Comment Report

Project Name:	2021-03 CIP-002 | Transmission Owner Control Centers
Comment Period Start Date:	6/13/2023
Comment Period End Date:	7/12/2023
Associated Ballots:	

There were 49 sets of responses, including comments from approximately 79 different people from approximately 61 companies representing 7 of the Industry Segments as shown in the table on the following pages.

Questions

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

3. Control Center Definition: The SDT replaced "including their associated data centers" with "and any Data Centers intended to support the function of those rooms" to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT's approach? If not, please provide your rational and an alternate proposal.

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT's approach and the proposed definition? If not please provide your rational and an alternate proposal.

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating "that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board". Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

7. Criterion 2.12: The SDT proposes to remove the following language "used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines" in favor of explicitly identifying Control Centers that are "operated by a registered Transmission Operator or owned by a registered Transmission Owner". This eliminates the ambiguity that has been identified regarding the application of 'performing the reliability tasks of a Transmission Operator' to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

8. Criterion 2.12: The SDT assigned a 'weight value per characteristic' to BES Transmission Lines less than 100kV given that the NERC defined term Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Nick Fogleman	Prairie Power, Inc.	1	SERC
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	RF
					Marcus Perkins	Southern Maryland Electric Cooperative	3	RF
Eversource Energy	Joshua London	1,3		Eversource	Joshua London	Eversource Energy	1	NPCC
					Vicki O'Leary	Eversource Energy	3	NPCC
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF
California ISO	Monika Montez	2	WECC	ISO/RTO Council Standards	Monika Montez	CAISO	2	WECC
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF

				Review Committee (SRC) Project 2021-03 CIP-002 TOCC	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
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Jim Howell, Jr.	Southern Company - Southern Company Generation	5	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
BC Hydro and Power Authority	Patricia Robertson	1,3,5	WECC	BC Hydro Balloters	Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
Western Electricity Coordinating Council	Steven Rueckert	10		WECC CIP	Steve Rueckert	WECC	10	WECC
					Morgan King	WECC	10	WECC
					Deb McEndaffer	WECC	10	WECC
					Tom Williams	WECC	10	WECC

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

Paul Mehlhaff - Sunflower Electric Power Corporation - 1

Answer	No
Document Name	

Comment

Sunflower does not believe a modification to the Control Center definition is required.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Duke Energy thanks the Drafting team for the work to create these proposed modifications and for the opportunity to provide feedback through an informal comment period. Duke Energy does not believe that there is a substational level of ambiguity on what currently constitutes a Control Center, but recognizes the intention to clarify expectations for inclusion. If broader industry stakeholders also support that there is an unacceptable level of ambiguity, we would recommend that "authority" to control be removed from the definition, as "capability" to control would be the new minimum. Capability should capture entities that have the authority to control, as those with the authority should have the capability. Below is our recommended definition for consideration if the Standard Drafting Team decides to continue modifying the definition:

Control Center:

One or more physical spaces where a responsible entity hosts operating personnel, as detailed below, that monitor and/or control Facilities on the Bulk Electric System (BES) in Real-time, and any Data Centers intended to support the function of those spaces.

1. *NERC certified personnel of a Reliability Coordinator, having the capability to control Facilities;*
2. *NERC certified personnel of a Balancing Authority, having the capability to control Facilities;*
3. *NERC certified personnel of a Transmission Operator having the capability to control Transmission Facilities at two or more locations;*
4. *Transmission Owner operating personnel having the capability to electronically control Transmission Facilities at two or more locations; or*

5. *Generation Operator operating personnel having the capability to electronically control generation Facilities at two or more locations.*

Likes 0	
Dislikes 0	

Response

Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC

Answer	No
Document Name	

Comment

BHE views the proposed modifications to the Control Center definition as a positive move in the right direction that does enhance clarity. We believe the proposed definition can be further clarified with the following suggested wording:

Control Center: One or more designated locations where a responsible entity hosts operating personnel, as detailed below, that monitor and control the Bulk Electric System (BES) with Real-time Assessment, and any part of data centers intended to support the BES reliability function of those locations.

Regarding the 5 categories of operating personnel, in all cases BHE requests replacing “capability or authority” with “capability and authority,” as anyone with authority but not capability would not merit inclusion as operating personnel.

Likes 0	
Dislikes 0	

Response

Matt Lewis - Lower Colorado River Authority - 1,5

Answer	No
Document Name	

Comment

We are not sure of the significance of the word “electronically control”. Is this to distinguish the TO/GO who uses a SCADA EMS to electronically control field devices versus an entity who has to manually/locally control? More clarity in the wording would help.

Likes 0	
Dislikes 0	

Response

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

Answer	No

Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	No
Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	No
Document Name	
Comment	

BHE views the proposed modifications to the Control Center definition as a positive move in the right direction that does enhance clarity. We believe the proposed definition can be further clarified with the following suggested wording:

Control Center: One or more designated locations where a responsible entity hosts operating personnel, as detailed below, that monitor and control the Bulk Electric System (BES) with Real-time Assessment, and any part of data centers intended to support the BES reliability function of those locations.

Rationale:

- “designated locations” is preferable to “rooms” as it provides greater flexibility and resolution.
- “with Real-time Assessment” is what we understand “in real-time" to intend.
- “part of data centers” to allow greater resolution to the applicable locations within a data center, which we do not believe requires a definition.
- “BES reliability function” to ensure only the relevant parts of a data center are within scope.

Regarding the 5 categories of operating personnel, in all cases BHE requests replacing “capability or authority” with “capability and authority,” as anyone with authority but not capability would not merit inclusion as operating personnel.	
Likes 0	
Dislikes 0	
Response	
Byron Booker - Oncor Electric Delivery - 1	
Answer	No
Document Name	
Comment	
Oncor supports the comments submitted by EEI.	
Likes 0	
Dislikes 0	
Response	
Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	
We recommend changing from “having the capability or authority to control Facilities;” to “having the capability and authority to control Facilities;” The numbered parts of the Control Center definition adds the phrase “having the capability or authority to control Facilities;” In the example “NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;” due to the “or,” the definition of Control Center would follow an employee who has the authority to control facilities, regardless of capability, to whatever room they reside in.	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	No
Document Name	

Comment
Cleco agrees with EEI comments.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
Although EEI appreciates SDT efforts to remove existing ambiguity surrounding what constitutes a Control Center, the proposed revisions appear to add to that ambiguity and may expand the scope of what constitutes a control center beyond what was intended. To address our concerns, we suggest the following for consideration: **Proposed Control Center Definition** The location(s) where the processes, procedures, tools, and training required to meet the reliability obligations under the NERC Organization Certification Process are performed. In addition, location(s) where the personnel and tools used to monitor and that have the capability to control, in Real-time, Facilities at two or more other locations.

Likes 0	
Dislikes 0	

Response

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	No
Document Name	

Comment
SPP appreciates the SDT's proposed changes to clarify the Control Center definition. The current draft creates more confusion than clarity on the scope of a Control Center and may have inadvertently incurred "scope creep" for the Reliability Coordinator (RC) and Balancing Authority (BA) reliability functions. SPP proposes the following draft to help simplify the Control Center definition (with the focus of these proposed changes on RC and BA responsibilities): Control Center: One or more rooms where a Responsible Entity hosts operating personnel, as detailed below, that either (i) monitor and control, or (ii) monitor and direct action for the Bulk Electric System (BES) in real-time, and any Data Centers intended to support the function of those rooms:

1. *NERC certified personnel of a Reliability Coordinator, having the authority to monitor and/or direct action for the reliability of the BES;*

2. *NERC certified personnel of a Balancing Authority, having the authority to monitor and/or direct action for the reliability of the BES;*

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	No
Document Name	

Comment

OPG agrees with the NPCC/RSC's comments.

Additionally, the definition of control center should be ‘locations’ and not ‘rooms’. It is possible a control center is a whole building or may even be virtual and not just a room.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

We recommend changing from “*having the capability or authority to control Facilities*;” to “*having the capability and authority to control Facilities;*”

The numbered parts of the Control Center definition adds the phrase “*having the capability or authority to control Facilities;”*

In the example “*NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;*” due to the “*or,*” the definition of Control Center would follow an employee who has the authority to control facilities, regardless of capability, to whatever room they reside in.

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	
Comment	
Eversource agrees with the comments of the NPCC RSC.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation does not support the proposed definition of Control Center. The proposed definition indicates operating personnel should have control "or" authority, but it is important for operating personnel to have the capability to control AND also have authority because having the capability to control requires having internal controls in place and having authorization is one of those internal controls. Understanding the BES reliability operating functions provides the foundation for classification of BES Cyber Systems. Reducing the definition to monitor and control may lead to confusion in methods used to classify BES Cyber Systems. We recommend keeping some reference to BROS function in the Control Center definition. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
FirstEnergy believes the suggested definition be narrowed for its intent toward CIP-002. We offer the suggested language : Control Center: One or more rooms where a responsible entity hosts operating personnel, as detailed below, that monitor and control the Bulk Electric System (BES) in real-time, and any Data Centers **containing BES Cyber Assets that comprise BES Cyber Systems**. 1. NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;	

2. NERC certified personnel of a Balancing Authority, having the capability or authority to control Facilities;

3. NERC certified personnel of a Transmission Operator for having the capability or authority to control Transmission Facilities at two or more locations;

4. Transmission Owner operating personnel having the capability to electronically control Transmission Facilities at two or more locations; or

5. Generation Operator operating personnel having the capability to electronically control generation Facilities at two or more locations.

Likes 0	
Dislikes 0	

Response

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 (NSRF) and ACES.

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5,6

Answer	No
Document Name	

Comment

Constellation does not support the proposed definition of Control Center. The proposed definition indicates operating personnel should have control "or" authority, but it is important for operating personnel to have the capability to control AND also have authority because having the capability to control requires having internal controls in place and having authorization is one of those internal controls. Understanding the BES reliability operating functions provides the foundation for classification of BES Cyber Systems. Reducing the definition to monitor and control may lead to confusion in methods used to classify BES Cyber Systems. We recommend keeping some reference to BROS function in the Control Center definition.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Justin Kuehne - AEP - 3,5,6	
Answer	No
Document Name	
Comment	

AEP does not recommend the inclusion of the Transmission Owner in #4 of the Control Center definition. Any operating personnel who have the capability to control Transmisssion Facilities from a Control Center are required to be NERC certified Transmission Operators thus requiring the entity to be registered as a Transmission Operator. As a result, the inclusion of Transmission Owner is confusing, as we feel the Transmission Operator language in #3 adequately covers what is described in #4.

Additionally, AEP recommends the following language for #5:

"5. Generator Operator (GOP) operating personnel having the capability to electronically control generation Facilities at two or more locations."

Generation Operator is not a NERC defined term, but Generator Operator is. As such, AEP recommends the defined function replace what is proposed.

Likes 0	
Dislikes 0	
Response	

Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	No
Document Name	
Comment	

Proposed modifications to the definition of Control Centre don’t align with CIP-002.5.1a Attachment 1 high and medium impact Control Center criteria 1.1 to 1.4 and 2.11 to 2.13 as these Control Centre criteria still use “perform functional obligations” language which is equivalent to “to perform the reliability tasks” SDT tried to replace. For instance, in a GOP control room, the operating personnel are capable of controlling generating units at two generation plants, but they don’t perform GOP obligations that are only taken by the GOP System Operators. Even though this GOP control room would become a Control Centre based on the modified Control Centre definition, it wouldn’t meet any high or medium Control Center impact rating criteria thus only becoming a low impact Control Center.
The language around "the capability to electronically control Transmission Facilities at two or more locations has a Control Center" is vague and could encompass facilities and locations that definitely should not be considered control centers.
The SDT is requested to consider not removing ‘reliability-related tasks' from the currently defined terms as this will further clarifiy who is 'operating personnel'.
BCH also seeks clarity on the use of the word 'capability'. SDT shoud allow for provisions where protections have been implemented that reduce/impair "capability", but there still exists the possibility without those protections.
The inclusion of point 4 and 5 (in Control Center Defintion) for consideration of operating personnel (i.e. technicians and electricians may qualify) would effectively turn any generation control room that has the capability to electronically control a local and remote BES asset into a Control Center. SDT to provide some use cases and exmaples to clarify this.
Recommendations:
1)Modify CIP-002 Attachment 1 criteria 1.1 to 1.4 and 2.11 to 2.13 to change “perform functional obligations” to “control Facilities”.
2)Provide calrity of the use term 'operating personnel' in item 4 and 5 of Control Center definition and use of the term 'capability' with use cases and examples

Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
SRP agrees with Berkshire Hathaway Energy (BHE) that all NERC certified personnel or operating personnel should have both the capability **and** authority to control facilities. Proposed Definition- Control Center: One or more **designated** rooms where a responsible entity hosts **NERC certified or** operating personnel, as detailed below, that monitor and control the Bulk Electric System (BES) in real-time, and any **part of** Data Centers intended to support the function of those **designated** rooms.	
Likes 0	
Dislikes 0	
Response	
VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	No
Document Name	
Comment	
Instead of "Capability OR authority," SVP suggests "capability and authority" or just "capbility."	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	No
Document Name	
Comment	
Suggest to change "having the capability and authority to control" in order to ensure that the room(s) can only be considered a Control Center when the	

personnels control with authority.

Likes 0	
Dislikes 0	

Response

TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer	No
Document Name	

Comment

Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) has concern with the change to Generation Operator in #5; SIGE suggests using the defined term Generator Operator.

Also, in the Control Center definition, SIGE suggests removing “as detailed below” and including “As used in this definition, the term “operating personnel” means the following” as suggested below.

Control Center: One or more control rooms where a responsible entity hosts operating personnel, that monitor and control the Bulk Electric System (BES) in real-time including their associated data centers. As used in this definition, the term “operating personnel” means the following:

1. *NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;*
2. *NERC certified personnel of a Balancing Authority, having the capability or authority to control Facilities;*
3. *NERC certified personnel of a Transmission Operator having the capability or authority to control Transmission Facilities at two or more locations;*
4. *Transmission Owner operating personnel having the capability to electronically control Transmission Facilities at two or more locations; or*
5. *Generator Operator operating personnel having the capability to electronically control generation Facilities at two or more locations.*

Likes 0	
Dislikes 0	

Response

Kevin Lyons - Central Iowa Power Cooperative - 1

Answer	No
Document Name	

Comment

On item #4, CIPCO suggests adding “BES” in front of “Transmission Facilities.” Although the NERC definition of Facility pertains to Bulk Electric System Elements, the definition of Transmission omits any mention of the BES. Adding “BES” removes the potential for ambiguity in the same manner that

replacing “facilities” with “rooms” does.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

CenterPoint Energy Houston Electric, LLC (CEHE) suggests using the defined term “Generator Operator” in place of “Generation Operator” in #5. Also, in the Control Center definition, CEHE suggests removing “as detailed below” and including “As used in this definition, the term “operating personnel” means the following.”

In addition, CEHE recommends adding “control” in front of “rooms”, as to restrict the term “control rooms” to only purpose-built spaces that monitor and control BES Cyber Assets of the BES. CEHE recommends the following definition of Control Center:

Control Center: *One or more control rooms where a responsible entity hosts operating personnel, that monitor and control the Bulk Electric System (BES) in real-time including their associated data centers. As used in this definition, the term “operating personnel” means the following:*

1. *NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;*
2. *NERC certified personnel of a Balancing Authority, having the capability or authority to control Facilities;*
3. *NERC certified personnel of a Transmission Operator having the capability or authority to control Transmission Facilities at two or more locations;*
4. *Transmission Owner operating personnel having the capability to electronically control Transmission Facilities at two or more locations; or*
5. *Generator Operator operating personnel having the capability to electronically control generation Facilities at two or more locations.*

Likes 0	
Dislikes 0	

Response

John Daho - MEAG Power - 1,3 - SERC

Answer	No
Document Name	

Comment

Since operating personnel is not a defined term in the Glossary of Terms, the criteria for Transmission Owner as currently proposed could lead to

confusion on applicability. Language that includes the term BES when referencing the capability to electronically control Transmission Facilities is recommended. Proposed update for 4) Transmission Owner: 'Transmission Owner operating personnel that monitor and control the BES in real-time and having the capability to electronically control the BES at two or more Transmission Facilities'. Similar update is suggested for Generation Operator.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
ACES suggests that, instead of modifying all the language, add: "A Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations" as a criterion for Control Center qualification. ACES believes less is more in this case.	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	No
Document Name	
Comment	
The SRC supports the proposed modifications to the definition of a Control Center but suggests the drafting team consider adding **"or monitor and direct action"** to the first sentence as follows: Control Center: One or more rooms where a responsible entity hosts operating personnel, as detailed below, that monitor and control **"or monitor and direct action"** for the Bulk Electric System (BES) in real-time, and any Data Centers intended to support the function of those rooms.	
Likes 0	
Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	No
Document Name	

Comment	
ITC supports the comments submitted by EEI	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the responses of the Edison Electric Institute and MRO NSRF for question #1.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	No
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	No
Document Name	
Comment	

NST believes the phrase, "having the capability or authority to control" should be changed to "having the capability *and* authority to control."

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Ameren supports EEI's comments on this question.

Likes 0	
Dislikes 0	

Response

Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

AES Clean Energy support Duke Energy's comments - see below.

"Duke Energy thanks the Drafting team for the work to create these proposed modifications and for the opportunity to provide feedback. Duke Energy does not believe that there is a substational level of ambiguity on what currently constitutes a Control Center, but recognizes the intention to clarify expectations for inclusion. If broader industry stakeholders also support that there is an unacceptable level of ambiguity, we would recommend that "authority" to control be removed from the definition, as "capability" to control would be the new minimum. Capability should capture entities that have the authority to control, as those with the authority should have the capability. Below is our recommended definition for consideration if the Standard Drafting Team decides to continue modifying the definition:

Control Center:

One or more physical spaces where a responsible entity hosts operating personnel, as detailed below, that monitor and/or control Facilities on the Bulk Electric System (BES) in Real-time, and any Data Centers intended to support the function of those spaces.

1. *NERC certified personnel of a Reliability Coordinator, having the capability to control Facilities;*
2. *NERC certified personnel of a Balancing Authority, having the capability to control Facilities;*
3. *NERC certified personnel of a Transmission Operator having the capability to control Transmission Facilities at two or more locations;*

4. *Transmission Owner operating personnel having the capability to electronically control Transmission Facilities at two or more locations; or*

5. *Generation Operator operating personnel having the capability to electronically control generation Facilities at two or more locations.*"

Likes 0	
Dislikes 0	

Response

Jessica Meisel-Tognacci - NextEra Energy - Florida Power and Light Co. - 1 - SERC

Answer	No
Document Name	

Comment

NextEra Energy supports EEI's comments.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

The standard drafting team has done a very detailed and careful review and accounted for many cases in the development of the definition. The team is using a good approach. Manitoba Hydro suggests that the definition can be clarified by highlighting in case 4 and 5 that they apply only in the case where multiple Facilities are controlled, in order to clarify that operating personnel can control a single Facility that spans multiple physical locations (for example, two ends of a transmission line). Additional clarification for Inverter Based Resources could improve clarity with respect to location as the individual generators span multiple physical locations. The following is suggested:

Transmission Owner operating personnel having the capability to electronically control two or more Transmission Facilities at two or more locations; or

Generation Operator operating personnel having the capability to electronically control two or more generation Facilities at two or more interconnections with the BES.

Likes 0	
Dislikes 0	

Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	

Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

Jessica Meisel-Tognacci - NextEra Energy - Florida Power and Light Co. - 1 - SERC

Answer	No
Document Name	

Comment

NextEra Energy supports EEI's comments.

Likes 0	
Dislikes 0	

Response

Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

AES Clean Energy support Duke Energy's comments - see below:

"While Duke Energy appreciates the attempts to clarify between the use of a defined and undefined term, Duke Energy did not experience confusion between the term facilities and the defined term Facilities. While we can appreciate that it is an area some may find confusing, it appears that the new "rooms" language introduces more ambiguity than facilities. We suggest that the drafting team consider "physical spaces" to better accommodate the variety of locations that an entity may house operators."

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Ameren supports EEI's comments on this question.

Likes 0	
Dislikes 0	

Response

Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable

Answer	No
Document Name	

Comment

NST agrees with replacing "facilities" with "rooms" but sees no need for further revision of the introductory words, so we recommend changing to say, "One or more rooms hosting operating personnel,..."

Likes 0	
Dislikes 0	

Response

Kinte Whitehead - Exelon - 1,3

Answer	No
Document Name	

Comment

Exelon suggest the use of “room” along with the definition following as to what qualifies it to be part of a Control Center. The definition should not change drastically from what it already is, but for clarity, to possibly eliminate some data centers that are technically “associated” but do not actively support the Control Center (e.g. are used for data archival only).

Likes 0	
Dislikes 0	

Response

Alan Kloster - Evergy - 1,3,5,6 - MRO

Answer	No
Document Name	

Comment

Evergy supports and incorporates by reference the response of the Edison Electric Institute for question #2.	
Likes 0	
Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	No
Document Name	
Comment	
ITC supports the comments submitted by EEI	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
ACES believes industry participants understand the location and scope of Control Centers and that this definition does not need to be modified. If the term “facility” must be replaced, ACES suggests a word other than “rooms”, as it seems to make the definition more ambiguous than the current definition.	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	

CEHE supports the comments as submitted by Edison Electric Institute (EEI).

Likes 0	
Dislikes 0	

Response

TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer	No
Document Name	

Comment

Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE)

supports the comments as submitted by Edison Electric Institute (EEI).

Likes 0	
Dislikes 0	

Response

VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5

Answer	No
Document Name	

Comment

Because the distinction between lower-case "facility" and uppercase "Facility" has been well-established over time, further clarification is not necessary.

Likes 0	
Dislikes 0	

Response

Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters

Answer	No
Document Name	

Comment

SDT is requested to avoid use of the word 'rooms' as this is confusing and can mix up with other rooms such as the communication rooms and operator training rooms.
The SDT should consider a definition of Control Centre Facility to define the Control Center that could be made up of multiple rooms that are either part of, or not part of a Control Centre.
Additionally, the SDT is requested to consider not removing ‘reliability-related tasks from defined terms as this further clarifies who is 'operating personnel'.
Recommendation:
Changing the “rooms” to “control rooms”.

Likes 0	
Dislikes 0	

Response

Justin Kuehne - AEP - 3,5,6

Answer	No
Document Name	

Comment

AEP agrees that the use of “facility” added confusion in the current definition. However, AEP recommends the word “rooms” be replaced with “secure areas defined by a physical security perimeter”. This language allows for more flexibility in how the space of a Control Center is defined.

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5,6

Answer	No
Document Name	

Comment

The terms Facility and facility are not confusing and should remain in the definition. The term “room” is ambiguous and could create confusion with the term "control room" that is used broadly at generation resources. The terms “location”, “space”, “Facility”, “building” could all be used in place of room. The operating personnel are the key to control capability, not the room.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
Refer to response to Q1.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	No
Document Name	
Comment	
The terms Facility and facility are not confusing and should remain in the definition. The term “room” is ambiguous and could create confusion with the term "control room" that is used broadly at generation resources. The terms “location”, “space”, “Facility”, “building” could all be used in place of room. The operating personnel are the key to control capability, not the room. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment
Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment
We agree that the use of the terms “facilities” and “Facilities” can create uncertainty in the meaning of the definition but believe that the proposed changes are too specific to the architecture of the building and does not provide clarity on what is meant by “hosting”. For example: A small municipal utility has the capability to monitor and control the two Transmission substations that they own through their SCADA system: 1) {C}If there is a desk with a SCADA HMI located in the engineering office that may be used by any of the utility engineers but no one is assigned to that desk, is the engineering office a Control Center? or 2) {C}If the configuration listed above is a Control Center, can the Control Center classification be removed if the SCADA desk is moved into the hallway or the parking lot? or 3) {C}If the engineers can remote into the SCADA from their computers at their desk, is the engineering office a Control Center? or 4) {C}If an engineer remotes into the SCADA system from a remote (room) location (home office, Starbucks) is this room now a Control Center? 5) {C}If the utility has a room that houses equipment for SCADA access but is only staffed during poor weather events for the purpose of dispatching field personnel, is this room a Control Center?

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
OPG agrees with the NPCC/RSC's comments.	
Likes 0	
Dislikes 0	
Response	

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not agree that changing the uncapitalized term facility to room eliminates confusion. To address this concern, “control room” should be added in front of room to narrow what might be considered a Control Center.	
Likes 0	
Dislikes 0	
Response	

Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Cleco agrees with EEI comments.	
Likes 0	
Dislikes 0	
Response	

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	

We agree that the use of the terms “facilities” and “Facilities” can create uncertainty in the meaning of the definition but believe that the proposed changes are too specific to the architecture of the building and does not provide clarity on what is meant by “hosting”.

For example: A small municipal utility has the capability to monitor and control the two Transmission substations that they own through their SCADA system:

1) If there is a desk with a SCADA HMI located in the engineering office that may be used by any of the utility engineers but no one is assigned to that desk, is the engineering office a Control Center? or

2) If the configuration listed above is a Control Center, can the Control Center classification be removed if the SCADA desk is moved into the hallway or the parking lot? or

3) If the engineers can remote into the SCADA from their computers at their desk, is the engineering office a Control Center? or

4) If an engineer remotes into the SCADA system from a remote (room) location (home office, Starbucks) is this room now a Control Center?

5) If the utility has a room that houses equipment for SCADA access but is only staffed during poor weather events for the purpose of dispatching field personnel, is this room a Control Center?

Likes 0	
Dislikes 0	
Response	

Byron Booker - Oncor Electric Delivery - 1	
Answer	No
Document Name	
Comment	

Oncor supports the comments submitted by EEI.

Likes 0	
Dislikes 0	
Response	

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer	No
Document Name	
Comment	
BHE agrees “rooms” is an improvement over “facilities” but would prefer the more flexible and more precise where needed term “designated locations.”	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	No
Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	No
Document Name	

Comment	
BHE agrees “rooms” is an improvement over “facilities” but would prefer the more flexible and more precise where needed term “designated location	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	No
Document Name	
Comment	
While Duke Energy appreciates the attempts to clarify between the use of a defined and undefined term, Duke Energy did not experience confusion between the term facilities and the defined term Facilities. While we can appreciate that it is an area some may find confusing, it appears that the new “rooms” language introduces more ambiguity than facilities. We suggest that the drafting team consider “physical spaces” to better accommodate the variety of locations that an entity may house operators.	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	No
Document Name	
Comment	
Sunflower does not believe a modification to the Control Center definition is required.	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Matt Lewis - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

3. Control Center Definition: The SDT replaced "including their associated data centers" with "and any Data Centers intended to support the function of those rooms" to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT's approach? If not, please provide your rational and an alternate proposal.

Paul Mehlhaff - Sunflower Electric Power Corporation - 1

Answer	No
Document Name	

Comment

Sunflower does not believe a modification to the Control Center definition is required.

Likes 0	
Dislikes 0	

Response

Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC

Answer	No
Document Name	

Comment

BHE understands the approach but would further refine it to not define data centers and to ensure only applicable portions of the data center supporting the BES reliability functions of the control center.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Southern Company supports the comments of EEI.

Likes 0	
Dislikes 0	

Response
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC
Answer	No
Document Name	
Comment
Xcel Energy supports EEI comments.
Likes 0	
Dislikes 0	
Response
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3
Answer	No
Document Name	
Comment
BHE understands the approach but would further refine it to not define data centers and to ensure only applicable portions of the data center supporting the BES reliability functions of the Control Center.
Likes 0	
Dislikes 0	
Response
Byron Booker - Oncor Electric Delivery - 1
Answer	No
Document Name	
Comment
Oncor supports the comments submitted by EEI.
Likes 0	
Dislikes 0	
Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	

The terms “any” and “intended to support the function” could be interpreted to include data centers that are not owned, operated or controlled by the entity.

The phrase “the function of those rooms” does not limit the function to only those that impact the BES.

Below, we recommend a new term instead of Data Center. Consistent with that recommendation, we start proposing an alternative approach here.

Data Center: A network of computing and storage resources that enable the use of shared applications in the exchange and management of data. The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity’s physical building locations or could be in a virtual setting.

Likes 0	
Dislikes 0	
Response	

Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	

Cleco agrees with EEI comments.

Likes 0	
Dislikes 0	
Response	

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	No
Document Name	
Comment	

Tri-State would like to know if the SDT rafting team considered future state of cloud based devices in the definition of Data Center?

Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not support this approach. The proposed definition for Data Center is too broad and has the potential of expanding the scope of a control center much further than is needed. Also, as responsible entities adopt virtualization and control center data move into the cloud, such a definition will impact their ability to utilize these solutions.	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
OPG agrees with the NPCC/RSC's comments.	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	
The terms “any” and “intended to support the function” could be interpreted to include data centers that are not owned, operated or controlled by the entity.	

The phrase “the function of those rooms” does not limit the function to only those that impact the BES.

Below, we recommend a new term instead of Data Center. Consistent with that recommendation, we start proposing an alternative approach here

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment

Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6

Answer	No
Document Name	

Comment

Constellation does not support changing the wording for data centers. Expanding the wording of data centers in the definition of Control Centers may create an unintended broad impact on the Control Centers. The language “intended to support the function of the rooms” is not clear and overly broad. Data centers support the BES reliability operating services. If the definition were to expand it could impact, unnecessarily, third party managed data centers or cloud-based services that may support a reliability function. The proposed definition of data center also may limit future technological efficiencies used to implement CIP-004-7 & CIP-011-3. Constellation recommends maintaining the existing control center wording, “including their associated data centers.”

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
We believe the definition of Control Center should not include the term Data Center to clarify applicable assets under CIP-002.	
Likes 0	
Dislikes 0	
Response	
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 (NSRF) and ACES.	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	No
Document Name	
Comment	
Constellation does not support changing the wording for data centers. Expanding the wording of data centers in the definition of Control Centers may create an unintended broad impact on the Control Centers. The language “intended to support the function of the rooms” is not clear and overly broad. Data centers support the BES reliability operating services. If the definition were to expand it could impact, unnecessarily, third party managed data centers or cloud-based services that may support a reliability function. The proposed definition of data center also may limit future technological efficiencies used to implement CIP-004-7 & CIP-011-3. Constellation recommends maintaining the existing control center wording, “including their associated data centers." Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response	
Justin Kuehne - AEP - 3,5,6	
Answer	No
Document Name	
Comment	
AEP supports the intent of the added Data Center definition within the Control Center definition. However, AEP recommends clarifying that a NERC defined Data Center is intended to support NERC functions referenced in the Control Center definition to further remove ambiguity regarding its purpose. Additionally, AEP recommends including the aforementioned “secure area” language to the end of the definition. Recommended language includes: *“and any Data Centers intended to support the Reliability Coordinator, Balancing Authority, Transmission Operator, or Generator Operator function of those secure areas”.*	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	No
Document Name	
Comment	
The Data Center definition should have a linkage to the Control Centre and should be at a physical location regardless of whether it is a virtual setting such as a virtual server. The sentence about "any Data Centers intended to support the function of those rooms" is very vague and could be used to include anything used directly or indirectly by operators in the control rooms. Including facilities that have nothing to do with the BES. BCH proposes that the original wording should be kept. Recommendations: BCH proposes the following wording for Data Center definiton: “A physical location hosting physical or virtual severs that are connected to one or more Control Centers through networking and communication equipment such as routers, switches and firewalls to store, transfer and exchange real-time BES data and share associated applications with Control Centers.”	
Likes 0	
Dislikes 0	
Response	

Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	

Manitoba Hydro thanks the drafting team for their detailed work on defining both a Control Center and Data Center. The effort to clarify the definitions is the correct direction. Using a separate definition for Data Center could be problematic as the definition of a Data Center would need to be generic, describing any Data Center whether it is used for SCADA EMS systems or business systems. However specifically relating to Control Centers, only the Control Center Data Center that actually processes SCADA EMS data is in scope. Manitoba Hydro suggests the following definition change, going back to the original approach of having one definition:

Control Center: One or more rooms where a responsible entity hosts operating personnel, as detailed below, that monitor and control the Bulk Electric System (BES) in real-time, and any data center rooms housing Cyber Assets that process Real-Time monitoring data for display in the Control Center or perform Real-Time Assessment.

Likes 0	
Dislikes 0	
Response	

Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	

Q3/Q4. SRP agrees with the approach to distinguish between data centers (or parts of data centers) that do and do not support the functions performed within the Control Center. However, in alignment with Duke, SRP does not see the need to define a data center as we don't believe there is ambiguity with what constitutes a data center. Further, the proposed definition of Control Center already clarifies that it is only addressing data centers (or parts of) that support the real-time functions performed within these designated rooms.

Likes 0	
Dislikes 0	
Response	

VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	No
Document Name	
Comment	

SVP agrees with AEP's comments.

Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	No
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	No
Document Name	
Comment	
CIPCO is concerned that the proposed definition does not sufficiently differentiate between business and operational systems and therefore allows for potential scope creep. CIPCO suggests two possible alternatives: 1) specifying within the new definition of Data Center “in the exchange and management of data *used in the operation and control of the Bulk Electric System*…”, or 2) leave the text of the definition as-is but change the term to “BES Data Center.” A third option would be to change both the definition and the term as described here.	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	
CEHE does not agree with the proposed Control Center definition and the use of the term “rooms.” CEHE believes that the term “rooms” is too broad	

and could be misinterpreted to include anywhere from which physical or electronic access to a BES Cyber System is permitted. To prevent this type of misinterpretation, CEHE suggests adding “control” in front of “rooms,” to restrict the definition of “control rooms” to only purpose-built spaces that monitor and control BES Cyber Assets of the BES. CEHE does not see the need to define “Data Center,” as this term is well understood in the industry. Also, CEHE feels that it would be difficult to prove the intent of “any Data Centers intended to support the function of those rooms,” as the definition is proposed. Furthermore, CEHE supports maintaining “the associated data centers” from the original language.

Likes 0	
Dislikes 0	

Response

John Daho - MEAG Power - 1,3 - SERC

Answer	No
Document Name	

Comment

Suggested update from ‘and any Data Centers intended to support the function of those rooms’

to ‘and any Data Centers or designated spaces within the Data Centers intended to support the function of those rooms’.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

The words “intended” and “support the function” allow for potential scope creep by including more physical locations. There are many Data Centers supporting the function of the BES external to the scope of BCS such as telecommunication Data Centers. “Including their associated data centers” has been used in the industry for years and ACES does not believe there is ambiguity in this definition.

Likes 0	
Dislikes 0	

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer	No

Document Name	
Comment	
ITC supports the comments submitted by EEI	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the responses of the Edison Electric Institute and MRO NSRF for question #3.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	No
Document Name	
Comment	
Exelon suggests including “reliability” in front of functions. This might help to limit scope. (Separately, consider Virtualization questions – these may need to be addressed separately).	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	No
Document Name	
Comment	

NST is not aware of a pressing need to change "associated data centers." However, if the SDT is convinced there is such a need, we recommend changing the proposed language to read, "and any data centers that provide necessary computing resources." The use of lower case, "data centers" is intentional.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Ameren supports EEI's comments on this question.

Likes 0	
Dislikes 0	

Response

Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF

Answer	No
Document Name	

Comment

AES Clean Energy supports Duke Energy's alternate proposal - see below:

"*Data Center: A network of computing and storage resources that enable the use of shared applications in the exchange and management of data. The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity's physical building locations or could be in a virtual setting."*

Likes 0	
Dislikes 0	

Response

Jessica Meisel-Tognacci - NextEra Energy - Florida Power and Light Co. - 1 - SERC

Answer	No
Document Name	

Comment	
NextEra Energy supports EEI’s comments.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Consider removing "intended" so that it reads "and any Data Centers supporting the function of those rooms."	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matt Lewis - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT's approach and the proposed definition? If not please provide your rational and an alternate proposal.

Jessica Meisel-Tognacci - NextEra Energy - Florida Power and Light Co. - 1 - SERC	
Answer	No
Document Name	
Comment	
NextEra Energy supports EEI's comments.	
Likes 0	
Dislikes 0	
Response	

Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	

AES Clean Energy supports Duke Energy's comments and alternate proposal - see below:

"Duke Energy again appreciates the effort to provide clarification, but does not see a compelling need to define data center. If the Standard Drafting Team determines that data center must become a defined term, we recommend that the SDT leverage a more standard framing of this concept instead of leading with "a network" and that "virtual setting" be changed to "virtual environment". We also recommend that the Drafting team coordinate with the Project 2016-02 team if they continue with the proposal of a Data Center definition to ensure that any virtualization impacts are appropriately considered.

Example Data Center definitions:

https://www.cisco.com/c/en/us/solutions/data-center-virtualization/what-is-a-data-center.html

https://www.ibm.com/topics/data-centers

https://www.paloaltonetworks.com/cyberpedia/what-is-a-data-center

CIP-002.5-1a Criterion 2.12:

Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:

2.12. *Each Control Center or backup Control Center, operated by a registered Transmission Operator or owned by a registered Transmission Owner that is not already included in the High Impact Rating (H), above., with an "aggregate weighted value" exceeding 6000 according to the table below, subject to the listed exclusion. The "aggregate weighted value" for a Control Center or backup Control Center is determined by summing the " weight*

value per characteristic" shown in the table for each BES Transmission Line monitored and controlled by the Control Center or backup Control Center.

Exclusion:

Control Centers or backup Control Centers, operated by a registered Transmission Operator or owned by a registered Transmission Owner, with an "aggregate weighted value" between 6000 and 12000 are excluded provided that the BES Transmission system net export, as calculated for all BES Transmission Lines monitored and controlled by the Control Center or backup Control Center, does not exceed 75 MW during non-Energy Emergency Alert (EEA) conditions. The system net export is based on the hourly integrated power flow values over the course of the most recent two-year period.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Ameren supports EEI's comments on this question.

Likes 0	
Dislikes 0	

Response

Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable

Answer	No
Document Name	

Comment

NST opposes the creation of a new Glossary term, as we believe it would create more problems than it solved. The proposed definition (which, we note, appears to have been copied from the web page: https://www.cisco.com/c/en/us/solutions/data-center-virtualization/what-is-a-data-center.html) would be a good addition to a "Distributed Computing 101" tutorial, but it would, in NST's opinion, only create confusion (or add to existing confusion) in the context of the CIP Standards.

Assuming, for the sake of argument, that most industrial control systems found in modern Registered Entity Control Centers are based on the familiar client-server paradigm, one might be inclined to simply state that the data center is the room/building/cloud where the servers are located. This may be a reasonable presumption if they're in a different zip code than the operations room(s) or "in the cloud," but what if they're in the same building, or even the same room (this is, in fact, exactly where they're located at an NST client's backup Control Center)? What if they're in the same Electronic Security Perimeter as the operator workstations, even while being physically located in a different room within the same building?

NST strongly recommends that the SDT carefully consider the potential implications, particularly on Responsible Entities' CIP-012 programs, of formally

defining, "Data Center" before proceeding.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	No
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the response of the Edison Electric Institute for question #4.	
Likes 0	
Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	No
Document Name	
Comment	
ITC supports the comments submitted by EEI	
Likes 0	

Dislikes 0	

Response

Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC

Answer	No
Document Name	

Comment

The SRC believes that the proposed definition provides additional clarity and counters the recent interpretation of the “data center” term that included substations that only generate and transmit data, as a data center but feel that there are a number areas that need adjustment. These are:

1. The portion of the definition that includes “The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity’s physical building locations or could be in a virtual setting” gives examples and is not part of the definition.

2. The first sentence starts with “A network of computing and storage resources.” The “routers, switches, firewalls” listed in the second sentence are communication equipment and are not used for computation or storage.

3. “The site could be located on-site within the entity’s physical building locations or could be in a virtual setting.” Limits a Data Center to these two locations. It is unclear if this language allows for Data Center equipment (non-virtualized) to be located in a physical building owned by another company.

4. The proposed Data Center definition creates too many questions. We suggest a return to the original intent of resources directly supporting BES functions in a Control Center. Perhaps with a different label like “supporting technology” that includes this narrower scope. The term “data center” is a dated concept in a distributed architecture. Today the emphasis is on functions instead of a place (room). This new term could be modeled after the proposed Control Center definition.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

CEHE does not agree with the SDT’s approach to define “Data Center”. As mentioned in the response to question 3, CEHE does not see the need to define “Data Center,” as this term is well understood in the industry. Also, CEHE feels that it would be difficult to prove the intent of “any Data Centers intended to support the function of those rooms,” as the definition is proposed. With virtualization technology advancing rapidly, the environment proposed as a “Data Center” could reside within a single piece of hardware or divided across a cloud of dynamically orchestrated nodes, rendering the proposed term “Data Center” obsolete.

Likes 0	

Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	No
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	No
Document Name	
Comment	
Require clarity on "virtual settings" as it is included in the current version of CIP standards.	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Q3/Q4. SRP agrees with the approach to distinguish between data centers (or parts of data centers) that do and do not support the functions performed within the Control Center. However, in alignment with Duke, SRP does not see the need to define a data center as we don't believe there is ambiguity with what constitutes a data center. Further, the proposed definition of Control Center already clarifies that it is only addressing data centers (or parts of) that support the real-time functions performed within these designated rooms.	

Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
Manitoba Hydro thinks that the definition of a data center should be included in the Control Center definition instead of being a separate term.	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	No
Document Name	
Comment	
We agree with the approach and disagree with the proposed Dater Center definition. Same comments as in question 3. The proposed defintion could include almost any data types, whether related to BES or not. BCH seeks clarity on the type of data, limited to Real-time data for monitoring and control and requests the type of data and what it is used for needs to be defined very clearly. BCH also recommends using a clear term instead of virtual setting. Propose to change this to a term like "Virtual Environment" and appropriatly define it.	
Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	
Answer	No
Document Name	
Comment	
AEP supports the intent of the proposed Data Center definition. However, the language regarding the Data Center site being located in a virtual setting is vague and would benefit from having additional clarity on what is meant by “virtual setting”. Additionally, with the Data Center serving a NERC	

function, AEP recommends including the “secure area” language to ensure protections are applied to those components and to limit the scope of the defined “network”.

Recommended language includes: *“A network of computing and storage resources within a secure area defined by a physical security perimeter that enable the use of…”*

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5,6

Answer	No
Document Name	

Comment

The term data center is well understood in the industry. The proposed changed to the data center definition encompasses a large scope and could hinder future technological advances and controls for both Control Centers and data centers.

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

MPC supports comments submitted by ACES.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment
FirstEnergy believes the Data Center definition offered seems broad. We suggest the following for clarification: Data Center: A network of computing and storage resources **dedicated** to the use of shared applications in the exchange and management of data. The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity's physical building locations or could be in a virtual setting.

Likes 0	
Dislikes 0	

Response

Kimberly Turco - Constellation - 5,6

Answer	No
Document Name	

Comment
The term data center is well understood in the industry. The proposed changed to the data center definition encompasses a large scope and could hinder future technological advances and controls for both Control Centers and data centers. Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment
Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	

We believe that the proposed definition provides additional clarity and counters the recent interpretation of the "*data center*" term that included substations that only generate and transmit data, as a data center but feel that there are a number areas that need adjustment. These are:

1. The portion of the definition that includes *"The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity's physical building locations or could be in a virtual setting"* gives examples and is not part of the definition.

2. The first sentence starts with *"A network of computing and storage resources."* The *"routers, switches, firewalls"* listed in the second sentence are communication equipment and are not used for computation or storage.

3. *"The site could be located on-site within the entity's physical building locations or could be in a virtual setting."* Limits a Data Center to these two locations. It is unclear if this language allows for Data Center equipment (non-virtualized) to be located in a physical building owned by another company.

4. The proposed Data Center definition creates too many questions. We suggest a return to the original intent of resources directly supporting BES functions in a Control Center. Perhaps with a different label like "*supporting technology*" that includes this narrower scope. The term "*data center*" is a dated concept in a distributed architecture. Today the emphasis is on functions instead of a place (room). This new term could be modeled after the proposed Control Center definition.

Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	

OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	
Response	

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	No

Document Name	

Comment

SPP appreciates the SDT's proposed Data Center definition. The current draft would be much stronger without the final sentence due to the ambiguity it creates for cloud services and virtualization, which the previous sentences address without being explicitly stated. SPP proposes the following changes to the proposed Data Center definition:

A network of computing and storage resources that enable the use of shared applications in the exchange and management of data. The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

EEI does not support defining Data Centers because this term is well understood, sufficiently defined.

Likes 0	
Dislikes 0	

Response

Clay Walker - Cleco Corporation - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

Cleco agrees with EEI comments.

Likes 0	
Dislikes 0	

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

We believe that the proposed definition provides additional clarity and counters the recent interpretation of the “data center” term that included substations that only generate and transmit data, as a data center but feel that there are a number areas that need adjustment. These are:

1. The portion of the definition that includes “The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity’s physical building locations or could be in a virtual setting” gives examples and is not part of the definition.

2. The first sentence starts with “A network of computing and storage resources.” The “routers, switches, firewalls” listed in the second sentence are communication equipment and are not used for computation or storage.

3. “The site could be located on-site within the entity’s physical building locations or could be in a virtual setting.” Limits a Data Center to these two locations. It is unclear if this language allows for Data Center equipment (non-virtualized) to be located in a physical building owned by another company.

4. The proposed Data Center definition creates too many questions. We suggest a return to the original intent of resources directly supporting BES functions in a Control Center. Perhaps with a different label like “supporting technology” that includes this narrower scope. The term “data center” is a dated concept in a distributed architecture. Today the emphasis is on functions instead of a place (room). This new term could be modeled after the proposed Control Center definition.

CIP-002.5-1a Criterion 2.12:

Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:

2.12. *Each Control Center or backup Control Center, operated by a registered Transmission Operator or owned by a registered Transmission Owner, that is not already included in the High Impact Rating (H), above., with an “aggregate weighted value” exceeding 6000 according to the table below, subject to the listed exclusion. The “aggregate weighted value” for a Control Center or backup Control Center is determined by summing the “ weight value per characteristic” shown in the table for each BES Transmission Line monitored and controlled by the Control Center or backup Control Center.*

Characteristics of a Line

Weight Value

per Characteristic

Each BES Transmission Line less than 100kV

100

Each BES Transmission Line 100kV to 199kV

250

Each BES Transmission Line 200kV to 299kV

700

Each BES Transmission Line 300kV to 499kV

1300

Each BES Transmission Line 500kV and above

0

Each BES Transmission Line identified as part of a Cranking Path

12000

Exclusion:

Control Centers or backup Control Centers, operated by a registered Transmission Operator or owned by a registered Transmission Owner, with an "aggregate weighted value" between 6000 and 12000 are excluded provided that the BES Transmission system net export, as calculated for all BES Transmission Lines monitored and controlled by the Control Center or backup Control Center, does not exceed 75 MW during non-Energy Emergency Alert (EEA) conditions. The system net export is based on the hourly integrated power flow values over the course of the most recent two-year period.

Likes 0	
Dislikes 0	

Response

Byron Booker - Oncor Electric Delivery - 1

Answer	No
Document Name	

Comment

Oncor supports the comments submitted by EEI.

Likes 0	
Dislikes 0	

Response

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer	No
Document Name	

Comment

BHE does not think a definition is warranted.

Likes 0	
Dislikes 0	

Response

Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer	No
Document Name	

Comment

Xcel Energy supports EEI comments.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Data center is already commonly understood and does not require an industry specific definition.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Southern Company supports the comments of EEI.

Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	No
Document Name	
Comment	
No. The Data Center definition is extremely broad. The definition should include a reference to BES Cyber System and the location being different than where the BES Cyber System is operated. Some of these attributes are captured in the definition of Control Center but not here.	
Likes 0	
Dislikes 0	
Response	
Matt Lewis - Lower Colorado River Authority - 1,5	
Answer	No
Document Name	
Comment	
The words “virtual setting” are open to interpretation. Could this ‘Data Center” be in the cloud. The definition would allow that.	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	No
Document Name	
Comment	
BHE does not think a definition is warranted.	
Likes 0	
Dislikes 0	

Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	No
Document Name	
Comment	
Duke Energy again appreciates the effort to provide clarification, but does not see a compelling need to define data center. If the Standard Drafting Team determines that data center must become a defined term, we recommend that the SDT leverage a more standard framing of this concept instead of leading with “a network” and that “virtual setting” be changed to “virtual environment”. We also recommend that the Drafting team coordinate with the Project 2016-02 team if they continue with the proposal of a Data Center definition to ensure that any virtualization impacts are appropriately considered. Example Data Center definitions: https://www.cisco.com/c/en/us/solutions/data-center-virtualization/what-is-a-data-center.html https://www.ibm.com/topics/data-centers https://www.paloaltonetworks.com/cyberpedia/what-is-a-data-center	
Likes 1	Jennie Wike, N/A, Wike Jennie
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	No
Document Name	
Comment	
Sunflower believes there is no need of a definition of data center. If the SDT believes there is, then the phrase “could be in a virtual setting” is not clear.	
Likes 1	Jennie Wike, N/A, Wike Jennie
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	

Answer	Yes
Document Name	
Comment	
ACES believes there is ambiguity in the phrase “or could be in a virtual setting.” Cloud computing is a virtual setting, and this phrasing could allow an entity to move BES Cyber Systems (BCS) to the cloud. ACES does not believe this is the SDT’s intent; however, if that is the intent, ACES agrees with the proposed revision. If this is not the SDT’s intent, ACES suggests changing the proposed language to “The site could be located on premise within the entity’s physical building locations or at a remote location” to avoid any potential misunderstanding by eliminating “in a virtual setting.”	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
The definition of Data Center would include current non-CIP data centers under its umbrella. The way this project is setting up a hierarchy of terms, Data Centers would only be implicated in CIP compliance when the term Control Center was used in a standard. Vigilance would need to be maintained to ensure that no future standard referenced just the Data Center term, because doing so would place CIP requirements on data centers not related to Control Centers. BPA believes it would be preferable to develop definitions that do not leave the industry open to such occurrences in the future. For example, the definition of Data Center could include “For the purpose of defining a Control Center under the NERC CIP standards, a Data Center is…”	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	
Document Name	
Comment	
As also stated in comments submitted by ACES, CIPCO believes there is ambiguity in the phrase “or could be in a virtual setting.” Cloud computing is a virtual setting, and this phrasing could allow an entity to move BES Cyber Systems (BCS) to the cloud. CIPCO does not believe this is the SDT’s intent; however, if that is the intent, CIPCO agrees with the proposed revision. If this is not the SDT’s intent, CIPCO suggests changing the proposed language to “The site could be located on premise within the entity’s physical building locations or at a remote location” to avoid any potential misunderstanding by eliminating “in a virtual setting.”	
Likes 0	
Dislikes 0	
Response	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating "that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board". Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters

Answer	No
Document Name	

Comment

Given that the transmission line less than 100KV doesn't meet BES definition and is not a BES transmission line, BCH seeks clarity why does SDT try to include non-BES transmission lines as one of the weight factors.
Recommendation:
Transmission line less than 100KV should be removed from the above table or explain and calrify with some use examples.

Likes 0	
Dislikes 0	

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer	No
Document Name	

Comment

It would appear the intent of the updated language under Criterion 2.12 is to exclude Transmission Operator or Transmission Owners entities Control Centers that if compromised do not pose an adverse impact to the BES. The SDT is identifying these less impactful entities by creating the aggregated weighted value table. On top of the table there is an exclusion. This appears to be a convoluted means to determining if a Contol Center should be classified as Low or Medium Impact.

A more straightforward method would be that all Control Centers that meet Criterion 1 are High Impact unless they meet the exclusion clause presented above, in which case they would be Medium Impact.

Likes 0	
Dislikes 0	

Response

Jessica Meisel-Tognacci - NextEra Energy - Florida Power and Light Co. - 1 - SERC	
Answer	No
Document Name	
Comment	
NextEra Energy is requesting additional information and technical rationale regarding the reliability criteria used to support the values in the table being applied to control centers.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy has not identified any issues with this proposal.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes

Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Byron Booker - Oncor Electric Delivery - 1	
Answer	Yes
Document Name	
Comment	
Oncor agress with the SDT's approach.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not oppose this change.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

FirstEnergy does not oppose the change.	
Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	Yes
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
David Jendras Sr - Ameren - Ameren Services - 1,3,6	
Answer	Yes
Document Name	
Comment	

Ameren supports EEI's comments on this question.	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joshua London - Eversource Energy - 1,3, Group Name Eversource	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	
Document Name	
Comment	
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	

Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	
Document Name	
Comment	
NST has no comment on this question, as it concerns technical issues that generally fall outside of our portfolio of consulting services.	
Likes 0	
Dislikes 0	
Response	

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

Alain Mukama - Hydro One Networks, Inc. - 1,3

Answer	No
Document Name	

Comment

Since there is already a preface with"Each BES Cyber System, …..,associated with any of the following" at the beginning of section 2, this addition is not necessary. Alternatively, use the same wordings in prefaces for all 3 sections.

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment

Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

The language "E*ach BES Cyber System, not included in Section 1 above, associated with any of the following*:" is included at the top of the Medium Impact (Section 2) criteria and applies to all Section 2 criteria. Does the addition of this language mean at the BES Cyber System must be "*used by, located at and associated with?*" Suggest changing the language at the beginning of each of the three sections to use either "*associated with*" or "*used by and located at.*" Having both of these terms apply to three, and only three of the criteria could be interpreted to mean that the SDT is trying to either

include, or exclude certain BES Cyber Systems for those criteria.

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	No
Document Name	

Comment

OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

The language “Each BES Cyber System, not included in Section 1 above, associated with any of the following:” is included at the top of the Medium Impact (Section 2) criteria and applies to all Section 2 criteria. Does the addition of this language mean at the BES Cyber System must be “used by, located at and associated with?” Suggest changing the language at the beginning of each of the three sections to use either “associated with“ or “used by and located at.” Having both of these terms apply to three, and only three of the criteria could be interpreted to mean that the SDT is trying to either include, or exclude certain BES Cyber Systems for those criteria.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

Ameren supports EEI's comments on this question.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	Yes
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	

No concerns at this time.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

EEI supports the proposed change to Criteria 2.11, 2.12 and 2.13.

Likes 0	
Dislikes 0	

Response

Byron Booker - Oncor Electric Delivery - 1

Answer	Yes
Document Name	

Comment

Oncor agress with the SDT's approach.

Likes 0	
Dislikes 0	

Response

Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC

Answer	Yes
Document Name	

Comment

Xcel Energy supports EEI comments.

Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy has not identified any issues with this proposal.	
Likes 0	
Dislikes 0	
Response	
Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	

Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	

Answer	
Document Name	
Comment	
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.	
Likes 0	
Dislikes 0	
Response	

7. Criterion 2.12: The SDT proposes to remove the following language "used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines" in favor of explicitly identifying Control Centers that are "operated by a registered Transmission Operator or owned by a registered Transmission Owner". This eliminates the ambiguity that has been identified regarding the application of 'performing the reliability tasks of a Transmission Operator' to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	

Comment

While we agree with the removal of this term, however, we feel that the question is misleading since it correctly states that this language is in the Control Center definition but does not state that the language related to "reliability tasks" has also been removed from the proposed Control Center definition.

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	

Comment

OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	

Comment

While we agree with the removal of this term, however, we feel that the question is misleading since it correctly states that this language is in the Control Center definition but does not state that the language related to "reliability tasks" has also been removed from the proposed Control Center

definition.	
Likes 0	
Dislikes 0	
Response	
Joshua London - Eversource Energy - 1,3, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource agrees with the comments of the NPCC RSC.	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	No
Document Name	
Comment	
The SDT should consider not removing ‘reliability-related tasks' from defined terms as this further clarifies who are 'operating personnel'	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy has not identified any issues with this proposal.	
Likes 0	

Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Byron Booker - Oncor Electric Delivery - 1	
Answer	Yes
Document Name	
Comment	
Oncor agress with the SDT's approach.	
Likes 0	
Dislikes 0	
Response	

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not oppose the proposed changes.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
No concerns at this time.	
Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	

Kinte Whitehead - Exelon - 1,3	
Answer	Yes
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
David Jendras Sr - Ameren - Ameren Services - 1,3,6	
Answer	Yes
Document Name	
Comment	
Ameren supports EEI's comments on this question.	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Justin Kuehne - AEP - 3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	
Document Name	
Comment	
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	

Constellation has no additional comments

Kimberly Turco on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Alison MacKellar - Constellation - 5,6

Answer	
Document Name	

Comment

Constellation has no additional comments

Alison Mackellar on behalf of Constellation Segments 5 and 6

Likes 0	
Dislikes 0	

Response

Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO

Answer	
Document Name	

Comment

Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).

Likes 0	
Dislikes 0	

Response

8. Criterion 2.12: The SDT assigned a 'weight value per characteristic' to BES Transmission Lines less than 100kV given that the NERC defined term Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

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

Answer	No
Document Name	

Comment

ACES does not agree with including BES Tranismission lines in the weighting scale. The field test report produced by this project did not suggest that they should be included, nor were they part of the field test.

Likes 0	
Dislikes 0	

Response

John Daho - MEAG Power - 1,3 - SERC

Answer	No
Document Name	

Comment

The weighted values should correspond to the risk profile and probability and are not necessary for Transmission Lines less than 100 KV since these lines would require specific inclusions and would be the exception not the norm for the BES.

Likes 0	
Dislikes 0	

Response

Kevin Lyons - Central Iowa Power Cooperative - 1

Answer	No
Document Name	

Comment

CIPCO does not agree with including BES Transmission lines under 100 kV in the weighting scale. The field test report produced by this project did not suggest that they should be included, nor were they part of the field test. If the SDT believes Transmission lines less than 100 kV must be included in the weight value table, the table should indicate only those lines <100 kV that have been specifically identified and included as BES Transmission.

Likes 0	

Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	No
Document Name	
Comment	
Given that NERC BES inclusions of equipment that is less than 100kV only applies to certain transformers and reactive resources rather than transmission lines, transmission line less than 100KV is not a BES Element. BES transmission line less than 100 KV should be removed from Criterion 12 (See our comments in Q5)	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
Joshua London - Eversource Energy - 1,3, Group Name Eversource	
Answer	No
Document Name	
Comment	
Eversource agrees with the comments of the NPCC RSC.	
Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	

Comment
Suggest that guidance be given on the result of combining the “BES” and the “Transmission Line” NERC defined terms. While the BES term allows for Transmission lines less than 100kV the “Transmission Lines” sets a lower limit of 69kV. Request clarification for a 69 kV line that meets the Transmission Line definition but not the BES definition. This is not specific to this question and may identify an issue that is not technically possible but there is a gap between the X99 and Y00 “Characteristics of Line” levels. A 199.5kV line is not rated on this table. Request explicit explanation (in the Standard) of the weighted value of zero for “Each BES Transmission Line 500 kV and above.” (see Criterion 2.5) We agree with the weighted value. Please correct as needed – we understand that a Control Center with such a Tranmission Line is High Impact.

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	

Comment
OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	

Comment
Suggest that guidance be given on the result of combining the “BES” and the “Transmission Line” NERC defined terms. While the BES term allows for

Transmission lines less than 100kV the “Transmission Lines” sets a lower limit of 69kV. Request clarification for a 69 kV line that meets the Transmission Line definition but not the BES definition.

This is not specific to this question and may identify an issue that is not technically possible but there is a gap between the X99 and Y00 “Characteristics of Line” levels. A 199.5kV line is not rated on this table.

Request explicit explanation (in the Standard) of the weighted value of zero for “Each BES Transmission Line 500 kV and above.” (see Criterion 2.5) We agree with the weighted value. Please correct as needed – we understand that a Control Center with such a Tranmission Line is High Impact.

Likes 0	
Dislikes 0	

Response

Paul Mehlhaff - Sunflower Electric Power Corporation - 1

Answer	No
Document Name	

Comment

Sunflower agrees with ACES comments “ACES does not agree with including BES Tranismission lines in the weighting scale. The field test report produced by this project did not suggest that they should be included, nor were they part of the field test.”

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

Ameren agrees with this change and EEI's comments, provided the table in section 2.5 stays the same.

Likes 0	
Dislikes 0	

Response

Kinte Whitehead - Exelon - 1,3

Answer	Yes

Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	Yes
Document Name	
Comment	
ITC does not believe that there should be a weighted value per line approach to determining Medium vs. Low impact facilities. We do not have concerns with including 69kV in the evaluation but only through the exclusion clause using the 75 MW of total export mentioned above.	
Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes

Document Name	
Comment	
FirstEnergy is not opposed to this change.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed “weighted value per characteristic” as an improved approach over the existing criterion.	
Likes 0	
Dislikes 0	
Response	
Byron Booker - Oncor Electric Delivery - 1	
Answer	Yes
Document Name	
Comment	
Oncor agress with the SDT's approach.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	

Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy has not identified any issues with this proposal.	
Likes 0	
Dislikes 0	
Response	
Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	
Document Name	
Comment	
NST has no comment on this question, as it concerns technical issues that generally fall outside of our portfolio of consulting services.	
Likes 0	
Dislikes 0	
Response	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	

Response
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC
Answer	
Document Name	
Comment
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.
Likes 0	
Dislikes 0	
Response

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	No
Document Name	
Comment	
Based on the low probability, Sunflower suggests to remove this characteristic from Criterion 2.12.	
Likes 0	
Dislikes 0	
Response	

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5	
Answer	No
Document Name	
Comment	
This inclusion seems to be in opposition to the reason for, and in conflict with the language of Criterion 3.4 which identifies as low impact, "Systems and facilities critical to system restoration, including Blackstart Resources and Cranking Paths and initial switching requirements."	
Likes 0	
Dislikes 0	
Response	

Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	

OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

This inclusion seems to be in opposition to the reason for, and in conflict with the language of Criterion 3.4 which identifies as low impact, “Systems and facilities critical to system restoration, including Blackstart Resources and Cranking Paths and initial switching requirements.”

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment

Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Alain Mukama - Hydro One Networks, Inc. - 1,3

Answer	No
Document Name	

Comment

Agree with the importance of control centers during restoration. However, instead of imposing cranking path with weight value, it may be less confusing to have a new requirement where each control centers or backup control center that monitors and controls a cranking path should be classified Medium

Impact.	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	No
Document Name	
Comment	
The weighted values should correspond to the risk profile and probablity, and since BES Transmission Lines that are part of a Cranking Path have a low probability for an event as stated above, the weighted value should be much less than the proposed 12000.	
Likes 0	
Dislikes 0	
Response	
David Jendras Sr - Ameren - Ameren Services - 1,3,6	
Answer	No
Document Name	
Comment	
Ameren would like more clarity around the phrase "Each BES Transmission Line identified as part of a Cranking Path.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	
Comment	
Duke Energy has not identified any issues with this proposal.	

Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
BPA supports the approach. However, there is a concern that a given utility will opt out or avoid designation of a cranking path so that their control center impact would remain low. This could have a negative impact on System Restoration from blackstart resources.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	

Response

Byron Booker - Oncor Electric Delivery - 1	
Answer	Yes
Document Name	
Comment	
Oncor agress with the SDT's approach.	
Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed approach.	
Likes 0	
Dislikes 0	

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy is not opposed to this change.	
Likes 0	
Dislikes 0	

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	Yes
Document Name	
Comment	
MPC supports comments submitted by ACES.	
Likes 0	
Dislikes 0	
Response	
TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
ACES only sees one potential issue with the proposed language. Some entities in the past chose to abandon Black Start because of the increased CIP requirements. This could occur with Transmission Owners that are a part of the Cranking Path due to increased compliance risk increasing the reliability risk to the BES.	
Likes 0	
Dislikes 0	
Response	

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF	
Answer	Yes
Document Name	
Comment	
ITC is in agreement that the the BES Transmission Lines identified as part of the Cranking path would automatically identify the Control Center as a Medium Impact Facility. We believe the criteria for Low Impact identification should be any Control Center below the 75 MW total export criteria. This Cranking Path identification would be the exclusion to that clause, making it medium impact.	
Likes 0	
Dislikes 0	
Response	
Kinte Whitehead - Exelon - 1,3	
Answer	Yes
Document Name	
Comment	
Exelon is in support of EEI response to this question.	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	
Document Name	
Comment	
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	

Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	
Answer	
Document Name	
Comment	
AEP chooses to abstain from providing a response.	
Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	

Answer	
Document Name	
Comment	
NST has no comment on this question, as it concerns technical issues that generally fall outside of our portfolio of consulting services.	
Likes 0	
Dislikes 0	
Response	

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer	No
Document Name	

Comment

ITC believes that the aggregate weighted value system on top of the exclusion clause makes this evaluation convoluted. It also allows for a Control Centers to control a transmission network with up to 24 lines less than 200kV lines while still being classified as Low Impact.

ITC proposes to use exclusion clause proposed under Criterion 2.12 as the determining factor for if a Control Center is Medium or Low Impact. Any Control Center that exceeds 75 MW during non-Energy Emergency Alert (EEA) conditions. The system net export is based on the hourly integrated power flow values over the course of the most recent two-year period would be classified as Medium Impact.

Likes 0	
Dislikes 0	

Response

Joshua London - Eversource Energy - 1,3, Group Name Eversource

Answer	No
Document Name	

Comment

Eversource agrees with the comments of the NPCC RSC.

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Quebec (HQ) - 1,5

Answer	No

Document Name	

Comment

The language for the exemption seems to allow for the exclusion of a Controls Center as Medium impact if the load in a set of BES Transmission Lines offsets the generation in another set of BES Transmission Lines, even if these lines are not tied together within the Transmission system controlled by the Control Center.

Does the “net” in “net export” apply to the net total for all applicable BES Transmission Lines at a single point in time or the net export of each of these lines over the two year period.

The two year period portion of the language makes it unclear how new transmission lines are handled even if it is known that they will increase the “net export” beyond the 75MW threshold.

The SDT should provide clarity on if a change in the “net export” fluctuates around or exceeds for the first time, the 75MW threshold. When is exceeding the threshold an “unplanned change”, allowing for a two year implementation and when is it a “planned change” requiring the medium impact implementation to be completed before the threshold is exceeded? If an exempt Control Center looses the exemption, starts the implementation period, gains the exemption before the implementation is completed and then looses the exemption, if there are not other medium impact programs in place, do they always get two years to either implement the plan or pray that they gain the exemption before the implementation period is over?

Likes 0	
Dislikes 0	

Response

Constantin Chitescu - Ontario Power Generation Inc. - 5

Answer	No
Document Name	

Comment

OPG agrees with the NPCC/RSC's comments.

Likes 0	
Dislikes 0	

Response

Junji Yamaguchi - Hydro-Quebec (HQ) - 1,5

Answer	No
Document Name	

Comment

The language for the exemption seems to allow for the exclusion of a Controls Center as Medium impact if the load in a set of BES Transmission Lines offsets the generation in another set of BES Transmission Lines, even if these lines are not tied together within the Transmission system controlled by

the Control Center.

Does the “net” in “net export” apply to the net total for all applicable BES Transmission Lines at a single point in time or the net export of each of these lines over the two year period.

The two year period portion of the language makes it unclear how new transmission lines are handled even if it is known that they will increase the “net export” beyond the 75MW threshold.

The SDT should provide clarity on if a change in the “net export” fluctuates around or exceeds for the first time, the 75MW threshold. When is exceeding the threshold an “unplanned change”, allowing for a two year implementation and when is it a “planned change” requiring the medium impact implementation to be completed before the threshold is exceeded? If an exempt Control Center looses the exemption, starts the implementation period, gains the exemption before the implementation is completed and then looses the exemption, if there are not other medium impact programs in place, do they always get two years to either implement the plan or pray that they gain the exemption before the implementation period is over?

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

Ameren supports EEI's comments on this question.

Likes 0	
Dislikes 0	

Response

Kinte Whitehead - Exelon - 1,3

Answer	Yes
Document Name	

Comment

Exelon is in support of EEI response to this question.

Likes 0	
Dislikes 0	

Response

TRACEY JOHNSON - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (SIGE) supports the comments as submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
FirstEnergy is not opposed to this change.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed Exclusion clause.	
Likes 0	
Dislikes 0	
Response	
Byron Booker - Oncor Electric Delivery - 1	

Answer	Yes
Document Name	
Comment	
Oncor agress with the SDT's approach.	
Likes 0	
Dislikes 0	
Response	
Joseph Gatten - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports EEI comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Ellese Murphy - Duke Energy - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF	
Answer	Yes
Document Name	

Comment	
Duke Energy has not identified any issues with this proposal.	
Likes 0	
Dislikes 0	
Response	
Jonathan Robbins - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tony Eddleman - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Evergy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Monika Montez - California ISO - 2 - WECC, Group Name ISO/RTO Council Standards Review Committee (SRC) Project 2021-03 CIP-002 TOCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Daho - MEAG Power - 1,3 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tristan Miller - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Lyons - Central Iowa Power Cooperative - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gail Golden - Entergy - Entergy Services, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alain Mukama - Hydro One Networks, Inc. - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

VAL GUZMAN - Silicon Valley Power - City of Santa Clara - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jay Sethi - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patricia Robertson - BC Hydro and Power Authority - 1,3,5 - WECC, Group Name BC Hydro Balloters	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Justin Kuehne - AEP - 3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ronald Bender - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jamison Cawley - Nebraska Public Power District - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Clay Walker - Cleco Corporation - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joseph Amato - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC CIP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Deanna Carlson - Cowlitz County PUD - 3,4,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Stacy Engelmann - City of College Station - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Roger Fradenburgh - Network and Security Technologies - 1 - NA - Not Applicable	
Answer	
Document Name	
Comment	
NST has no comment on this question, as it concerns technical issues that generally fall outside of our portfolio of consulting services.	

Likes 0	
Dislikes 0	
Response	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1 - MRO	
Answer	
Document Name	
Comment	
Minnesota Power is in agreement with the comments submitted by Edison Electric Institute (EEI).	
Likes 0	
Dislikes 0	
Response	
Alison MacKellar - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 5,6	
Answer	
Document Name	
Comment	
Constellation has no additional comments	

Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC	
Answer	
Document Name	
Comment	
The scope of this question is not applicable to SPP, so SPP defers to feedback offered from other Responsible Entities who are in scope for this question.	
Likes 0	
Dislikes 0	
Response	

Comments received from MRO NSRF

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No
   Comments:
   The MRO NSRF would like to request additional clarification on the following "electronically control Transmission Facilities at two or more locations".

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☒ Yes
   ☐ No
   Comments:

3. Control Center Definition: The SDT replaced "including their associated data centers" with "and any Data Centers intended to support the function

of those rooms" to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT's approach? If not, please provide your rational and an alternate proposal.

☐ Yes
☒ No
Comments:
The MRO NSRF is concerned that the definition does differentiate between bussinees and operational systems causing the potential scope creep with an additional definition of 'data center'.

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT's approach and the proposed definition? If not please provide your rational and an alternate proposal.

☒ Yes
☐ No
Comments:

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating "that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board". Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No
Comments:

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No
Comments:

7. Criterion 2.12: The SDT proposes to remove the following language "used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines" in favor of explicitly identifying Control Centers that are "operated by a registered Transmission Operator or owned by a registered Transmission Owner". This eliminates the ambiguity that has been identified regarding the application of 'performing the reliability tasks of a Transmission Operator' to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No
Comments:

8. Criterion 2.12: The SDT assigned a 'weight value per characteristic' to BES Transmission Lines less than 100kV given that the NERC defined term

Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No
Comments:

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☒ Yes
   ☐ No
   Comments:

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

    ☒ Yes
    ☐ No
    Comments:

Comments received from NPCC

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   We recommend changing from "*having the capability or authority to control Facilities;*" to "*having the capability and authority to control Facilities;*"

   The numbered parts of the Control Center definition adds the phrase "*having the capability or authority to control Facilities;*"

In the example "*NERC certified personnel of a Reliability Coordinator, having the capability or authority to control Facilities;*" due to the "*or,*" the definition of Control Center would follow an employee who has the authority to control facilities, regardless of capability, to whatever room they reside in.

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   We agree that the use of the terms "facilities" and "Facilities" can create uncertainty in the meaning of the definition but believe that the proposed changes are too specific to the architecture of the building and does not provide clarity on what is meant by "hosting".

   For example: A small municipal utility has the capability to monitor and control the two Transmission substations that they own through their SCADA system:

   1) If there is a desk with a SCADA HMI located in the engineering office that may be used by any of the utility engineers but no one is assigned to that desk, is the engineering office a Control Center? or
   2) If the configuration listed above is a Control Center, can the Control Center classification be removed if the SCADA desk is moved into the hallway or the parking lot? or
   3) If the engineers can remote into the SCADA from their computers at their desk, is the engineering office a Control Center? or
   4) If an engineer remotes into the SCADA system from a remote (room) location (home office, Starbucks) is this room now a Control Center?
   5) If the utility has a room that houses equipment for SCADA access but is only staffed during poor weather events for the purpose of dispatching field personnel, is this room a Control Center?

3. Control Center Definition: The SDT replaced "including their associated data centers" with "and any Data Centers intended to support the function of those rooms" to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT's approach? If not, please provide your rational and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   The terms "any" and "intended to support the function" could be interpreted to include data centers that are not owned, operated or controlled by the entity.

   The phrase "the function of those rooms" does not limit the function to only those that impact the BES.

   Below, we recommend a new term instead of Data Center. Consistent with that recommendation, we start proposing an alternative approach here.

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT's approach and the proposed definition? If not please provide your rational and an alternate proposal.

☐ Yes
☒ No

Comments:
We believe that the proposed definition provides additional clarity and counters the recent interpretation of the "*data center*" term that included substations that only generate and transmit data, as a data center but feel that there are a number areas that need adjustment. These are:

1. The portion of the definition that includes *"The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application-delivery controllers. The site could be located on-site within the entity's physical building locations or could be in a virtual setting"* gives examples and is not part of the definition.
2. The first sentence starts with *"A network of computing and storage resources."* The *"routers, switches, firewalls"* listed in the second sentence are communication equipment and are not used for computation or storage.
3. *"The site could be located on-site within the entity's physical building locations or could be in a virtual setting."* Limits a Data Center to these two locations. It is unclear if this language allows for Data Center equipment (non-virtualized) to be located in a physical building owned by another company.
4. The proposed Data Center definition creates too many questions. We suggest a return to the original intent of resources directly supporting BES functions in a Control Center. Perhaps with a different label like "*supporting technology*" that includes this narrower scope. The term "*data center*" is a dated concept in a distributed architecture. Today the emphasis is on functions instead of a place (room). This new term could be modeled after the proposed Control Center definition.

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating "that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board". Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

   ☒ Yes
   ☐ No

   Comments:

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   The language "E*ach BES Cyber System, not included in Section 1 above, associated with any of the following*:" is included at the top of the Medium Impact (Section 2) criteria and applies to all Section 2 criteria. Does the addition of this language mean at the BES Cyber System must be "*used by, located at and associated with?*" Suggest changing the language at the beginning of each of the three sections to use either "*associated with*" or "*used by and located at.*" Having both of these terms apply to three, and only three of the criteria could be interpreted to mean that the SDT is trying to either include, or exclude certain BES Cyber Systems for those criteria.

7. Criterion 2.12: The SDT proposes to remove the following language “used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines” in favor of explicitly identifying Control Centers that are “operated by a registered Transmission Operator or owned by a registered Transmission Owner”. This eliminates the ambiguity that has been identified regarding the application of ‘performing the reliability tasks of a Transmission Operator’ to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT’s approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   While we agree with the removal of this term, however, we feel that the question is misleading since it correctly states that this language is in the Control Center definition but does not state that the language related to “reliability tasks“ has also been removed from the proposed Control Center definition.

8. Criterion 2.12: The SDT assigned a ‘weight value per characteristic’ to BES Transmission Lines less than 100kV given that the NERC defined term Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT’s approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   Suggest that guidance be given on the result of combining the “BES” and the “Transmission Line” NERC defined terms. While the BES term allows for Transmission lines less than 100kV the “Transmission Lines” sets a lower limit of 69kV. Request clarification for a 69 kV line that meets the Transmission Line definition but not the BES definition.

   This is not specific to this question and may identify an issue that is not technically possible but there is a gap between the X99 and Y00 “Characteristics of Line” levels. A 199.5kV line is not rated on this table.

   Request explicit explanation (in the Standard) of the weighted value of zero for “Each BES Transmission Line 500 kV and above.” (see Criterion 2.5) We agree with the weighted value. Please correct as needed – we understand that a Control Center with such a Tranmission Line is High Impact.

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT’s approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   This inclusion seems to be in opposition to the reason for, and in conflict with the language of Criterion 3.4 which identifies as low impact, “Systems and facilities critical to system restoration, including Blackstart Resources and Cranking Paths and initial switching requirements.”

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or

backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

☐ Yes
☒ No

Comments:
The language for the exemption seems to allow for the exclusion of a Controls Center as Medium impact if the load in a set of BES Transmission Lines offsets the generation in another set of BES Transmission Lines, even if these lines are not tied together within the Transmission system controlled by the Control Center.

Does the "net" in "net export" apply to the net total for all applicable BES Transmission Lines at a single point in time or the net export of each of these lines over the two year period.

The two year period portion of the language makes it unclear how new transmission lines are handled even if it is known that they will increase the "net export" beyond the 75MW threshold.

The SDT should provide clarity on if a change in the "net export" fluctuates around or exceeds for the first time, the 75MW threshold. When is exceeding the threshold an "unplanned change", allowing for a two year implementation and when is it a "planned change" requiring the medium impact implementation to be completed before the threshold is exceeded? If an exempt Control Center looses the exemption, starts the implementation period, gains the exemption before the implementation is completed and then looses the exemption, if there are not other medium impact programs in place, do they always get two years to either implement the plan or pray that they gain the exemption before the implementation period is over?

Comments received from Tacoma Power

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   Tacoma Power does not agree with changing the existing Control Center definition. Instead, Tacoma Power proposes creating a standalone definition for Transmission Owner Control Center (TOCC), and then a new CIP-002 criterion. Trying to parse out the proposed Control Center definition is a challenge and has far reaching impacts beyond CIP-002. In order to limit the impacts and ensure the definition resolves the concerns in the SAR, Tacoma Power supports a standalone definition and new CIP-002 criterion for TOCC only.

If the SDT wants to continue with this revision, Tacoma Power has several issues with the proposed changes, as described below. Tacoma Power recommends instead of stating "having the capability or authority to control Facilities", the original language of the Control Center definition of "perform real-time reliability tasks" should be used. Controlling Facilities is only a small part of the responsibilities of the NERC certified personnel of a BA or TOP. There are other real-time reliability tasks that are essential functions. Additionally, "real-time reliability tasks" aligns with the language used in PER Standards.

Tacoma Power is also concerned that the term "function" in "to support the function of those rooms" is not clearly defined. An entities' Control Center can also provide non-BES functions and the proposed wording implies that these functions would also include non-BES in the scope.

Tacoma Power disagrees with the first bullet in the definition. Reliability Coordinators do not have the capability or authority to control Facilities, but Reliability Coordinators do perform reliability tasks, as stated in the current definition.

Tacoma Power needs additional information or examples to understand how a Transmission Owner operates Transmission Facilities. Operations are performed by Transmission Operators, as defined in the NERC ROP, Appendix 5b, Section 2 definition of Transmission Operator and Transmission Owner. Implying that a Transmission Owner has operating authority is confusing and conflicts with the ROP functional definitions. Tacoma Power recommends striking "operating" from "operating personnel" in the leading sentence, the fourth and fifth bullet to clarify that a Transmission Owner and Generator Operator do not operate Facilities.

Based on the above comments, Tacoma Power recommends the following Control Center definition changes:

Control Center: One or ***more facilities hosting*** ~~*rooms where a responsible entity hosts operating*~~ *personnel, as detailed below, that monitor and control the Bulk Electric System (BES) in real-time* ***to perform reliability tasks, including their associated Data Centers:*** ~~*, and any Data Centers intended to support the function of those rooms.*~~

1. *NERC certified personnel of a Reliability Coordinator*~~*,*~~ *having the capability or authority* ***to perform real-time reliability tasks*** ~~*control Facilities;*~~
2. *NERC certified personnel of a Balancing Authority*~~*,*~~ *having the capability or authority* ***to perform real-time reliability tasks*** ~~*control Facilities;*~~
3. *NERC certified personnel of a Transmission Operator having the capability or authority* ***to*** *control Transmission Facilities at two or more locations,*
4. *Transmission Owner* ~~***operating***~~ *personnel having the capability to electronically control Transmission Facilities at two or more locations; or*
5. *Generation Operator* ~~***operating***~~ *personnel having the capability to electronically control generation Facilities at two or more locations.*

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☐ Yes
☒ No

Comments:
Tacoma Power does not agree that "room" is needed or an improvement to the existing language. For example, a Control Center could be a building. It doesn't matter if a facility has one control room or multiple control rooms – it still falls under the term "facility." Therefore, it's better to stick with the lowercase facility. There is no confusion between Facility and facility. In the O&P Standards, the lowercase and uppercase facility is often used concurrently (see Facility Ratings).

Any change to the Control Center definition should be aligned with adding Control Centers as applicable rooms/facilities under CIP-002 4.2.2.

Currently the standard is only applicable to “All BES Facilities”, whereas a Control Room does not meet the NERC definition of Facility.

3. Control Center Definition: The SDT replaced “including their associated data centers” with “and any Data Centers intended to support the function of those rooms” to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT’s approach? If not, please provide your rational and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments: Tacoma Power does not agree with the change. Tacoma Power recommends keeping the existing Control Center definition term language of “including their associated data centers.”

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT’s approach and the proposed definition? If not please provide your rational and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   Tacoma Power is concerned that the proposed Data Center definition is too broad and may result in unintended scope creep. For example, this definition could encompass corporate business systems, telephony, camera monitoring systems, radios, or energy balance market systems.

   Tacoma Power recommends bounding the Data Center definition to only reliability support functions.

   Tacoma Power recommends the following changes to the Data Center definition that will better define the intended scope:

   Data Center: location housing computing and storage resources that ~~enable the use of~~ ***host*** *shared applications in the exchange and management of data* ***that directly supports Reliable Operation****. ~~The key components of a Data Center may include, but are not limited to, routers, switches, firewalls, storage systems, servers, and application delivery controllers. The site could be located on-site within the entity’s physical building locations or could be in a virtual setting.~~*

   In addition to revising the Data Center definition, Tacoma Power recommends that the CIP-002 redline clearly states that the Responsible Entity would be responsible for defining the Data Center equipment that directly supports Reliable Operation.

   Alternatively, Tacoma Power recommends leaving data center as an undefined term.

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating “that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board”. Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:

The proposed language is unclear on how to calculate the weighted value for many sections of Tacoma Power's 115 kV sub-trasmission system. The existing CIP-002-6 supplemental material only address configurations common at 230 kV and it does not have examples of common 115 kV sub-transmission configurations.

The TOCC_Field_Test_Final_Report contains some limited guidance, but that guidance appears to dramatically overestimate the impact of typical 115 kV sub-transmission lines when looped through small distribution stations. For example, we have 5 mile 115 kV line that loops through 3 small distribution stations. If the entire NE-Blair-Lincoln-East F-St Paul line is counted as a single line, it would have a weighted value of 250, whereas if each series section is counted as a separate line, this would have a weighted value of 1000. It would be absurd to weight this short 115 kV line section more heavily that a regional 230 kV line running for dozens of miles.

Additionally, in different poritons of the TOCC_Field_Test_Final_Report there were conflicting recommendations. In one place it suggested the criteria be to use elements that interrupt fault current, whereas another plant suggested the criteria be to use elements that can intterupt network flows. These criteria result in vastly different aggregate weighted values when applied to Tacoma Power's system.

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☒ Yes
   ☐ No

   Comments:

7. Criterion 2.12: The SDT proposes to remove the following language "used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines" in favor of explicitly identifying Control Centers that are "operated by a registered Transmission Operator or owned by a registered Transmission Owner". This eliminates the ambiguity that has been identified regarding the application of 'performing the reliability tasks of a Transmission Operator' to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   Tacoma Power supports keeping the language "used to perform the reliability tasks of a Transmission Operator in real-time to monitor and control BES Transmission Lines".

8. Criterion 2.12: The SDT assigned a 'weight value per characteristic' to BES Transmission Lines less than 100kV given that the NERC defined term Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments:
   The original work to develop the 'weight value per characteristic' focused on EHV transmission, so it is not clear why picking a value of 100 is an appropriate value for subtransmission at less than 100 kV. Subtransmission systems tend be configured much differently compared to EHV transmission, and the proposed value is likely to overestimate the importance of subtransmission elements.

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an

inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☐ Yes
☒ No

Comments:
The inclusion of blackstart units into various NERC standards had the unintended consequence that many blackstart units being converted to normal units by their owners in order to avoid extensive compliance efforts. Inclusions of the Cranking Path may have similar unintended consequences.

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments:
The proposed value of 12000 seems appropriate as long as the definition of a line does not count individual subtransmission segments between distribution substations. If the proposal is to count every circuit breaker location as forming a separate line, the value of 12000 is much too low.

Comments received from Hydro One Networks, Inc.

1. Control Center Definition: The SDT has proposed modifications to the definition of a Control Center based on ambiguity that surfaced during the Field Test. The crux of the ambiguity related to the existence of a TOCC and authority to control versus capability to control. As such, the SDT proposes to clearly specify that a Transmission Owner with the capability to electronically control Transmission Facilities at two or more locations has a Control Center. Further, the SDT is proposing to replace "to perform the reliability tasks" with specific language related to the capability or authority to control Facilities. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

   ☐ Yes
   ☒ No

   Comments: Suggest to change "having the capability and authority to control" for 5 points, in order to ensure that the room(s) can only be considered a Control Center when the personnels control with authority. Suggest to retain "to perform the reliability tasks" or define the function (such as BES Reliabilility Operating Services".

2. Control Center Definition: The SDT replaced "One or more facilities hosting operating personnel" with "One or more rooms where a responsible entity hosts operating personnel" to eliminate confusion between the terms 'facility' and NERC-defined 'Facility' that appears later in the

definition of a Control Center. Further, the use of the term 'rooms' is intended to clarify that a Control Center may be one or more rooms within a larger building. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments:

3. Control Center Definition: The SDT replaced "including their associated data centers" with "and any Data Centers intended to support the function of those rooms" to reference a recommended new defined term for Data Center and to clarify that an entity may have data centers that do not support the functions performed within the Control Center (e.g., data archival, etc.). Do you agree with the SDT's approach? If not, please provide your rational and an alternate proposal.

☒ Yes
☐ No

Comments: agree with the change, but require clarity on "Data Center"

4. Data Center Definition: The SDT developed a definition for Data Center to support a common understanding of the term across the industry. Do you agree with the SDT's approach and the proposed definition? If not please provide your rational and an alternate proposal.

☐ Yes
☒ No

Comments: Require clarity on "virtual settings" as it is not included in the current version of CIP standards. It may open up other concerns on virtualization and cloud computing.

5. Criterion 2.12: The BOT withdrew the previously proposed Reliability Standard CIP-002-6 in February 2021 and issued a resolution stating "that NERC Staff, working with stakeholders, is directed to promptly conduct further study of the need to readdress the applicability of the CIP Reliability Standards to such Control Centers to safeguard reliability, for the purpose of recommending further action to the Board". Pursuant to further study performed by the SDT via a Field Test, the SDT has determined that the previously proposed bright line of 6000 remains an appropriate initial criterion to differentiate between low impact and medium impact BES Cyber Systems, while safeguarding reliability. Further, the SDT recommends consideration of additional characteristics that may merit inclusion or exclusion. As such, the SDT has recommended revisions based on the previously proposed version of the standard. Do you agree with this approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments:

6. Criterion 2.12: The SDT added the following preface to Criteria 2.11, 2.12 and 2.13: "Each BES Cyber System, not included in Section 1 above, used by and located at any of the following:". The intent of this addition was to align the language in the Medium Impact Rating section of CIP-002 Attachment 1 that applies to Control Centers with the language in the High Impact Rating section of CIP-002 Attachment 1. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☐ Yes
☒ No

Comments: Since there is already a preface with"Each BES Cyber System, …..,assoicated with any of the following" at the beginning of section 2, this addition is not necessary. Alternatively, use the same wordings in prefaces for all 3 sections.

7. Criterion 2.12: The SDT proposes to remove the following language "used to perform the reliability tasks of a Transmission Operator in real-time to

monitor and control BES Transmission Lines" in favor of explicitly identifying Control Centers that are "operated by a registered Transmission Operator or owned by a registered Transmission Owner". This eliminates the ambiguity that has been identified regarding the application of 'performing the reliability tasks of a Transmission Operator' to Transmission Owners and also eliminates duplication with language that already exists in the NERC defined term Control Center. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments:

8. Criterion 2.12: The SDT assigned a 'weight value per characteristic' to BES Transmission Lines less than 100kV given that the NERC defined term Bulk Electric System allows for specific inclusions of equipment that is less than 100kV. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments:

9. Criterion 2.12: The SDT has incorporated an additional characteristic, each BES Transmission Line identified as part of a Cranking Path, as an inclusion characteristic that would automatically ensure a Control Center is dispositioned above the bright line of 12000. This is based on the low probability, but high impact event where a cyber-compromised Control Center impacts restoration efforts following a widespread blackout. Further, systems and facilities critical to system restoration are specifically called out in the Low Impact Rating section of CIP-002 Attachment 1 which is indicative of reliability impacts. Other characteristics that were considered for inclusion such as Flowgates, IROLs and Remedial Action Schemes were ultimately excluded because the mere presence of these does not constitute a reliability risk to the BES and the ones that do impact reliability have already been addressed under CIP-002 Attachment 1 Criteria 2.6 and 2.9. Do you agree with the SDT's approach? If not, please provide your rationale and an alternate proposal.

☐ Yes
☒ No

Comments: Agree with the importance of control centers during restoration. However, instead of imposing cranking path with weight value, it may be less confusing to have a new requirement where each control centers or backup control center that monitors and controls a cranking path should be classified Medium Impact.

10. Criterion 2.12: The SDT has developed an exclusion clause that would allow the BES Cyber Assets that are associated with a Control Center or backup Control Center to be classified as Low Impact instead of Medium Impact in the event that the calculated "aggregate weighted value" falls between 6000 and 12000, and the calculated BES Transmission system net export does not exceed 75 MW during non-Energy Emergency Alert conditions over the most recent two-year period. The 12000 cap on the "aggregate weighted value" is based on the equivalent of four stations with Medium impact BES Cyber Systems. The selection of the 75 MW threshold is based on the BES definition inclusion criterion for a generation plant. Energy Emergency Alert conditions were excluded given that an entity may be required to provide assistance, including load shed, to support the system. Do you agree with the SDT's approach and the proposed exclusion clause? If not, please provide your rationale and an alternate proposal.

☒ Yes
☐ No

Comments: