NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2022-02 Modifications to TPL-001 and MOD-032 | Draft 2 - MOD-032-2
Comment Period Start Date:	10/6/2023
Comment Period End Date:	11/20/2023
Associated Ballot(s):	2022-02 Modifications to TPL-001 and MOD-032 | Draft 1 Implementation Plan AB 2 OT 2022-02 Modifications to TPL-001 and MOD-032 | Draft 1 MOD-032-2 AB 2 ST 2022-02 Modifications to TPL-001 and MOD-032 | Non-Binding Poll MOD-032-2 AB 2 NB

There were 71 sets of responses, including comments from approximately 185 different people from approximately 114 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 Vice President of Engineering and Standards, Soo Jin Kim (via email) or at (404) 446-9742.

Questions

1. **Given the explanation in the Technical Rationale and response to industry comment, do you agree with the proposed definition for DER?**

2. **Are there any other clarifications needed in the Technical Rationale?**

3. **Do you agree the modifications made in MOD-032-2 will improve system modeling and reliability?**

4. **Do you agree the modifications made in MOD-032-2 are cost effective?**

5. **Do you agree with the Implementation Plan for revised MOD-032-2?**

6. **Provide any additional comments for the standard drafting team to consider, if desired.**

The Industry Segments are:

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

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
DTE Energy - Detroit Edison Company	Adrian Raducea	5		DTE Energy - DTE Electric	Karie Barczak	DTE Energy - Detroit Edison Company	3	RF
					Adrian Raducea	DTE Energy - Detroit Edison	5	RF
					patricia ireland	DTE Energy	4	RF
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

Jaimin Patal	Saskatchewan Power Corporation (SPC)	1	MRO
Kimberly Bentley	Western Area Power Adminstration	1,6	MRO
Marc Gomez	Southwestern Power Administration (SWPA)	1	MRO
Fred Meyer	Algonquin Power Co.	3	MRO
George Brown	Pattern Operators LP	5	MRO
Larry Heckert	Alliant Energy (ALTE)	4	MRO
Terry Harbour	MidAmerican Energy Company (MEC)	1,3	MRO
Bryan Sherrow	Board Of Public Utilities (BPU)	1	MRO
Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
Bobbi Welch	Midcontinent ISO, Inc.	2	MRO

					Michael Ayotte	ITC Holdings	1	MRO
Public Utility District No. 1 of Chelan County	Anne Kronshage	6		Public Utility District No. 1 of Chelan County - Voting Group	Anne Kronshage	Public Utility District No. 1 of Chelan County	6	WECC
					Diane Landry	Public Utility District No. 1 of Chelan County	1	WECC
					Rebecca Zahler	Public Utility District No. 1 of Chelan County	5	WECC
					Joyce Gundry	Public Utility District No. 1 of Chelan County	3	WECC
Midcontinent ISO, Inc.	Bobbi Welch	2	MRO,RF,SERC	ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2	Ali Miremadi	CAISO	2	WECC
					Kennedy Meier	Electric Reliability Council of Texas, Inc.	2	Texas RE
					John Pearson	ISO New England, Inc.	2	NPCC
					Bobbi Welch	MISO	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC

					Elizabeth Davis	PJM	2	RF
					Charles Yeung	SPP	2	MRO
WEC Energy Group, Inc.	Christine Kane	3		WEC Energy Group	Christine Kane	WEC Energy Group	3	RF
					Matthew Beilfuss	WEC Energy Group, Inc.	4	RF
					Clarice Zellmer	WEC Energy Group, Inc.	5	RF
					David Boeshaar	WEC Energy Group, Inc.	6	RF
Jennie Wike	Jennie Wike		WECC	Tacoma Power	Jennie Wike	Tacoma Public Utilities	1,3,4,5,6	WECC
					John Merrell	Tacoma Public Utilities (Tacoma, WA)	1	WECC
					John Nierenberg	Tacoma Public Utilities (Tacoma, WA)	3	WECC
					Hien Ho	Tacoma Public Utilities (Tacoma, WA)	4	WECC
					Terry Gifford	Tacoma Public Utilities (Tacoma, WA)	6	WECC

					Ozan Ferrin	Tacoma Public Utilities (Tacoma, WA)	5	WECC
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,RF,SERC,Texas RE,WECC	ACES Collaborators	Bob Soloman	Hoosier Energy Electric Cooperative	1	RF
					Nick Fogleman	Prairie Power, Inc.	1,3	SERC
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
					Kris Carper	Arizona Electric Power Cooperative, Inc.	1	WECC
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Andy Fuhrman	Minnkota Power Cooperative, Inc.	1	MRO
					Bill Pezalla	Old Dominion Electric Cooperative	3,4	SERC

Eversource Energy	Joshua London	1		Eversource	Joshua London	Eversource Energy	1	NPCC
					Vicki O'Leary	Eversource Energy	3	NPCC
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
Southern Company - Southern Company Services, Inc.	Pamela Frazier	1,3,5,6	MRO,RF,SERC,Texas RE,WECC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC

					Jim Howell, Jr.	Southern Company - Southern Company Generation	5	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Leslie Burke	Southern Company - Southern Company Generation	5	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC RSC	Gerry Dunbar	Northeast Power Coordinating Council	10	NPCC
					Alain Mukama	Hydro One Networks, Inc.	1	NPCC
					Deidre Altobell	Con Edison	1	NPCC
					Jeffrey Streifling	NB Power Corporation	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
John Pearson	ISO New England, Inc.	2	NPCC
Harishkumar Subramani Vijay Kumar	Independent Electricity System Operator	2	NPCC
Randy MacDonald	New Brunswick Power Corporation	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

Salvatore Spagnolo	New York Power Authority	1	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
David Kwan	Ontario Power Generation	4	NPCC
Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	1	NPCC
Glen Smith	Entergy Services	4	NPCC
Sean Cavote	PSEG	4	NPCC
Jason Chandler	Con Edison	5	NPCC
Tracy MacNicoll	Utility Services	5	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC
Vijay Puran	New York State Department of Public Service	6	NPCC
ALAN ADAMSON	New York State Reliability Council	10	NPCC
David Kiguel	Independent	7	NPCC
Joel Charlebois	AESI	7	NPCC

					Joshua London	Eversource Energy	1	NPCC
Ryan Strom	Ryan Strom		RF	Buckeye Power Group	Carl Spaetzel	Buckeye Power, Inc.	3	RF
					Jason Procuniar	Buckeye Power, Inc.	4	RF
					Kevin Zemanek	Buckeye Power, Inc.	5	RF
Scott Brame	Scott Brame		SERC	NCEMC	Richard McCall	North Carolina Electric Membership Corporation	4	SERC
					Reid Cashion	North Carolina Electric Membership Corporation	5	SERC
					Chris Dimisa	North Carolina Electric Membership Corporation	3	SERC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Connie Lowe	Dominion - Dominion Resources, Inc.	3	NA - Not Applicable
					Lou Oberski	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable

					Larry Nash	Dominion - Dominion Virginia Power	1	NA - Not Applicable
					Rachel Snead	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
Shannon Mickens	Shannon Mickens		MRO,SPP RE,WECC	SPP RTO	Shannon Mickens	Southwest Power Pool Inc.	2	MRO
					Sheri Maxey	Southwest Power Pool Inc.	2	MRO
					Mia Wilson	Southwest Power Pool Inc.	2	MRO
					Mason Favazza	Southwest Power Pool Inc.	2	MRO
					Scott Jordan	Southwest Power Pool Inc.	2	MRO
					Dee Edmondson	Southwest Power Pool Inc.	2	MRO
					Jim Williams	Southwest Power Pool Inc.	2	MRO
					Joshua Phillips	Southwest Power Pool, Inc. (RTO)	2	MRO
					Eddie Watson	Southwest Power Pool Inc.	2	MRO
Stephen Whaite	Stephen Whaite		RF	ReliabilityFirst Ballot Body	Lindsey Mannion	ReliabilityFirst	10	RF

				Member and Proxies	Stephen Whaite	ReliabilityFirst	10	RF
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	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
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. Given the explanation in the Technical Rationale and response to industry comment, do you agree with the proposed definition for DER?	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	
FirstEnergy supports EEI's comments which state: we do not support the development of a DER definition within this NERC Reliability Standards project. The impact of this definition will have far reaching impacts that go beyond this project. To address this issue, we suggest that a separate NERC Reliability Standards project be developed to address this definition. We additionally do not agree or support the notion that from a NERC Reliability Standard compliance standpoint, entities should be held accountable for DERs that fall outside of the NERC registration criteria.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	

We do not agree with the proposed definition for DER, nor do we agree that the definition for the term DER should be defined by the drafting team of single project working within the confines of that project as set forth by the Standard Drafting Process. We are concerned with the proliferation of NERC projects that are either directly, or indirectly, related to DERs and the potential consequences of the proposed DER definition. A definition that impacts multiple standards should be developed outside the scope of any individual standard and consider the impact to all of the affected NERC Reliability standards.

We have for example a GO/GOP-registered plant that feeds a DP-registered data center in behind-the-meter fashion, i.e. upstream of the POI to the TO. This 2.5 GW generation facility is clearly not a Distributed Energy Resource, yet it seems to be included under the currently proposed DER definition, depending on how one interprets the term, “parallel operation.”

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1A: DT should not define DER - separate project needed
The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.

Re: example
Such installations would require GO registration and information should already be provided by the registered GO. However, the DT understands that there could be a need to coordinate with the PC/TP so as to not double count the capacity.

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

Answer	No
Document Name	
Comment	
WEC Energy Group does not agree with the proposed definition for DER for the reasons stated by both EEI and the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and MRO NSRF.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State Generation and Transmission supports the MRO NSRF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	

MRO NSRF does not agree with the proposed definition for DER; further, the MRO NSRF does not believe that the definition for the term DER should be defined solely by this Standard Drafting Team within the parameters of Project 2022-02. With the proliferation of NERC projects that are either directly, or indirectly, related to DERs, MRO NSRF contends that a definition, for a term such as DER, which is a broadly utilized term that impacts multiple standards, should be developed in a separate project.

Additionally, MRO NSRF has concerns that the proposed definition for DER may fall outside the purview of NERC Reliability Standards as allowed for by Section 215(a)(1) of the Federal Power Act ("The term [bulk-power system] does not include facilities used in the local distribution of electric energy.").

Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	

Response

Thank you for your comments.
1A: DT should not define DER - separate project needed
The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.

1B: Definition falls outside NERC jurisdiction
Defining terms is not bound/restricted to NERC jurisdictional authority. The NERC glossary includes many examples of such defined terms including, but not limited to: Demand, Fault, Hourly Value, Interpersonal Communication, Load, and Vegetation.

Srikanth Chennupati - Entergy - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

Entergy agree with NAGF comments. The NAGF does not agree with the proposed definition for DER, nor do we agree that the definition for the term DER should be defined by the drafting team of single project working within the confines of that project as set forth by the Standard

Drafting Process. The NAGF is concerned with the proliferation of NERC projects that are either directly, or indirectly, related to DERs and the potential consequences of the proposed DER definition. A definition that impacts multiple standards should be developed outside the scope of any individual standard and consider the impact to all of the affected NERC Reliability standards.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	
Comment	
- MH recommends using “Bulk Power System” instead of “Bulk Electric System" - It is essential to explicitly state both exporting Real Power to the BPS and offsetting Real Power load. Proposed Definition: Generators and energy storage technologies connected to the Distribution Provider’s system that are capable of exporting Real Power or offsetting Real Power load in non-isolated parallel operation with the Bulk Power System.	
Likes 0	

Dislikes 0	

Response

Thank you for your comments.
Facilities operating in non-isolated parallel operation with the BPS are generally also operating in non-isolated parallel operation with the BES and vice versa, so to a certain extent it does not really matter which term is used in the definition. The DT chose to use “Bulk Electric System” in the proposed definition to align with the concept that NERC reliability standards are generally intended to ensure the reliability of the BES.

The proposal to explicitly refer to both exporting Real Power and offsetting Real Power Load in the DER definition is addressed in the Technical Rationale. The DT consensus was that explicitly using the term “offsetting” in the definition could be interpreted in unintended ways.

Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric

Answer	No
Document Name	

Comment

Having two different defintions for Distribution Provider makes the scope confusing. The definition is too broad and we believe that there needs to be threshold for what constitutes a DER.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1C: Definition needs threshold/too broad/creates compliance obstacle
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf
It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

1G: Confusion between glossary DP and registered DP The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
There needs further clarification if the DER is going to include every DER or there will be a threshold as there are several small projects that would be extremely costly to have to abide by each NERC mandated modeling and testing requirement when their impact to the BES is marginal. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Neither the proposed definition, nor MOD-032-2 mandate any testing related to DER. The DT proposals do not require detailed models for every individual DER. The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g. rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. Such information should be sufficient for PCs and TPs to properly represent potential DER reliability impacts.	
Diana Aguas - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	

Answer	No
Document Name	
Comment	
CenterPoint Energy Houston Electric, LLC (CEHE) does not support the development of an additional NERC Reliability Standard to define DER. CEHE finds the proposed revisions to MOD-032-2, too prescriptive and recommends that data reporting requirements for DERs listed in Attachment 1 be determined by the Planning Coordinator, in coordination with the Transmission Planner.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition. As stated in the Technical Rationale, the STD contends that, “Specific data items listed for DER reflect the minimum amount of information expected to be needed to reasonably represent DER in transmission system models.”	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV ENERGY does not agree with the proposed definition for DER; further, NV Energy does not believe that the definition for the term DER should be defined solely by this Standard Drafting Team within the parameters of Project 2022-02. With the proliferation of NERC projects	

that are either directly, or indirectly, related to DERs, NV ENERGY contends that a definition, for a term such as DER, which is a broadly utilized term that impacts multiple standards, should be developed in a separate project. Additionally, NV ENERGY has concerns that the proposed definition for DER may fall outside the purview of NERC Reliability Standards as allowed for by Section 215(a)(1) of the Federal Power Act ("The term [bulk-power system] does not include facilities used in the local distribution of electric energy.").

Likes 0	
Dislikes 0	

Response
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition. 1B: Definition falls outside NERC jurisdiction Defining terms is not bound/restricted to NERC jurisdictional authority. The NERC glossary includes many examples of such defined terms including, but not limited to: Demand, Fault, Hourly Value, Interpersonal Communication, Load, and Vegetation.

Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group

Answer	No
Document Name	

Comment
Buckeye Power, Inc. supports the comments of ACES:

We at ACES applaud the attempt made by the SDT to clearly define what is by nature a nebulous concept; however, we feel that the current definition is overly broad and will create an insurmountable compliance obstacle.

We have an ongoing concern regarding the level upon which this will require DPs to collect DER data interconnected to distribution systems. The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes each and every residential solar and commercial rooftop solar customer on the DP's systems. This is a major concern given the extent it may go to exhausting the resources of our Members for the collection of DER data which may not have a material impact to the reliability of the BES.

Additionally, there is a seemingly interchangeable use of the terms Distributed Energy Resource (DER) and Inverter Based Resource (IBR) to describe the same types of assets. It is our opinion that a singular definition should be developed to define these resource types. Given the currently proposed changes to the NERC Rules of Procedure (specifically Appendices 5A and 5B), we believe that the term IBR should be utilized in lieu of DER. Moreover, it is our opinion that the newly proposed GO-IBR and GOP-IBR registrations should be utilized when developing MOD-032-2. In short, we believe that the NERC registration criteria are well reasoned and were intentionally developed to only include those entities and/or resources that could have a material impact to the BES.

In conclusion, it is our recommendation that the proposed MOD-032-2 Reliability Standard be modified to include a non-zero MVA threshold. We believe that the DP should only be required to collect data from NERC registered entities.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1C: Definition needs threshold/too broad/creates compliance obstacle
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf

It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable. 1D: IBR/DER - single definition/GO-IBR The scope of the SAR was to address DER. Not all DER is IBR and not all IBR is DER. The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e. greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
AES Clean Energy appreciates the Standard Drafting Team's research into the various DER definitions adopted across the industry and regions. However, with the introduction of a new definition from NERC, this will create additional confusion for entities, especially those that operate in regions where the term DER is currently utilized. AES Clean Energy recommends that the Standard Drafting Team take an approach of proposing a broader definition of DER that is not specific to MOD-032 and will be applicable to other on-going DER related standard projects before moving forward with MOD-032 changes. This is similar to that of Project 2020-06 where definitions of IBRs were proposed for industry feedback.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1E: Need broader definition for DER not specific to MOD-032	

The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032.	
Kacie Fischer - Kacie Fischer On Behalf of: Byron Booker, Oncor Electric Delivery, 1; - Kacie Fischer	
Answer	No
Document Name	
Comment	

- Oncor Electric Delivery Company LLC ("Oncor") considers the DER definition used in the Technical Rationale for Reliability Standard MOD-032-2 too vague because it does not contain a voltage class threshold for an energy resource to be considered a DER.
- Oncor's view of DER is consistent with ERCOT's definition of DER, which is: "An electrical generating facility consisting of one or more on-site distributed generation units connected at a voltage less than or equal to 60 kilovolts (kV), which may be connected in parallel operation to the utility system." This definition can be found here: https://www.ercot.com/files/docs/2017/03/24/DER_OnePager_FINAL.pdf
- From Oncor's experience, the total capacity of the installation's on-site distributed generation units may exceed ten megawatts (MW); however, no more than ten MW of the installation's capacity will be allowed to export into the grid at any point in time at the point of common coupling.
- Is there any MW size threshold for Generator and energy storage technologies to be taken into account when the end-use customer is served at transmission voltage? We would prefer a MW size threshold be specified in the definition.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1F: Include voltage class in definition
DT views that it is not appropriate to include voltage level in the DER definition given the different considerations of voltage level across the continent. As noted in the NERC glossary definition, the Distribution Provider "is not defined by a specific voltage, but rather as performing the distribution function at any voltage."

1C: Definition needs threshold/too broad/creates compliance obstacle

The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
"See comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
David Rivera - New York Power Authority - 3	
Answer	No
Document Name	
Comment	
*NYPA appreciates the standard drafting team's effort to define '**DER**' and aligning it with IEEE 1547, but we believe a more detailed definition is essential for better interpretations. The current proposed definition seems too narrow, given the use of the term DER across multiple NERC standards. NYPA suggest SDT to propose a more detailed **DER** definition with examples to avoid potential misinterpretations as DER which is not solely for renewables.*	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. 1E: Need broader definition for DER not specific to MOD-032 The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The Technical Rationale includes examples of facilities intended to be in scope.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES and the MRO NERC Standards Review Forum.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES and MRO NSRF.	
Bill Garvey - Dominion - Dominion Virginia Power - 3	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEI comments	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. See response to EEI.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	

Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name SPP RTO	
Answer	No
Document Name	
Comment	
SPP recommends that the drafting team creates propose language in the Technical Rationale that suggests including the prosed definition in the Rules of Procedure (RoP- Appendix 2A) to ensure proper alignment with the NERC Glossary of Terms.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The suggestion is beyond the scope of Project 2022-02. If DER was added to and used within the Rules of Procedure (ROP), it would be determined at that time if our proposed NERC glossary definition was appropriate (not all the definitions in ROP Appendix 2 are from NERC glossary).	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	
Comment	
ATC agrees that there is a need for a NERC DER definition, but ATC does not support the SDT's proposed definition for DER. Defining DER within the confines of a single NERC project (i.e., NERC Project 2022-02) could limit the definition's use within other ongoing and future DER standard drafting efforts. With the number of NERC projects under modification and existing Standards that are either directly or indirectly related to DERs, ATC believes that a definition for a term such as DER, which is a broadly utilized term that impacts multiple standards, should be developed outside the scope of any individual standard, and should consider the impact to any affected NERC Reliability standards.	

If the SDT does go forward with a NERC Glossary of Terms definition for DER, the NERC definition of DER should not involve itself in facilities that do not fall under the purview and regulation of NERC (e.g., local distribution facilities).

ATC believes that the text “Distribution Provider’s system” should not be referenced in the DER definition as it refers to the NERC glossary definition of Distribution Provider, not the NERC registered entity and in some cases this is different.

If the term “Distribution Provider” is used, ATC also suggests that there should be a clearer distinction between Distribution Provider as a NERC glossary term and Distribution Provider as a NERC registered entity.

As an alternative, the SDT could replace “connected to the DP’s system” with “not directly connected to a bulk power system.”

Additionally, ATC requests that the standard explicitly allows the PC to determine thresholds (ex: MW or MVA) for both the collection of DER data and for the modeling of DERs. Alternatively, thresholds for DER data collection and for DER data modeling could be included in the standard. Thresholds for DER data collection and for DER data modeling could also be included in the DER definition but this may be less appropriate/ flexible for future use.

DER thresholds greater than zero MW are needed to manage the potentially large administrative burden on NERC Registered Entities such as the TOs, TPs, and DPs.

ATC encourages a new NERC Registered Entity for DER (ex: DP-DER or IBR-DER) to bring DER data reporting accountability to those unregistered DPs with DER.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1A: DT should not define DER - separate project needed
The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this.

1B: Definition falls outside NERC jurisdiction

Defining terms is not bound/restricted to NERC jurisdictional authority. The NERC glossary includes many examples of such defined terms including, but not limited to: Demand, Fault, Hourly Value, Interpersonal Communication, Load, and Vegetation.

1G: Confusion between glossary DP and registered DP
The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.

1C: Definition needs threshold/too broad/creates compliance obstacle
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf
It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

As noted in the Technical Rationale, developing new registration criteria is beyond the scope of this project.

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

Answer	No
Document Name	

Comment

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

Likes 0	
Dislikes 0	

Response

Thank you for your comments. See responses to EEI, NAGF, and MRO NSRF.	
Alison MacKellar - Constellation - 5	
Answer	No
Document Name	
Comment	
There needs further clarification if the DER is going to include every DER or there will be a threshold as there are several small projects that would be extremely costly to have to abide by each NERC mandated modeling and testing requirement when their impact to the BES is marginal. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Neither the proposed definition, nor MOD-032-2 mandate any testing related to DER. The DT proposals do not require detailed models for every individual DER. The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g., rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. Such information should be sufficient for PCs and TPs to properly represent potential DER reliability impacts.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF does not agree with the proposed definition for DER, nor do we agree that the definition for the term DER should be defined by the drafting team of single project working within the confines of that project as set forth by the Standard Drafting Process. The NAGF is	

concerned with the proliferation of NERC projects that are either directly, or indirectly, related to DERs and the potential consequences of the proposed DER definition. A definition that impacts multiple standards should be developed outside the scope of any individual standard and consider the impact to all of the affected NERC Reliability standards. *In addition, the NAGF is concerned with the inconsistency of DER term used across the industry as stated in the examples provided in the Technical Rationale. Regions or even states have their own definition of DERs which may impact a Generator Owner's ability to comply with both NERC and other state or regional requirements. It is recommended that NERC perform outreach to regions and/or states to try to ensure some consistency on how the term is going to be used.*

Likes 0	
Dislikes 0	

Response
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.

Ben Hammer - Western Area Power Administration - 1	
Answer	No
Document Name	

Comment
The definition for the term DER should be defined solely by this Standard Drafting Team within the parameters of Project 2022-02. With the proliferation of NERC projects that are either directly, or indirectly, related to DERs. A definition, for a term such as DER, which is a broadly utilized term that impacts multiple standards, should be developed in a separate project. Additionally, the proposed definition for DER may fall outside the purview of NERC Reliability Standards as allowed for by Section 215(a)(1) of the Federal Power Act ("The term [bulk-power system] does not include facilities used in the local distribution of electric energy.").

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition. 1B: Definition falls outside NERC jurisdiction Defining terms is not bound/restricted to NERC jurisdictional authority. The NERC glossary includes many examples of such defined terms including, but not limited to: Demand, Fault, Hourly Value, Interpersonal Communication, Load, and Vegetation.	
Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	No
Document Name	

Comment	
Ameren supports EEI's comments on this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
Dominion Energy supports EEi comments. The current proposed definition appears to conflict with how FERC has previously defined DER: “any resource located on the distribution system, any subsystem thereof or behind a customer meter”, which may include, but not limited to, “electric storage resources, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI. The Technical Rationale already provides a description for why the FERC definition is not suitable for application within the context of reliability standards.	

Scott Brame - Scott Brame On Behalf of: Chris Dimisa, North Carolina Electric Membership Corporation, 4, 3, 5; Reid Cashion, North Carolina Electric Membership Corporation, 4, 3, 5; Richard McCall, North Carolina Electric Membership Corporation, 4, 3, 5; - Scott Brame, Group Name NCEMC	
Answer	No
Document Name	
Comment	
NCEMC supports comment of ACES.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to ACES.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	No

Document Name	
Comment	
Black Hills Corporation does not support the development of a DER definition within the NERC Reliability Standards Project 2022-02 Modifications to TPL-001 and MOD-032. Black Hills Corporation agrees with EEI and NAGF comments that the inclusion of the proposed DER definition will affect multiple other NERC standards and as such a DER definition should be defined outside the scope of a single standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.	
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not support the development of a DER definition within the NERC Reliability Standards Project 2022-02 Modifications to TPL-001 and MOD-032. Black Hills Corporation agrees with EEI and NAGF comments that the inclusion of the proposed DER definition will affect multiple other NERC standards and as such a DER definition should be defined outside the scope of a single standard.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR, which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
Black Hills Corporation does not support the development of a DER definition within the NERC Reliability Standards Project 2022-02 Modifications to TPL-001 and MOD-032. Black Hills Corporation agrees with EEI and NAGF comments that the inclusion of the proposed DER definition will affect multiple other NERC standards and as such a DER definition should be defined outside the scope of a single standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR, which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.	
Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller	
Answer	No
Document Name	
Comment	

Black Hills Corporation does not support the development of a DER definition within the NERC Reliability Standards Project 2022-02 Modifications to TPL-001 and MOD-032. Black Hills Corporation agrees with EEI and NAGF comments that the inclusion of the proposed DER definition will affect multiple other NERC standards and as such a DER definition should be defined outside the scope of a single standard.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR, which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition.	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	

Comment
As stated in our draft 1 comments, EEI does not support the development of a DER definition within this NERC Reliability Standards project. The impact of this definition will have far reaching impacts that go beyond this project. To address this issue, we suggest that a separate NERC Reliability Standards project be developed to address this definition. We additionally do not agree or support the notion that from a NERC Reliability Standard compliance standpoint, entities should be held accountable for DERs that fall outside of the NERC registration criteria.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. 1A: DT should not define DER - separate project needed The SC approved the DT and the SAR, which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

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
We at ACES applaud the attempt made by the SDT to clearly define what is by nature a nebulous concept; however, we feel that the current definition is overly broad and will create an insurmountable compliance obstacle.

We have an ongoing concern regarding the level upon which this will require DPs to collect DER data interconnected to distribution systems. The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes each and every residential solar and commercial rooftop solar customer on the DP's systems. This is a major concern given the extent it may go to exhausting the resources of our Members for the collection of DER data which may not have a material impact to the reliability of the BES.

Additionally, there is a seemingly interchangeable use of the terms Distributed Energy Resource (DER) and Inverter Based Resource (IBR) to describe the same types of assets. It is our opinion that a singular definition should be developed to define these resource types. Given the currently proposed changes to the NERC Rules of Procedure (specifically Appendices 5A and 5B), we believe that the term IBR should be utilized in lieu of DER. Moreover, it is our opinion that the newly proposed GO-IBR and GOP-IBR registrations should be utilized when developing MOD-032-2. In short, we believe that the NERC registration criteria are well reasoned and were intentionally developed to only include those entities and/or resources that could have a material impact to the BES.

In conclusion, it is our recommendation that the proposed MOD-032-2 Reliability Standard be modified to include a non-zero MVA threshold. We believe that the DP should only be required to collect data from NERC registered entities.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1C: Definition needs threshold/too broad/creates compliance obstacle
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf
It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

1D: IBR/DER - single definition/GO-IBR

The scope of the SAR was to address DER. Not all DER is IBR and not all IBR is DER. The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	

AEPC signed on to ACES comments:

We at ACES applaud the attempt made by the SDT to clearly define what is by nature a nebulous concept; however, we feel that the current definition is overly broad and will create an insurmountable compliance obstacle.

We have an ongoing concern regarding the level upon which this will require DPs to collect DER data interconnected to distribution systems. The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes each and every residential solar and commercial rooftop solar customer on the DP's systems. This is a major concern given the extent it may go to exhausting the resources of our Members for the collection of DER data which may not have a material impact to the reliability of the BES.

Additionally, there is a seemingly interchangeable use of the terms Distributed Energy Resource (DER) and Inverter Based Resource (IBR) to describe the same types of assets. It is our opinion that a singular definition should be developed to define these resource types. Given the

currently proposed changes to the NERC Rules of Procedure (specifically Appendices 5A and 5B), we believe that the term IBR should be utilized in lieu of DER. Moreover, it is our opinion that the newly proposed GO-IBR and GOP-IBR registrations should be utilized when developing MOD-032-2. In short, we believe that the NERC registration criteria are well reasoned and were intentionally developed to only include those entities and/or resources that could have a material impact to the BES.

In conclusion, it is our recommendation that the proposed MOD-032-2 Reliability Standard be modified to include a non-zero MVA threshold. We believe that the DP should only be required to collect data from NERC registered entities.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
1C: Definition needs threshold/too broad/creates compliance obstacle
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf
It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

1D: IBR/DER - single definition/GO-IBR
The scope of the SAR was to address DER. Not all DER is IBR and not all IBR is DER. The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity

The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
The drafting team should consider defining “Transmission connected DERs” (100 kV and above) and “Distribution connected DERs” (below 100 kV). The proposed DER definition begins with “generators and energy storage technologies…”, implying that a Generator Owner is involved. The NERC Glossary of Terms defines a Generator Owner as the “Entity that owns and maintains generating Facility(ies)”. Would it be more practical to acquire DER data from the associated GO rather than the DP/TO; particularly in instances where the GO is a NERC registered entity?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 1F: Include voltage class in definition DT views that it is not appropriate to include voltage level in the DER definition given the different considerations of voltage level across the continent. As noted in the NERC glossary definition, the Distribution Provider “is not defined by a specific voltage, but rather as performing the distribution function at any voltage.” In most cases, the GO for DER is not a NERC-registered entity. It does not seem practical to create a NERC registration for DER GO because it would need to extend down to the level of residential solar (which in aggregate can significantly impact BPS reliability). Thus, it seems most appropriate for DPs, which would seem to have a need to know about and understand the capabilities of such DER installations to ensure reliable distribution system operations, to report DER data.	

Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
We agree with some comments provided by ACES, EEI, MRO, NAGF, and Talen but are not going to restate each item specifically, as others have already restated them. Also, It should say BES in front of "Generators" and before "energy storage technologies".	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES, EEI, MRO, NAGF, and Talen. The DT is not proposing DER to be included in the BES, so the proposed modification to the DER definition was not made.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
Hi, please reference comments by Marty Hostler, NCPA Compliance Manager. Thank you, **Jeremy Lawson, P.E.**	

Generation Services Director of Engineering Northern California Power Agency	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to comments by Marty Hostler, NCPA Compliance Manager.	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Texas RE agrees with the definition of DER. Texas RE noticed a potential contradiction within the technical rationale and would like it clarified. On page 2 of the technical rationale, it states “It should be clear that MOD-032 2 applicability and compliance obligations refer to	

NERC registered DPs; the use of the DP term in the DER definition does not in itself imply any compliance." This seems to be contradicted on page 3, where it states: "The NERC glossary definition for DP1 notes that the DP is defined by providing the distribution function (this includes entities that may not be NERC-registered DPs)."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Compliance obligations are only established for NERC-registered entities in standards, not definitions. A DER is a DER whether it is connected to the system of a registered entity or not (i.e., the DER definition should not be dependent on entity registration). 1G: Confusion between glossary DP and registered DP The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.	
John Pearson - ISO New England, Inc. - 2	
Answer	Yes
Document Name	
Comment	
The number of different DER definitions is confusing and difficult to work with. We agree with the proposed definition but it doesn't appear to be used consistently throughout the standard.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Attachment 1 was updated to add “aggregate” DER data. The DT believes this may address the concern.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; 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	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Eric Sutlief - CMS Energy - Consumers Energy Company - 3,4,5 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Greg Davis - Georgia Transmission Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Helen Lainis - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Stephen Whaite - Stephen Whaite On Behalf of: Lindsey Mannion, ReliabilityFirst , 10; - Stephen Whaite, Group Name ReliabilityFirst Ballot Body Member and Proxies	
Answer	
Document Name	
Comment	
RF recommends revising the proposed definition to explicitly include behind the meter resources: "Generators and energy storage technologies connected to the Distribution Provider's system*, either directly or behind the meter of an end use customer,* that are capable of providing Real Power in non-isolated parallel operation with the Bulk Electric System."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT has avoided the use of the term "directly connected" as described in the Technical Rationale. However, an explicit reference to behind the meter resources was added to the proposed DER definition.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	

Document Name	
Comment	
The apparent use of a defined term for a registered entity (functional entity) may cause confusion in the industry. WECC appreciates the idea of trying to illustrate what the entity functions may be regardless of the determination for registration	
Likes 0	
Dislikes 0	
Response	
1G: Confusion between glossary DP and registered DP Thank you for your comments. The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.	

2. Are there any other clarifications needed in the Technical Rationale?	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
Hi, please reference comments by Marty Hostler, NCPA Compliance Manager. Thank you, **Jeremy Lawson, P.E.** Generation Services Director of Engineering Northern California Power Agency	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to comments by Marty Hostler, NCPA Compliance Manager.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	

AEPC signed on to ACES comments: While we do not agree with some of the SDT's viewpoints about the level of DER data required, we do appreciate the high level of effort made by the SDT to develop the Technical Rationale.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to ACES.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
While we do not agree with some of the DT's viewpoints about the level of DER data required, we do appreciate the high level of effort made by the SDT to develop the Technical Rationale.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	

While EEI finds the Technical Rationale to be clear, we have concerns with the following statements and positions contained in the Technical Rationale:

Page 1; Rationale for Applicability Section:

EEI does not agree that TOs (or registered DPs) should be required to coordinate with the owners of distribution facilities that do not have an associated NERC-registered DP to ensure the availability of necessary data, either through interconnection agreements or other binding contracts. TOs and DPs have no ability to control interconnection agreements on other entity's system or the ability to obtain data from non-registered entities or facilities used in the local distribution of electric energy.

EEI is also concerned that the SDT acknowledges that data collection for DERs connected to unregistered entities is a problem and suggests that NERC should expand DP registration criteria or develop a DER-only DP registration criteria to address this gap but still believes there is value in moving MOD-032-2 forward with requirements for TOs and DPs when those obligations are limited to assets owned by the TOs and DPs.

Page 4 – Rational for Modifications to Attachment 1

EEI does not support the scope of modifications to MOD-032, Attachment 1 which obligates TOs and DPs to collect DER data on all relevant DERs including utility scale facilities and smaller behind the meter facilities, which appears to include all residential DERs even though these resources are used for local distribution.

EEI does not agree with the SDT's position that the PC/TP should have the authority to specify DER data to whatever level it deems appropriate. (Ref. the explanation of Footnote 4 from Attachment 1 of MOD-032).

The following statement (in boldface) should be struck from the Technical Rationale because TOs and DPs should have no obligation to provide any data related to DERs participating within a DER Aggregation in the organized markets. While the SDT appears to believe that while the data should be provided by the DER Aggregator, they believe that TOs and DPs still have an obligation to provide this data if requested to do so by the PC/TP: **This in no way absolves a DP/TO from an obligation to provide DER data according to the data requirements and reporting procedures developed by its Planning Coordinator and Transmission Planner in Requirement R1.**

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 2B: FN 4 - disagree with PC/TP authority Data collection requirements for DER in MOD-032 are focused on what is necessary for reliability and may differ from the data collected by a DER Aggregator to participate in a market.	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	

Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
Ameren supports EEI's comments on this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	
Comment	
ATC appreciates the effort of the Standard Drafting Team in developing the Technical Rationale.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	

Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES and the MRO NERC Standards Review Forum.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES and MRO NSRF.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	

Comment	
"See comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	
Answer	No
Document Name	
Comment	
Buckeye Power, Inc. supports the comments of ACES: While we do not agree with some of the SDT's viewpoints about the level of DER data required, we do appreciate the high level of effort made by the SDT to develop the Technical Rationale.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to ACES.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	

Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group agrees with the concerns expressed by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	
FirstEnergy has concerns with the following statements and positions contained in the Technical Rationale:	

Page 1; Rationale for Applicability Section:

EEI does not agree that TOs (or registered DPs) should be required to coordinate with the owners of distribution facilities that do not have an associated NERC-registered DP to ensure the availability of necessary data, either through interconnection agreements or other binding contracts. Such a requirement makes no sense. TOs and DPs have no ability to control interconnection agreements on other entity's system or the ability to obtain data from non-registered entities.

EEI is also concerned that the SDT acknowledges that data collection for DERs connected to unregistered entities is a problem and suggests that NERC should expand DP registration criteria or develop a DER-only DP registration criteria to address this gap but still believes there is value in moving MOD-032-2 forward with regulator obligations on TOs and DPs when it is recognized their ability to collect certain data is not possible.

Page 4 – Rational for Modifications to Attachment 1

EEI does not support the scope of modifications to MOD-032, Attachment 1 which obligates TOs and DPs to collect DER data on all relevant DERs including utility scale facilities and smaller behind the meter facilities, which appears to include all residential DERs even though these resources are used for local distribution.

EEI does not agree with the SDT's position that the PC/TP should have the authority to specify DER data to whatever level it deems appropriate. (Ref. the explanation of Footnote 4 from Attachment 1 of MOD-032).

EEI believes that the following statement (underlined) should be struck from the Technical Rationale because TOs and DPs should have no obligation to provide any data related to DERs participating within a DER Aggregation in the organized markets. While the SDT appears to believe that while the data should be provided by the DER Aggregator, they believe that TOs and DPs still have an obligation to provide this data if requested to do so by the PC/TP: This in no way absolves a DP/TO from an obligation to provide DER data according to the data requirements and reporting procedures developed by its Planning Coordinator and Transmission Planner in Requirement R1.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity.

The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 2B: FN 4 - disagree with PC/TP authority Data collection requirements for DER in MOD-032 are focused on what is necessary for reliability and may differ from the data collected by a DER Aggregator to participate in a market.	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Scott Brame - Scott Brame On Behalf of: Chris Dimisa, North Carolina Electric Membership Corporation, 4, 3, 5; Reid Cashion, North Carolina Electric Membership Corporation, 4, 3, 5; Richard McCall, North Carolina Electric Membership Corporation, 4, 3, 5; - Scott Brame, Group Name NCEMC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name SPP RTO	
Answer	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
David Rivera - New York Power Authority - 3	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruchi Shah - AES - AES Corporation - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Diana Aguas - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	
Response	

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
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	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	Yes
Document Name	
Comment	

We agree with some comments provided by ACES, EEI, MRO, NAGF, and Talen but are not going to restate each item specifically, as others have already restated them.

Specifically, we disagree with the SDT stating in the standard footnote 5 on page 16, first sentence "Where DER is connected to an unregistered Distribution Provider". This makes it appear as though said entity should be registered. If they are not in the NERC registry then they are not a DP.

Consequently, it should say "Where a DER is connected to a non-Distribution Provider".

We also disagree with the SDT re: proposed standard footnote 5 on page 16, second sentence. "An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider". Our view is that this seems to imply that another

DP or TO can determine, or has the responsibility of determining, if an entity should be registered as a DP. That is NERC's or the Regional Entities' responsibility; registration determination is not a DP's or a TO's responsibility.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES, EEI, MRO, NAGF, and Talen. 1G: Confusion between glossary DP and registered DP The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
The technical rationale doesn’t provide guidance on determining which facilities connected to the DP’s system would be classified as DERs and which ones would not. The current definition would classify any generation connected to a registered DP as a DER.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. All generation connected to a DP’s system (whether the DP satisfies the NERC registration criteria or not) is considered DER. As noted in the Technical Rationale, the PC/TP may specify certain classifications of DER that do not need to be reported by the DP - such exclusions would be specified in the PC/TP data reporting procedures and requirements.	

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) for this question and adopts them as its own.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to IRC SRC	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
The SDT should give consideration to paragraph 105 of FERC Order No. 901 which states that if distribution providers are unable to gather adequate IBR-DERs data in the aggregate or unable to gather IBR-DERs data in the aggregate at all, provide instead to the Bulk-Power System planners and operators in their areas: (1) an estimate of the modeling data and parameters of IBR-DERs in the aggregate, (2) an explanation of the limitations of the availability of data, (3) an explanation of the limitations of the data provided by IBR-DERs, and (4) the method used for estimation.	
Likes 0	

Dislikes 0	

Response

Thank you for your comments. 6B: FERC 901 reference to allow estimated data
Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale.

Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2

Answer	Yes
Document Name	2022-02 Unofficial_Comment_Form_SRC_11-20-23_FINAL_as filed.docx

Comment

The **ISO/RTO Council Standards Review Committee (SRC)**[1] recommends that the Technical Rationale include an explanation of why the term reactive power capability (*see* Draft #1 of MOD-032-2, Attachment 1, steady-state item 9c) has been removed in favor of the language added in Draft #2 of MOD-032-2, Attachment 1, steady-state item 9d. Our understanding is the change was made to focus on broadening the language to better describe the data needed to model operating characteristics (including ride-through capability, voltage support, frequency control, etc.) instead of focusing on mere operating capabilities.

[1] For purposes of these comments, the IRC SRC includes the following entities: CAISO, MISO, NYISO, PJM, SPP and ISO-NE (except for the response to question 6). ERCOT supports the response to question 2 only.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2C: elimination of reactive power
The DT removed the reactive power capability in response to previous industry comments. A DER's reactive power operating characteristics can depend on many factors aside from the maximum capability, including the mode of reactive power control. For instance, if the DER is in volt/var control mode, the distribution system loading, voltage regulation scheme, and impedance can all affect the DER's reactive power

output. The Attachment 1 information provides a minimum baseline for information. The PC/TP may request additional information to make assumptions about aggregate DER reactive power operating characteristics.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Does the term "interconnection-wide" need to be capitalized.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Interconnection is defined in the NERC glossary as: “A geographic area in which the operation of Bulk Power System components is synchronized such that the failure of one or more of such components may adversely affect the ability of the operators of other components within the system to maintain Reliable Operation of the Facilities within their control. When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.” The DT believes that the use of non-capitalized “interconnection-wide” within MOD-032-1 may have been intentional; no change made.	
Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller	
Answer	Yes
Document Name	
Comment	

Black Hills Corporation does not support the included language that the "next closest electrically connected registered entity (DP or TO)" is responsible for coordinating DER data with unregistered DPs. Black Hills Corporation agrees with EEI and NAGF comments that TO, or nearest registered DP do not have the ability or authority to gather or request data from unregistered DP entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Claudine Bates - Black Hills Corporation - 6	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation does not support the included language that the "next closest electrically connected registered entity (DP or TO)" is responsible for coordinating DER data with unregistered DPs. Black Hills Corporation agrees with EEI and NAGF comments that TO, or nearest registered DP do not have the ability or authority to gather or request data from unregistered DP entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	

Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation does not support the included language that the "next closest electrically connected registered entity (DP or TO)" is responsible for coordinating DER data with unregistered DPs. Black Hills Corporation agrees with EEI and NAGF comments that TO, or nearest registered DP do not have the ability or authority to gather or request data from unregistered DP entities.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	Yes
Document Name	
Comment	
Black Hills Corporation does not support the included language that the "next closest electrically connected registered entity (DP or TO)" is responsible for coordinating DER data with unregistered DPs. Black Hills Corporation agrees with EEI and NAGF comments that TO, or nearest registered DP do not have the ability or authority to gather or request data from unregistered DP entities.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
John Pearson - ISO New England, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Please provide the reasoning for elimination of reactive power (see Draft #1 of MOD-032-2, Attachment 1, item 9c) in favor of the added language in Draft #2 of MOD-032-2, Attachment 1, item 9d.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2C: elimination of reactive power The DT removed the reactive power capability in response to previous industry comments. A DER's reactive power operating characteristics can depend on many factors aside from the maximum capability, including the mode of reactive power control. For instance, if the DER is in volt/var control mode, the distribution system loading, voltage regulation scheme, and impedance can all affect the DER's reactive power output. The Attachment 1 information provides a minimum baseline for information. The PC/TP may request additional information to make assumptions about aggregate DER reactive power operating characteristics.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	

While we may disagree with some of the positions taken by the Standard Drafting Team, the NAGF appreciates the efforts the Standard Drafting Team put forth in developing the technical rationale.

In the Technical Rationale, the Standard Drafting Team acknowledges that there may be challenges in collecting data for DER connected to unregistered entities and that the obligations of this standard may place an unreasonable compliance risk on registered entities. However, despite the acknowledgement of this unreasonable risk, the Standard Drafting Team has put forth in draft 2 similar language, containing the same unreasonable risk for industry. The NAGF recommends that the Standard Drafting Team re-consider how to address the issues surrounding data collection from entities who have no obligation to comply.

The NAGF recommends that the statement "Distribution Provider refers to the NERC glossary definition, not the NERC registered entity," be revised to be: "The term Distribution Provider in the DER definition includes all parties cited in the NERC Glossary definition of a Distribution Provider, some of whom may be registered as TOs and not as DPs. References to Distribution Providers in the requirements of MOD-032 pertain however only to entities registered as DPs."

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

1G: Confusion between glossary DP and registered DP
The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.

Alison MacKellar - Constellation - 5

Answer	Yes

Document Name	
Comment	
Clarification is needed on size of DERs applicable. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2D: Define DER threshold to model (either aggregate or individual) The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Greg Davis - Georgia Transmission Corporation - 1	
Answer	Yes
Document Name	
Comment	
Both the Technical Rationale & the Standard need to address the following issue: If the TO/DP is required to report data that the DER owner has no obligation to provide, how does the SDT propose to eliminate this compliance risk in the interim while a permanent solution is developed.?	
Likes 0	

Dislikes 0	

Response
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Alan Kloster - Alan Kloster On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and NAGF for question #2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and NAGF.	
Kacie Fischer - Kacie Fischer On Behalf of: Byron Booker, Oncor Electric Delivery, 1; - Kacie Fischer	
Answer	Yes
Document Name	
Comment	

- Getting the gross demand of a registered/unregistered DP's DER will require tracking and retention of their DER data for TO/TP. Managing this additional DER data will put an undue burden on TPs. We request that the DER be responsible for submitting data to the PC/TPs directly.

• As requested by Oncor in the previous comment period, clarification is needed by SDT on how to represent a single location with multiple types of DER.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT contends that TOs and DPs have a reliability need to know what is being connected to their systems in terms of gross demand and DER and should have methods for managing this information. The intent of MOD-032 revisions is to ensure that DER data is available to PCs and TPs for inclusion in system studies. Details about how data is to be reported are specified by the PC/TP per Requirement R1. SPIDERWG has published numerous reliability guidelines and white papers related to representing DER: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf. The DT contends that it is not appropriate to mandate a specific DER representation in MOD-032.	
Kimberly Turco - Constellation - 6	
Answer	Yes
Document Name	
Comment	
Clarification is needed on size of DER's applicable. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2D: Define DER threshold to model (either aggregate or individual)	

The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Regarding non registered DPs, as stated in the technical rationale *"the SDT recommends that NERC consider a range of options that could include expanding DP registration criteria or registering DER-only DPs to reduce or eliminate this potential DER data collection gap. However, the process to modify NERC registry criteria and register new entities is beyond the scope of Project 2022-02 and would unnecessarily delay the implementation of DER data requirements. The SDT believes there is value in moving forward with MOD-032-2 as it does provide substantial improvement with respect to ensuring DER data is available for inclusion in PC and TP studies."* We do not agree that this would unnecessarily delay the implementation. We believe it is necessary to delay the implementation because of this. Please explain the justification for moving forward with this known ambiguity which will cause significant compliance risk and may not ultimately be feasible until the process to modify NERC registry criteria is completed.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 6J: Don't move forward without addressing registration gap The DT believes that the data collection covered by the current registration available covers a significant portion of the DER data and provides a reliability benefit prior to efforts to close the registration gap and collect the remaining DER data.	
Eric Sutlief - CMS Energy - Consumers Energy Company - 3,4,5 - RF	

Answer	Yes
Document Name	
Comment	

In the “Inclusion of Aggregate Demand Clarification” section, it is suggested a comparison to historical load levels can be used to approximate the addition of DER on the distribution feeder. In an era of energy efficiency and significant load transformation, it is extremely difficult to differentiate DER additions vs. other factors contributing to changing feeder loads. This suggestion should be removed as it could lead to false DER aggregation assumptions.

Foot Note 5 is an attempt by NERC to force requirements onto unregistered entities via registered entities. This requirement places compliance risk on TO’s and DP’s to request data where there is no enforcement support. The comments also don’t explain what would happen if the unregistered DP doesn’t provide the requested data.

Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Reference to historical load levels was removed from that section of the Technical Rationale.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO

Answer	Yes
Document Name	
Comment	

The addition of the wording to support Footnote 2: "In situations where DER is not separately metered, a comparison to historical load levels can be used to approximate the addition of DER on the distribution feeder. A consistent reduction in load on the feeder may be indicative of DER interconnections. "

This may serve the purpose of determining approximate aggregate demand under item # 2 in Attachment-1, column-1 (steady-state), but won't support item # 9 which requires generator type (solar, battery etc.) and DER capabilities.

The addition of footnote 5 seems to be confusing. This can be addressed in the joint PC/TP modeling data requirements and reporting procedures developed per R1 (after coordinating with applicable DPs/TOs).

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The identified language was removed from the technical rationale. It was originally intended as an example rather than a covering potential situation.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Srikanth Chennupati - Entergy - 1,3,5,6 - SERC

Answer	Yes
Document Name	

Comment

The standard as written places an untenable compliance burden on NERC registered entities. The technical rationale notes the challenges in collecting DER data from unregistered DPs. It does not note or address in any way the challenges in collecting DER data from the unregistered DER owners connected to DPs. These unregistered DER owners have no obligation or requirement under NERC standards to provide data for

modeling. Requiring that DPs provide modeling data for equipment they do not own and have no means to acquire data on leaves them in a position where they fail to comply with the standard through no fault of their own and despite their best efforts.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Please see our response to Question #3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support. See response to Question #3.	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	

While we may disagree with some of the positions taken by the Standard Drafting Team, the NAGF appreciates the efforts the Standard Drafting Team put forth in developing the technical rationale.

In the Technical Rationale, the Standard Drafting Team acknowledges that there may be challenges in collecting data for DER connected to unregistered entities and that the obligations of this standard may place an unreasonable compliance risk on registered entities. However, despite the acknowledgement of this unreasonable risk, the Standard Drafting Team has put forth in draft 2 similar language, containing the same unreasonable risk for industry. We recommend that the Standard Drafting Team re-consider how to address the issues surrounding data collection from entities who have no obligation to comply.

We also recommend that the statement “Distribution Provider refers to the NERC glossary definition, not the NERC registered entity,” be revised to be, “The term Distribution Provider in the DER definition includes all parties cited in the NERC Glossary definition of a Distribution Provider, some of whom may be registered as TOs and not as DPs. References to Distribution Providers in the requirements of MOD-032 pertain however only to entities registered as DPs.”

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

1G: Confusion between glossary DP and registered DP
The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.

Alison MacKellar - Constellation - 5

Answer	Yes

Document Name	
Comment	
The standard needs to specify the size of DER that is required to model	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2D: Define DER threshold to model (either aggregate or individual) The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	

Comment	
Please see Texas RE's answer to #1.	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. See response to Texas RE comment for #1.

3. Do you agree the modifications made in MOD-032-2 will improve system modeling and reliability?	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	

FirstEnergy supports EEI's comments which state:

EEI does not support the proposed changes to MOD-032-2 because many of the changes would obligate TOs and DPs to provide data that exceeds their ability to obtain. EEI further notes that during the Fall 2023 NPCC Compliance and Reliability Conference a presentation titled "Inverter Based Resource Work Plan" was given and appears to use data from a Berkeley National Laboratory Report. The presentation goes on to indicate that BES IBRs (75MW at ≥100kV) account for 84% and non-BES (≥20MW & ≤75MW at ≥100kV plus ≥MW at <100kV) account for an additional 14%; for a total of 98% of the IBRs currently interconnected on the grid. This data additionally indicates that small IBRs (<20MW at any kV) only account for 2% of the connected IBRs and if correct, would mean these resources would have no meaningful impact on the Reliability of the BPS. Moreover, in FERC Order No. 901 (Reliability Standards to Address Inverter-Based Resources), the Commission made it clear that the focus of changes to NERC Reliability Standards, as it relates to modeling of DERs, is to be limited data to aggregate data not granular details on a non-aggregated basis. Given the NPCC data and FERC Order No. 901, it would indicate that many of the proposed changes to MOD-032 are unnecessary for reliability. This would include modifications to MOD-032 that propose to provide PCs/TPs with the authority to request data that is overly granular and unnecessary to model the impacts of DERs on the BPS. IBRs that have a meaningful impact on the BPS should be registered. Once this has been done, PCs and TPs could seek the data they need directly from the registered resource, not the TOs or DPs that are unlikely to have the needed data. While we recognize the need to gather and model the impacts of DER resources on the distribution system, modeling should be limited to load demand and aggregate DER impacts/offsets. However, we do support obligating DER Aggregators who are participating in the organized markets to provide data on their aggregated resources to the PCs/TPs upon request. We do not support obligating TOs and DPs to gather non aggregated data, upon request.

Likes 0	
Dislikes 0	
Response	

Thank you for your comments. See response to EEI.	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	No
Document Name	
Comment	
Things appear to be specultive at this point.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
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	No
Document Name	
Comment	
SMUD and BANC agree with the comments submitted by BC Hydro, especially pertaining to Footnote 5. We feel that the language in Footnote 5, and the Technical Rationale, do not support passing the compliance obligations of an “unregistered Distribution Provider” onto “the next electrically connected registered entity (DP or TO)”. If models are required for all DERs in the BPS, there is an increased chance of Planning Coordinators and Transmission Planners receiving inaccurate models (especially from “unregistered Distribution Providers”) as many Distribution Providers may not have the experience to model their DERs correctly which could pollute the base cases and diminish their quality.	

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

3B: Data accuracy
It is understood that modeling aggregate DER (based on collected data) will involve some assumptions (similar to modeling aggregate load response). The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf.

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

Answer	No
Document Name	

Comment

WEC Energy Group does not agree that the modifications made in MOD-032-2 will improve system modeling and reliability for the reasons stated by both EEI and the MRO NSRF.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. See responses to EEI and MRO NSRF.

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

Answer	No

Document Name	
Comment	
Tri-State Generation and Transmission supports the MRO NSRF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
The MRO NSRF believes that the modifications made to MOD-032-2 will have very limited impact on improving system modeling and reliability. The fact remains that, TOs and DPs have no ability to compel DER owners to provide the data that would be necessary to significantly improve system modeling and reliability. This provides (in our opinion) a likely scenario under which a NERC-registered entity may be held to have a compliance gap for the non-performance/compliance of a non-NERC-registered entity. The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes every residential solar and commercial rooftop solar customer on the DP's systems. This would likely impose an immense administrative burden on (NERC Registered) Distribution Providers and Transmission Owners, while not delivering significant reliability benefits.	
Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	
Response	

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

3C: Minimum threshold
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

Srikanth Chennupati - Entergy - 1,3,5,6 - SERC

Answer	No
Document Name	

Comment

Accurate modeling of significant DER facilities would improve system modelling and reliability. However, requiring the modeling of facilities where modeling data is not available could just as easily harm the reliability of the transmission system.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
3B: Data accuracy
It is understood that modeling aggregate DER (based on collected data) will involve some assumptions (similar to modeling aggregate load response). The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf.

Eric Sutlief - CMS Energy - Consumers Energy Company - 3,4,5 - RF

Answer	No
Document Name	
Comment	
Through various reports, NERC has displayed how IBR can have an impact on the BES, but it is unclear how the aggregation of smaller “R-DER” impacts the BES in a manor proportional to “U-DER”. Total aggregated R-DER penetration is far from equivalent to a few “U-DER” installations across a utility’s footprint. Much of the required information is not available to DP’s for smaller DER installations and the ability to require the information from interconnectors is authorized by RERRA entities. The assumptions required to try to model R-DER due to MOD-032-2 requirements could also lead to false confidence and support of the BES from R-DER sources. A threshold is needed, suggested at 1 MW, for DER installations to differentiate the discrete modeling of resources with steady state and dynamic information vs. aggregating DER below such threshold, providing gross nameplate values, and allowing the PC to determine approximated DER response to system events.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 3B: Data accuracy It is understood that modeling aggregate DER (based on collected data) will involve some assumptions (similar to modeling aggregate load response). The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf. 3C: Minimum threshold The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	

Answer	No
Document Name	
Comment	
The benifit of this additional data will have to be explained better. We are unclear of why it is important. The scope should only include what is directly connecting into Transmission System.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The SC has already determined this was important by approving the SAR and project. The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf. Additionally, numerous disturbance reports where DER impact was significant have been published, including but not limited to: https://nercstg.nerc.com/pa/rrm/ea/April_May_2018_Fault_Induced_Solar_PV_Resource_Int/April_May_2018_Solar_PV_Disturbance_Report.pdf https://nercstg.nerc.com/pa/rrm/ea/Documents/San_Fernando_Disturbance_Report.pdf	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	
It depends on the applicability of generators. If there is a threshold then Constellation agrees on improvement to reliability but a blanket statement will be overly burdensome with minimal to no improvement on reliability for projects smaller than 20 MVA. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	

Dislikes 0	

Response

Thank you for your comments.
3C: Minimum threshold
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

Diana Aguas - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer	No
Document Name	

Comment

CEHE believes the proposed revisions to MOD-032-2 are problematic and contradicts the existing data requirements that have already been established by the local Planning Coordinators in coordination with Transmission Planners. For example, in the ERCOT region, ERCOT defines these data requirements through the coordination with Transmission Planners as part of various regional working groups. The already defined data requirements do not align with the proposed revisions of the Data Reporting Requirements in MOD-032-2 (ex. Attachment 1, item 2, footnote 2). The current MOD-032-1 addresses and includes the requirements around DER data.

CEHE is in support of EEI's comment that the modifications made to MOD-32-2 "continue to obligate TOs and DPs to provide data that exceeds their ability to obtain." CEHE agrees with EEI in that if this data is needed, the resource owners should be registered and obligated to supply the data, not the TOs or DPs.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The DT agrees that local PC/TP requirements per Requirement R1 may need to be updated to incorporate DER data, but such requirements are still established by the local PC/TP so MOD-032-2 will not contradict the PC/TP requirements. MOD-032-2 highlights PC/TP flexibility in developing data requirements and reporting procedures in both Footnote 2 and footnote 4. The SC already determined that MOD-032-1 was not sufficient to address DER data by approving the SAR and project. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV Energy believes that the modifications made to MOD-032-2 will have very limited impact on improving system modeling and reliability. The fact remains that, TOs and DPs have no ability to compel DER owners to provide the data that would be necessary to significantly improve system modeling and reliability. This provides (in our opinion) a likely scenario under which a NERC-registered entity may be held to have a compliance gap for the non-performance/compliance of a non-NERC-registered entity. The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes every residential solar and commercial rooftop solar customer on the DP's systems. This would likely impose an immense administrative burden on (NERC Registered) Distribution Providers and Transmission Owners, while not delivering significant reliability benefits.	
Likes 0	
Dislikes 0	
Response	

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

3C: Minimum threshold
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf

It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	

BC Hydro appreciates the drafting team's efforts and the opportunity to comment, and offers the following.

1. While BC Hydro appreciates the intent of modifications made in MOD-032-2, BC Hydro is of the opinion that the intended improvement in system modeling and reliability cannot be realized, until the implementation of an effective and practical approach to collect accurate DER data in a timely manner and with a sufficient level of detail. This would be challenging due to the lack of any compliance obligations on unregistered DER owners. DP and TO may have some leverage, such as introducing obligations for DER owners to provide acceptable data for future DERs before they can be connected to the DP/TO systems. However, in the case of unregistered DER owners that are already connected to a TO/DP, the TO/DP will have an extremely limited ability to ensure a timely collection of such data, its accuracy, and sufficient level of detail.

2. The Footnote 5 of the Attachment 1 states that "Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information". This appears to set a

mandatory requirement, which – as outlined above – would impose regulatory compliance obligations the TO and/or DP registered entity may be unable to meet.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Kacie Fischer - Kacie Fischer On Behalf of: Byron Booker, Oncor Electric Delivery, 1; - Kacie Fischer	
Answer	No
Document Name	
Comment	
Clarification is needed with the changes outlined in Attachment 1 in the Steady-State column of Table-#9: 1. "b. Real power capability" • Is this referring to the nameplate or approved capacity? 2. "c. Generator type (solar, battery, etc.)" • Oncor recommends modifying this statement to give instructions on how to report a single location with multiple types of DER. 3. "d. DER capabilities related to ride through, voltage control and/or frequency control or information that can be used to infer those capabilities for modeling purposes." • Could the SDT elaborate on how frequency control would impact the Steady State modeling?	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. Details about how data is to be reported is specified by the PC/TP per Requirement R1. SPIDERWG has published numerous reliability guidelines and white papers related to representing DER https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf. The DT contends that it is not appropriate to mandate a specific DER representation in MOD-032. 6G: Move control capabilities to dynamics? As noted in the Technical Rationale, the DT maintained the approach from MOD-032-1 where detailed sub-bullets are only presented in the "steady state" column although such information may also be relevant to "dynamics" or "short circuit." In general, information about control and ride-through capabilities could be used to inform steady state behavior assumptions.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
"See comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name SPP RTO	
Answer	No
Document Name	
Comment	
While SPP believes that the proposed modifications are a good step towards improving system modeling and reliability. However, we still have concerns around the appropriate data collection process pertaining to DERs.	

We recommend that the UFLS-Only DP be added to the applicability section of the standard as these registered entities are just as likely to have DERs connected to their system. From our perspective, adding the UFLS-Only DP will eliminate the possibility of uncaptured DER load data if a DP does not have access to this data	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 3F: Add UFLS-only DP to applicability The DT agrees that adding "UFLS-Only Distribution Provider" to MOD-032-2 applicability would reduce (but not necessarily completely eliminate) the potential gaps associated with DER connected to unregistered entities with no compliance obligation. However, consultation with NERC legal staff indicated that adding UFLS-Only Distribution Provider to the applicability would not be appropriate at this time.	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	No
Document Name	
Comment	
The modifications do not address the true reliability gap in that GOP and DPs are not by the NERC ROP obligated to align to a TP. The language should be adjusted in R2 to state that the BA et all shall provide... to the TP of the interconnected Transmission system.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. This issue seems beyond the scope of the SAR.	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No

Document Name	
Comment	
ATC appreciates the intent of modifications contained in MOD-032-2. However, as Draft 2 of the Standard is written, TOs and DPs have no mechanism to compel the actual DER owners to provide the data that would be necessary to significantly improve system modeling and reliability. Compliance-related questions: Please clarify what the compliance implications are if a TO/ TP or DP requests the modeling data but does not receive it or if the data is inaccurate? Will showing that the TO/ TP attempted to request data be enough? Or that the TO/ TP utilized (or at least considered) the data received if no collection and modeling thresholds are set? Please clarify how the TO/ TP or DP should be aware that DER are connected to an unregistered DP? The TO/ TP and DP would not have insight into those systems. Please clarify the obligations of the TO/TP and DP in determining who is next closest electrically to each unregistered entity (DP or TO) as listed in Footnote 5? Does the TO/TP or DP need to reach out to the DER or to the unregistered DP for the information? Would the request for DER information be an annual process or triggered by something else?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 6D: issues with "next electrically closest" - need clarification Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.	

Alan Kloster - Alan Kloster On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and MRO NSRF for question #3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and MRO NSRF.	
Greg Davis - Georgia Transmission Corporation - 1	
Answer	No
Document Name	
Comment	
If DER penetration levels are high in a particular area, the changes in MOD-032-2 could have a positive impact on reliability. However, if DER penetrations are not high enough to impact the reliability of the BES, DPs and TOs will have added unnecessary administrative work and compliance burden for the purpose of checking a compliance box.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 3C: Minimum threshold	

The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Alison MacKellar - Constellation - 5	
Answer	No
Document Name	
Comment	
It depends on the applicability of generators. If there is a threshold then Constellation agrees on improvement to reliability but a blanket statement will be overly burdensome with minimal to no improvement on reliability for projects smaller than 20 MVA. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 3C: Minimum threshold The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.	
Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	

Answer	No
Document Name	
Comment	
The new requirements for DER data do not appear to directly correlate with the fields in existing modeling software such as the Composite Load Model (CMPLDWG). Tacoma would prefer for the Requirements to either align with existing modeling software, or for there to be a guidance document outlining what additional new software/model development needs to take place before the required DER can actually be utilized. The most significant concern is that there are often multiple installations of DERs connected to each substation, where each DER has unique ride-through and voltage control capabilities.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. In general, DER can be adequately represented in most common software packages. SPIDERWG has published a White Paper specifically related to simulation software: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Software_Vendor_DER_Recommendations_SPIDERWG_postPubs.pdf as well as numerous other documents related to DER modeling: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf	
John Pearson - ISO New England, Inc. - 2	
Answer	No
Document Name	
Comment	
The revisions should also note that if the Planning Coordinator or Transmission Planner can obtain the information directly from the generator based on individual ISO Tariff or other local requirements that the TO or DP does not need to provide information listed in Attachment 1. Suggested revision is redlined below.	

For steady-state:

9. Distributed Energy Resource (DER) data [DP, TO where DER is directly connected to the TO system and not through a DP unless the generator is required to provide the data directly to the PC or TP based on individual Tariff or local provisions]

a. Location (bus from item 1)

b. Real power capability

c. Generator type (solar, battery, etc.)

d. DER capabilities related to ride-through, voltage control and/or frequency control or information that can be used to infer those capabilities for modeling purposes.

For dynamics:

10. Distributed Energy Resource (DER) data including whether DER is subject to tripping in conjunction with UFLS and/or UVLS [DP, TO where DER is directly connected to the TO system and not through a DP, unless the generator is required to provide the data directly to the PC or TP based on individual Tariff or local provisions]

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
3H: Availability of data through alternative methods - move from TR to standard?
This concept is addressed in the Technical Rationale to provide flexibility to PC/TP in ensuring necessary data is available. Data collection requirements for DER in MOD-032 are focused on what is necessary for reliability and may differ from the data collected via an individual Tariff or local provisions.

Ben Hammer - Western Area Power Administration – 1	
Answer	No
Document Name	
Comment	

The modifications made to MOD-032-2 may have limited impact on improving system modeling and reliability. However, TOs and DPs have no ability to compel DER owners to provide the data that would be necessary to significantly improve system modeling and reliability. The changes create a likely scenario under which a NERC-registered entity may be held to have a compliance gap for the non-performance/compliance of a non-NERC-registered entity.

The proposed draft establishes a zero MVA threshold for the collection of all DER data "in non-isolated parallel operation with the Bulk Power System". Per the Technical Rationale, this includes every residential solar and commercial rooftop solar customer on the DP's systems. This would likely impose an immense administrative burden on (NERC Registered) Distribution Providers and Transmission Owners, while not delivering significant reliability benefits.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

3C: Minimum threshold
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
Ameren supports EEI's comments on this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	

Comment
Exelon concurs with the comments submitted by the EEI.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. See response to EEI.

Sheila Suurmeier - Black Hills Corporation - 5	
Answer	No
Document Name	

Comment
Black Hills Corporation believes that the modifications made in MOD-032-2 will not improve system modeling and reliability as unregistered DPs are still not required to provide DER information. Additionally, the language changes impose regulatory compliance risk onto registered TO, or DP entities that are the "next closest electrically connected registered entity" to the unregistered DPs.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. The DT views the collection of DER data from registered DPs as improving reliability. The DT does not agree that there is no improvement simply because there is a potential gap with unregistered Distribution Providers. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt

Answer	No
Document Name	
Comment	
Black Hills Corporation believes that the modifications made in MOD-032-2 will not improve system modeling and reliability as unregistered DPs are still not required to provide DER information. Additionally, the language changes impose regulatory compliance risk onto registered TO, or DP entities that are the "next closest electrically connected registered entity" to the unregistered DPs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT views the collection of DER data from registered DPs as improving reliability. The DT does not agree that there is no improvement simply because there is a potential gap with unregistered Distribution Providers. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
Black Hills Corporation believes that the modifications made in MOD-032-2 will not improve system modeling and reliability as unregistered DPs are still not required to provide DER information. Additionally, the language changes impose regulatory compliance risk onto registered TO, or DP entities that are the "next closest electrically connected registered entity" to the unregistered DPs.	
Likes 0	

Dislikes 0	

Response

Thank you for your comments. The DT views the collection of DER data from registered DPs as improving reliability. The DT does not agree that there is no improvement simply because there is a potential gap with unregistered Distribution Providers.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller

Answer	No
Document Name	

Comment

Black Hills Corporation believes that the modifications made in MOD-032-2 will not improve system modeling and reliability as unregistered DPs are still not required to provide DER information. Additionally, the language changes impose regulatory compliance risk onto registered TO, or DP entities that are the "next closest electrically connected registered entity" to the unregistered DPs.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The DT views the collection of DER data from registered DPs as improving reliability. The DT does not agree that there is no improvement simply because there is a potential gap with unregistered Distribution Providers.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

Kinte Whitehead - Exelon - 3

Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not support the proposed changes to MOD-032-2 because many of the changes would obligate TOs and DPs to provide data that exceeds their ability to obtain. EEI further notes that during the Fall 2023 NPCC Compliance and Reliability Conference a presentation titled "Inverter Based Resource Work Plan" was given and appears to use data from a Berkeley National Laboratory Report. The presentation goes on to indicate that BES IBRs (75MW at ≥100kV) account for 84% and non-BES (≥20MW & ≤75MW at ≥100kV plus ≥MW at <100kV) account for an additional 14%; for a total of 98% of the IBRs currently interconnected on the grid. This data additionally indicates that small IBRs (<20MW at any kV) only account for 2% of the connected IBRs and if correct, would mean these resources would have no meaningful impact on the Reliability of the BPS. Moreover, in FERC Order No. 901 (Reliability Standards to Address Inverter-Based Resources), the Commission made it clear that the focus of changes to NERC Reliability Standards, as it relates to modeling of DERs, is to be limited data to aggregate data not granular details on a non-aggregated basis. Given the NPCC data and FERC Order No. 901, it would indicate that many of the proposed changes to MOD-032 are unnecessary for reliability. This would include modifications to MOD-032 that propose to provide PCs/TPs with the authority to request data that is overly granular and unnecessary to model the impacts of DERs on the BPS. IBRs that have a meaningful impact on the BPS should be registered. Once this has been done, PCs and TPs could seek the data they need directly from the registered resource, not the TOs or DPs that are unlikely to have the needed data. While we recognize the need to	

gather and model the impacts of DER resources on the distribution system, modeling should be limited to load demand and aggregate DER impacts/offsets. However, we do support obligating DER Aggregators who are participating in the organized markets to provide data on their aggregated resources to the PCs/TPs upon request. We do not support obligating TOs and DPs to gather non aggregated data, upon request.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Response to similar comment related to modeling details + 4D & 6T themes: The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g., rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. The DT does not believe that the development of essential requirements related to ensuring appropriate DER data is available to PCs and TPs should be delayed to put the industry behind the curve as they are with IBR performance requirements. The DT believes this is aligned with the urgency conveyed in FERC Order No. 901. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No

Document Name	
Comment	
We agree with some comments provided by ACES, EEI, MRO, NAGF, and Talen but are not going to restate each item specifically, as others have already restated them. Also, we believe either a DP or TO who has another entity interconnecting with them has a marketing responsibility of modifying their Interconnection requirements if they deem it necessary for reliability in their BA.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES, EEI, MRO NSRF, NAGF, and Talen.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
Hi, please reference comments by Marty Hostler, NCPA Compliance Manager. Thank you, **Jeremy Lawson, P.E.** Generation Services Director of Engineering Northern California Power Agency	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to comments by Marty Hostler, NCPA Compliance Manager.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	

AEP thanks the SDT for adding the text in footnote 5 which states "…Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through ***available*** information" and request that clarity be provided on exactly what is meant by "available information?" AEP believes that information that is requested (and perhaps even exists) but is not provided by the data owner should be considered unavailable. In addition, this scenario should be added to the others listed in the Technical Rationale document.

Notwithstanding the SDT's response to our previous suggestion, AEP continues to believe that the best path forward for this proposed standard would be for those entities providing power at a minimum threshold to be registered as a Functional Entities and to provide DER data. We recommend that the SDT establish an aggregate minimum threshold, similar to what was recently proposed by NERC in regard to IBRs. As is the case in existing standards where Generator Owners are obligated to provide similar data, entities who possess the needed DER data noted in the Attachment One revisions should likewise be registered and explicitly obligated to provide this data as well. While we are unsure if the existing Functional Entities classes are themselves sufficient, or if instead, a new class of Functional Entities might need to be considered and developed, the need nonetheless exists. NERC may wish to also consider the potential that such obligations could potentially cross Federal and State jurisdictional lines of responsibility, further illustrating the complexity-of and challenges-in developing obligations to obtain the DER data in the revised Attachment One.

Likes 0	

Dislikes 0	

Response

Thank you for your comments.
2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

3C: Minimum threshold
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf. It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO

Answer	Yes
Document Name	

Comment

In principle, getting more “reasonably accurate” DER models into the regional models should help to improve reliability. There could be some risk to reliability if DER dispatch in models is higher than expected as this could mask load serving reliability issues. MOD-032 regional model building groups need to provide guidelines on what level of DER should be included in each seasonal model. Studying appropriate sensitivity cases should be part of TPL-001 scope.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. The DT agrees with the comment. The intent of MOD-032-2 is to ensure DER data is available for inclusion in PC/TP studies. Assessing the reliability impacts of DER are within the scope of the second phase of Project 2022-02 covering TPL-001 modifications.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF believes that including DERs will improve system modeling and reliability.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Scott Brame - Scott Brame On Behalf of: Chris Dimisa, North Carolina Electric Membership Corporation, 4, 3, 5; Reid Cashion, North Carolina Electric Membership Corporation, 4, 3, 5; Richard McCall, North Carolina Electric Membership Corporation, 4, 3, 5; - Scott Brame, Group Name NCEMC	
Answer	Yes
Document Name	
Comment	
The latest draft of MOD-032 no longer requires reactive power information to be collected for DERs. While most smaller systems really only operate at unity, it is the belief of NCEMC having this information will allow planners to more accurately model Distributed Energy Resources, thereby improving grid reliability. Thus, NCEMC recommends that reactive power data collection for DERs be required by MOD-032.	
Likes 0	

Dislikes 0	

Response

Thank you for your comments.
2C: elimination of reactive power
The DT removed the reactive power capability in response to previous industry comments. A DER's reactive power operating characteristics can depend on many factors aside from the maximum capability, including the mode of reactive power control. For instance, if the DER is in volt/var control mode, the distribution system loading, voltage regulation scheme, and impedance can all affect the DER's reactive power output. The Attachment 1 information provides a minimum baseline for information. The PC/TP may request additional information to make assumptions about aggregate DER reactive power operating characteristics.

Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2

Answer	Yes
Document Name	

Comment

The SRC believes there is an urgent need to move forward with collecting DER data now. Additional DER data collection activities will be needed as the penetration of DERs increases; however, these modifications are a step in the right direction and more can be done over time. The revisions should also note that if the Planning Coordinator or Transmission Planner will obtain the information directly from the generator based on individual ISO Tariff or other local requirements that the TO or DP may not need to provide information listed in Attachment 1. Suggested revision is redlined below.

For steady-state:

9. Distributed Energy Resource (DER) data [DP, TO where DER is directly connected to the TO system and not through a DP ***unless the generator will provide the data directly to the PC or TP based on individual Tariff or local provisions****]*

a. Location (bus from item 1)

b. Real power capability

c. Generator type (solar, battery, etc.)

d. DER capabilities related to ride-through, voltage control and/or frequency control or information that can be used to infer those capabilities for modeling purposes.

For dynamics:

10. Distributed Energy Resource (DER) data including whether DER is subject to tripping in conjunction with UFLS and/or UVLS [DP, TO where DER is directly connected to the TO system and not through a DP, ***unless the generator will provide the data directly to the PC or TP based on individual Tariff or local provisions****]*

Likes 0	
Dislikes 0	

Response

Thank you for your comments. 3H: Availability of data through alternative methods - move from TR to standard?
This concept is addressed in the Technical Rationale to provide flexibility to PC/TP in ensuring necessary data is available. Data collection requirements for DER in MOD-032 are focused on what is necessary for reliability and may differ from the data collected via an individual Tariff or local provisions.

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

Answer	Yes
Document Name	

Comment

While the acquisition and utilization of DER data by the PC/TP for the purposes of power system modeling should enhance the PC/TP's ability to study future scenarios and develop plans accordingly, we are concerned with the future compliance interpretation for Requirement R4. That is, how might the ERO (or its designee) modify its expectation for Interconnection-wide case(s) in regard to DER data?

Likes 0	
Dislikes 0	

Response	
Thank you for your comments. Per R4, the PC "shall make available models for its planning area reflecting data provided to it under Requirement R2 to the Electric Reliability Organization (ERO) or its designee to support creation of the Interconnection-wide case(s) that includes the Planning Coordinator's planning area." In other words, DER data provided to the PC shall be made available for inclusion in Interconnection-wide cases.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Helen Lainis - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

4. Do you agree the modifications made in MOD-032-2 are cost effective?	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
Hi, please reference comments by Marty Hostler, NCPA Compliance Manager. Thank you, **Jeremy Lawson, P.E.** Generation Services Director of Engineering Northern California Power Agency	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to comments by Marty Hostler, NCPA Compliance Manager.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	

We agree with some comments provided by ACES, EEI, MRO, NAGF, and Talen but are not going to restate each item specifically, as others have already restated them.

Additionally, the SDT has not stated a cost or benefit to said modifications. No standard should be allowed if a cost/benefit analysis is not provided by the SDT. SDT frequently asks this question but never provides a cost/benefit justification, simply someone says there is a reliability gap, or a risk, but does not provide estimated tangible reliability indices improvement numbers or a cost to fill the alleged gap or risk, is not good justification to create another costly administrative process.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. See responses to ACES, EEI, MRO, NAGF, and Talen.

The intent of the question is to solicit industry feedback on potentially more cost-effective ways to meet the reliability objective for DT consideration. The SC has already established the reliability need by approving the SAR and project. The work of the SPIDERWG provides technical references and industry best practices related to DER: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf. Additionally, numerous disturbance reports where DER impact was significant have been published , including but not limited to:
https://nercstg.nerc.com/pa/rrm/ea/April_May_2018_Fault_Induced_Solar_PV_Resource_Int/April_May_2018_Solar_PV_Disturbance_Report.pdf
https://nercstg.nerc.com/pa/rrm/ea/Documents/San_Fernando_Disturbance_Report.pdf

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

Answer	No
Document Name	

Comment

AEPC signed on to ACES comments:

It is our opinion that, as written, the proposed changes are not cost effective. It is our belief that requiring the DP to collect data for all DER/IBR resources, without regard to size and/or reliability impact, will create an unnecessary compliance burden and only provide a marginally increased reliability benefit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Collaborators	
Answer	No
Document Name	
Comment	
It is our opinion that, as written, the proposed changes are not cost effective. It is our belief that requiring the DP to collect data for all DER/IBR resources, without regard to size and/or reliability impact, will create an unnecessary compliance burden and only provide a marginally increased reliability benefit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit	

For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Scott Brame - Scott Brame On Behalf of: Chris Dimisa, North Carolina Electric Membership Corporation, 4, 3, 5; Reid Cashion, North Carolina Electric Membership Corporation, 4, 3, 5; Richard McCall, North Carolina Electric Membership Corporation, 4, 3, 5; - Scott Brame, Group Name NCEMC	
Answer	No
Document Name	
Comment	
The latest draft of MOD-032 no longer requires reactive power information to be collected for DERs. While most smaller systems really only operate at unity, it is the belief of NCEMC having this information will allow planners to more accurately model Distributed Energy Resources, thereby improving grid reliability and potentially allowing for solutions which reduce cost by taking DER reactive power capability into account. Thus, NCEMC recommends that reactive power data collection for DERs be required by MOD-032.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2C: elimination of reactive power The DT removed the reactive power capability in response to previous industry comments. A DER's reactive power operating characteristics can depend on many factors aside from the maximum capability, including the mode of reactive power control. For instance, if the DER is in volt/var control mode, the distribution system loading, voltage regulation scheme, and impedance can all affect the DER's reactive power output. The Attachment 1 information provides a minimum baseline for information. The PC/TP may request additional information to make assumptions about aggregate DER reactive power operating characteristics.	
Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	No

Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach. *The NAGF requests that the SDT address the process under MOD-032 to require the TP/PC to request data each year rather than require the GO to go look for and follow TP/PC process. If reliability is really the goal, an active request for data is likely to receive a much higher response rate than expecting those that need to supply information to go looking for when, where and how they need to provide it. The NAGF believes that it is extremely costly for hundreds of entities to go looking for information to determine when they need to provide data than it is for a few entities to send out emails requesting the information.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. This issue of PC/TP processes appears to be beyond the scope of Project 2022-02. The DT has not proposed any new requirements for NERC registered GOs.	

Alison MacKellar - Constellation - 5	
Answer	No
Document Name	
Comment	
Inclusion of small DERs is extremely cost burdensome for Generator Owners. Alison Mackellar on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Greg Davis - Georgia Transmission Corporation - 1	
Answer	No
Document Name	
Comment	
As previously stated, if DER penetration levels are high in a particular area, the changes in MOD-032-2 could have a positive impact on reliability. However, if DER penetrations are not high enough to impact the reliability of the BES, DPs and TOs will have added unnecessary administrative work and compliance burden for the purpose of checking a compliance box. Additionally, if the TO/DP is required to report data that the DER owner has no obligation to provide, the standard should address how the RE intends to handle situations where the	

unregistered Distribution Provider does not provide the requested data to the registered DP or TO. Otherwise, the TO/DP may be subject to fines and penalties for non-compliance related an issue that is beyond the control of the TO/DP.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Alan Kloster - Alan Kloster On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the MRO NSRF for question #4.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	

LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	
Comment	
ATC does not believe that MOD-032-2 Draft 2 is cost effective as it is written. The requirements would likely impose a huge administrative burden on the NERC Registered DPs and TOs potentially requiring additional staff.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	

Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name SPP RTO	
Answer	No
Document Name	
Comment	
Because so many issues around DERs, IBRs and ESRs remain unresolved and will be dependent upon final requirements for DERs, it is difficult to address the cost effectiveness of the MOD-32-2 modifications. We do believe that software upgrades will be required to collect data on DERs, IBRs, and ESRs that have the potential to create cost increases for many in the industry.	

Furthermore, we recommend the drafting team take into consideration evaluation the cost effectiveness from the FERC Order 2222 and IEEE Standards (1547 and 2800) perspectives.	
Likes 0	
Dislikes 0	
Response	
Thank you for the recommendation.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES and the MRO NERC Standards Review Forum.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES and MRO NSRF.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
“See comments submitted by the Edison Electric Institute”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	

Kacie Fischer - Kacie Fischer On Behalf of: Byron Booker, Oncor Electric Delivery, 1; - Kacie Fischer	
Answer	No
Document Name	
Comment	
• Cost-effectiveness depends on the level of assumptions TOs/TPs are allowed to make in the DER data modeling. If high precision in data collection is required, this will take a resource's time, which will increase costs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4D: Issue with unregistered entities (DP and/or DER) or detailed modeling The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	
Answer	No
Document Name	
Comment	
Buckeye Power, Inc. supports the comments of ACES:	

It is our opinion that, as written, the proposed changes are not cost effective. It is our belief that requiring the DP to collect data for all DER/IBR resources, without regard to size and/or reliability impact, will create an unnecessary compliance burden and only provide a marginally increased reliability benefit.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
NV ENERGY does not agree that the modifications in MOD-032-2 are cost effective. As proposed MOD-032-2 would likely impose a immense administrative burden on (NERC Registered) Distribution Providers and Transmission Owners, while not delivering significant reliability benefits.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit	

For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	No
Document Name	
Comment	
The effort required to model all DER's, regardless of size, is considerable and likely not achievable with non-registered entities. This is likely an exercise until additional regulations are in place requiring information at appropriate levels.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4D: Issue with unregistered entities (DP and/or DER) or detailed modeling The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.	
Kimberly Turco - Constellation - 6	
Answer	No
Document Name	
Comment	

Inclusion of small DER's is extremely cost burdensome for generator owners. Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
The effort required to model all DER’s, regardless of size, is considerable and likely not achievable with non-registered entities. This is likely an exercise until additional regulations are in place requiring information at appropriate levels.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4D: Issue with unregistered entities (DP and/or DER) or detailed modeling	

The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	No
Document Name	
Comment	
The effort required to model all DER's, regardless of size, is considerable and likely not achievable with non-registered entities. This is likely an exercise until additional regulations are in place requiring information at appropriate levels.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4D: Issue with unregistered entities (DP and/or DER) or detailed modeling The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No

Document Name	
Comment	
No it requires a huge amount of effort that is why we need to have a clearly defined scope and a better defined process for registering non-registered DPs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 4B: Too much TO/DP (and GO?) burden - not enough reliability benefit For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5. 4D: Issue with unregistered entities (DP and/or DER) or detailed modeling The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.	
Eric Sutlief - CMS Energy - Consumers Energy Company - 3,4,5 - RF	
Answer	No
Document Name	
Comment	

The administrative burden to provide accurate modeling of aggregated R-DER does not outweigh marginal modeling benefits. It is recommended NERC focus on utility scale DER and assuming little to no support from residential DER during system events. A compromise may be to add a threshold for the steady state and dynamic modeling requirements in MOD-032-2 and allow all other DER to be aggregated gross nameplate values reported by DP/TO entities which the PC can determine modeling parameters for based on industry research.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. 4C: Threshold needed for cost effectiveness The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.

Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment
It’s unclear how much work will be needed to develop the models. We don’t see the modifications made since the last draft is changing the cost effectiveness.

Likes 0	
Dislikes 0	

Response

Thank you for the comment.	
Srikanth Chennupati - Entergy - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
We will not be able to assess the cost effectiveness of this process until the resulting procedure changes at MISO are finalized and we understand data requirements.	
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	No
Document Name	
Comment	
MRO NSRF does not agree that the modifications in MOD-032-2 are cost effective. As proposed MOD-032-2 would likely impose a immense administrative burden on (NERC Registered) Distribution Providers and Transmission Owners, while not delivering significant reliability benefits.	
Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	
Response	
4B: Too much TO/DP (and GO?) burden - not enough reliability benefit	

Thank you for your comments. For the same reasons that MOD-032 and TPL-001 are being revised to account for DER data needs and potential impacts on the bulk power system, the DT understands that the TO/DP also has a reliability need for visibility into the types and amounts of DER connected to their electric systems. Burden will be reduced as a consequence of modification to Footnotes 4 and 5.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	
Tri-State Generation and Transmission supports the MRO NSRF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group does not agree that the modifications made in MOD-032-2 are cost effective for the reasons stated by both EEI and the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and MRO NSRF.	

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach..	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	No
Document Name	
Comment	
Things appear to be specultive at this point.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	

Comment	
Until the intent of obligations assigned to the Applicable Entities are clear, FirstEnergy cannot determine the cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	

Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thank you for your support.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	
We offer no opinion on the cost effectiveness of the proposed changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2	
Answer	
Document Name	
Comment	
No comment.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	

Answer	
Document Name	
Comment	
No comment	
Likes 0	
Dislikes 0	
Response	
Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller	
Answer	
Document Name	
Comment	
Black Hills Corporation will not provide comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Claudine Bates - Black Hills Corporation - 6	
Answer	
Document Name	
Comment	

Black Hills Corporation will not provide comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	
Document Name	
Comment	
Black Hills Corporation will not provide comment on cost effectiveness.	
Likes 0	
Dislikes 0	
Response	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	
Document Name	
Comment	
Black Hills Corporation will not provide comment on cost effectiveness.	
Likes 0	

Dislikes 0	
Response	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
Ameren has no comments on cost effectiveness of this project	
Likes 0	
Dislikes 0	
Response	

5. Do you agree with the Implementation Plan for revised MOD-032-2?	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	No
Document Name	
Comment	
Until the intent of obligations assigned to the Applicable Entities are clear, FirstEnergy cannot support the Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
AEP believes additional time will be needed to accommodate the work pertaining to assets newly brought into scope. Rather than being required to comply with the obligations 12 months after the definition has become effective, we instead suggest it be 24 months after the definition has become effective.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	No
Document Name	
Comment	
WEC Energy Group does not agree with the Implementation Plan for the reasons stated by both EEI and the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and MRO NSRF.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	No
Document Name	
Comment	

Tri-State Generation and Transmission supports the MRO NSRF Comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group	
Answer	No
Document Name	
Comment	
The timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It The PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect and provide the data to the PC/TP. The Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.	
Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the	

Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Eric Sutlief - CMS Energy - Consumers Energy Company - 3,4,5 - RF	
Answer	No
Document Name	
Comment	
If MOD-032-2 is approved as-is, utilities will need to increase resourcing to accommodate the additional modeling complexities and data collection. DP's, in particular, may not have staffing experience in dynamic modeling, which would lead to a need to establish contractors with the experience or hire/train internal staff. The ability to request the level of information to create dynamic models of DER also falls to the authority of RERRAs. Depending on the existing interconnection procedures, state or local government authorities may need to approve revisions to interconnection requirements. 12 months after the approval date is too soon to require compliance.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	No

Document Name	
Comment	
DER definition needs to be clarified first.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to question #1 related to the proposed DER definition.	
Diana Aguas - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	
CEHE does not support of the proposed changes to MOD-032-2 and therefore cannot support the Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	

The timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It The PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect and provide the data to the PC/TP. The Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
5A: 12 months for data obligations is too short (18-36 months)
As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.

Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group

Answer	No
Document Name	

Comment

Buckeye Power, Inc. supports the comments of ACES:

The timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It is surprising to us that the PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect

and provide it to the PC/TP. We believe that the Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Based on the rationale provided in our response to Question 3 above, BC Hydro is unable to support the proposed Implementation Plan at this time.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. See response to your comment on question #3.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	No
Document Name	
Comment	
"See comments submitted by the Edison Electric Institute"	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	No
Document Name	
Comment	
MPC supports comments submitted by ACES and the MRO NERC Standards Review Forum.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES and MRO NSRF.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	No

Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name SPP RTO	
Answer	No
Document Name	
Comment	

SPP recommends that the implementation of Requirements R2, R3 and R4 become effective 24 – 36 months after the implementation of Requirement R1. In order for industry to implement these changes we believe it will require a large transitional curve for requesting and providing the data. Newly impacted entities will need time to transition and ensure that the new process is efficient and reliable.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	
Comment	
While ATC does not have any particular concerns with the timing outlined in the implementation plan as proposed, we are opposed to the rest of the standard and DER definition as written, and its associated responsibilities, we therefore do not agree with the implementation plan of the proposed version.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment.	
Alan Kloster - Alan Kloster On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the MRO NSRF for question #5.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Greg Davis - Georgia Transmission Corporation - 1	
Answer	No
Document Name	
Comment	
It is not prudent to agree with the implementation plan until the standard addresses how the RE intends to handle situations where the unregistered Distribution Provider does not provide the requested data to the registered DP or TO.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Ben Hammer - Western Area Power Administration - 1	
Answer	No
Document Name	
Comment	
The timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It The PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect and provide the data to the PC/TP. The Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	

Answer	No
Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
Ameren supports EEI's comments on this project	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Scott Brame - Scott Brame On Behalf of: Chris Dimisa, North Carolina Electric Membership Corporation, 4, 3, 5; Reid Cashion, North Carolina Electric Membership Corporation, 4, 3, 5; Richard McCall, North Carolina Electric Membership Corporation, 4, 3, 5; - Scott Brame, Group Name NCEMC	
Answer	No
Document Name	

Comment	
NCEMC support comments of ACES.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to ACES.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Kinte Whitehead - Exelon - 3	
Answer	No
Document Name	
Comment	
Exelon concurs with the comments submitted by the EEI.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
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 timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It is surprising to us that the PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect and provide it to the PC/TP. We believe that the Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
EEI does not support the proposed changes made to MOD-032 and therefore cannot support the Implementation Plan at this time as a result.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
AEPC signed on to ACES comments: The timeline proposed in the Implementation Plan is not long enough for Requirements R2, R3, and R4. It is surprising to us that the PCs and TPs are given 24 months to develop their data requirements, yet the entities required to submit said data are only given 12 months to collect and provide it to the PC/TP. We believe that the Phased-In Compliance Dates for R2, R3 and R4 should be extended to at least 18 months (preferably 24 months) after the effective date of MOD-032-2.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
As explained in our comments on Draft 1, we suggest the implementation plan be revised to allow 24 months (rather than 12 months) after the effective date for the initial performance of R2, R3 and R4. The drafting team's "expectation" that TOs and DPs would participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of R1, thereby allowing TOs and DPs to start working on data collection processes and methods more than 12 months prior to the effective dates of R2, R3, and R4 is not assured.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 5A: 12 months for data obligations is too short (18-36 months) As noted in the Project 2022-02 10/30/2023 Webinar, TOs and DPs would be expected to participate in PC/TP processes to change data reporting requirements related to DER developed during the 24 months prior to the effective date of Requirement R1 and should be able to	

start working on data collection processes and methods more than 12 months prior to the effective dates of Requirements R2, R3, and R4. In summary, this would give a full 36 months from FERC approval until data is required to be reported. Further, "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. The DT believes that industry concerns related to the level of required DER modeling detail may be driving industry suggestions for longer implementation times and are addressed by these modifications.	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
It should not be implemented as currently drafted and until a cost benefit analysis is provided.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to your comment on question #4 regarding cost/benefit analysis.	
Jeremy Lawson - Northern California Power Agency - 3,4,5,6	
Answer	No
Document Name	
Comment	
Hi, please reference comments by Marty Hostler, NCPA Compliance Manager. Thank you,	

Jeremy Lawson, P.E. Generation Services Director of Engineering Northern California Power Agency	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to comments by Marty Hostler, NCPA Compliance Manager.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Claudine Bates - Black Hills Corporation - 6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kimberly Turco - Constellation - 6	

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

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF supports the proposed Implementation Plan.	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern supports the comments by EEI on potential implementation challenges.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Alyssia Rhoads - Public Utility District No. 1 of Snohomish County - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Tim Kelley - Tim Kelley On Behalf of: Charles Norton, Sacramento Municipal Utility District, 3, 6, 4, 1, 5; 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	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Martin Sidor - NRG - NRG Energy, Inc. - 6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Srikanth Chennupati - Entergy - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Robert Follini - Avista - Avista Corporation - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Mike Magruder - Avista - Avista Corporation - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kacie Fischer - Kacie Fischer On Behalf of: Byron Booker, Oncor Electric Delivery, 1; - Kacie Fischer	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Thank you for your support.	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Leslie Hamby - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Jennie Wike - Jennie Wike On Behalf of: Hien Ho, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Merrell, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; John Nierenberg, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Ozan Ferrin, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; Terry Gifford, Tacoma Public Utilities (Tacoma, WA), 1, 4, 5, 6, 3; - Jennie Wike, Group Name Tacoma Power	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC RSC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
John Pearson - ISO New England, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Helen Lainis - Independent Electricity System Operator - 2	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thank you for your support.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thank you for your support.	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	

Document Name	
Comment	
Hard to tell at this point.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	
Document Name	
Comment	
no comment	
Likes 0	
Dislikes 0	
Response	

6. Provide any additional comments for the standard drafting team to consider, if desired.	
Apollonia Gonzales - PNM Resources - Public Service Company of New Mexico - NA - Not Applicable - WECC	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Marty Hostler - Northern California Power Agency - 3,4,5,6	
Answer	
Document Name	
Comment	
We agree with some comments provided by ACES, EEI, MRO, NAGF, and Talen but are not going to restate each item specifically, as others have already restated them. Area coordinators are already responsible for submitting data for modelling, they should be getting data they feel they need; not what some other entity tells them they should get. If a PA needs data they should be responsible for getting said data. Further, if said data is needed, then the BA and/or the TO or DP should modify and/or enforce their market and/or interconnection rules to require load and/or generation entities (Utilities interconnected to a BA's area) provide said data. It appears we are trying to draft new standards continent wide for local issues.	

Additionally, each Utility is already required to complete an EIA-861 form annually. We suggest that the entity needing said data use data that is already on those spreadsheets and use a macro to populate each year's data (which EIA already has) with the bus numbers for each utility so it can be used with a composite load model for each bus. The entity needing the data can call each utility or the TO that services them in order to get the appropriate bus number. We feel there is more man-hours being spent talking about the issue and trying to develop a standard then it would take the entity that wants the data to call and find out the bus numbers to assign to data that already exists. Then the entity needing said data can get it annually from the public EIA website and run a macro to insert the bus numbers. Much simpler and less costly for everyone.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES, EEI, MRO, NAGF, and Talen. 6W: Data is already available to entities that need it The SC approved the DT and the SAR which includes modification of MOD-032 to specifically add DER data in its scope. The DT has taken care to not be overly prescriptive in allowing the PC/TP flexibility in specifying data reporting requirements aligned with local needs.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG supports NPCC Regional Standards Committee's comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. See response to NPCC Regional Standards Committee.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	
Document Name	
Comment	

Comments on "Attachment 1":

Footnote 2 is concerning since the way we collect and forecast aggregate load data is metering that is unaware of any DER impacts. The suggestion in the technical rationale isn't possible to do cleanly. ("*In situations where DER is not separately metered, a comparison to historical load levels can be used to approximate the addition of DER on the distribution feeder. A consistent reduction in load on the feeder may be indicative of DER interconnections.")*

We would prefer the standard more explicitly allow for estimation by either reported DER nameplate capacity, or by estimated % of load (i.e., if no better information is available, perhaps use the data you do have to estimate DER as a % of peak load).

Dynamics reporting requirement # 10 reads:

"*Distributed Energy Resource (DER) data including whether DER is subject to tripping in conjunction with UFLS and/or UVLS [DP, TO where DER is directly connected to the TO system and not through a DP]*"

The added detail here is more burdensome, and is almost certainly not going to be available. The technical rationale says:

"*The SDT intentionally maintained flexible language as to whether the underlying DER data originates from interconnection documentation, measured quantities, estimated quantities, or other sources*."

However the addition of requirements for more specific data seems to go against the characterization that "estimated quantities" are acceptable.

Steady-state reporting requirement #9 has a footnote 4 that reads:

"*The joint PC/TP modeling data requirements and reporting procedures developed per R1 will specify data flow processes and the required level of aggregation. The PC or TP may need to coordinate with the DP or TO to determine appropriate equivalent distribution system impedance.*"

The implication here about determining the equivalent distribution system impedance to DER is perplexing. First because steady-state models do not model distribution impedance. In most cases, everything (including the main distribution transformers) is lumped into the aggregate load. This does apply to dynamic load models that consider equivalent distribution system impedances, but there is no practical way to vary that for every DER. And this is inconsistent with the approach used to model motor loads. For example, there is no requirement to report every individual motor and the equivalent impedance to that motor. And one could argue that the motor load has a vastly more important effect on the system than DER. TPL-001-5.1 stipulates the use of dynamic load models for Stability analysis but allows for the use of an aggregate System Load model. No further details or requirements. Studies are extremely sensitive to the load model that's used. If it is okay to develop those load models in estimated, aggregate form, why should there be anything more expected for DER?

Our general feeling is that the proposed modifications for DER data is getting too detailed and there needs to be very clear and explicit language that says estimating aggregate DER data is acceptable if more detailed data is not available.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6U: more explicitly allow estimates related to FN2 (related to theme 6B)
Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale.

6V: Estimated quantities related to UVLS/UFLS & DER

Knowledge of whether DER is subject to trip by UFLS/UVLS relays is necessary for proper development of UFLS/UVLS schemes as described in the SPIDERWG documents referenced in the Technical Rationale. 6S: FN 4 aggregation level - standardize/specify? Clarify modeling detail? The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.

Kennedy Meier - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	
The phrase “where DER is directly connected to the TO system and not through a DP” in steady state item 9 (and dynamics item 10) from Attachment 1 may not be consistent with footnote 5. ERCOT recommends simplifying the responsibility assignment in steady state item 9 (and dynamics item 10) to “[DP, TO]” and modifying footnote 5 to read as follows: **The registered entity (TO or DP) to which DER is connected is responsible for reporting DER data in accordance with PC/TP modeling data requirements and reporting procedures developed under Requirement R1.** Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	

6I: Separate registration for TO with DER?/clarify TO obligation & FN5 Footnotes 4 and 5 were combined and modified to add clarity and a more detailed description of the DT intent was added to the Technical Rationale.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	

AEPC signed on to ACES comments:

We have a great deal of apprehension as it relates to proposed language in Footnote 5 of Attachment 1. Footnote 5 states (emphasis added):

"Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column."

By what method should it be determined which registered entity is the "next closest electrically connected". Consider the case wherein a substation owned by an unregistered DP has a feeder from 2 different registered entities. Who is to make the determination as to which registered entity is the "next closest electrically connected" and how? In order to make this determination, a certain amount of knowledge about the other entity's infrastructure is required.

Of even greater concern is the continued inclusion of data from unregistered entities despite the open acknowledgment by the SDT of the challenges with collecting said data (see Technical Rationale, paragraph 2). We recommend that the SDT postpone further development of this Project until the GO-IBR and GOP-IBR registration criteria have been approved and can be included in the next draft of MOD-032-2.

Thank you for the opportunity to comment.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 6D: issues with "next electrically closest" - need clarification Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale. 6E: GO-IBR to the rescue (related to theme 1D) The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
EEI notes that this project has been listed as a low priority project. While we understand this may have some immediate impacts on the work being conducted by this SDT, we suggest that a two phased approach for the revision of MOD-032 might address the immediate concerns surrounding efforts to align registration under Project 2017-02. Phase 1: Consider completing the work from project 2017-02 Standards	

Alignment with Registration: Replace Load-Serving Entity (LSE) with Distribution Provider (DP), remove the Planning Authority (PA) functional entity name and keep the Planning Coordinator (PC) functional entity name, and make the associated LSE / DP functional changes to the standard requirements. Phase 2: Please consider addressing additional DER data requirements, after further discussion regarding how GO-IBR and GOP-IBR standards are going to be addressed and what is needed from Distribution Providers regarding unregistered IBRs. In addition to the comments responding to the questions above and our suggests related to project phasing, we are additionally concerned with Attachment 1, Footnote 5 and suggest it should be deleted because the next closest DP or TO to an unregistered distribution provider, should not be held responsible for providing DER data outside of their control or ability to collect.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6T: Prioritize administrative issues with MOD-032/Wait for 901
The DT does not believe that the development of essential requirements related to ensuring appropriate DER data is available to PCs and TPs should be delayed to put the industry behind the curve as they are with IBR performance requirements. The DT believes this is aligned with the urgency conveyed in FERC Order No. 901.

6E: GO-IBR to the rescue (related to theme 1D)
The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.

6D: issues with "next electrically closest" - need clarification
Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
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 have a great deal of apprehension as it relates to proposed language in Footnote 5 of Attachment 1. Footnote 5 states (emphasis added):

"Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column."

By what method should it be determined which registered entity is the "next closest electrically connected". Consider the case wherein a substation owned by an unregistered DP has a feeder from 2 different registered entities. Who is to make the determination as to which registered entity is the "next closest electrically connected" and how? In order to make this determination, a certain amount of knowledge about the other entity's infrastructure is required.

Of even greater concern is the continued inclusion of data from unregistered entities despite the open acknowledgment by the SDT of the challenges with collecting said data (see Technical Rationale, paragraph 2). We recommend that the SDT postpone further development of this Project until the GO-IBR and GOP-IBR registration criteria have been approved and can be included in the next draft of MOD-032-2.

Additionally ACES collected the following comments for the consideration of the SDT:

1. "Once the GO-IBR standards are in place, the DP should not be part of this equation at all. This is especially true of non-registered members. Put the burden onto the GO-IBR not the DP."

2. "The latest draft of MOD-032 no longer requires reactive power information to be collected for DERs. While most smaller systems really only operate at unity, it is the belief of NCEMC having this information will allow planners to more accurately model Distributed Energy Resources, thereby improving grid reliability. Thus, NCEMC recommends that reactive power data collection for DERs be required by MOD-032."

Thank you for the opportunity to comment.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6D: issues with "next electrically closest" - need clarification
Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.

6E: GO-IBR to the rescue (related to theme 1D)
The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

2C: elimination of reactive power
The DT removed the reactive power capability in response to previous industry comments. A DER's reactive power operating characteristics can depend on many factors aside from the maximum capability, including the mode of reactive power control. For instance, if the DER is in

volt/var control mode, the distribution system loading, voltage regulation scheme, and impedance can all affect the DER's reactive power output. The Attachment 1 information provides a minimum baseline for information. The PC/TP may request additional information to make assumptions about aggregate DER reactive power operating characteristics.	
Pamela Frazier - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name Southern Company	
Answer	
Document Name	
Comment	
The SDT should give consideration to paragraph 105 of FERC Order No. 901 which states that if distribution providers are unable to gather adequate IBR-DERs data in the aggregate or unable to gather IBR-DERs data in the aggregate at all, provide instead to the Bulk-Power System planners and operators in their areas: (1) an estimate of the modeling data and parameters of IBR-DERs in the aggregate, (2) an explanation of the limitations of the availability of data, (3) an explanation of the limitations of the data provided by IBR-DERs, and (4) the method used for estimation. Southern supports the comments by EEI on potential implementation challenges.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI. 6B: FERC 901 reference to allow estimated data Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale.	
Kinte Whitehead - Exelon - 3	
Answer	
Document Name	

Comment
Exelon concurs with the comments submitted by the EEI. Exelon suggests the drafting team consider allowing TP/PCs to establish a threshold for aggregate DER reporting. Certain types of DERs such as non-exporting, or DERs connected behind the meter as load offsetting DERs may not be of concern to the TP/PC should be exempt from DP/TO data collection and reporting requirements. Data collection and reporting requirements should focus on "front of meter" connected DERs who primarily export energy, or DERs participating in wholesale markets. Additionally, FERC Order 2222 will require some level of DER data reporting and modeling that may result in the proposed changes to MOD-032 becoming duplicative of, and in some cases in conflict with, obligations imposed by Order 2222.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. See response to EEI. 6N: Threshold needed - PC/TP discretion? (related to themes 1C, 2D and 3C) The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable. 6O: FERC 2222 coordination FERC 2222 may provide a different avenue for PC/TP obtaining needed data - care will be needed to not double count if that avenue is used (and PC/TP may need to adjust their data reporting requirements), but it's not clear how MOD-032-2 would conflict. The Technical Rationale already includes statements acknowledging these types of scenarios.

Bobbi Welch - Midcontinent ISO, Inc. - 2, Group Name ISO/RTO Council Standards Review Committee (IRC SRC) 2022-02 Modifications to MOD-032 Draft 2

Answer	
Document Name	2022-02 Unofficial_Comment_Form_SRC_11-20-23_FINAL_as filed.docx

Comment

The SRC offers the following additional comments and recommendations:

Ensure consistency between Attachment 1, footnote 5 and steady-state item 9: The SRC is concerned that steady-state item 9 in Attachment 1 may not be consistent with footnote 5. Item 9 addresses instances in which DER is directly connected to a TO or DP, while footnote 5 addresses instances in which DER is not directly connected to a NERC-registered entity. Rather than addressing these topics in two separate locations, the SRC recommends that the drafting team ensure consistent language is used to describe each topic and consider addressing both topics in the same location, such as by moving relevant language from item 9 down to footnote 5.

The SRC recommends the SDT review and standardize its use of "DER" throughout the document. For example, MOD-032-2, Attachment 1, item 9 states:

Distributed Energy Resource (DER) data4 [DP, TO where DER is directly connected to the TO system and not through a DP (when DER is not associated with a registered DP)]5

However, this description of DER as "*DER is directly connected to the TO system and not through a DP*" appears to conflict with the DER definition (on page 2) which states: "*Generators and energy storage technologies connected to the Distribution Provider's system…*" To the extent a TO can also serve as a Distribution Provider and a DER is connected to the DP portion of a TO's system, there is no need to refer to that entity as a "TO" as the standard would apply to them as a DP.

Alternatively, if DERs can also be directly connected to a TO system, then the Distributed Energy Resource (DER) definition needs to be updated to reflect that as detailed below:

Generators and energy storage technologies connected to ***either a Transmission Owner's system or a*** *Distribution Provider's system that are capable of providing Real Power in non-isolated parallel operation with the Bulk Electric System.*

· Distribution Provider refers to the NERC glossary definition, not the NERC registered entity.

Stay within NERC's purview and require NERC-registered entities to provide DER information: To keep this project moving forward, the SRC recommends the SDT maintain its scope within NERC's regulatory purview. Requiring NERC registered entities to request information from non-registered entities as in Attachment 1, Footnote 5, moves the burden from entities that own and control the data to entities who do not own or control DER data. Entities are free to request information at any time without a standard. Using a mandatory standard to require an entity to request data is of little to no value. **The benefit of a mandatory standard lies in placing a requirement on the appropriate entity to provide the data**. Without a requirement on the providing entity, the data collected may be garbage and lead to poor modeling results; i.e. garbage in/garbage out.

As DERs proliferate, this increases the risk, administrative burden and cost on registered entities to expend time and energy on requesting and passing through DER data from unregistered entities that have no obligation to provide it ("pull" method). As non-registered entities have no obligation to provide the data or ensure its quality, this process may translate into a costly proposition that leads to poor modeling results. If the goal is to obtain quality data for modeling, NERC must ensure that it has the appropriate registration criteria and rules in place to require applicable NERC registered entities to provide it ("push" method) to modeling entities.

Footnote 5: *Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column.*

Review the adequacy of Distribution Provider registration criteria. As noted in the **Technical Rationale for Reliability Standard MOD-032-2** and in Attachment 1, Footnote 5, the SRC observes that in some cases, the entity that owns and controls the DER information may not be a NERC-registered DP. In fact, in July 2018 NERC relaxed its Distribution Provider registration criteria which allowed certain entities to deregister as Distribution Providers,[1] thereby removing what would otherwise have been in place to compel a broader scope of entities to provide DER data.

To that end, NERC has the obligation to ensure all Distribution Providers with the ability to impact the reliability of the BES are registered. Therefore, NERC should verify whether its existing DP registration criteria is adequate to ensure reliable modeling. As with the registration of IBRs (where the approach proposed under Docket RD22-24-000 is expected to result in approximately 98% of BPS-connected IBR nameplate capacity being subject to applicable NERC Reliability Standards), existing DP registration requirements should likewise be made adequate to acquire needed DER information.

Although NERC may not be able to address this now, NERC should nonetheless commit to a plan to perform this validation as it would be helpful to know whether the existing registration criteria for a "Distribution Provider" is sufficient to capture a predominance of DERs. If not,

NERC could develop and implement a plan to register DPs that would close the gap. In this way, this effort will not delay the SDT from moving forward with proposed modifications to MOD-032-2 now, as acquiring some DER information now will provide substantial improvement in PC and TP studies.

Standardize the required level of aggregation: The SRC is concerned if the standard does not specify or standardize "the required level of aggregation" among PC/TPs. The reason for this is to ensure future compliance audits will have an established aggregation level and removes any ambiguity of "the required level of aggregation" between the PC/TP being audited and the auditor.

Footnote 4 "*The joint PC/TP modeling data requirements and reporting procedures developed per R1 will specify data flow processes and* ***the required level of aggregation****. The PC or TP may need to coordinate with the DP or TO to determine appropriate equivalent distribution system impedance.*"

Ensure comprehensive reporting: The SRC is concerned with the proposed written language as it allows a gap as to knowing whether or not the registered DP or non-registered DP is providing all information and data – leaving an unknown compliance responsibility. This is especially true for non-jurisdictional entities, where the data may be unverifiable (un-auditable) and would lead to additional compliance concerns. One possible remedy is to aggregate small generators of the same type, along with an optional MW threshold for reporting.

[1] **ERO Enterprise Registration Practice Guide:** Distribution Provider "directly connected" Determinations Version 2: July 5, 2018

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6I: Separate registration for TO with DER?/clarify TO obligation & FN5
Footnotes 4 and 5 were combined and modified to add clarity and a more detailed description of the DT intent was added to the Technical Rationale.

3B: Data accuracy
It is understood that modeling aggregate DER (based on collected data) will involve some assumptions (similar to modeling aggregate load response). The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

The DP registration suggestion is aligned with DT statement in the Technical Rationale.

Related to 6S: standardized aggregation
The intent is not to require a detailed model for every single DER and the DT is not proposing any such requirement. However, DER data items proposed to be added to Attachment 1 are needed to assess the reliability impact of aggregate DER in system studies. Across the continent, there are variations of DER penetrations and preponderance of DER classes (some areas may have more residential rooftop solar, others may have more utility scale DER). Therefore, it is prudent to allow the PC/TP greater flexibility in determining the details regarding DER data requirements rather than being overly prescriptive in MOD-032. "Aggregate" was added to the DER data item in Attachment 1 to clarify the information that is expected to be included in the transmission model.

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

Answer	
Document Name	

Comment

In Attachment 1 please capitalize “interconnection-wide” in the following sentence: “Data must be shareable on an **interconnection-wide** basis to support use in the **Interconnection-wide** cases.”

Did the SDT intend to have the TO(s) gather Item 1 in the “short circuit” column of the table in Attachment 1 for DERs (Item 9 in “steady-state” column)?

Has the SDT collaborated with Project 2022-04 EMT Modeling SAR team on any possible changes to MOD-032 that could be promoted now versus waiting to re-open MOD-032?

Attachment 1 Footnote 5- Determining the “next closest electrically connected entity” is very broad and subject to interpretation especially if deep within multiple jurisdictions (TO and DP or multiples of each). What mechanism is in place for registered DPs and TOs to ensure that

data is collected appropriately for a non-registered DP? "Appropriately" may mean avoiding a couple of scenarios---Accounted for twice or more (once by a TO AND once or more by one or more registered DPs) or not accounted for at all by either the DP or TO. Is the SDT leaving the determination of "next closest electrically connected entities" to the TP or PC?

Additionally, would recommend a footnote 5 (or 6) be added to Item 10 in the "dynamics" column to provide clarity versus referring to item 10 within the footnote itself.

For Item 9 in "steady-state" column (i.e., DER data). WECC would suggest changing "Generator type (solar, battery, etc.)" to be more reflective of the proposed definition of DER which starts out as "Generators and energy storage technologies…". Consider removing "Generator" from 9c and simply say "Type (solar, battery, etc.)"

The SDT should consider utilizing or correcting Glossary of Term usage within Table 1 to reflect "Real Power" and "Reactive Power" for all parts of the table to provide clarity.

Further comments for Question 1: The addition of the phrase "Distribution Provider refers to the NERC glossary definition, not the NERC registered entity" may cause confusion as the ROP definition of the registered entity (DP) is the same as the Glossary of Terms. SDT should further consider if a different term should be utilized to avoid some confusion. WECC appreciates the idea of trying to illustrate what the entity functions may be regardless of the determination for registration (and the ensuing obligation to NERC Reliability Standards construct if registered.)

ROP definition in Appendix 5b: "Provides and operates the "wires" between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage."

ROP definition in Appendix 2:" "Distribution Provider" means the entity that provides and operates the "wires" between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage.**"

Glossary of Terms Definition: "Provides and operates the "wires" between the transmission system and the end-use customer. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the distribution function at any voltage."

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
Interconnection is defined in the NERC glossary as:
“A geographic area in which the operation of Bulk Power System components is synchronized such that the failure of one or more of such components may adversely affect the ability of the operators of other components within the system to maintain Reliable Operation of the Facilities within their control. When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.”

The DT believes that the use of non-capitalized “interconnection-wide” within MOD-032-1 may have been intentional; no change made.

Explicitly adding DER data to the "short circuit" column was outside the scope of this SAR. As noted in the Technical Rationale, the PC or TP is not restricted from requiring any needed short circuit data in their joint modeling data requirements and reporting procedures developed per R1.

The DT is aware of Project 2022-04. EMT model requirements are beyond the scope of this SAR. Ultimately, the Project 2022-04 team may propose EMT model data collection requirements. At this time, it is not clear that MOD-032 is an appropriate location for such requirements.

6D: issues with "next electrically closest" - need clarification
Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.

6P & 6Q: dynamics 10/steady state 9
DT addressed the issue with referring to Item 10 for dynamics within the footnote for item 9 in steady state.
Steady state Item 9 was modified to address the concern.

6R: Modify to Real/Reactive defined terms throughout?
Addressing the use of defined terms for Real Power and Reactive Power throughout MOD-032 is beyond the scope of this SAR. The DT believes that the usage of capitalized or non-capitalized terms may have been intentional.

1G: Confusion between glossary DP and registered DP The DT found that the confusion related to the NERC glossary definition for Distribution Provider and the NERC registration criteria was pre-existing. The DT attempted to clarify that use of "Distribution Provider" in the proposed DER definition is not referring to NERC registration. The use of the "Distribution Provider" within the standard without further specific explanation refers to the NERC registered entity. The DT added language in the Technical Rationale and also modified the proposed definition to clarify.
Carly Miller - Carly Miller On Behalf of: Micah Runner, Black Hills Corporation, 5, 6, 1, 3; - Carly Miller

Answer	
Document Name	
Comment	
Black Hills Corporation agrees with other entities that Footnote 5 should be deleted. The "next closest electrically connected registered entity" DP, TO, or PC to an unregistered distribution provider, should not be held responsible for providing DER data outside of their control or ability to collect.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Claudine Bates - Black Hills Corporation - 6	
Answer	
Document Name	
Comment	

Black Hills Corporation agrees with other entities that Footnote 5 should be deleted. The "next closest electrically connected registered entity" DP, TO, or PC to an unregistered distribution provider, should not be held responsible for providing DER data outside of their control or ability to collect.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Rachel Schuldt - Rachel Schuldt On Behalf of: Josh Combs, Black Hills Corporation, 5, 6, 1, 3; - Rachel Schuldt	
Answer	
Document Name	
Comment	
Black Hills Corporation agrees with other entities that Footnote 5 should be deleted. The "next closest electrically connected registered entity" DP, TO, or PC to an unregistered distribution provider, should not be held responsible for providing DER data outside of their control or ability to collect.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	

Daniel Gacek - Exelon - 1	
Answer	
Document Name	
Comment	

Exelon concurs with the comments submitted by the EEI.

Exelon suggests the drafting team consider allowing TP/PCs to establish a threshold for aggregate DER reporting. Certain types of DERs such as non-exporting, or DERs connected behind the meter as load offsetting DERs may not be of concern to the TP/PC should be exempt from DP/TO data collection and reporting requirements. Data collection and reporting requirements should focus on "front of meter" connected DERs who primarily export energy, or DERs participating in wholesale markets.

Additionally, FERC Order 2222 will require some level of DER data reporting and modeling that may result in the proposed changes to MOD-032 becoming duplicative of, and in some cases in conflict with, obligations imposed by Order 2222.

Likes 0	
Dislikes 0	

Response

Thank you for your comments. See response to EEI.

6N: Threshold needed - PC/TP discretion? (related to themes 1C, 2D and 3C)
The DT consensus is that it is most appropriate to not include a threshold within the DER definition. NERC has recommended a zero MVA threshold for gathering DER information: https://www.nerc.com/comm/RSTC_Reliability_Guidelines/DERStudyReport.pdf
It is expected that PC/TP procedures may specify thresholds and technical justification for inclusion of DER models (or not) in any particular study – this issue is more aligned with the SAR for TPL-001 that will be addressed in the second phase of this project 2022-02. A single threshold is not likely universally applicable.

6O: FERC 2222 coordination

FERC 2222 may provide a different avenue for PC/TP obtaining needed data - care will be needed to not double count if that avenue is used (and PC/TP may need to adjust their data reporting requirements), but it's not clear how MOD-032-2 would conflict. The Technical Rationale already includes statements acknowledging these types of scenarios.	
Sheila Suurmeier - Black Hills Corporation - 5	
Answer	
Document Name	
Comment	
Black Hills Corporation agrees with other entities that Footnote 5 should be deleted. The "next closest electrically connected registered entity" DP, TO, or PC to an unregistered distribution provider, should not be held responsible for providing DER data outside of their control or ability to collect.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
David Jendras Sr - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
Ameren supports EEI's comments on this project	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Kenya Streeter - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	
Document Name	
Comment	
See comments submitted by the Edison Electric Institute	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Ben Hammer - Western Area Power Administration - 1	
Answer	
Document Name	
Comment	
Transmission Owners who are not Distribution Providers likely have no knowledge or capability to provide data for planned demand or DER constituents served from the transmission system. Transmission Owner visibility for load demand is typically limited to historical telemetered MW and MVAR data. This finding, especially with regards to DERs, has already been well-documented. A key recommendation in the NERC Reliability and Security Technical Committee (RSTC) subcommittee approved the "Model Verification of Aggregate DER Models used in Planning Studies - Reliability Guideline" developed by the System Planning Impacts from Distributed Energy Resources Working Group (SPIDERWG) was:	

"TPs, PCs, TOs, and other applicable entities that may need DER information should coordinate with DPs for facilities connected to distribution systems to determine the necessary measurement information that would be of use for DER modeling and model verification and jointly develop requirements or practices that will ensure this data is available. ***As the TPs, PCs, and TOs are dependent on the DP to have the data made available****, this will likely require actions from state regulatory bodies and DPs to establish requirements to gather this information" (page 7 of 61).*

The SDT should consider that Transmission Owners should not be held accountable for demand and DER data that they have no cognizance of. Additionally, the SDT should remember that most DER are smaller than the BES resource threshold or reside on a distribution system. The threshold for an entity to be registered as a Distribution Provider is 75 MW of load. This implies that the majority of DERs are and will be connected to systems outside the scope and visibility of Transmission Owners, as well as existing Distribution Providers. To emphasize this reality: as of 15 May 2023, there were 314 Distribution Providers registered with NERC (excluding UFLS-only DPs). Of those DPs, 96 were not otherwise registered as either a PC, TP, or TO. While it may be misunderstood that only 96 DPs may become newly applicable and participatory in model data collection given the draft changes to MOD-032-2, this ignores that the latest EIA 861 data (collected in 2021; published in 2022) reflects about 1,190 distribution utilities reflecting almost 197,000 distribution circuits in the continental US. In other words, it may be reasonable to conclude that 74% of the distribution utilities in the US do not meet the NERC registration threshold. Furthermore, PCs, TPs, and TOs have no regulatory relationship with these unregistered entities and cannot be held responsible for DER data for which that are not aware.

In June 2022, NERC published its "Inverter-Based Resource Strategy" that recognized efforts necessary to analyze the breakdown of resource size, location, type, and applicability with the BES definition to make a determination of whether the current BES threshold should be updated to reflect the changing resource mix" (page 9 of 10). Subsequently, the NERC Member Representatives Committee (MRC) and Board of Trustees (BOT) technical session on inverter-based resources in February 2023 emphasized the need for a focus on functional registration noting: "industry is increasingly challenged with addressing reliability issues for unregistered inverter-based resources, and those resources are reaching critical mass in some parts of the country. The lack of requirements currently imposed on those resources creates local and regional reliability risks to the BPS in aggregate. This issue compounds in many areas with the growing presence of distributed energy resources (DERs) connected to the distribution system." In response to the FERC directive "Registration of Inverter-based Resources", NERC filed a proposal to modify its Rules of Procedure to "include a new function comprised of owners of IBRs interconnected to the BPS." The Generator Owner – Inverter-Based Resource (GO-IBR) registration would include "owners of IBRs which have aggregate nameplate capacity of less than or equal to 75 MVA and greater than or equal to 20 MVA interconnected at a voltage greater than or equal to 100 kV; or Owners of IBRs which have aggregate nameplate capacity of greater than or equal to 20 MVA interconnected at a voltage less than 100 kV."

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 6E: GO-IBR to the rescue (related to theme 1D) The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.	
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 your support.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	

Document Name	
Comment	
The NAGF suggests that NERC consider the work being performed under Project 2023-05 to revise FAC-001 – Facility Interconnection Requirements to include Distribution Provider which may help to alleviate the drafting team's concerns regarding the ability of either TO or DP needing to obtain data from unregistered entities that own DERs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. At the time of this response, the 2023-05 team does not appear to have been formed yet, but this comment supports the idea that DPs and TOs should have the necessary DER data.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	
Document Name	
Comment	
Attachment 1 Data Reporting table (Steady State Column items 2, and 9, and Dynamics Column items 5, and 10) has added language indicating that the Transmission Owner (TO) is the responsible entity for submitting modeling data when a demand is not associated with a registered Distribution Provider. AZPS requests clarification regarding the type of entity that would have load, but not be a registered distribution provider. AZPS is concerned that the Transmission Owner may not have the ability to produce or acquire certain load information from an unregistered entity unless there is some other type of contractual relationship in place.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments.	

This comment appears applicable to draft 1 rather than draft 2, but the DT believes that the expressed concerns have been addressed. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
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	
Alan Kloster - Alan Kloster On Behalf of: Jeremy Harris, Evergy, 3, 5, 1, 6; Kevin Frick, Evergy, 3, 5, 1, 6; Marcus Moor, Evergy, 3, 5, 1, 6; Tiffany Lake, Evergy, 3, 5, 1, 6; - Alan Kloster	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference the comments of the Edison Electric Institute (EEI) and MRO NSRF for question #6.	
Likes 0	
Dislikes 0	

Response
Thank you for your comments. See responses to EEI and MRO NSRF.

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	

Comment
In Attachment 1, Item 9, Texas RE recommends the SDT consider not removing the minimum and maximum for Real Power capability and Reactive Power capability (minimum and maximum) for DER data requirements. If the minimum and maximum Real Power and Reactive Power data is available, it should be submitted the TP/PC to be included in the system model which will yield more accurate models that are represented in Real-Time operations.

Likes 0	
Dislikes 0	

Response
Thank you for your comments. MOD-032 should establish minimum requirements across the continent without being overly prescriptive. The PC/TP can require additional or more detailed information per Requirement R1, but at a minimum Real Power capability must be included in their data requirements and reporting procedures.

LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	
Document Name	

Comment
Very little has changed from Draft 1 to Draft 2 of the proposed modifications to MOD-032-2. ATC supports the comments from the MRO-NSRF.

In the Technical Rationale, the Standard Drafting Team acknowledges that there may be challenges in collecting data for DER connected to unregistered entities and that the obligations of this standard may place an unreasonable compliance risk on registered entities. However, despite the acknowledgement of this unreasonable risk, the Standard Drafting Team has put forth in draft 2 similar language, containing the same unreasonable risk for industry consideration. A separate effort should be initiated to explore making DER entities above a specified threshold a NERC registered entity to ensure data will be correctly shared. The DT may also consider waiting until possible modifications have been suggested to MOD-032 in response to FERC Order No. 901 and IBR modeling.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such Footnotes, 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 6T: Prioritize administrative issues with MOD-032/Wait for 901 The DT does not believe that the development of essential requirements related to ensuring appropriate DER data is available to PCs and TPs should be delayed to put the industry behind the curve as they are with IBR performance requirements. The DT believes this is aligned with the urgency conveyed in FERC Order No. 901.	
Israel Perez - Israel Perez On Behalf of: Mathew Weber, Salt River Project, 3, 1, 6, 5; Sarah Blankenship, Salt River Project, 3, 1, 6, 5; Thomas Johnson, Salt River Project, 3, 1, 6, 5; Timothy Singh, Salt River Project, 3, 1, 6, 5; - Israel Perez	
Answer	
Document Name	
Comment	

While these modifications are necessary, approving them prior to the DT's documented concerns over the changes to the DP registration creates a disconnect that has the potential for unintended future consequences. SRP recommend the DT crate a SAR for adjusting the definition of DP to include the DER resources prior to moving forward with this effort.

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6J: Don't move forward without addressing registration gap
The DT believes that the data collection covered by the current registration available covers a significant portion of the DER data and provides a reliability benefit prior to efforts to close the registration gap and collect the remaining DER data.

Shannon Mickens - Shannon Mickens On Behalf of: Joshua Phillips, Southwest Power Pool, Inc. (RTO), 2; - Shannon Mickens, Group Name
SPP RTO

Answer	
Document Name	

Comment

SPP recommends this drafting team coordinates with the Project 2023-08 drafting team to ensure the appropriate DER data is identified as well as listed to meet the needs of the two standards from an efficient and reliability prospective.

Furthermore, we recommend that the drafting team consider creating an independent registration for the TO with direct connection to DERs (R-DERs). From our perspective, the proposed Attachment 1 (footnotes) does not clearly define the role for this particular Transmission Owner (TO). Moreover, the independent document can be used to provide clarity on the expectation of the role for the TO with direct connection to DERs (R-DERs).

In support of the proposed solution, we recommend that the drafting team review the efforts made in the NERC Rules of Procedures (RoP) in reference to the GO (IBR) and GOP (IBR) pertaining to their definition and registration.

Additionally, we recommend that the drafting team takes into consideration the impact of creating a separate project to address the proposed definition in an independent process. We have the concern that the creation of an independent project for the definition will only delay the efforts of addressing the needs for DER data collection. From our perspective, the definition effort needs to be finalized before pursuing other activities associate with data collection. Finally, SPP recognizes that DPs and TOs have expressed concern with their ability to obtain granular DER data and because of this, the proposed data collection modifications to MOD-032-2 may not be accepted by industry. To help reach consensus, SPP suggests that the drafting team consider an alternative mechanism that would allow the DPs and TOs to forecast DER data based on their knowledge of DER penetration on their systems, especially when the data is not directly available through a NERC standard.	
Likes 0	
Dislikes 0	

Response

Thank you for your comments. At the time of this response, the 2023-08 team has not been formed yet - that SAR was also initiated at SPIDERWG, so the DT does not expect conflicts in objectives.

6I: Separate registration for TO with DER?/clarify TO obligation & FN5
Footnotes 4 and 5 were combined and modified to add clarity and a more detailed description of the DT intent was added to the Technical Rationale.

6E: GO-IBR to the rescue (related to theme 1D)
The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.

1A: DT should not define DER - separate project needed

The SC approved the DT and the SAR which includes consideration of a DER definition in its scope. The DT considered a range of existing DER definitions with broad applicability across electric system planning and operations in proposing the current version; it is not intended to be specific to MOD-032. The DT recognizes the wide-reaching impacts of this definition. 3B: Data accuracy It is understood that modeling aggregate DER (based on collected data) will involve some assumptions (similar to modeling aggregate load response). The work of the SPIDERWG provides technical references and industry best practices: https://www.nerc.com/pa/Documents/DER_Quick%20Reference%20Guide.pdf.	
Andy Thomas - Duke Energy - 1,3,5,6 - SERC,RF	
Answer	
Document Name	
Comment	
See comments submitted by the Edison Electric Institute for Duke Energy's official response.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	
Hillary Creurer - Allete - Minnesota Power, Inc. - 1	
Answer	
Document Name	
Comment	
Minnesota Power supports MRO's NERC Standards Review Forum's (NSRF) comments.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comments. See response to MRO NSRF.	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	
Document Name	
Comment	
MPC supports comments submitted by ACES and the MRO NERC Standards Review Forum.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to ACES and MRO NSRF.	
Selene Willis - Edison International - Southern California Edison Company - 5	
Answer	
Document Name	
Comment	
“See comments submitted by the Edison Electric Institute”	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to EEI.	

Stephen Whaite - Stephen Whaite On Behalf of: Lindsey Mannion, ReliabilityFirst , 10; - Stephen Whaite, Group Name ReliabilityFirst Ballot Body Member and Proxies	
Answer	
Document Name	
Comment	
RF respectfully abstains from this ballot event and recommends NERC staff, the Standards Committee, and the Standards Drafting Team revisit the project scope in light of the directives in FERC Order 901, issued October 19th, 2023.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 6T: Prioritize administrative issues with MOD-032/Wait for 901 The DT does not believe that the development of essential requirements related to ensuring appropriate DER data is available to PCs and TPs should be delayed to put the industry behind the curve as they are with IBR performance requirements. The DT believes this is aligned with the urgency conveyed in FERC Order No. 901.	
Ruchi Shah - AES - AES Corporation - 5	
Answer	
Document Name	
Comment	
AES Clean Energy believes that the new requirements for DERs will help TPs and PCs to better understand the root cause of system instability. However, there is still concern about the ability of the TO and DP to obtain the data from unregistered entities that own the DERs. Currently, FAC-001 allows the TO to specify its interconnection requirements which may help TO to obtain the necessary data. However, there is no similar requirement for DP. AES Clean Energy recommends the Standard Drafting Team to look into this as well.	

Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT doesn't envision a need to request detailed technical information directly from customers. The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g., rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. Such information should be sufficient for PCs an TPs to properly represent potential DER reliability impacts.	
Joshua London - Eversource Energy - 1, Group Name Eversource	
Answer	
Document Name	
Comment	
Eversource recommends either Footnote 5 or the requirements be modified to make clear that the next closest DP or TO to an unregistered distribution provider should not be held responsible for providing DER data in case the unregistered entity does not supply this information, but only responsible to request this data. If the unregistered distribution provider does not supply this information, the DP or TO should remain compliant as long as they submitted the request.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.	
Ryan Strom - Ryan Strom On Behalf of: Carl Spaetzel, Buckeye Power, Inc., 4, 3, 5; Jason Procuniar, Buckeye Power, Inc., 4, 3, 5; Kevin Zemanek, Buckeye Power, Inc., 4, 3, 5; - Ryan Strom, Group Name Buckeye Power Group	
Answer	

Document Name	
Comment	
Buckeye Power, Inc. supports the comments of ACES: We have a great deal of apprehension as it relates to proposed language in Footnote 5 of Attachment 1. Footnote 5 states (emphasis added): "Where DER is connected to an unregistered Distribution Provider, the next closest electrically connected registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column." By what method should it be determined which registered entity is the "next closest electrically connected". Consider the case wherein a substation owned by an unregistered DP has a feeder from 2 different registered entities. Who is to make the determination as to which registered entity is the "next closest electrically connected" and how? In order to make this determination, a certain amount of knowledge about the other entity's infrastructure is required. Of even greater concern is the continued inclusion of data from unregistered entities despite the open acknowledgment by the SDT of the challenges with collecting said data (see Technical Rationale, paragraph 2). We recommend that the SDT postpone further development of this Project until the GO-IBR and GOP-IBR registration criteria have been approved and can be included in the next draft of MOD-032-2.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See response to ACES.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	
Document Name	
Comment	
Transmission Owner is not listed as a Functional Entity to which the proposed standard(s) should apply in the SAR. The SAR states that the Functional Entities to which the proposed standard(s) should apply are the Transmission Planner (TP), the Planning Coordinator (PC) and the	

Distribution Provider (DP). This section of the SAR is designed to, "assist the NERC Standards Committee in appointing a drafting team with the appropriate members." The proposed language in ATTACHMENT 1, affects and changes the obligations of the Transmission Owner (TO). Changes to the obligations of the Transmission Owner (TO) were not approved in the SAR and SDT members selected may not provide adequate representation of TOs.

In the Technical Rationale, the Standard Drafting Team acknowledges that there may be challenges in collecting data for DER connected to unregistered entities and that the obligations of this standard may place an unreasonable compliance risk on registered entities. However, despite the acknowledgement of this unreasonable risk, the Standard Drafting Team has put forth in draft 2 similar language, containing the same unreasonable risk for industry consideration. NV ENERGY recommends that the Standard Drafting Team consider utilizing the procedures allowed for by NERC Rules of Procedure to halt activity on this project until such time that issues surrounding data collection from entities who have no obligation to comply are addressed.

NV Energy has concerns with Footnote 5 of Attachment 1:

"Where DER is connected to an unregistered Distribution Provider, the **next closest electrically connected** registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column."

Likes 0	
Dislikes 0	

Response

Thank you for your comments.
6C: TO was not identified on SAR/TO representation is lacking on DT
TOs are represented on the DT and changes made to the Table in Attachment 1 and Footnotes 4 and 5 should address TO concerns.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity

The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent. 6D: issues with "next electrically closest" - need clarification Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.	
Kimberly Turco - Constellation - 6	
Answer	
Document Name	
Comment	
Constellation has no additional comments Kimberly Turco on behalf of Constellation Segments 5 and 6	
Likes 0	
Dislikes 0	
Response	
Adrian Raducea - DTE Energy - Detroit Edison Company - 5, Group Name DTE Energy - DTE Electric	
Answer	
Document Name	
Comment	

There needs to be a way to exempt or use generic models for legacy systems. Additionally, with some state regulators, such as the MPSC, it may be difficult to request information from customers that are not within the MPSC procedures and rules.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g., rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. MOD-032-2 highlights PC/TP flexibility in developing data requirements and reporting procedures in both Footnote 2 and Footnote 4.	
Duane Franke - Manitoba Hydro - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
- Currently, the existing U-DERs are not obligated to provide any data for models. It may not be a problem for new U-DERs since data requirement can be incorporated in the IOA. - It is more appropriate to list the item 9.d in steady-state modelling requirement under dynamic modelling data requirements. (d. DER capabilities related to ride-through, voltage control and/or frequency control or information that can be used to infer those capabilities for modeling purposes.)	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The DT contends that DPs should already have a record and basic understanding of DER that is connected to their system (e.g., rooftop solar, batteries, etc.) similar to how they have a record and basic understanding of houses, factories, and commercial spaces connected to their system. However, as suggested, there may be additional opportunities to obtain data for U-DER. Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale. 6G: Move control capabilities to dynamics? As noted in the Technical Rationale, the DT maintained the approach from MOD-032-1 where detailed sub-bullets are only presented in the "steady state" column although such information may also be relevant to "dynamics" or "short circuit." In general, information about control and ride-through capabilities could be used to inform steady state behavior assumptions.
Anna Martinson - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO Group

Answer	
Document Name	

Comment
Transmission Owner is not listed as a Functional Entity to which the proposed standard(s) should apply in the SAR. The SAR states that the Functional Entities to which the proposed standard(s) should apply are the Transmission Planner (TP), the Planning Coordinator (PC) and the Distribution Provider (DP). This section of the SAR is designed to, "assist the NERC Standards Committee in appointing a drafting team with the appropriate members." The proposed language in ATTACHMENT 1, affects and changes the obligations of the Transmission Owner (TO). Changes to the obligations of the Transmission Owner (TO) were not approved in the SAR and SDT members selected may not provide adequate representation of TOs. In the Technical Rationale, the Standard Drafting Team acknowledges that there may be challenges in collecting data for DER connected to unregistered entities and that the obligations of this standard may place an unreasonable compliance risk on registered entities. However, despite the acknowledgement of this unreasonable risk, the Standard Drafting Team has put forth in draft 2 similar language, containing the same unreasonable risk for industry consideration. MRO NSRF recommends that the Standard Drafting Team consider utilizing the procedures

allowed for by NERC Rules of Procedure to halt activity on this project until such time that issues surrounding data collection from entities who have no obligation to comply are addressed.

The NSRF has concerns with Footnote 5 of Attachment 1:

"Where DER is connected to an unregistered Distribution Provider, the **next closest electrically connected** registered entity (DP or TO) shall request DER data and pass through available information. An unregistered Distribution Provider is an unregistered entity meeting the NERC Glossary of Terms definition of Distribution Provider. This footnote is also applicable to item 10 under the "dynamics" column."

By what method should it be determined which registered entity is the "next closest electrically connected?" Consider the case wherein a substation owned by an unregistered DP has a feeder from 2 different registered entities. Who is to make the determination as to which registered entity is the "next closest electrically connected" and how? In order to make this determination, a certain amount of knowledge about the other entity's infrastructure is required.

In closing, the NSRF would like to reemphasize the significant challenges in collecting the data in question from non-NERC-registered entities, challenges that the SDT itself has acknowledged (see Technical Rationale, paragraph 2).We recommend that the SDT postpone further development of this Project until the GO-IBR and GOP-IBR registration criteria have been approved.

Likes 1	Lincoln Electric System, 5, Millard Brittany
Dislikes 0	

Response

Thank you for your comments.
6C: TO was not identified on SAR/TO representation is lacking on DT
TOs are represented on the DT and changes made to the table in Attachment 1 and Footnotes 4 and 5 should address TO concerns.

2AG: Still maintains unreasonable compliance obligations + FN 5 - explain intent if no response from unregistered entity
The DT recognized the need for clarity in Footnote 5. As such, Footnotes 4 and 5 were modified and combined to address unreasonable compliance obligations. The Technical Rationale was also updated to clarify the DT intent.

6D: issues with "next electrically closest" - need clarification Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale. 6E: GO-IBR to the rescue (related to theme 1D) The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e. greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Christine Kane - WEC Energy Group, Inc. - 3, Group Name WEC Energy Group	
Answer	
Document Name	
Comment	

WEC Energy Group supports the additional comments of both EEI and the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. See responses to EEI and MOR NSRF.	
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	
Document Name	
Comment	
Industry might be more open to language that mimics FERC Order 901, Paragraph 141, for Verification of IBR Plant Dynamic Model Performance. The requirements could be modified to allow the Transmission Owner and/or Distribution Providers, if unable to gather accurate DER data, or unable to gather DER data at all, to provide instead to the Bulk-Power System planners and operators in their areas, dynamic models of individual DERs and DERs in the aggregate using ***estimated data***. This would give the Planning Coordinators the latitude to use their best judgement and experience in developing the most accurate models for their areas if they cannot get the data from the DER owners or “unregistered Distribution Providers”.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 6B: FERC 901 reference to allow estimated data	

Consistent with what is described in FERC Order No. 901 and what already takes place with load demand, some level of estimation is anticipated as described in the Technical Rationale.	
Joseph OBrien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	
Document Name	
Comment	
No TPL questions?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The modifications to TPL-001 will be proposed in the second phase of project 2022-02. The SDT concluded that it was necessary to complete the DER definition and data obligations in MOD-032 prior to working on TPL study requirements associated with DER.	
Anne Kronshage - Public Utility District No. 1 of Chelan County - 6, Group Name Public Utility District No. 1 of Chelan County - Voting Group	
Answer	
Document Name	
Comment	
In Attachment 1, the steady state section 2 removed the TO due to the DP NERC glossary definition. I think the TO should also be removed from steady state section 9 and dynamics section 10 for the same reason.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. The TO is referenced in the footnote related to item 2 and was similarly added to the footnote related to Item 9. The DT contends that the TO may have a role in reporting both load data and DER data.	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 4, Group Name FE Voter	
Answer	
Document Name	
Comment	
FirstEnergy believes Footnote 5 should be deleted. The next closest DP or TO to an unregistered distribution provider should not be held responsible for providing DER data outside of their control or ability to collect. Further, FirstEnergy supports EEI's comments which state: EEI notes that this project has been listed as a low priority project. While we understand this may have some immediate impacts on the work being conducted by this SDT, we suggest that a two phased approach for the revision of MOD-032 might address the immediate concerns surrounding efforts to align registration under Project 2017-02. Phase 1: Consider completing the work from project 2017-02 Standards Alignment with Registration: Replace Load-Serving Entity (LSE) with Distribution Provider (DP), remove the Planning Authority (PA) functional entity name and keep the Planning Coordinator (PC) functional entity name, and make the associated LSE / DP functional changes to the standard requirements. Phase 2: Please consider addressing additional DER data requirements, after further discussion regarding how GO-IBR and GOP-IBR standards are going to be addressed and what is needed from Distribution Providers regarding unregistered IBRs.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. 6D: issues with "next electrically closest" - need clarification Footnotes 4 and 5 were combined and modified to eliminate the “next closest electrically connected” language and add clarity. A more detailed description of the DT intent was added to the Technical Rationale.	

6T: Prioritize administrative issues with MOD-032/Wait for 901
The DT does not believe that the development of essential requirements related to ensuring appropriate DER data is available to PCs and TPs should be delayed to put the industry behind the curve as they are with IBR performance requirements. The DT believes this is aligned with the urgency conveyed in FERC Order No. 901.

6E: GO-IBR to the rescue (related to theme 1D)
The proposed GO-IBR registration effort is primarily intended to capture the smaller transmission-connected resources that don't meet BES definition. Most individual DER will not meet proposed GO-IBR registration criteria (i.e., greater than 20 MVA) so that effort will provide little benefit with respect to making DER data available to PC/TPs. Yet, smaller individual DER installations connected to DP systems can, in aggregate, have a significant impact on BES reliability.