NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2020-06 Verifications of Models and Data for Generators | Draft 3 of IBR Definitions
Comment Period Start Date:	7/12/2024
Comment Period End Date:	8/12/2024
Associated Ballot(s):	2020-06 Verifications of Models and Data for Generators IBR-related Definitions | Implementation Plan AB 3 OT 2020-06 Verifications of Models and Data for Generators Inverter-Based Resource (IBR) AB 3 DEF

There were 52 sets of responses, including comments from approximately 147 different people from approximately 100 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Manager of Standards Information, Nasheema Santos (via email) or at (404) 446-2564.

Questions

1. Do you support the definition for IBR as proposed, or with non-substantive changes? If you do not support the definition as proposed, please explain the changes that, if made, would result in your support.

2. Provide any additional comments for the DT to consider, if desired.

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
MRO	Anna Martinson	1,2,3,4,5,6	MRO	MRO Group	Shonda McCain	Omaha Public Power District (OPPD)	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jamison Cawley	Nebraska Public Power District	1,3,5	MRO
					Jay Sethi	Manitoba Hydro (MH)	1,3,5,6	MRO
					Husam Al-Hadidi	Manitoba Hydro (System Performance)	1,3,5,6	MRO
					Kimberly Bentley	Western Area Power Administration	1,6	MRO
					Jaimin Patal	Saskatchewan Power Corporation (SPC)	1	MRO
					George Brown	Pattern Operators LP	5	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Larry Heckert	Alliant Energy (ALTE)	4	MRO
					Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
					Dane Rogers	Oklahoma Gas and Electric (OG&E)	1,3,5,6	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Ayotte	ITC Holdings	1	MRO
					Andrew Coffelt	Board of Public Utilities- Kansas (BPU)	1,3,5,6	MRO
					Peter Brown	Invenergy	5,6	MRO
					Angela Wheat	Southwestern Power Administration	1	MRO
					Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
	Barbara Marion	5,6		Dominion	Victoria Crider	Dominion	3	NA - Not Applicable

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Dominion - Dominion Resources, Inc.					Barbara Marion	Dominion	5	NA - Not Applicable
					Sean Bodkin	Dominion	6	NA - Not Applicable
					Steven Belle	Dominion	1	NA - Not Applicable
Southwest Power Pool, Inc. (RTO)	Charles Yeung	2	MRO,NPCC,RF,SERC,SPP RE,Texas RE,WECC	SRC 2024	Charles Yeung	SPP	2	MRO
					Ali Miremadi	CAISO	1	WECC
					Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Greg Campoli	NYISO	1	NPCC
					Matt Goldberg	ISO New England	2	NPCC
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NPCC,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Jason Procuniar	Buckeye Power, Inc.	4	RF

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Jolly Hayden	East Texas Electric Cooperative, Inc.	NA - Not Applicable	Texas RE
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Nick Fogleman	Prairie Power, Inc.	1,3	SERC
FirstEnergy - FirstEnergy Corporation	Mark Garza	4		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Mark Garza	FirstEnergy-FirstEnergy	1,3,4,5,6	RF
					Stacey Sheehan	FirstEnergy - FirstEnergy Corporation	6	RF

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Michael Johnson	Michael Johnson		WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					Tyler Brun	Pacific Gas and Electric Company	5	WECC
DTE Energy - Detroit Edison Company	Mohamad Elhusseini	3,5		DTE Energy	Mohamad Elhusseini	DTE Energy	5	RF
					Patricia Ireland	DTE Energy	4	RF
					Marvin Johnson	DTE Energy - Detroit Edison Company	3	RF
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

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Black Hills Corporation	Rachel Schuldt	6		Black Hills Corporation - All Segments	Micah Runner	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Deidre Altobell	Con Edison	1	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Stephanie Ullah-Mazzuca	Orange and Rockland	1	NPCC
					Michael Ridolfino	Central Hudson Gas & Electric Corp.	1	NPCC
					Randy Buswell	Vermont Electric Power Company	1	NPCC
					James Grant	NYISO	2	NPCC
					Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
					David Burke	Orange and Rockland	3	NPCC
					Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Salvatore Spagnolo	New York Power Authority	1	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
					David Kwan	Ontario Power Generation	4	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
					Sean Cavote	PSEG	4	NPCC
					Jason Chandler	Con Edison	5	NPCC
					Tracy MacNicoll	Utility Services	5	NPCC
					Shivaz Chopra	New York Power Authority	6	NPCC
					Vijay Puran	New York State Department of Public Service	6	NPCC
					David Kiguel	Independent	7	NPCC
					Joel Charlebois	AESI	7	NPCC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Joshua London	Eversource Energy	1	NPCC
					Jeffrey Streifling	NB Power Corporation	1,4,10	NPCC
					Joel Charlebois	AESI	7	NPCC
					John Hastings	National Grid	1	NPCC
					Erin Wilson	NB Power	1	NPCC
					James Grant	NYISO	2	NPCC
					Michael Couchesne	ISO-NE	2	NPCC
					Kurtis Chong	IESO	2	NPCC
					Michele Pagano	Con Edison	4	NPCC
					Bendong Sun	Bruce Power	4	NPCC
					Carvers Powers	Utility Services	5	NPCC
					Wes Yeomans	NYSRC	7	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Victoria Crider	Dominion Energy	3	NA - Not Applicable
					Sean Bodkin	Dominion Energy	6	NA - Not Applicable

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Steven Belle	Dominion Energy	1	NA - Not Applicable
					Barbara Marion	Dominion Energy	5	NA - Not Applicable
Western Electricity Coordinating Council	Steven Rueckert	10		WECC	Steve Rueckert	WECC	10	WECC
					Curtis Crews	WECC	10	WECC
Tim Kelley	Tim Kelley		WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. *Do you support the definition for IBR as proposed, or with non-substantive changes? If you do not support the definition as proposed, please explain the changes that, if made, would result in your support*.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	No
Document Name	
Comment	
Idaho Power Company believes a definition of an IBR Unit is still needed and would be a helpful addition. It also seems like keeping the last section of the original definition could serve useful as this detail was excluded from the new proposed definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, the Drafting Team (DT) is considering using the term IBR Unit as a standard only definition for MOD-026. Other DTs can use the standard only definition approach as needed.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	
FirstEnergy supports EEI's proposed changes which state: **Inverter-Based Resource (IBR):** A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together **through a common facility-level controller** as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), **VSC-HVDC systems used to connect off-shore renewable resources to the BPS,** and fuel cell devices.	

In addition, FirstEnergy requests the DT provide a definition for Type 3 and Type 4 wind devices to ensure intent and applicability of compliance toward this definition.	
Likes 0	
Dislikes 0	
Response	
The DT considered adding this to the IBR definition, however decided against it due to Type 3 and Type 4 wind already being listed within the definition. An offshore wind IBR is still an IBR whether or not it is connected via an AC or HVDC cable. Further, the DT felt as though the discussion within the technical rationale was sufficient to explain that the HVDC terminals are part of the IBR in this case.	
Anna Todd - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	No
Document Name	
Comment	
Renewable generation must at some point cover Reactive Power if we are moving towards all renewable generation in the future. Due to this, Southern Indiana Gas & Electric, Company recommends adding “Reactive Power” to the definition.	
Likes 0	
Dislikes 0	
Response	
By requiring active capabilities the DT is referring to generating resources, and not transmission connected reactive resources. The DT includes the fact that an IBR produces reactive power, and does not define IBR by having to create reactive power.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	

LG&E/KU suggest the following revisions to the proposed definition, with a clean version of the edits provided at the bottom.

1. Describing an IBR as a “plant/facility” risks confusion around IBRs that are co-located with synchronous generators as components of a hybrid plant. Suggesting the more generic “generating resource”.
2. An IBR may consist of only one inverter. The definition should use “one or more device(s)” from IEEE Std 2800-2022 rather than the current “individual devices”.
3. The phrase “to the electric system” should be moved to the immediate context of exporting power through the power electronic interface.
4. The wording “at a common point of interconnection” risks confusion at locations where multiple IBRs share a point of interconnection. Here also it should be noted that the NERC IBR definition parallels the IEEE Std 2800-2022 definition of “IBR Plant” rather than “IBR”. In any case, it is recommended to use IEEE Std 2800-2022 wording: “operated by a common facility-level controller” (however, due to the use of “facility” in various NERC contexts, “facility-level” should be removed; it is also unnecessary as “common” already requires that the controller operates all devices).
5. The wording of the last sentence implies a plant with a BESS is an IBR. Again (see point 1), this risks confusion for IBRs that are co-located with synchronous generators as part of a hybrid plant. Only the IBR components should be defined as IBRs.

"A generating resource consisting of one or more device(s) capable of exporting Real Power through a power electronic interface to the electric system and operated by a common controller. Examples include, but are not limited to, solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system, and fuel cell generating resources."

Likes 0	
Dislikes 0	

Response

1. The DT had found that the plant/facility was the most fitting wording for the definition. The DT wanted to stay away from the NERC definition “Facility”
2. The DT agrees that IBR may only consist of one inverter, the definition does not exclude this.
3. Thank you for the comment and concern. The DT intent was for the whole facility connecting to the system.
4. The key part of the IBR definition is “operating together as a single resource at a common point of interconnection.” Please review the TR as that goes into more detail.
5. The DT BESS would be considered an IBR but a Hybrid IBR. The IBR language would apply to the BESS, please see the TR for further explanation.

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

Answer	No

Document Name	
Comment	
Duke Energy suggests the following modifications: Inverter-Based Resource (IBR): A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together “through a common facility-level control system” “STRIKE” at a common point of interconnection to the electric system. The above enhancement will eliminate the vagueness of the phrase single resource at a point of interconnect. Using the "facility-level control system" prevents confusion of plant/facility since some locations may have a feeder bus with multiple GO's connecting to the feeder that feed to a single point of interconnect. Additionally, this modification would clarify that each plant/facility is responsible for their own PRC-028 thru -030 requirements, among others.	
Likes 0	
Dislikes 0	
Response	
DT believes the phrase “operated together as a single resource” is sufficiently clear. Please review the TR as that goes more into depth.	
Brian Van Gheem - Radian Generation - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
1. We believe the proposed definition should align with the Category 2 Generator Owner language recently added to the NERC Rules of Procedure. Instead of referencing “operated” and “point of interconnection to the electric system,” the definition of a Category 2 Generator Owner uses “delivering capacity” and “point of connection.” We propose the following definition in its place, “Plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s), such as an inverter or converter, delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV...” We believe such a definition could be applied to Category 1 Generator Owners with IBR Facilities as well. 2. We propose a minor, non-content modification to the definition. We recommend adding a comma after the word “interface(s)” to separate the word from the prepositional phrase.	
Likes 0	

Dislikes 0	
Response	
1. The DT decided the “capable of exporting Real Power” is preferable to “delivering such capacity”. The DT does not want to insert applicability into the definition and the DT does not want to add the phrase “voltage greater than or equal to 60 kV.” 2. The DT does not feel this is a necessary change.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
The entire definition could be consolidated slightly for ease of reading and understanding. Example: Inverter-Based Resource (IBR): A plant/facility comprising of individual devices capable of exporting Real Power through power electronics e.g. inverters or converters. These devices operate collectively at a single connection point to the electric system. Examples include but are not limited to, solar photovoltaic (PV), Type 3 & 4 wind, battery energy storage system (BESS), and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Israel Perez - Israel Perez On Behalf of: Laura Somak, Salt River Project, 3, 6, 5, 1; Mathew Weber, Salt River Project, 3, 6, 5, 1; Thomas Johnson, Salt River Project, 3, 6, 5, 1; Timothy Singh, Salt River Project, 3, 6, 5, 1; - Israel Perez	
Answer	No
Document Name	
Comment	

Proposed Definition: A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, the DT feels the proposed removed wording, "...and that are operated together as a single resource at a common point of interconnection to the electric system" is necessary for reliability in the IBR Definition.	
Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	No
Document Name	
Comment	
PNM agrees with the comment of EEI: **Inverter-Based Resource (IBR):** A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together **through a common facility-level controller** as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), **VSC-HVDC systems used to connect off-shore renewable resources to the BPS,** and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comment.	
LaTroy Brumfield - LaTroy Brumfield On Behalf of: Amy Wilke, American Transmission Company, LLC, 1; - LaTroy Brumfield	
Answer	No

Document Name	
Comment	
The definition should make clear that standalone HVDC facilities are not included in the definition. If the phrases, “plant/facility” are intended to do that, it could still be confusing as an HVDC could theoretically be called a facility. Adding the phrase, “from a primary energy source or energy storage system” to the definition might help make this more clear The suggested definition could read like the example below: Inverter-Based Resource (IBR): A plant/facility consisting of individual devices that are capable of exporting Real Power (active power) from a primary energy source or energy storage system through a power electronic interface(s) such as an inverter or converter, and that are operated together as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, inverter-interfaced battery energy storage systems (BESS), and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please refer to the TR. The TR has a table of what qualifies as an IBR and what does not qualify. HVDC is listed in the “Not qualifying” as an IBR column.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Texas RE recommends the drafting team consider using the terms generator or generator plant instead of the term “plant/facility”. Since Facility is a defined term, using lower-case facility could cause confusion. Texas RE inquires as to whether the term “turbines” should be added after the phrase “Type 3 and 4 wind.”	
Likes 0	

Dislikes 0	
Response	
The DT had found that the plant/facility was the most fitting wording for the definition. The DT wanted to stay away from the NERC definition "Facility." The DT felt the Glossary definition for Facility was too vague. Thank you for the concern, but the DT feels the wording is clear enough as stated.	
Rachel Schuldt - Black Hills Corporation - 6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation supports the addition of the proposed IBR definition from the EEI that would provide improved clarity. That definition is as follows: **Inverter-Based Resource (IBR):** A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together **through a common facility-level controller** as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), **VSC-HVDC systems used to connect off-shore renewable resources,** and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comment.	
Srikanth Chennupati - Entergy - Entergy Services, Inc. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
No comments	
Likes 0	

Dislikes 0	
Response	
Thank you for the response.	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
As BPA understands, power electronic interfaces are flexible. BPA believes adding "devices *capable* of exporting real power through a power electronic interface" would now include a broad spectrum of equipment that can produce electric power. BPA recommends revising the following language: **from**: "…consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s)…" **to**: "…consisting of individual devices that export Real Power through a power electronic interface(s)…"	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, the DT is going to retain the current wording of the IBR definition as the change does not appear to be substantive or enhance the intent of the IBR definition.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Foung Mua, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Kevin Smith, Balancing Authority of Northern California, 1; Nicole Looney, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Ryder Couch, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; Wei Shao, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; - Tim Kelley, Group Name SMUD and BANC	
Answer	Yes

Document Name	
Comment	
SMUD and BANC support this definition for IBR but strongly feel that a definition for “IBR Unit” is needed to help drafting teams in future NERC Order 901 Work Plan Projects. The drafting team should consider adding the word “turbines” after “wind” and defining what Type 3 and Type 3 wind turbines are. Adding the word “turbines” is a non-substantive change and could be made in the final ballot.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, the (DT) is considering using the term IBR Unit as a standard only definition for MOD-026. Other DTs can use the standard only definition approach as needed. Thank you for the suggestion the DT feels this change is not needed and the wording is clear as stated from posting.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	Yes
Document Name	
Comment	
I have reviewed the proposed definition of IBR and support the proposed definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment and support.	
Hayden Maples - Hayden Maples On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Evergy - 1,3,5,6 - MRO	
Answer	Yes

Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and Midwest Reliability Organization's NERC Standards Review Forum (MRO NSRF) on question 1	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see the response to EEI's and NAGF's comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF supports the proposed IBR definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	Yes
Document Name	
Comment	
The NSRF supports the proposed IBR definition, but would request the standard drafting team consider the following non-substantive changes to improve clarity.	

Inverter-Based Resource (IBR): A plant/facility consisting of individual devices capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and operated together as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, on shore and off-shore wind and solar plants/facilities, Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, the DT agrees that these changes are non-substantive and are not inclined to make these modifications.	
Alison MacKellar - Constellation - 5	
Answer	Yes
Document Name	
Comment	
Constellation aligns with the NAGF comments. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see the response to NAGF's comment.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Constellation aligns with NAGF comments.	

Kimberly Turco on behalf of Constellation Energy Segments 5 and 6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see the response to NAGF's comment.	
Kristine Martz - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI does not object to the revisions made to the proposed IBR definition but there are some non-substantive changes (in boldface text) that we feel would provide improved clarification of the intent of the definition. **Inverter-Based Resource (IBR):** A plant/facility consisting of individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together **through a common facility-level controller** as a single resource at a common point of interconnection to the electric system. Examples include, but are not limited to, plants/facilities with solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), **VSC-HVDC systems used to connect off-shore renewable resources,** and fuel cell devices.	
Likes 0	
Dislikes 0	
Response	
The DT considered adding this to the IBR definition, however decided against it due to already listed Type 3 and Type 4 wind within the definition. An offshore wind IBR is still an IBR whether it is connected via an AC or HVDC cable. Further, the DT felt as though the discussion within the technical rationale was sufficient to explain that the HVDC terminals are part of the IBR in this case.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Minnesota Power supports the definition for IBR as proposed, but also supports EEI and MRO's NERC Standards Review Forum's (NSRF) suggestions to improve clarity.	
Likes 0	
Dislikes 0	
Response	
Please see the responses to EEI's and MRO NSRF's comments.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	Yes
Document Name	
Comment	
"Please see EEI Comments"	
Likes 0	
Dislikes 0	
Response	
Please see response to EEI's comment.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	Yes
Document Name	
Comment	
Ameren does not have any additional comments for consideration by the drafting team.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment.	
Carver Powers - Utility Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
1. Recommend clarifying “Type 3 and Type 4 wind” by including “turbine” after wind in the proposed IBR definition. 2. Without a clear definition of “power electronic interface(s)” it could be determined that it includes transformers which we believe is not the intent of this definition. Can the SDT provide clarity on what is and what is not a “power electronic interface(s)”	
Likes 0	
Dislikes 0	
Response	
1. Please see the response to Texas RE’s comment. 2. DT believes transformers are decidedly not power electronic interfaces.	
George E Brown - Pattern Operators LP - 5	
Answer	Yes
Document Name	
Comment	
Pattern Energy supports Midwest Reliability Organization’s NERC Standards Review Forum’s (MRO NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	

Please see response to MRO's NSRF's comment.	
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	
It is the opinion of ACES that the inclusion of the phrase "plant/facility" within the proposed IBR definition introduces additional confusion into this definition. As this term is not explicitly defined, it allows for a considerable amount of interpretation by the industry. It is our opinion that the term facility should instead be included within the defined term itself (i.e., Inverter-Based Resource Facility) to be consistent with other uses of this phrase within the NERC Glossary of Terms.	
Likes 0	
Dislikes 0	
Response	
The DT believes the plant/facility is sufficiently described by what follows the term in the first sentence of the definition. There should not be confusion, but one can refer to the TR for further explanation.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
AEPC signed on to ACES comments: It is the opinion of ACES that the inclusion of the phrase "plant/facility" within the proposed IBR definition introduces additional confusion into this definition. As this term is not explicitly defined, it allows for a considerable amount of interpretation by the industry. It is our opinion that the term facility should instead be included within the defined term itself (i.e., Inverter-Based Resource Facility) to be consistent with other uses of this phrase within the NERC Glossary of Terms.	
Likes 0	
Dislikes 0	

Response	
Please see response to ACES's comment.	
Charles Yeung - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC,Texas RE,NPCC,SERC,RF, Group Name SRC 2024	
Answer	Yes
Document Name	
Comment	

The ISO/RTO Council (IRC) Standards Review Committee (SRC) supports the revised term, but notes that the deletion of "connected to the electric system" from the IBR definition, implies that the IBR term is not in and of itself applicable to BES or non-BES interconnections. Therefore, those reliability requirements applicable to IBRs will need to specify whether they apply to the new registration categories of "GO/GOP Category 1" and "GO/GOP Category 2" to complement the IBR definition. Any and all current and proposed standards applicable to IBR should be reviewed and updated to clarify their applicability.

In addition, the SRC proposes the changes in red below.

Inverter-Based Resource (IBR): *A plant/facility that includes one or more individual devices that are capable of exporting Real Power through a power electronic interface(s) such as an inverter or converter, and that are operated together as a single resource at a common point of interconnection{C}**[1]** to the electric system. Examples include, but are not limited to, plants/facilities with that include one or more solar photovoltaic (PV), Type 3 and Type 4 wind, battery energy storage system (BESS), and fuel cell devices.*

The SRC proposes that a definition or examples of what constitutes a "common point of interconnection" be provided (such as in a footnote) since this term is not defined in the NERC Glossary of Terms and it is unclear whether it refers to a transformer, a bus, or some other point of interconnection.

Illustrative examples are also useful to clarify how a hybrid plant, in which only a portion of the interconnected facility employs an inverter or converter, falls under the definition.

The SRC proposes that the language "one or more" be restored in the first sentence of the definition and added to the second sentence for clarity and consistency.

Finally, the SRC is concerned that the word "with" in the second sentence of the definition is unclear. Therefore, we propose replacing the word "with" with "that include."

Footnote: ISO NE is a party to these comments however does not support the comments provided in response to Q1.

Likes 0	

Dislikes 0	
Response	
The DT agrees to leave applicability to the specific Drafting Teams. DT believes the phrase “operated together as a single resource” is sufficiently clear. Please review the Technical Rationale (TR) as that goes more into depth. The drafting team agrees the definition by itself is not applicable to BES or non-BES interconnections as this is the intent of the language. Decisions about applicability are left to the standard drafting team using the definition. For example: BES-IBR, DER-IBR, BPS-IBR, Category 1 IBR, Category 2 IBR, etc. The DT also agrees that proposed standards will need to be reviewed for conformance. The DT views the wording of the second sentence as easy to understand and will retain the current wording.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
ERCOT joins the comments submitted by the ISO/RTO Council (IRC) Standards Review Committee (SRC) and adopts them as its own.	
Likes 0	
Dislikes 0	
Response	
Please see response to IRC SRC comment.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Barbara Marion - Dominion - Dominion Resources, Inc. - 5,6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Diana Aguas - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Sing Tay - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Michael Johnson - Michael Johnson On Behalf of: Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Casey Jones - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment.	
Patricia Lynch - NRG - NRG Energy, Inc. - 5	
Answer	
Document Name	
Comment	
NRG Energy Inc is in support of the comments made by EPSA.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response please see response to EPSA.	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	
Document Name	
Comment	
NRG agrees with the EPSA comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response please see response to EPSA.	
Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott	
Answer	
Document Name	

Comment	
ITC has no comments on the proposed definition for Project 2020-06.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	

2. *Provide any additional comments for the DT to consider, if desired*.	
Kyle Thomas - Elevate Energy Consulting - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
Elevate appreciates the opportunity to comment on the draft NERC standards, particularly those pertaining to future IBR NERC Reliability Standards, and FERC Order No. 901 directives. The IBR definition appears to be using IEEE 2800-2022 as a reference; however, there are notable differences between definitions. Most importantly, IEEE 2800-2022 is careful in its consideration of supplemental devices, defined as "any equipment within an IBR plant, which may or may not be inverter-based…" These could include capacitor banks, STATCOMs, harmonic filters, protection systems, plant-level controllers, etc., which should all be considered as part of the overall IBR facility. If the resource (or part of the resource) is deemed "IBR", then all applicable components that support that resource (such as those listed above) should be considered part of the IBR. We also would like to see the re-introduction of an IBR Unit definition, which we believe is necessary for meaningful standards applications. The difference between IBR Unit requirements/capabilities and IBR requirements/capabilities can be significant, so defining these two clearly is strongly encouraged. Creating an IBR Unit definition that matches the IEEE 2800 standard would help facilitate this process efficiently and is recommended for the definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	

ERCOT joins the comments submitted by the IRC SRC and adopts them as its own.	
Likes 0	
Dislikes 0	
Response	
Please see the response to IRC SRC's comment.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC	
Answer	
Document Name	
Comment	
WECC voted yes but offers the following for consideration. WECC appreciates the efforts to provide a definition for Inverter-Based Resource (IBR). WECC asks if the DT is planning to provide some examples so that "misunderstanding" will be avoided when the definition is applied within Standards/Requirements? Compliance can create interesting arguments that ignore the reliability (and risk) concerns. It is understood that the registration candidate pool will be limited to the definition of Generator Operator and Generator Owner recently approved by FERC. The definitions did not use IBR directly and, instead, used "non-BES inverter based generating resources" (for Cat 2) and "generating Facility(ies)" for Cat 1. It is clear to WECC that the proposed IBR definition is applicable for Cat 1 and Cat 2 GOs and GOPs.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comments, DT has provided examples in the TR on this topic but did not want to create an exhaustive list within the definition. The drafting team agrees the definition by itself is not applicable to BES or non-BES interconnections as this was the intent of the language. Decisions about applicability are left to the standard drafting team using the definition. For example: BES-IBR, DER-IBR, BPS-IBR, Category 1 IBR, Category 2 IBR, etc. The drafting team also agrees that proposed standards will need to be reviewed for conformance.	
Charles Yeung - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC,Texas RE,NPCC,SERC,RF, Group Name SRC 2024	
Answer	

Document Name	2020-06_IBR_Definition_Unofficial_Comment_Form_SRCFinal.docx

Comment

Concerns Associated with Removing the IBR Unit Definition

The SRC is aware of a draft **Standards Authorization Request (SAR)** entitled *Revisions to FAC-001-4 and FAC-002-4* that the **Inverter-Based Resource Performance Subcommittee (IRPS)** is currently composing that seeks to address modeling conformity. The SRC believes that this may require unit-level model validation and benchmarking (where the original manufacturer conducts laboratory tests to compare the actual equipment response to the modeled response) before models can be accurately applied at the plant/facility level. This may make the elimination of the IBR Unit definition problematic if this term will be needed when drafting future standard requirements.

See Purpose or Goal, bullet item #2 (on page 3):

2." …require Transmission Planners (TPs) and Planning Coordinators (PCs) to assess IBR plant capability and performance conformity for example through a combination of review of documentation, simulation studies, and physical tests that a newly interconnecting IBR complies with applicable IBR performance requirements."

See Purpose or Goal, paragraph (on page 4):

"Having a specific conformity assessment process (in addition to currently performed interconnection studies) will ensure that the TP and PC verify generator conformity with applicable interconnection requirements, preferably prior to IBR plant commissioning. Standard drafting team should consider FERC GIA/GIP requirements to determine an aligning timeline to resolve discrepancies in plant conformity. Enhancing current generator interconnection processes with clear conformity assessment processes will ensure that new BPS-connected IBR facilities are designed with the capabilities necessary for reliable operation."

Further, the SRC notes that existing NERC standards apply requirements at the unit level. For instance, **MOD-026, Requirement R2, Part 2.1** has unit-specific requirements for excitation control systems.

2.1. Each applicable unit's model shall be verified by the Generator Owner using one or more models acceptable to the Transmission Planner. Verification for individual units less than 20 MVA (gross nameplate rating) in a generating plant (per Section 4.2.1.2, 4.2.2.2, or 4.2.3.2) may be performed using either individual unit or aggregate unit model(s), or both. Each verification shall include the following: . . .

Similarly, **PRC-024, Section 4 Applicability, Part 4.2 Facilities**, **Part 4.2.1.4** includes individual dispersed power producing resource(s) as applicable facilities identified in Inclusion I4 of the BES Definition.

4.2.1.4 Individual dispersed power producing resource(s) identified in the BES Definition, Inclusion I4.

For these reasons, the SRC believes consideration should be given to retaining a definition of “IBR Unit” as it will engender common understanding and application of the term among Registered Entities. While an “IBR Unit” definition may not need to be finalized in this immediate project, there will likely be a need to complete this task in the future to align with developing frameworks.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, however the (DT) is considering using the term IBR Unit as a standard only definition for MOD-026 at this time. Other DTs can use the standard only definition approach as needed.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	

AEPC signed on to ACES comments:

We at ACES applaud the SDT for the work that has been put into developing the IBR definition. We are greatly encouraged by the SDT’s willingness to heed industry feedback and implement changes to the IBR definition. However, it is the opinion of ACES that consolidating the IBR Unit and IBR Facility definitions into a single definition is a mistake.

It is the perspective of ACES that, without a way to clearly define what constitutes the individual devices of an IBR, each individual Standards Drafting Team is left to provide their own (potentially unique) definition. We believe that this will be a detriment to consistency and will potentially have a negative impact on compliance. We suggest utilizing terms and/or language already contained within the Glossary of Terms whenever possible. Thus, we recommend using the following terms to define these types of generating resources (a:

Inverter-Based Resource (IBR) Facility: One or more IBR Unit(s), and any associated Element(s) required for the operation thereof, connected to the electric system and operated as a single resource at a common point of Interconnection.

Inverter-Based Resource (IBR) Unit: An individual generating resource capable of exporting electric power that uses a power electronic interface, such as an inverter or converter, and connects at a single point to a system designed primarily for delivering such electric power to a common point of

Interconnection (note: a system designed primarily for delivering such electric power to a common point of Interconnection is commonly referred to as a collector system). Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Please see response to ACES' comment.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	
Document Name	
Comment	
We at ACES applaud the SDT for the work that has been put into developing the IBR definition. We are greatly encouraged by the SDT's willingness to heed industry feedback and implement changes to the IBR definition. However, it is the opinion of ACES that consolidating the IBR Unit and IBR Facility definitions into a single definition is a mistake. It is the perspective of ACES that, without a way to clearly define what constitutes the individual devices of an IBR, each individual Standards Drafting Team is left to provide their own (potentially unique) definition. We believe that this will be a detriment to consistency and will potentially have a negative impact on compliance. We suggest utilizing terms and/or language already contained within the Glossary of Terms whenever possible. Thus, we recommend using the following terms to define these types of generating resources (a: **Inverter-Based Resource (IBR) Facility:** One or more IBR Unit(s), and any associated Element(s) required for the operation thereof, connected to the electric system and operated as a single resource at a common point of Interconnection. **Inverter-Based Resource (IBR) Unit**: An individual generating resource capable of exporting electric power that uses a power electronic interface, such as an inverter or converter, and connects at a single point to a system designed primarily for delivering such electric power to a common point of Interconnection (note: a system designed primarily for delivering such electric power to a common point of Interconnection is commonly referred to as a collector system). Thank you for the opportunity to comment.	

Likes 0	
Dislikes 0	
Response	
The DT will consider this if the DT decides to create a standard only definition for IBR Unit. It was not the teams intention to combine IBR Unit and IBR Facility into the same the definition, the team is not using “Facility” in the definition but using the undefined “facility” term.	
George E Brown - Pattern Operators LP - 5	
Answer	
Document Name	
Comment	
Pattern Energy supports Midwest Reliability Organization’s NERC Standards Review Forum’s (MRO NSRF) comments on this question.	
Likes 0	
Dislikes 0	
Response	
Please see the response to MRO NSRFs comment.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	
Document Name	
Comment	
NPCC RSC supports the project.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	

Scott Thompson - PNM Resources - Public Service Company of New Mexico - 1,3,5 - WECC	
Answer	
Document Name	
Comment	
Any and all items listed items/assets in the proposed IBR definition should be defined and in the NERC Glossary of Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, the team did not want to make an limiting and exhaustive list within the definition, this information can be found in the TR.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
Southern Company has no further comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	

OPG supports NPCC Regional Standards Committee's comments.	
Likes 0	
Dislikes 0	
Response	
Please see the response to NPCC's RS comment.	
Nick Leathers - Nick Leathers On Behalf of: David Jendras Sr, Ameren - Ameren Services, 3, 6, 1; - Nick Leathers	
Answer	
Document Name	
Comment	
Ameren does not have any additional comments for consideration by the drafting team.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Romel Aquino - Edison International - Southern California Edison Company - 3	
Answer	
Document Name	Project 2020-06 _ EEI Near Final Revised IBR Definition Draft 3 Rev 0a 8_06_2024.docx
Comment	
See comments submitted by the Edison Eclectic Institute in the attached file	
Likes 0	
Dislikes 0	
Response	

Thank you for the comments, please response to EEI's comment.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Energy Segments 5 and 6.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Gail Elliott - Gail Elliott On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Gail Elliott	
Answer	
Document Name	
Comment	
ITC has no comments on the proposed definition for Project 2020-06.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Alison MacKellar - Constellation - 5	
Answer	
Document Name	

Comment	
Constellation has no additional comments. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Martin Sidor - NRG - NRG Energy, Inc. - 5,6	
Answer	
Document Name	
Comment	
NRG agrees with the EPSA comments.	
Likes 0	

Dislikes 0	
Response	
Please see EPSA comment for response.	
Mohamad Elhusseini - DTE Energy - Detroit Edison Company - 3,5, Group Name DTE Energy	
Answer	
Document Name	
Comment	
No other comments to provide.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Jennifer Weber - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	

Technical Rationale:

- Need to define the acronym “LCC” as, while it may be obvious to some, it isn’t necessarily known to all. Note that the definition of “VSC HVDC” should be moved up to the first time it’s used.
- Contains the term “IBR Unit,” which is no longer a defined term, and, as such, should not be included in the document.

Implementation Plan:

- The Background section contains the term “IBR Unit,” which is no longer a defined term, and, as such, should not be included in the document.
- The General Considerations section makes reference to multiple definitions, but there is only one (“IBR”) now.

Likes 0	
Dislikes 0	
Response	
Thank you for these comments, the team has made the conforming changes to the IP and TR regarding IBR Unit. The DT has made the TR conforming changes.	
Brian Van Gheem - Radian Generation - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
1. Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Michael Johnson - Michael Johnson On Behalf of: Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; Tyler Brun, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PGAE is curious why the SDT did not use the IEEE definition of an IBR and IBR Unit so there is alignment between NERC and IEEE? The difference does not appear to change the overall meaning but may lead to confusion/conflict down the road between product developers and compliance related tasks.	
Likes 0	
Dislikes 0	

Response	
The DT does align the NERC IBR definition with IEEE 2800 definition, but the NERC definition only applies to NERC standards.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
LG&E/KU thanks the DT for their work on this desperately needed definition. The suggested edits sharpen the proposed definition and reduce the risk of confusion regarding IBRs co-located with synchronous generators and separate IBRs sharing a point of interconnection. Most of these edits are believed to be non-substantive relative to the intent of the DT.	
Likes 0	
Dislikes 0	
Response	
Thank you for the support.	
Anna Todd - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	

Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Sing Tay - AES - AES Corporation - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
AES Clean Energy believes that a definition for IBR Unit is still required. Currently, PRC-028 proposed Draft 4 has its own "IBR unit" definition within the standard in order to create the requirement language needed. Since other Standards are being revised or created to meet FERC Order 901, AES Clean Energy believes that having a NERC Glossary definition for IBR Unit will help maintain consistency between all the different Standards that will be applicable to IBRs. AES Clean Energy strongly recommends that NERC continues to pursue a definition for IBR Unit.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, however the (DT) is considering using the term IBR Unit as a standard only definition for MOD-026 at this time. Other DTs can use the standard only definition approach as needed. PRC-028 is including IBR Unit in a footnote.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	

None	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Srikanth Chennupati - Entergy - Entergy Services, Inc. - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Sean Steffensen - IDACORP - Idaho Power Company - 1	
Answer	
Document Name	
Comment	
IPC has concerns about removing the entire current definition of IBR Units. Will “IBR Unit” be defined somewhere else, or excluded altogether? IPC believes a broader definition of IBR (unit) is still necessary and would be helpful to the process.	
Likes 0	
Dislikes 0	
Response	
Thank you for the response, however the (DT) is considering using the term IBR Unit as a standard only definition for MOD-026 at this time. Other DTs can use the standard only definition approach as needed.	

End of Report