one entity may be unviable compared to the associated costs conferred upon another entity. Entities which have elected to participate in a common data exchange hosted by a separate entity (such as an ISO) become dependent on the preferred availability solution of the hosting entity and those associated costs.

Likes 0

Dislikes 0

Response

Thank you for your comment. While the standard does not impose any one measure to meet its objectives, some entities may choose to use one or more measures to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability.

Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Martin Sidor - NRG - NRG Energy, Inc. - 6

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 | |
| Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO | |
| 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 | |
| John Daho - MEAG Power - 1,3 - SERC | |
| 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 | |
| Glen Farmer - Avista - Avista Corporation - 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 | |
| Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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 | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |

Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD

Answer Yes

Document Name

Comment

| | |
|---|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Justin Kuehne - AEP - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jack Stamper - Clark Public Utilities - 3 - WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Jesus Sammy Alcaraz - Imperial Irrigation District - 1 | |

| | |
|--|-----|
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support | |
| Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE | |
| 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 | |
| Patricia Ireland - DTE Energy - 4 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF | |
| 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 | |
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |

| | |
|--|-----|
| Response | |
| Thank you for your support | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Joshua London - Eversource Energy - 1, Group Name Eversource | |
| 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

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support

Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA

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; - Israel Perez | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC | |
| 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 | |

| | |
|---|-----|
| 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. | |
| Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |

| | |
|--|--|
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Steven Rueckert - Western Electricity Coordinating Council - 10 | |
| Answer | |
| Document Name | |
| Comment | |
| No comment | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| David Jendras Sr - Ameren - Ameren Services - 3 | |
| Answer | |
| Document Name | |
| Comment | |
| No Comment | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |

Claudine Bates - Black Hills Corporation - 1,3,5,6

Answer

Document Name

Comment

Black Hills Corporation (BHP) will not provide a response to the cost effectiveness question.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Sheila Suurmeier - Black Hills Corporation - 5

Answer

Document Name

Comment

Black Hills Corporation (BHP) will not provide a response to the cost effectiveness question.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Josh Combs - Black Hills Corporation - 3

Answer

Document Name

Comment

Black Hills Corporation (BHP) will not provide a response to the cost effectiveness question.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Micah Runner - Black Hills Corporation - 1,3,5,6

Answer

Document Name

Comment

Black Hills Corporation (BHP) will not provide a response to the cost effectiveness question.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6

Answer

Document Name

Comment

BHE feels the question is difficult to answer due to the inherent dependency of inter-entity coordination as prescribed by this standard. Costs incurred by one entity may be unviable compared to the associated costs conferred upon another entity. Entities which have elected to

participate in a common data exchange hosted by a separate entity (such as an ISO) become dependent on the preferred availability solution of the hosting entity and those associated costs.

Likes 0

Dislikes 0

Response

Thank you for your comment. While the standard does not impose any one measure to meet its objectives, some entities may choose to use one or more measures to meet the requirements. The standard drafting team recommends entities consider the cost of this method to be balanced against the cost of alternative methods to mitigate the risk of loss of availability.

Kinte Whitehead - Exelon - 3

Answer

Document Name

Comment

Exelon has elected to align with EEI in response to this question.

Likes 0

Dislikes 0

Response

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

Daniel Gacek - Exelon - 1

Answer

Document Name

Comment

| | |
|--|---|
| Exelon has elected to align with EEI in response to this question. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comment. Please see responses to the EEI's comment. | |
| Rachel Coyne - Texas Reliability Entity, Inc. - 10 | |
| Answer | |
| Document Name | |
| Comment | |
| Texas RE does not have comments. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |

6. The last ballot showed industry approval of the proposed 24-month implementation plan. Do you still agree the proposed timeframe is appropriate in light of the proposed revisions to the standard language? If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

Chris Carnesi - Chris Carnesi On Behalf of: Dennis Sismaet, Northern California Power Agency, 4, 6, 3, 5; Jeremy Lawson, Northern California Power Agency, 4, 6, 3, 5; Marty Hostler, Northern California Power Agency, 4, 6, 3, 5; Michael Whitney, Northern California Power Agency, 4, 6, 3, 5; - Chris Carnesi, Group Name NCPA

| | |
|---------------|----|
| Answer | No |
|---------------|----|

| | |
|----------------------|--|
| Document Name | |
|----------------------|--|

Comment

Answer is based on current supply chain lead times. It has taken us over 18 months working with AT&T to install a simple circuit and receive equipment, some other sites even longer. This leaves the utility little time for other testing, implementing configuration changes, scheduling outages and placing new circuits into production.

| | |
|-------|---|
| Likes | 0 |
|-------|---|

| | |
|----------|---|
| Dislikes | 0 |
|----------|---|

Response

Thank you for your comment. Industry was supportive of the 24-month timeframe in the previous ballot.

Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) 2020-04 CIP-012-2v4

| | |
|---------------|----|
| Answer | No |
|---------------|----|

| | |
|----------------------|--|
| Document Name | |
|----------------------|--|

Comment

The SRC believes a 24-month implementation plan is inadequate. More time is needed to accommodate annual budget planning cycles required for capital expenditures and the lead-time required for supply chain considerations, which can be up to two years. Depending upon when the standard is approved, the annual budget planning cycle for some entities may have just ended. In addition, there is currently a one-year lead-time when placing orders for new equipment. Therefore, we propose an implementation time period of 36 months.

Likes 0

Dislikes 0

Response

Thank you for your support.

Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh

Answer No

Document Name

Comment

Absent clarity about what CIP-012-2 would require a Responsible Entity to do, NST cannot comment on an implementation timetable.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro

Answer No

Document Name

Comment

As identified in BC Hydro's answers to Questions 1 to 4 and 5, at this time BC Hydro does not have sufficient information to affirm whether 24 months will be adequate to implement the solutions to comply with the changes proposed in Project 2020-04 for CIP-012.

Likes 0

Dislikes 0

Response

Thank you for your comment. Industry was supportive of the 24-month timeframe in the previous ballot.

Robert Follini - Avista - Avista Corporation - 3

Answer No

Document Name

Comment

Avista's experience with ATT contracts folks, supply chain delays, etc, delayed completion of our CIP-012 project by several months past effective date. If entities have to work with ATT for further improvements to mitigate loss, then we might need some additional time than we had for the initial CIP-012-1 implementation plan.

Likes 0

Dislikes 0

Response

Thank you for your comment. Industry was supportive of the 24-month timeframe in the previous ballot.

Glen Farmer - Avista - Avista Corporation - 5

Answer No

Document Name

Comment

Avista's experience with ATT contracts folks, supply chain delays, etc, delayed completion of our CIP-012 project by several months past effective date. If entities have to work with ATT for further improvements to mitigate loss, then we might need some additional time than we had for the initial CIP-012-1 implementation plan.

Likes 0

Dislikes 0

Response

Thank you for your comment. Industry was supportive of the 24-month timeframe in the previous ballot.

Mike Magruder - Avista - Avista Corporation - 1

Answer No

Document Name

Comment

Avista's experience with ATT contracts folks, supply chain delays, etc, delayed completion of our CIP-012 project by several months past the effective date. If entities have to work with ATT for further improvements to mitigate loss, then we may need more time than we had for the initial CIP-012-1 implementation plan.

Likes 0

Dislikes 0

Response

Thank you for your comment. Industry was supportive of the 24-month timeframe in the previous ballot.

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

Answer No

Document Name

Comment

| | |
|---|-----|
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6 | |
| Answer | No |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| Summer Esquerre - NextEra Energy - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| please reference EEI's comments | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |

Thank you for your support.

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer Yes

Document Name

Comment

Implementation in many cases is dependent on the availability of additional hardware to add any additional functionality to meet the standard. Additionally, data connections which may be hosted by a common entity between several other entities may be dependent on hardware provided by the hosting entity. BHE feels flexibility in implementation for entities who can establish circumstances outside their control for failure to implement on time is highly desirable.

Likes 0

Dislikes 0

Response

Thank you for your support.

Kimberly Turco - Constellation - 6

Answer Yes

Document Name

Comment

Constellation aligns with Exelon Corporation in response to this question.

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0

| | |
|--|-----|
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Alison MacKellar - Constellation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Alison Mackellar on behalf of Constellation Segments 5 and 6. | |
| 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 | |
| We support a 24-month implementation plan pending the scope of availability. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your support.

John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway

Answer Yes

Document Name

Comment

ISO-NE is in support of comments developed by ISO-RTO council and NPCC.

Likes 0

Dislikes 0

Response

Thank you for your support.

Daniel Gacek - Exelon - 1

Answer Yes

Document Name

Comment

Exelon has elected to align with EEI in response to this question.

Likes 0

Dislikes 0

Response

Thank you for your support.

Kinte Whitehead - Exelon - 3

Answer Yes

| | |
|--|-----|
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| 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 a 24 month implementation plan. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |

Implementation in many cases is dependent on the availability of additional hardware to add any additional functionality to meet the standard. Additionally, data connections which may be hosted by a common entity between several other entities may be dependent on hardware provided by the hosting entity. BHE feels flexibility in implementation for entities who can establish circumstances outside their control for failure to implement on time is highly desirable.

Likes 0

Dislikes 0

Response

Thank you for your support.

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

Answer Yes

Document Name

Comment

The NAGF supports the proposed 24-month implementation plan.

Likes 0

Dislikes 0

Response

Thank you for your support.

Marcus Bortman - APS - Arizona Public Service Co. - 6

Answer Yes

Document Name

Comment

| | |
|---|-----|
| AZPS still agrees with the proposed implementation timeframe. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Brian Lindsey - Entergy - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comment | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE | |
| Answer | Yes |
| Document Name | |
| Comment | |
| No comments | |
| 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 24-month Implementation Plan. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Ronald Bauer - MGE Energy - Madison Gas and Electric Co. - 3 - MRO | |
| 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.

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

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC

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; - Israel Perez | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Teresa Krabe - Lower Colorado River Authority - 1,5 | |
| 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.

Jamie Monette - Allele - Minnesota Power, Inc. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC

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. | |
| Joshua London - Eversource Energy - 1, Group Name Eversource | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott | |

| | |
|---|-----|
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| 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. | |
| Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Patricia Ireland - DTE Energy - 4 | |
| 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. | |
| Erik Gustafson - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC,Texas RE | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |

| | |
|---|-----|
| Response | |
| | |
| Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Jesus Sammy Alcaraz - Imperial Irrigation District - 1 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Micah Runner - Black Hills Corporation - 1,3,5,6 | |
| 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. | |
| Sheila Suurmeier - Black Hills Corporation - 5 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |

Thank you for your support.

Claudine Bates - Black Hills Corporation - 1,3,5,6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Jack Stamper - Clark Public Utilities - 3 - WECC

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. | |
| Justin Kuehne - AEP - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Joyce Gundry - Public Utility District No. 1 of Chelan County - 3, Group Name CHPD | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |

Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Thank you for your support.

Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC

Answer Yes

Document Name

Comment

| | |
|--|-----|
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Fong Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Goi, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD / BANC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

| | |
|--|-----|
| Thank you for your support. | |
| Steven Rueckert - Western Electricity Coordinating Council - 10 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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. | |
| John Daho - MEAG Power - 1,3 - SERC | |
| 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. | |
| Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO | |
| 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. | |
| Martin Sidor - NRG - NRG Energy, Inc. - 6 | |
| Answer | Yes |
| Document Name | |
| Comment | |
| | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your support. | |
| Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC | |
| 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. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| NA | |

7. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale and implementation guidance document, if desired.

Brian Millard - Tennessee Valley Authority - 1,3,5,6 - SERC

Answer

Document Name

Comment

With the advent of CIP-012 including controls for communications between Control Centers, consider retiring CIP-006 R1.10 for better alignment within the CIP standards.

Likes 0

Dislikes 0

Response

Thank you for your comment. This is out of scope of the SAR that the SDT is working on.

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

Answer

Document Name

Comment

FirstEnergy feels the Implementation Guidance were very helpful

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

Document Name

Comment

PG&E thanks the SDT for the effort in working with the industry in completing these modifications.

Likes 0

Dislikes 0

Response

Thank you for your support.

Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer

Document Name

Comment

The Implementation Guidance and Technical Rationale documents for CIP-012-2 reference the use of incident response plans (CIP-008) and recovery plans (CIP-009) as supporting evidence for CIP-012-2, Requirement R1.3. Requirement R1.3 speaks to recovery plans and the measures only refer to CIP-009 recovery plans. It appears that CIP-008 incident response plans would not be relevant for R1.3. CEHE seeks clarification on the use of CIP-008 incident response plans to satisfy R1.3.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see updated Implementation Guidance and Technical Rationale documents.

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, 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

Document Name

Comment

The measures in M1 Part 1.2 provide example evidence for loss of availability of data, and not loss of data. The SDT should consider updating the R1 Part 1.2 Requirement language to "loss of the availability of data", as suggested in Tacoma Power's responses to Q1 and Q2. The suggested change to R1 Part 1.2 will align the examples provided in M1 with the Requirement language.

Likes 0

Dislikes 0

Response

Thank you for your comment and revised language suggestion. The SDT agrees that more clarity was needed for the language of part R1.2 and has modified the language accordingly.

Steven Rueckert - Western Electricity Coordinating Council - 10

Answer

Document Name

Comment

No additional comments

Likes 0

| | |
|--|---|
| Dislikes | 0 |
| Response | |
| Thank you for your support | |
| Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC | |
| Answer | |
| Document Name | |
| Comment | |
| Xcel Energy believes that updates to the Technical Rationale and Implementation Guidance should be made to provide better clarity on the difference between the cybersecurity-related requirements of CIP-012-2 R1.2 and the operational requirements in EOP-008-2 R1.2. If Responsible Entities and ERO auditors cannot clearly distinguish between the two NERC Requirements, then the possibility of double jeopardy may exist. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Thank you for your comments. Please see revised language in the Standard, Technical Rationale, and Implementation Guidance. | |
| Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC | |
| Answer | |
| Document Name | |
| Comment | |
| While the SDT has removed the term “availability” from the Requirements and sub-parts, the term remains in the Purpose and Measures. BPA suggests removing the term throughout the standard.CIP-012 focuses on using physical and technical means to secure data while in-transit. | |

Securing data while in transit requires either physical hardware encryption devices or software based encryption and integrity checks. Physical encryption is not cost effective and impacts the timely manner of data received over links that are slow. The cost of redesign of the architecture of systems to implement physical encryption is also high. Logical encryption such as SSL/TLS which uses certificate based encryption cannot be supported end to end with certain devices and impacts the real-time data that is needed instantly. Maintaining these certificates also poses additional challenges as CC to CC is not always owned by the same entity.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT included availability in the Purpose statement and Measures to remain in line with the previous SDT and FERC Order 866 in addressing confidentiality, integrity, and availability (the CIA triad).

Jennifer Buckman - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer

Document Name

Comment

The Implementation Guidance and Technical Rationale documents for CIP-012-2 reference the use of incident response plans (CIP-008) and recovery plans (CIP-009) as supporting evidence for CIP-012-2, Requirement R1.3. Requirement R1.3 speaks to recovery plans and the measures only refer to CIP-009 recovery plans. It appears that CIP-008 incident response plans would not be relevant for R1.3. SIGE seeks clarification on the use of CIP-008 incident response plans to satisfy R1.3.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see updated Implementation Guidance and Technical Rationale documents.

Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF

| | |
|---|---|
| Answer | |
| Document Name | |
| Comment | |
| <p>We recommend that the SDT be consistent and use either “risks” or “risk(s)” in R1., parts 1.1., and 1.2. We would prefer the parenthetical version. We appreciate the diligent work of the drafting team to incorporate industry feedback in this draft.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| <p>Thank you for your comment. The SDT has made changes to align with each other.</p> | |
| <p>Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro</p> | |
| Answer | |
| Document Name | |
| Comment | |
| <p>BC Hydro suggests adding more clarity to the term 'availability' by providing a more detailed definition.</p> <p>Although the SDT has proposed the use of the NIST definition of "Ensuring timely and reliable access to and use of information" for defining the term 'availability' in the Technical Rationale document, a more detailed and specific definition concerning the application and use, specifically at entities to which this standard applies, will help improve a clear understanding and easier implementation. BC Hydro also suggests including some pertinent use cases and examples.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |

Thank you for your comment. The SDT has removed the term “availability” from the Requirements. Additionally, the SDT has modified the National Institute of Standards and Technology (NIST) definition used in current Implementation Guidance and Technical Rationale documents. The SDT modified the definition of availability as defined by (NIST) to read “Ensuring timely and reliable access to information”.

Justin Kuehne - AEP - 6

Answer

Document Name

Comment

AEP appreciates the efforts of the SDT on this revision. No further comments at this time.

Likes 0

Dislikes 0

Response

Thank you for your support.

David Jendras Sr - Ameren - Ameren Services - 3

Answer

Document Name

Comment

No Comment

Likes 0

Dislikes 0

Response

NA

| | |
|--|--|
| Brian Lindsey - Entergy - 1 | |
| Answer | |
| Document Name | |
| Comment | |
| No comment | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| NA | |
| Jack Stamper - Clark Public Utilities - 3 - WECC | |
| Answer | |
| Document Name | |
| Comment | |
| <p><i>The measures in M1 Part 1.2 provide example evidence for loss of availability of data, and not loss of data. The SDT should consider updating the R1 Part 1.2 Requirement language to "loss of the availability of data", as suggested in Tacoma Power's responses to Q1 and Q2. The suggested change to R1 Part 1.2 will align the examples provided in M1 with the Requirement language.</i></p> | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your response. Please see the response to Tacoma Power's comments on Q1 and Q2. | |
| Marcus Bortman - APS - Arizona Public Service Co. - 6 | |

| | |
|---|--|
| Answer | |
| Document Name | |
| Comment | |
| AZPS has no additional comments at this time. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF | |
| Answer | |
| Document Name | |
| Comment | |
| The NAGF has no additional comments. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Thank you for your support. | |
| Melanie Wong - Seminole Electric Cooperative, Inc. - 1,3,4,5,6 | |
| Answer | |
| Document Name | |
| Comment | |

1. Implementation Guidance

- i. On pages 2-3 of the Implementation Guidance, the STD has a section titled “Mitigate Risks Associated with Unauthorized Disclosure and Modification”. In reviewing this section, the SDT appears to comingle “preventative” measures with mitigating measures. For example, physical security of data cabling is more of a preventive measure, and does not mitigate the impact of the disclosure of the data or modification of the data once it has occurred. The SDT should review this section and specify whether they are looking for preventive or mitigating measures.
- ii. On page 3 of the redline version of the Implementation Guidance, the SDT struct different “protocol” and modified the language to different “systems”, and the examples were changed from DNP3 and ICCC to primary and secondary. Is the SDT confirming that the same type of system, e.g., two ICCP circuits, can be used as long as the paths are diverse?
- iii. On page 8 of the redlined Implementation Guidance, the SDT states “Entity Alpha then physically protects the cabling and connections over which the data travels until it is within the Control Center.” In looking at Figure 3, the SDT has indicated that “Entity Alpha’s CIP-012 physical security protection applied” includes communication cabling “inside” the Control Center’s PSP, and not just the cabling and router outside of the PSP. We believe the SDT needs to update the Figure to only show a need for CIP-012 physical protection outside of the Control Center PSP.
- iv. On page 10 of the Implementation Guidance, in Figure 2, the SDT has indicated one communication link from the Primary Control Center. To be compliant, does not Entity Alpha have to indicate additional communication links to its back-up Control Center along with a secondary communication link to Entity Beta’s Control Center? The SDT should modify the Figure as it does not coincide well with Figure 1 provided by the SDT.

1. Technical Rationale

- i. On page v of the technical rationale, if your Control Center connects to a GOP that is owned by a separate entity, how are you supposed to verify whether the GOP is an applicable Control Center?
- ii. On page vii of the technical rationale, the SDT states “but the potential situation exists where there are substation with an HMI or protective relay that “operating personnel” within the substation could use to impact an adjacent substation.” This language is confusing because the language of Control Center is “monitor and control”, if entities are supposed to look at “impact”, then multiple relays at different locations could be involved, including GOPs and TOPs. The SDT should revise this language and specifically note that “impact” is not to be evaluated, but only direct control.

- iii. For Figure 4 in the technical rationale, if the control room operator at Entity B location 1 provides TOP-003 data to Entity A TOP for both Location 1 and Location 2 via a manual entry messaging system directly from Entity B Location 1 to Entity A TOP Control Center, e.g., outage information, then that specific data link would be included in CIP-012, correct?

Likes 0

Dislikes 0

Response

Thank you for your comments.

1. Implementation Guidance

- i. Thank you for your comment. The SDT does not want to be prescriptive in how an entity defines or classifies the security controls it selects. As indicated on page two of the IG, entities have latitude to identify and choose which security protections are used to mitigate the risks posed by unauthorized disclosure and unauthorized modification of Real-time Assessment and Real-time monitoring data while being transmitted between Control Centers.
- ii. The SDT has removed the specification of protocol (e.g., the redundancy of systems).
- iii. Thank you for your response. The SDT agrees that more clarity could be added to figure 3 within the Implementation Guidance. The figure has been updated; specifically, it has been labeled to clearly show the PSP with a physically secured area (e.g., physical security boundary) adjacent and within the same facility/BES Asset. This is one example of the implementation of physical security controls that can be used to mitigate the risk of the loss of the ability to communicate Real-time Assessment and Real-time monitoring data
- iv. Thank you for your response. The SDT agrees that more clarity could be added to figure 2 within the Implementation Guidance. The figure has been updated; specifically, it has been labeled to clearly show the communication link between Entity Alpha’s primary and back-up Control Centers. This is one example of the implementation of alternate paths that can be used to mitigate the risk of the loss of the ability to communicate Real-time Assessment and Real-time monitoring data

2. Technical Rationale

- i. This question of identification of Control Centers is addressed in CIP-002 and is out of scope for CIP-012
- ii. Thank you for your comment. The Technical Rationale (pg. vii) states: “SDT’s attempts to address by clarifying the definition of Control Center pointed out larger issues that are not within the SDT’s SAR to address.” The SDT continues to assert that a given Entity may find clarity around the Control Center definition by referring to Exemption 4.2.3. Moreover, the SDT believes that there is sufficient clarity within the TR regarding Control Center definition/function within Section ‘CIP-012 Exemption (4.2.3) for certain Control Centers’ on pg. v. The SDT cannot offer specific guidance on how to comply with the Requirement and would refer questions of compliance guidance back to the ERO or respective Regional Entities.
- iii. The intent of Figure 4 is to illustrate a generic example of an exemption. The question provided is requesting a clarification on specific compliance obligation. The SDT cannot advise how Registered Entities comply.

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF

Answer

Document Name

Comment

PPL NERC Registered Affiliates do not support the proposed changes. Specifically, the proposed R1.3 is overly broad.

PPL NERC Registered Affiliates propose the following revisions to R1.3: “Identification of method(s) used to recover in the recovery of Responsible Entity owned or operated communication links used to transmit Real-time Assessment and Real-time monitoring data between Control Centers;”

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the modified language of R1.3.

Silvia Mitchell - NextEra Energy - Florida Power and Light Co. - 1

| | |
|---|--|
| Answer | |
| Document Name | |
| Comment | |
| NextEra Energy supports EEI's comments | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Please see response to EEI comments | |
| Kinte Whitehead - Exelon - 3 | |
| Answer | |
| Document Name | |
| Comment | |
| Exelon has elected to align with EEI in response to this question. | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| Please see response to EEI comments | |
| Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group | |
| Answer | |
| Document Name | |
| Comment | |

WEC Energy Group supports the MRO-NSRF comments.

Additionally, the NIST definition of Availability listed in the Implementation Guidance and the Technical Rational differs. Request the SDT to align the definitions.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see updated Technical Rationale and Implementation Guidance.

FOR REVIEW:

Tech Rationale

- ~~Based on the NIST definition⁵, Availability is defined by the SDT and based on the NIST definition as, “Ensuring Providing timely and reliable access to and use of information.”⁵~~

IG

- ~~Based on the NIST definition⁵, Availability is defined by the SDT and based on the NIST definition as, “Ensuring Providing timely and reliable access to and use of information.”⁵~~

Daniel Gacek - Exelon - 1

Answer

Document Name

Comment

Exelon has elected to align with EEI in response to this question.

Likes 0

| | |
|---|---|
| Dislikes | 0 |
| Response | |
| Please see response to EEI comments | |
| Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC | |
| Answer | |
| Document Name | |
| Comment | |
| <p>SPP Supports all the comments filed by the NSRF.</p> <p>In addition, the proposed language introduces three concepts that introduce confusion:</p> <p>First, the entity becomes responsible for a documented plan to mitigate situations where data becomes unavailable without scoping that risk. Is this risk to the other party, the sending party, the receiving party, or all parties? Is it risk to the reliable operation of the BES, risk to the exchange of data, or risk to the corruption or theft of the data?</p> <p>Second, a data-providing entity now bears responsibility to document a plan of action to mitigate the risk to operations at another entity when that entity loses access to data for any reason in any way. The methods used by parties to fulfill the responsibility of a RTA or RTM are varied and far-reaching. Expecting all parties in the network of exchanged data to understand the implications of lost data and to keep up with the changes to those implications is excessively burdensome when the sending party has no opportunity or ability to assist the receiving party. The responsibility of a party providing data to another, under current NERC Standards, ends at the point at which the other party receives the data. This language would expand that scope and cause entities to cover risks that (i) are already mitigated, and (ii) the responsibility of other entities.</p> <p>Third, the language overlaps in Measure and evidence with existing NERC Standards that cover RTA, RTM, and data exchange agreements. If an entity, as indicated by members of the SDT, can simply point to the evidence already submitted for these existing NERC Standards, there is only added confusion instead of value.</p> <p>Finally, the SDT should clarify the extent to which an entity is responsible for mitigating the risk of data loss when that data is transmitted by a third-party. For instance, if a Transmission Operator’s data is consumed by a Balancing Authority that in turn shares that</p> | |

Transmission Operator’s data with a neighboring Reliability Coordinator, would Part 1.1 now become the responsibility of the Transmission Operator to mitigate for the risk of the Reliability Coordinator losing access to the data that is provided over the Balancing Authority’s network infrastructure?

Likes 0

Dislikes 0

Response

Thank you for your comments. Please see responses to MRO NSRF regarding revised language in Requirement R1 addressing scoping of risk to Cyber security and ability to communicate language identified in R1.2.

Please see updated Implementation Guidance and Technical Rationale documents. Specifically, the IG (pg.5) states: “Technical Rationale and Justification for CIP-012 identifies key considerations in the Control Center Ownership section when communications between Control Centers with different owners or operators.”

The SDT agrees with the delegation of authority as described in the CIP-012-2 Implementation Guidance stating that “Entity Alpha does not need to consider whether Entity Beta further share its data with another Entity. That is the responsibility of Entity Beta and is outside of Entity Alpha’s purview.” The SDT cannot offer specific guidance on how to comply with the Requirement and would refer questions of compliance guidance back to the ERO or respective Regional Entities. Security measures identified in CIP-012 Requirement R1 are intended to provide cyber security protection for the transfer of RTA and RTM only between the communicating Control Centers. The SDT asserts that responsible entities are responsible to protect/secure data while in transit.

The SDT references to utilizing plans or procedures that were created to address other NERC Standards were only meant as an option to reduce administrative documents. As an example, if an entity chooses to create a single Standard Operating Procedure for “System Recovery,” they could use that procedure as evidence for their CIP-012 System recovery activities. They could also use that same document as evidence for their CIP-009 system recovery activities and corporate system recovery. The important aspect is that the procedure needs to address all parts of the Standard it is meant to be used as evidence for. Entities are still free to have multiple system recovery documents to address each Standard and or system separately. As long as Registered Entities’ EOP-008, IRO-010, and TOP-003 plans address all of the required elements for CIP-012-2, that may be used as part your CIP-012 plan. The referenced EOP-008 Standard applies only within Registered Entities’ own Control Center environments. Therefore, to use those plans it would be modified to include

the CIP-012 elements required. To further clarify the distinction between CIP-012 and Operation and Planning Standards, the Standard Drafting Team has updated language in the parent requirement and language in R1.2 to better reflect the focus on the cyber risk to include the risk of the loss of the ability to communicate RTA and RTM data between Control Centers.

John Galloway - John Galloway On Behalf of: John Pearson, ISO New England, Inc., 2; - John Galloway

Answer

Document Name

Comment

ISO-NE is in support of comments developed by ISO-RTO council and NPCC.

Likes 0

Dislikes 0

Response

Please see response to ISO-RTO and NPCC.

Kendra Buesgens - MRO - 1,2,3,4,5,6,7 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

On the SDT webinar on October 24, 2022, mention was made of how existing plans for other standards can be leveraged as evidence of compliance with CIP-012-2, in order to minimize resources spent on documentation. The MRO NSRF requests the SDT further clarify the differences required in CIP-012-2 versus EOP-008-2, IRO-010-3 & TOP-003-3 in supplemental documentation and how a responsible entity can leverage such as evidence of compliance.

Likes 0

| | |
|---|---|
| Dislikes | 0 |
| Response | |
| <p>Thank you for your comments. The SDT references to utilizing plans or procedures that were created to address other NERC Standards were only meant as an option to reduce administrative documents. As an example, if an entity chooses to create a single Standard Operating Procedure for “System Recovery,” they could use that procedure as evidence for their CIP-012 System recovery activities. They could also use that same document as evidence for their CIP-009 system recovery activities and corporate system recovery. The important aspect is that the procedure needs to address all parts of the Standard it is meant to be used as evidence for. Entities are still free to have multiple system recovery documents to address each Standard and or system separately. As long as Registered Entities’ EOP-008, IRO-010, and TOP-003 plans address all of the required elements for CIP-012-2, that may be used as part your CIP-012 plan. The referenced EOP-008 Standard applies only within Registered Entities’ own Control Center environments. Therefore, to use those plans it would be modified to include the CIP-012 elements required.</p> | |
| Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO | |
| Answer | |
| Document Name | |
| Comment | |
| <p>MPC supports comments submitted by the MRO NERC Standards Review Forum.</p> | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| <p>Please see response to MRO NSRF comments.</p> | |
| 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

CIP-012 R1 includes all security such as information protection, location, asset inventory, confidentiality, integrity, and availability.

Recommend CIP-012 provide greater specifications of this plan.

R1 indicates “..to mitigate the risks posed by unauthorized disclosure and, unauthorized modification of, and loss of availability of data used for Real-time Assessment and Real-time monitoring data while such data is being transmitted between any applicable Control Centers.” While R1.1, R1.2, and R1.3 indicate “...between Control Centers” and R1.5 indicates “if the Control Centers..” . We suggest adding the wording “applicable” to R1.1, R1.2, R.1.3, and R1.5.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the revised language, Technical Rationale, and Implementation Guidance for more specific information regarding an Entity’s plan. The SDT has updated the parent language in R1 to include “applicable” Control Centers.

Larry Brusseau - Corn Belt Power Cooperative - 1 - MRO

Answer

Document Name

Comment

On the SDT webinar on October 24, 2022, mention was made of how existing plans for other standards can be leveraged as evidence of compliance with CIP-012-2, in order to minimize resources spent on documentation. The MRO NSRF requests the SDT further clarify the

differences required in CIP-012-2 versus EOP-008-2, IRO-010-3 & TOP-003-3 in supplemental documentation and how a responsible entity can leverage such as evidence of compliance.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT is performing these modifications to the CIP Standards as directed by FERC in Order 866, which specifically states in the directive, "...the Commission directs NERC to develop modifications to the **CIP Reliability Standards** to require protections regarding the availability of communication links and data communicated between bulk electric system Control Centers". As such, the SDT is working within the constraints of the directive to ensure that the modifications to the language reflect addressing an appropriate cyber security risk. The TOP and IRO standards do address availability, but are focused on data exchange infrastructure **within** the primary control center and do not address data in motion **between** other Control Centers. The revisions to CIP-012 will address elements that TOP and IRO do not address. The SDT agrees that more clarity was needed for the language in R1 and subpart R1.2 and has modified the language accordingly.

Finally, the SDT cannot offer specific guidance on how to comply with the Requirement and would refer questions of compliance guidance back to the ERO or respective Regional Entities.

Alison MacKellar - Constellation - 5

Answer

Document Name

Comment

Constellation aligns with Exelon Corporation in response to this question.

Alison Mackellar on behalf of Constellation Segments 5 and 6.

Likes 0

| | |
|--|---|
| Dislikes | 0 |
| Response | |
| Please see response to Exelon comments. | |
| Kimberly Turco - Constellation - 6 | |
| Answer | |
| Document Name | |
| Comment | |
| Constellation aligns with Exelon Corporation in response to this question. | |
| Kimberly Turco on behalf of Constellation Segments 5 and 6 | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Please see response to Exelon comments. | |
| Michael Russell - Massachusetts Municipal Wholesale Electric Company - 5 - NPCC | |
| Answer | |
| Document Name | |
| Comment | |
| CIP-012 R1 includes all security such as information protection, location, asset inventory, confidentiality, integrity, and availability. Recommend CIP-012 provide greater specifications of this plan. R1 indicates “..to mitigate the risks posed by unauthorized disclosure and, unauthorized modification of, and loss of availability of data | |

used for Real-time Assessment and Real-time monitoring data while such data is being transmitted between any applicable Control Centers.” While R1.1, R1.2, and R1.3 indicate “...between Control Centers” and R1.5 indicates “if the Control Centers..” . We suggest adding the wording “applicable” to R1.1, R1.2, R.1.3, and R1.5.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see response to NPCC.

Roger Fradenburgh - Roger Fradenburgh On Behalf of: Nicholas Lauriat, Network and Security Technologies, 1; - Roger Fradenburgh

Answer

Document Name

Comment

As noted in our responses to Questions 1-6, NST believes the proposed changes to CIP-012 implementation guidance reduce rather than add clarity about what a Responsible Entity must or might do to address new availability requirements. We find suggestions to the effect that an Entity might rely on its CIP-008 and CIP-009 plans to address parts of CIP-012 to be of particular concern, for reasons including the fact such guidance creates at least the potential for "double jeopardy" situations in compliance audits. FERC wrote Order 866 precisely because the Commission believes CIP-002 through CIP-011 do NOT address protection and recovery of communication links between Control Centers, so in NST's opinion, the SDT should refrain from suggesting that perhaps they do and should therefore be considered for inclusion in an Entity's CIP-012 compliance narratives.

NST also believes the SDT should refrain from making suggestions such as, on page 4, " Another method would be to use multiple systems that can aid availability in that one software solution providing data can fail independently of the other while data continues to flow via the alternate software/protocol stack. This can also be demonstrated utilizing network or system diagrams that identify the method(s) by which the protections are afforded by the solution." To repeat, it is NST's opinion that FERC did not intend for CIP-012 revisions to add data availability requirements that include sending and receiving Cyber Assets that are within, as opposed to between, Control Centers.

Likes 0

| | |
|--|---|
| Dislikes | 0 |
| Response | |
| <p>Thank you for your comment. The SDT references to utilizing plans or procedures that were created to address other NERC Standards were only meant as an option to reduce administrative documents. As an example, if an entity chooses to create a single Standard Operating Procedure for “System Recovery,” they could use that procedure as evidence for their CIP-012 System recovery activities. They could also use that same document as evidence for their CIP-009 system recovery activities and corporate system recovery. The important aspect is that the procedure needs to address all parts of the Standard it is meant to be used as evidence for. Entities are still free to have multiple system recovery documents to address each Standard and or system separately.</p> <p>To address the second comment. FERC Order 866 directs that protections be placed on data being communicated between Control Centers only. Communications from Control Center to field Cyber assets (i.e., SCADA) are not in scope of CIP-012.</p> | |
| Jamie Monette - Allele - Minnesota Power, Inc. - 1 | |
| Answer | |
| Document Name | |
| Comment | |
| MP agrees with the NSRF’s comments. | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Please see response to MRO NSRF comments. | |
| James Baldwin - Lower Colorado River Authority - 1 | |
| Answer | |
| Document Name | |
| Comment | |

LCRA is worried about the number of connections the standard is starting to include. Recent guidance by NERC and Regional Entities suggests an expansion in scope of the CIP-012 standard to include connections with other entities that do not fit the definition of Control Center. These entities forward data to their RC, BA, or TOP and it has been suggested that the entire connection is applicable to CIP-012. This may yield inconsistent application of the standard across the ERO. Specifically, in the CIP-012-2 Implementation Guidance it is stated that “Entity Alpha does not need to consider whether Entity Beta further share its data with another Entity. That is the responsibility of Entity Beta and is outside of Entity Alpha’s purview.” LCRA would recommend more guidance on applicability of the standard.

Furthermore, the increased scope of the standard is bringing communication networks into scope that were previously excluded under exemption 4.2.3.2. Utilizing CIP-009 as a method for achieving compliance with out-of-scope systems provides additional compliance risk.

LCRA has found that the use of “Real-time Assessment and Real-time monitoring” being used in each Requirement Part adds to the complexity of the standard. LCRA proposes the use of “data” in parentheses following the first use of the term (e.g., ... and loss of availability of data used for Real-time Assessment and Real-time monitoring (data)).

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT agrees with the delegation of authority as described in the CIP-012-2 Implementation Guidance stating that “Entity Alpha does not need to consider whether Entity Beta further share its data with another Entity. That is the responsibility of Entity Beta and is outside of Entity Alpha’s purview.” The SDT cannot offer specific guidance on how to comply with the Requirement and would refer questions of compliance guidance back to the ERO or respective Regional Entities.

[The SDT references to utilizing plans or procedures that were created to address other NERC Standards were only meant as an option to reduce administrative documents. As an example, if an entity chooses to create a single Standard Operating Procedure for “System Recovery,” they could use that procedure as evidence for their CIP-012 System recovery activities. They could also use that same document as evidence for their CIP-009 system recovery activities and corporate system recovery. The important aspect is that the procedure needs to address all parts of the Standard it is meant to be used as evidence for. Entities are still free to have multiple system recovery documents to address each Standard and or system separately.

The SDT thanks LCRA for the verbiage suggestion; however, the SDT believes the continued use of “Real-time Assessment and Real-time monitoring data” provides needed clarity to the Standard.

Teresa Krabe - Lower Colorado River Authority - 1,5

Answer

Document Name

Comment

LCRA is worried about the number of connections the standard is starting to include. Recent guidance by NERC and Regional Entities suggests an expansion in scope of the CIP-012 standard to include connections with other entities that do not fit the definition of Control Center. These entities forward data to their RC, BA, or TOP and it has been suggested that the entire connection is applicable to CIP-012. This may yield inconsistent application of the standard across the ERO. Specifically, in the CIP-012-2 Implementation Guidance it is stated that “Entity Alpha does not need to consider whether Entity Beta further share its data with another Entity. That is the responsibility of Entity Beta and is outside of Entity Alpha’s purview.” LCRA would recommend more guidance on applicability of the standard.

Furthermore, the increased scope of the standard is bringing communication networks into scope that were previously excluded under exemption 4.2.3.2. Utilizing CIP-009 as a method for achieving compliance with out-of-scope systems provides additional compliance risk.

LCRA has found that the use of “Real-time Assessment and Real-time monitoring” being used in each Requirement Part adds to the complexity of the standard. LCRA proposes the use of “data” in parentheses following the first use of the term (e.g., ... and loss of availability of data used for Real-time Assessment and Real-time monitoring (data)).

Likes 0

Dislikes 0

Response

Please see previous response to LCRA comment.

| | |
|---|--|
| | |
| 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; - Israel Perez | |
| Answer | |
| Document Name | |
| Comment | |
| <p>The measures in M1 Part 1.2 provide example evidence for loss of availability of data, and not loss of data. The SDT should consider updating the R1 Part 1.2 Requirement language to "loss of the availability of data", as suggested in Tacoma Power's responses to Q1 and Q2. The suggested change to R1 Part 1.2 will align the examples provided in M1 with the Requirement language.</p> | |
| Likes 0 | |
| Dislikes 0 | |
| Response | |
| <p>Thank you for your comment. Please see updated language in R1 Part 1.2.</p> | |
| Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC | |
| Answer | |
| Document Name | |
| Comment | |
| <p>Southern Company proposes 1.5 should include parts 1.1 through 1.3</p> | |

Southern Company proposed Language for 1.5 - If the Control Centers are owned or operated by different Responsible Entities, **document the agreement** of identification of the responsibilities of each Responsible Entity for implementing method(s) as required in Parts 1.1 and 1.2.

Likes 0

Dislikes 0

Response

Thank you for your comment. The SDT agrees and has updated the Standard language in R1 Part 1.5 to include Part 1.3.

Regarding the proposed verbiage addition to R1 part 1.5, the SDT has added measures for Part 1.5 which highlights the variety of documentation that may be acceptable as evidence. The SDT does not believe adding verbiage to R1 Part 1.5 adds any clarity and may in fact be interpreted as more narrow.

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5

Answer

Document Name

Comment

None at this time.

Likes 0

Dislikes 0

Response

Thank you for your support.

Summer Esquerre - NextEra Energy - 5

Answer

Document Name

| | |
|--|---|
| Comment | |
| please reference EEI's comments | |
| Likes | 0 |
| Dislikes | 0 |
| Response | |
| Please see response to EEI comments | |
| Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF | |
| Answer | |
| Document Name | |
| Comment | |
| We would like to thank the SDT for continuing to listen to industry feedback to meet the FERC order and not create overly burdensome requirements. | |
| 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.

Likes 0

Dislikes 0

Response

Thank you for your support.

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

Answer

Document Name

Comment

We would like to thank the SDT for allowing feedback to meet the FERC order.

Likes 0

Dislikes 0

Response

Thank you for your support.