NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments on the 1st Draft of MOD-024-2 Verification and Data Reporting of Generator Real Power — Project 2007-09 Generator Verification

The Generator Verification Standard Drafting Team thanks all commenters who submitted comments on the 1st Draft of MOD-024-2 Verification and Data Reporting of Generator Real Power — Project 2007-09 Generator Verification. This standard was posted for a 30-day public comments period from January 18, 2010 through February 18, 2010. The stakeholders were asked to provide feedback on the standards through a special Electronic Comments Form. There were 47 sets of comments, including comments from more than 130 different people from over 60 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

http://www.nerc.com/filez/standards/Generator-Verification-Project-2007-09.html

Summary Consideration:

Redundancy: Several commenters indicated that the data addressed in MOD-024-2 is already required to be provided through other standards.

- Considerable time has passed since MOD-024-2 was originally posted, and some of the other standards that previously included data provision requirements have now been proposed for retirement. Some of the duplicate requirements were identified in the TOP series of standards and the TOP requirements have been identified for retirement to avoid duplication with the MOD-024 standard. The requirements slated for retirement include TOP-002 Requirement R 12 which was the closest matching data collection requirement to MOD-024 for real power verification.

The drafting team has reviewed each of the standards identified as possibly containing a requirement redundant with MOD-024 and has confirmed that the proposed requirements in the revised MOD-024 do not duplicate other requirements. To clarify this point the SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured.

Applicability: The requirement for the Resource Planner and Planning Coordinator to provide the Generator Owner with schedules and temperature adjustments was deleted, and the applicability section of the standard was revised to omit the Planning Coordinator and Resource Planner.

Several commenters had specific suggestions for modifications to the proposed applicability, and the drafting team defaulted to using the same facility criteria for generating units as listed in the compliance registration criteria.

Several commenters provided support for including variable units, such as solar wind and run of river hydro, in the real power verification because these units are important to the model of the system, even though they might not reach their maximum real power capability on any given day due to the resource they depend on as a 'prime mover'. The revised standard does not exempt these units from the verification requirements.

Requirement R1: Several commenters indicated that Requirement R1 didn't specify where to send the verified data. The requirement was modified to clarify that the data must be sent to the Planning Coordinator. The Functional Model indicates that all planning entities are required to collect data for models, and also indicates that these entities are required to coordinate the update of models with other planning entities. As envisioned, the Planning Coordinator will share the data from the Generator Owner with its Resource Planners and Transmission Planners.

Some commenters suggested that the verified data should be shared with all operating and planning entities and this suggestion was not adopted. The revised standard does not provide the data to any operating entities as the data is verified for its applicability in long-range planning studies, and the data needed for operating monitoring and operational analysis needs to be more current than needed for planning studies.

Several commenters suggested that verifications are not needed every year – and proposed a five year cycle and this was adopted. Seasonal verifications are not included in the revised standard.

The SDT has combined the requirements of MOD-024 and MOD-025 into MOD-025. Under the combined standard, all applicable units will be verified for both real and reactive power capability just once every five years. To avoid having many units requiring verification in any one year, the initial implementation period proposed requires verification of 20% of an entity's units each year.

Requirement R2: The first draft of MOD-024-2 required the Generator Owner to provide its verified data to both the Planning Coordinator and the Resource Planner according to a schedule defined by the planning entity. The majority of respondents supported having the Resource Planner and Planning Coordinator provide a schedule for performing the verifications which was the SDT's initial proposal; however, the stakeholder comments indicated that this approach may result in a large number of different schedules, potentially causing confusion among the entities that must provide the data. The SDT has dropped the requirement to have the planning entities provide the Generator Owner with a schedule for conducting verifications since the periodicity for conducting verifications was revised to 5 years.

Requirement R3: The first draft of MOD-024-2 required the Generator Owner to provide the Resource Planner and Planning Coordinator with updates to its verified capabilities when the change to gross Real Power generating capability was expected to last at least six months and involve at least 50 MW. Several comments suggested that the 50 MW threshold should be modified and the SDT has proposed a 10% change to the last verified capability as the threshold in the revised standard. Note that in the revised standard this update is addressed in Attachment 1 and is considered part of Requirement R1.

All persons and entities that have provided comments on MOD-024-2 are encouraged by the SDT to review the first posting of MOD-025-2.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comments serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards,

Herb Schrayshuen, at 609-452-8060 or at herb.schrayshuen@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Reliability Standards Development Procedures: http://www.nerc.com/standards/newstandardsprocess.html.

Index to Questions, Comments, and Responses

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

	Commenter	Organization	Industry Segment									
			1	2	3	4	5	6	7	8	9	10
1.	Group Guy Zito	Northeast Power Coordinating Council										X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	Gregory Campoli	New York Independent System Operator	NPCC	2
3.	Roger Champagne	Hydro-Quebec TransEnergie	NPCC	2
4.	Kurtis Chong	Independent Electricity System Operator	NPCC	2
5.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1
6.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1
7.	Brian D. Evans-Mongeon	Utility Services	NPCC	8
8.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10
9.	Brian L. Gooder	Ontario Power Generation Inc.	NPCC	5
10.	Kathleen Goodman	ISO - New England	NPCC	2
11.	David Kiguel	Hydro One Networks Inc.	NPCC	1
12.	Michael R. Lombardi	Northeast Utilities	NPCC	1
13.	Randy MacDonald	New Brunswick System Operator	NPCC	2
14.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10

15.	Bruce Metruck	New York Power Authority	NPCC	6
16.	Chris Orzel	FPL Energy/NextEra Energy	NPCC	5
17.	Robert Pellegrini	The United Illuminating Company	NPCC	1
18.	Saurabh Saksena	National Grid	NPCC	1
19.	Michael Schiavone	National Grid	NPCC	1
20.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3

2. Group Thomas J Bradish Generators Supporting Elimination of MOD-024 X X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Larry Fishman	AES Warrior Run	NPCC	5
2.	Benjamin Church	NextEra Energy Resources, LLC	TRE	5
3.	Steve Toth	Covanta, Fairfax, Inc.	RFC	5
4.	David Murray	Guadalupe Power Partners LP	NPCC	5
5.	Rheal Caron	GDF SUEZ Energy Marketing NA, Inc.	NPCC	6
6.	Steve Kimmish	PSEG Energy Resources & Trade LLC	NPCC	6
7.	Angie McCarroll	Valencia Power, LLC	WECC	5
8.	Harry Brand	Rensselaer Cogeneration, LLC	NPCC	5
9.	Gary L. Carlson	Michigan Public Power Agency	RFC	5
10.	Michelle D'Antuono	Occidental Chemical Corporation	SERC	5
11.	Gina Navarro	NAEA Energy Massachusetts, LLC	NPCC	5
12.	Mary Jo Cooper	Canandaigua Power Partners II, LLC	WECC	5
13.	Larry Rodriguez	Union Power Partners, L.P. (PUPP)	SERC	5
14.	Kelsi Jo Oswald	Pinellas County Resource Recovery	NPCC	5
15.	Larry Rodriguez	Gila River Power, LP - GO/GOP/PSE	WECC	5, 6

3. Group Carol Gerou NERC Standards Review Subcommittee X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Chuck Lawrence	American Transmission Company	MRO	1
2.	Tom Webb	WPS Corporation	MRO	3, 4, 5, 6
3.	Terry Bilke	Midwest ISO Inc.	MRO	2
4.	Jodi Jenson	Western Area Power Administration	MRO	1, 6
5.	Ken Goldsmith	Alliant Energy	MRO	4

6.	Dave Rudolph	Basin Electric Power Cooperative	MRO	1, 3, 5, 6
7.	Eric Ruskamp	Lincoln Electric System	MRO	1, 3, 5, 6
8.	Joseph Knight	Great River Energy	MRO	1, 3, 5, 6
9.	Joe DePoorter	Madison Gas & Electric	MRO	3, 4, 5, 6
10.	Scott Nickels	Rochester Public Utilties	MRO	4
11.	Terry Harbour	MidAmerican Energy Company	MRO	1, 3, 5, 6

4.	Group	Howard Rulf	We Energies		X	X	X	

	Additional Member	Additional Organization	Region	Segment Selection
1.	Dale Fredrickson	We Energies	RFC	3, 4, 5
2.	Jeff Klarer	We Energies	RFC	

5.	Group	Mike Garton	Electric Market Policy	X	X		X	X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Jalal Babik	Dominion Resources, Inc.	SERC	1
2.	Louis Slade	Dominion Resources, Inc.	RFC	6
3.	Chip Humphrey	Dominion Resources, Inc.	RFC	5
4.	Fatima Ahmed	Dominion Resources, Inc.	RFC	5
5.	Jeffrey Heffelman	Virginia Electric & Power Company - Fossil & Hydro	SERC	5
6.	Matthey Woodzell	Virginia Electric & Power Company - Fossil & Hydro	SERC	5
7.	Larry Whanger	Virginia Electric & Power Company - Fossil & Hydro	SERC	5
8.	Lou Nunez	Dominion Resources, Inc.	NPCC	5

6.	Group	Sam Ciccone	FirstEnergy	X	X	X	X	X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Doug Hohlbaugh	FE	RFC	1, 3, 4, 5, 6
2.	Mike Williams	FE	RFC	5
3.	Bill Duge	FE	RFC	5
4.	Brian Orians	FE	RFC	5
5.	Dave Folk	FE	RFC	1, 3, 4, 5, 6

7.	Group	Jose Medina (NextEra-GS Chair)	SERC Generation Subcommittee (GS)	X

Please complete the following information.

	Additional Member	Additional Organization	Region	Segment Selection
1.	Brad Haralson	AECI	SERC	
2.	Paul Camilletti	Santee Cooper	SERC	
3.	Dale Goodwine	Duke Energy	SERC	
4.	Terry Crawley	Southern Co.	SERC	
5.	Tom Higgins	Southern Co.	SERC	
6.	Robin Siewert	E.ON US	SERC	
7.	Chris Georgeson	Progress Energy	SERC	
8.	Kumar Mani	Progress Energy	SERC	
9.	Sam Dwyer	Ameren	SERC	
10.	Travis Borrini	Ameren	SERC	
11.	Chris Schaeffer	Duke Energy	SERC	
12.	Joe Spencer	SERC Reliability	SERC	

8.	Group	Frank Gaffney	Florida Municipal Power Agency and Some Members	X	X	X	X	X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Jim Howard	Lakeland Electric	FRCC	1, 3, 5
2.	Greg Woessner	Kissimmee Utilities Authority		1, 3, 5

9.	Group	Philip R. Kleckley	SERC Planning Standards Subcommittee	X	X		X

	Additional Member	Additional Organization	Region	Segment Selection
1.	John Sullivan	Ameren Services Co.	SERC	1
2.	Charles Long	Entergy	SERC	1
3.	John Harmon	Midwest Independent Transmission System Operator, Inc.	SERC	1
4.	James Manning	North Carolina Electric Membership Corporation		3
5.	Pat Huntley	SERC Reliability Corporation		10
6.	Bob Jones	Southern Company Services, Inc. - Transmission		1

10.	Group	Denise Koehn	Bonneville Power Administration	X	X		X	X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Jim Burns	BPA, Transmission, Technical Services	WECC	1

11.	Group	Ben Li	IRC Standards Review Committee		X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Patrick Brown	PJM	RFC	2
2.	James Castle	NYISO	NPCC	2
3.	Bill Phillips	MISO	MRO	2
4.	Lourdes Estrada-Salinero	CAISO	WECC	2
5.	Steve Myers	ERCOT	ERCOT	2
6.	Charles Yeung	SPP	SPP	2
7.	Mark Thompson	AESO	WECC	2
8.	Matt Goldberg	ISO-NE	NPCC	2

12.	Individual	Duncan Brown	Calpine Corporation					X	
13.	Individual	Silvia Parada Mitchell	GO/GOP					X	
14.	Individual	David P Belanger	Exelon Generation Co LLC					X	
15.	Individual	Brent Ingebrigtson	E.ON U.S.	X		X		X	X
16.	Individual	Rick Terrill	Luminant					X	
17.	Individual	Jack Cashin	Electric Power Supply Association (EPSA)					X	
18.	Individual	Stephen Mizelle	Southern Company Transmission/Generation					X	
19.	Individual	Sandra Shaffer	PacifiCorp	X		X		X	X
20.	Individual	Ray Phillips	AMEA				X		
21.	Individual	Scott McGough	Oglethorpe Power Corporation					X	
22.	Individual	Martin	Bauer					X	
23.	Individual	Jonathan Appelbaum	Long island power Authority	X					

24.	Individual	Russell A. Noble	Cowlitz County PUD		X			
25.	Individual	Edwin Thompson	Consolidated Edison Co. of New York	X	X		X	X
26.	Individual	Baj Agrawal	Arizona Public Service Co.	X				
27.	Individual	Greg Mason	Dynegy Inc				X	
28.	Individual	Jon Kapitz	Xcel Energy	X	X		X	X
29.	Individual	Kenneth D. Brown	Public Service Electric and Gas Company	X	X			
30.	Individual	James H. Sorrels, Jr.	American Electric Power	X	X		X	X
31.	Individual	Marty Berland	Progress Energy	X	X		X	X
32.	Individual	Scott Berry	Indiana Municipal Power Agency			X		
33.	Individual	Armin Klusman	CenterPoint Energy	X				
34.	Individual	Greg Rowland	Duke Energy	X	X		X	X
35.	Individual	Jason Shaver	American Transmission Company	X				
36.	Individual	Kasia Mihalchuk	Manitoba Hydro	X	X		X	X
37.	Individual	James Sharpe	South Carolina Electric and Gas	X	X		X	X
38.	Individual	Richard Kafka	Pepco Holdings, Inc	X	X		X	X
39.	Individual	Roger Champagne	Hydro-Québec TransEnergie (HQT)	X				
40.	Individual	Michael Ayotte	ITC Holdings	X				
41.	Individual	Joylyn Faust	Consumers Energy		X	X	X	
42.	Individual	Michael R. Lombardi	Northeast Utilities	X	X		X	

43.	Individual	Fred Meyer	The Empire District Electric Company	X		X		X			
44.	Individual	Laura Zotter	ERCOT ISO		X						X
45.	Individual	Catherine Koch	Puget Sound Energy	X							
46.	Individual	James Manning, Bob Beadle, Dave Sofra	North Carolina Electric Membership Corporation			X	X	X	X		
47.	Individual	Dan Rochester	Independent Electricity System Operator		X						

1. **MOD-024-1, Verification of Generator Gross and Net Real Power Capability, was approved by the NERC Board 2/7/2006. It has not been approved for enforcement under Section 215 by FERC because it contains "fill-in-the-blank" characteristics with responsibilities assigned to the Regional Reliability Organization. Megawatt data is currently collected and reported under several other standards as well as many market rules. Do you feel that there is a reliability need for this additional empirical data, or should this standard be retired? Please explain.**

Summary Consideration:

The intent of question 1 was to obtain input from industry as to whether MOD-024 was required to ensure reliability, or should it be retired because real power data is collected and reported under other NERC standards and market rules. The originally proposed MOD-024-2 had three requirements:

- R1 required the Generator Owner to verify summer and winter real power generating capability of each of its units
- R2 required the Resource Planner and Planning Coordinator that wanted verified generating unit real power capability data to provide the Generator Owner with temperature adjustments and a schedule for verification
- R3 required the Generator Owner to report significant changes in gross Real Power generating capability to its Resource Planner and Planning Coordinator

There was a mixture of responses indicating to the Standard Drafting Team (SDT) that the question had been interpreted differently by different commenting entities. In hindsight, the question was worded poorly.

Stakeholders indicated that the following standards include requirements that duplicate the requirements the SDT had originally proposed with MOD-024:

FAC-002-0, Requirements R1 and R1.1 and R1.4

- The requirements identified require evidence of coordination in conducting studies before integrating facilities. The requirements do not require identification or sharing of specific capability data.

FAC-008/009

- FAC-008-1 requires the facility owner to document and share its facility rating methodology – it does not require sharing any facility ratings
- FAC-009-1 requires the facility owner to develop and communicate its facility ratings. The facility rating is not the same as the capability.

TOP-002, Requirement R12/R13, R14 and R15

- Requirement R13 requires the Generator Operator to perform real and reactive power capability verifications, but this requirement has been proposed for retirement under Project 2007-03 to avoid duplication with MOD-024.
- Requirement R14 requires the Generator Operator to notify the Balancing Authority of changes in capabilities and characteristics. This requirement involves different functional entities for both reporting and receiving data – it has a different reliability objective from MOD-024-2 (now MOD-025).
- Requirement R15 has been proposed for retirement under Project 2007-03.

TOP-003, Requirements R1, R2, and R3

- Requirements R1, R2, and R3 are all related to sharing of outage information. Requirement R3 from the originally proposed MOD-024-2 has been modified and absorbed in the attachment associated with Requirement R1 of MOD-025. Now outage information that leads to different real or reactive power capability only needs to be reported if the outage changes the capability by at least 10% for at least 6 months. The drafting team working on TOP-003 has proposed modifications that eliminate requirements to provide specific data – the revised standard, as proposed, allows each TOP to identify what data it needs and to request that data from the entities that have that data. Neither the original TOP-003 nor the proposed revisions to TOP-003 address provision of the same data to the same entities as the data proposed to be provided by the Generator Owner to the Resources Planner and Transmission Planner in MOD-024 (now MOD-025.)

TOP-006, Requirements R1 and R1.1

- Requirements R1 and R1.1 in TOP-006 do not duplicate the proposed requirements in MOD-024 (now MOD-025). The requirements in TOP-006 require the TOP to 'know' the status of generation resources available for use – and require the Generator Operator to provide the Transmission Operator with that information. The requirements in TOP-006 are intended for exchange of information for near real-time use, and don't involve the same data or the same entities as proposed to be provided in MOD-024 (now MOD0-025).

MOD-010/011

- MOD-011 Requirement R1.2 does require the RRO to develop a specification for entities to provide net generator minimum and maximum Ratings for both real and reactive power and MOD-010 does require the Generator Owner to provide the requested data. The minimum and maximum ratings are not the same as the capabilities.

MOD-012, R1

- MOD-012, Requirement R1 requires Generator Owners to provide equipment characteristics to the Regional Reliability Organization, which is not the same as providing unit capabilities collected under specific conditions.

MOD-026/027

- MOD-026-1 requires Generator Owners to provide generator excitation control system and plant volt/var control function models to accurately represent control response behavior during dynamic simulation, which is reactive power response behavior.
- MOD-027-1 requires Generator Owners to provide turbine/governor and load control or active power/frequency function models to accurately represent control response behavior during dynamic simulation, which is not the same as Real Power capabilities.

Please see the proposed revisions to MOD-024 that have been absorbed into MOD-025. The changes allow use of historical data; merge the requirements for the two standards into a single standard for efficiency when conducting the verifications.

Organization	Yes or No	Question 1 Comment
SERC Generation Subcommittee (GS)		The SERC Generation Subcommittee (GS) could not answer this definitively yes or no. The GS believes that reporting on MOD-024 is duplicative with other standards and may be retired. While this data is important, it is covered under:FAC-008/009, TOP-002, MOD-010/011, etc.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed FAC-008/009, TOP-002 and MOD-010/MOD011 as well as other standards for potential duplication and did not find duplication with the proposed requirements. After thorough consideration of all responses and additional deliberation, the SDT is proposing that the revised standard require the Generator Owner to collect real power verification data at the same time as reactive power verification data, and merged MOD-024 requirements in MOD-025. To perform the reactive power verification it is necessary to go to the rated real power operating point. Therefore, recording and reporting both the real and reactive power data as part of the MOD-025 verification only makes sense for efficiency.		
American Electric Power	No	
ITC Holdings	No	
PacifiCorp	No	: Information required under the proposed standard is currently submitted with FERC Form 1 and for FAC-008 compliance. This standard is redundant and should be retired.
Response: Thank you for your comments. Data provided under FERC Form 1 is not required to be shared with entities that need the data for modeling. FAC-008-1 does not require sharing of capabilities, it requires developing a facility rating methodology. FAC-009 requires sharing of facility ratings developed according to the rating methodology, however facility ratings are not the same as capabilities.		
Indiana Municipal Power Agency	No	IMPA is anwering no to the question "Do you feel that there is a relaiblity need for this additional empirical data", and answering yes to the question "should this standard be retired". The reporting of megawatt data in

Organization	Yes or No	Question 1 Comment
		other reliability standards and in market testing requirements for units is enough.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. Data provided under FERC Form 1 is not required to be shared with entities that need the data for modeling. **After thorough consideration of all responses and additional deliberation, the SDT is proposing that the revised standard require the Generator Owner to collect real power verification data at the same time as reactive power verification data, and merged MOD-024 requirements in MOD-025. To perform the reactive power verification it is necessary to go to the rated real power operating point. Therefore, recording and reporting both the real and reactive power data as part of the MOD-025 verification only makes sense for efficiency.**		
GO/GOP	No	No, we do not feel additional empirical data is necessary as we believe this version should include data required in Version 1 as this version gave a better description of what is happening with a generating unit during a test. Yes, we do feel this standard should be retired. We believe this standard is unnecessary since real power verification can and should be handled by generation and transmission agreements. The Generator Owner (GO) & Generator Operator (GOP) provide generation unit real power capability in seven standards other than in MOD-024 plus the Transmission Operator (TOP), Reliability Coordinator (RC), Balancing Authority (BA) and Regional Transmission Organization (RTO) / Independent System Operator (ISO) see a unit's real time output via their Energy Management System (EMS). Therefore, the generator testing and reporting contemplated under MOD-024 is unnecessary. In addition, MOD-026 and 027 have not been considered in this discussion but are anticipated to be approved over the course of the next two years would cause further duplication. Thus, MOD-024 is clearly unnecessary.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. Note that the standard was modified and the second draft does allow use of historical data from actual output.		
Bauer	No	The changes in this standard duplicate and conflict the requirement specific under TOP002. Originally this standard was for verification procedures which were used to meet TOP-002. The verification procedures defined in this standard should be incorporated into TOP-002 if this standard is retired.
Response: Thank you for your comments. TOP-002-2a Requirement R13 requires the Generator Operator to perform real and reactive power capability verifications, but this requirement has been proposed for retirement under Project 2007-03 to avoid duplication with MOD-024. Please see the summary consideration.		
Generators Supporting	No	The generator owner/operator provides unit real power capability in six standards other than in MOD-024 plus the TOP/RC/BA/ISO see a unit's real time output via their EMS. MOD-024 is duplicative and, as such,

Organization	Yes or No	Question 1 Comment
Elimination of MOD-024		unnecessary. Planners on the RFC MOD-024 draft standard drafting team argued that they needed to know what a unit could consistently produce over a 7-24 hour period when running their reliability models. They were not interested in knowing short-term unit capability. Another reason for not using the unit's output under a stressed condition is that it is not at a level of reliable output. A unit can generate the real power during a test but many times not under actual system conditions. These tests are conducted at the most favorable time for unit performance and are only indicative of unit performance at that point in time. They are no guarantee of future performance. This results in system operators not getting the real power output that they thought was available to them. This shortage of real power occurs during system emergencies when system operators need the mega-watts the most. Because of this, these mega-watts have been called paper mega-watts. Requiring a test actually fosters a situation counter to ALR.Every unit's output must be metered and its output is monitored in real time in the TOP, RC and/or ISO Energy Management System (EMS). The EMS would have a history of a units output. This data is the most accurate representation of a unit's capability under actual system conditions and is a true representation of actual unit capability. This actual unit production data can be made available to the transmission planners. The transmission planners can analyze EMS data and use that period of unit performance that meets their requirements. If they are interested in a unit's performance during the period of highest demand, they can analyze unit output during the most recent or previous peak demand period. By using actual data, the paper mega-watt's issue goes away. If the planner has any issues, they can discuss these directly with the generator operator/owner.Requiring the planner to analyze EMS data may have another benefit. It will force the planner to become more engaged and communicate more strongly with the real-time system operators. The planner will become more aware of real-time issues that will enable them to incorporate these anomalies into their system models.Another benefit to using actual unit data is that it will eliminate running the unit to perform the MOD-024 verification. Not having to run a unit that is not needed to meet system demand will result in fewer emissions and fuel consumption yielding a higher level of environmental stewardship. As a nation, we are supposed to be concerned about greenhouse gases and efficient use of carbon-based fuels. Forcing units to run is contrary to these national goals.Unit real power capability is specified in the units interconnection agreement with the TO. The GOP is required to report unit de-rates to the TOP, RC, BA or ISO immediately after they occur. Real power reporting requirements currently appear in six (6) standards as follows: FAC-002-0: R1. The GO, TO, Distribution Provider (DP), and Load-Serving Entity (LSE) seeking to integrate generation facilities, transmission facilities, and electricity end-user facilities shall each coordinate and cooperate on its assessments with its Transmission Planner and Planning Authority. The assessment shall include: R1.1. Evaluation of the reliability impact of the new facilities and their connections on the interconnected transmission systems.

Organization	Yes or No	Question 1 Comment
		R1.4. Evidence that the assessment included steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance in accordance with Reliability Standard TPL-001-0. MOD-010-0 Applicability 4.3. GO specified in the data requirements and reporting procedures of MOD-011-0 R1. MOD-011-0 R1.2. Generating Units (including synchronous condensers, pumped storage, etc.): location, minimum and maximum Ratings (net Real and Reactive Power), regulated bus and voltage set point, and equipment status. TOP-002-2a R13. At the request of the Balancing Authority or Transmission Operator, a Generator Operator shall perform generating real and reactive capability verification that shall include, among other variables, weather, ambient air and water conditions, and fuel quality and quantity, and provide the results to the Balancing Authority or Transmission Operator operating personnel as requested. R14. Generator Operators shall, without any intentional time delay, notify their Balancing Authority and Transmission Operator of changes in capabilities and characteristics including but not limited to: R14.1. Changes in real and reactive output capabilities. (Retired August 1, 2007) R14.1. Changes in real output capabilities. (Effective August 1, 2007) R15. Generation Operators shall, at the request of the Balancing Authority or Transmission Operator, provide a forecast of expected real power output to assist in operations planning (e.g., a seven-day forecast of real output). TOP-003-1 R1. Generator Operators and Transmission Operators shall provide planned outage information. Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements. Such information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection. R2. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series

Organization	Yes or No	Question 1 Comment
		capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required. R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas. TOP-006-2 R1` Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use. R1.1 Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use. Because the generator owner/operator provides unit real power capability in six standards plus the TOP/RC/BA/ISO see a unit's real time output via their EMS reporting the generator testing and reporting contemplated under MOD-024 is unnecessary. In addition, MOD-026 and 027 have not been considered in this discussion but are anticipated to be approved over the course of the next two years would cause further duplication. Thus, MOD-024 is clearly unnecessary.

Response: Thank you for your comments. The revised MOD-025 (which includes Requirement R1 from the originally proposed MOD-024-2) does allow the use of operational data.

The SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured.

Requiring a one hour capability test period is based on engineering judgment. The SDT envisions Generator Owners will first realize steady state conditions at maximum capability before commencing the one hour verification test. The SDT believes demonstrating a unit can operate at maximum capability during steady state conditions for one hour also proves the unit can operate indefinitely in this manner. Also, the proposed PRC-024-1 standard requires generator performance by remaining connected during voltage and frequency excursions.

The SDT agrees in general with comments raised regarding environmental stewardship concerns and believes this consideration is rendered moot by requiring verification once every five years. It is reasonable to assume that the unit will run for at least one hour at maximum capability during the five

Organization	Yes or No	Question 1 Comment
year period. **Please see the summary consideration. The drafting team reviewed each of the standards and requirements you've identified for potential duplication and did not find duplication with the proposed requirements. Note that the standard was modified and the second draft does allow use of historical data from actual output.**		
Calpine Corporation	No	The reliability need has not been adequately demonstrated and the standard should be retired. It's not clear that it's necessary to require a high degree of accuracy on one segment of generation, when another segment (variable generation) is not addressed and loads levels used in studies are estimates.
Response: Thank you for your comment. The reliability-related need for this project was established at the SAR development stage of this project.		
Hydro-Quebec TransEnergie (HQT)	No	The SDT is asking two question at the same time, with possible contradicting answer.There is reliability need to collect this data. NERC staff should coordinate and ensure that the collection of this data is incorporated in existing standards. If it is, the Standard (MOD-024) should be retired. If it is not done in other Standards this project should be pursued. Even if the collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements, in what way would the compliance and sanction be addressed? If there is a Standard that make it obligatory to respect tariffs, Market Rules, and Interconnection Agreements, this project could be retired.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. After thorough consideration of all responses and additional deliberation, the SDT is proposing that the revised standard require the Generator Owner to collect real power verification data at the same time as reactive power verification data, and merged MOD-024 requirements in MOD-025. To perform the reactive power verification it is necessary to go to the rated real power operating point. Therefore, recording and reporting both the real and reactive power data as part of the MOD-025 verification only makes sense for efficiency.		
Exelon Generation Co LLC	No	The standard should be retired there is presently an number of different standards the require Generators to provide the same information.
Response: Thank you for your comment. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements.		
Public Service Electric and Gas Company	No	The standard should be retired. There are several other standards pursuant to which the GO and/or GOP provides real power capability to those parties needing that data. Also, the RTOs, ISOs, in their role as TOP,

Organization	Yes or No	Question 1 Comment
		RC and BA receive actual data continuously via the EMS. Likewise, those entities performing the same functions in non-ISO areas also receive the data. The actual operating data collected through EMS systems is far superior in quality to that resultant from compliance with MOD-024, both presently and as proposed. Imposing duplicate burdens on generators with no commensurate benefit to reliability should be avoided. Hence, MOD-024 is not necessary.
Response: Thank you for your comments. Keep in mind ambient monitoring is allowed and EMS system data does not necessarily represent unit maximum capability. The SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured. **Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. Note that the standard was modified and the second draft does allow use of historical data from actual output.**		
AMEA	No	The two questions the SDT asked on question 1 could have two different answers. I answered no to the additional data and yes to retire this standard.The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.
Response: Thank you for your comment. The generators covered by this standard are those that are owned by Generator Owners required to register for compliance.		
Arizona Public Service Co.	No	There is no reliability need for this standard and it should be retired. It does not serve any purpose and no body uses this data.
Response: Thank you for your comment. The reliability-related need for this standard was established with the SAR for this project. The data is used in models that are then used to conduct assessments of the bulk power system.		
South Carolina Electric and Gas	No	This standard appears to be redundant with TOP-002 R13. Also, Generator ratings are established in FAC-008. If a verification run by MOD-024-2 contradicts a rating established in FAC-008, which rating should an entity use? If the rating established by verification were used, would this not alter an entity's facility rating

Organization	Yes or No	Question 1 Comment
		methodology?
Response: Thank you for your comments. Please see the summary consideration. Generator ratings are not the same as capability. Actual capability can differ from generator rating provided because of derate or constraint conditions. Furthermore, a unit limited today may be released for unrestricted operation in the future. Capability verification identifies actual unit performance that can be achieved with respect to the operational and regulatory constraints existing. The drafting team reviewed several standards for potential duplication, including TOP-002 and FAC-008 and did not find duplication with the proposed requirements.		
The Empire District Electric Company	No	This standard should be retired
Response: Thank you for your comment. A Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. Therefore, this standard will not be retired – instead the requirements have been clarified and merged into MOD-025.		
Electric Market Policy	No	We agree that a standard for Verification of Generator Gross and Net Real Power Capability is needed. We support the data being requested in standard MOD-024-2, Attachment 1 and 2.
Response: Thank you for your supportive comment.		
We Energies	No	We feel this requirement could be retired do to the fact that the data is collected and reported under several other standards as well as many market rules. For example, the Midwest ISO has established testing requirements for generators under Module E of the Midwest ISO Open Access Transmission, Energy and Operating Reserve Markets Tariff. We also feel that having multiple different testing and reporting requirements can potentially lead to confusion and errors in reporting. If it is determined to not retire this standard, a provision should be made that if generator testing information is provided to a RTO following prescribed testing standards of the RTO, the submittal of the information to the RTO would meet the requirements of MOD-024-2. There is also a concern regarding the different applicability requirements between MOD-024-2 (Generator Owner, Planning Coordinator, and Resource Planner) and the recently passed MOD-024-RFC-01 (Generator Operator and Planning Coordinator) which further illustrates the problem of consistency of requirements.
Response: Thank you for your comments. Data provided under market rules is not necessarily required to be provided to the planning entities that need this data for modeling. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements. **The drafting team consulted with the Functional Model for verification that the Generator Owner is the correct functional entity to provide data about**		

Organization	Yes or No	Question 1 Comment
its facilities. The Functional Model does not provide as much clarity on responsibility for updating models. The Functional Model assigns all three of the planning entities - the Planning Coordinator, Resource Planner and Transmission Planner with responsibility for collecting data to update models, and assigns all three of the planning entities with responsibility for coordinating data collection with other planning entities. To minimize the efforts associated with providing data, the SDT revised the standard so that the Generator Owner is only required to provide data to the Planning Coordinator.		
Southern Company Transmission/Generation	No	We feel this standard is unnecessary since real power verification can and should be handled by generation and transmission agreements. Most traditional utilities already have a process in place to validate and/or certify unit capabilities. In the case of an IPP, this requirement can be addressed in the Transmission Interface documents. If this standard moves forward, then TOP-002-2 R13 must be deleted or at a minimum, revised to indicate that it addresses short term equipment issues in the operations horizon.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards, including TOP-002, for potential duplication and did not find duplication with the proposed requirements.		
Consumers Energy	Yes	
Long island power Authority	Yes	
Independent Electricity System Operator	Yes	Accurate data for real power output of a generating unit/plant is critical to system modeling for resource adequacy and transmission reliability analyses. Unless other standards already cover the requirement for this data, this standard needs to be retained but some of the details for the additional empirical data are not necessary. Please see our comments under Q9.
Response: Thank you for your supportive comment. Please see the summary consideration. After thorough consideration of all responses and additional deliberation, the SDT is proposing that the revised standard require the Generator Owner to collect real power verification data at the same time as reactive power verification data, and merged MOD-024 requirements in MOD-025. To perform the reactive power verification it is necessary to go to the rated real power operating point. Therefore, recording and reporting both the real and reactive power data as part of the MOD-025 verification only makes sense for efficiency.		
Bonneville Power Administration	Yes	BPA suggests reducing the frequency of data collection ... not sure it needs to be every 5 years, it is just more onerous documentation for something that does not change a lot.
Response: Thank you for your comment. All standards must be reviewed and either reaffirmed or revised once every five years. If, once the requirements are implemented, entities find that the data doesn't change much during a five-year period; the standard can be revised to extend the periodicity beyond five years.		

Organization	Yes or No	Question 1 Comment
ERCOT ISO	Yes	ERCOT ISO believes there is a need for this data. The verification methodologies, including the scheduling and timing of verification testing, should be left to the discretion of the relevant NERC functional entities - e.g. the Planning Coordinator / Transmission Planner.
Response: Thank you for your supportive comment. Please see the summary consideration. After thorough consideration of all responses and additional deliberation, the SDT is proposing that the revised standard require the Generator Owner to collect real power verification data at the same time as reactive power verification data, and merged MOD-024 requirements in MOD-025. Some degree of specificity is necessary to ensure that the data can be used as intended.		
Manitoba Hydro	Yes	If FAC-008 and FAC-009 are based upon design data and Engineering Analysis, a standard is required to complete field verification of the unit real power capability. There should be clear distinctions between these standards.
Response: Thank you for your comment. Agree.		
Luminant	Yes	Luminant believes the verification of capability is needed to ensure unit capabilities utilized for resource planning, operating reserves and real time operations are accurate. “Paper Megawatts” can have a detrimental effect on grid reliability.
Response: Thank you for your comment. Agree.		
Puget Sound Energy	Yes	Note: The way the question is worded with two opposite ideas makes it difficult to determine which box to check. Puget Sound Energy feels that this standard should be retired. This standard duplicates information required by other standards, including MOD-010, MOD-012, TOP-002 (R13), as well as FAC-009. Our Transmission Planners already request temperature related Real Power information for generating units through these other standards. Unit derates (proposed R3) are covered under TOP-002 R14, TOP-003, and TOP-006 R1.1. These other standards allow the Transmission Planners to customize their verification needs from the GO/GOP and not have a one-size fits all solution imposed on them as prescribed in this proposed standard.
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards (including MOD-010, MOD-012, TOP-002, TOP-006, and FAC-009) for potential duplication and did not find duplication with the proposed requirements. Note that the standard was modified and the second draft does allow use of historical data from actual output. The intent in MOD-024 (now integrated into MOD-025) is to ensure that planning entities have the data they need for accurate models.		

Organization	Yes or No	Question 1 Comment
E.ON U.S.	Yes	obtaining the additional empirical data is helpful. The data required in Version 1 as established by the Regions gives a better description of what is happening with a generating unit during a test; this version only requires capability, auxiliary power usage, and temperatures-which does not give one a picture of what is occurring during a test and why the capabilities might have been the way they were.
Response: Thank you for your comments. Agree that obtaining the data is helpful to reliability. The original standard was not approved by FERC because the details associated with the verifications were developed by each Region. Please see the revised standard and see if you believe additional information should be collected with the verifications.		
Pepco Holdings, Inc	Yes	Planning Coordinators and Planning Authorities need the data
Response: Thank you for your comment. Agree.		
Dynegy Inc	Yes	Planning related entities (i.e. Planning Coordinator, Resource Planner and Transmission Planner) need the maximum (normalized)demonstrated capability of generating units for inclusion in their planning models. No other Standard requires this data to be accumulated and reported to these entities. Also, historical EMS data that reflects economic dispatch and regulating requirements is not an alternative source for this data.
Response: Thank you for your comments. Agree that planning entities need the data identified in the MOD-024 standard (now integrated into MOD-025). Please see the revised standard – the drafting team is proposing to accept the use of some historical data provided it meets specific criteria.		
NERC Standards Review Subcommittee	Yes	Please review the possibility of redundancy within the following NERC standards: FAC-001-0; R1.1, Connection requirements for Generation facilitiesR2.1.3, Voltage level and MW and MVAR capacity or demand at point of connection. FAC-008-1;R1, GO shall each document its current methodology used for determining Facility Ratings...FAC-009-1;R1, GO shall each establish Facility ratings...MOD-010-0;R1, GOPs shall provide this steady-state modeling and simulation data...MOD-012-0;R1, GOPs shall provide appropriate equipment characteristics and system data...TOP-002-2a;R14, GOP shall notify the BA and TOP of changes in capabilities and characteristics...R14.1, Changes in real output capabilities
Response: Thank you for your comments. Please see the summary consideration. The drafting team reviewed several standards (including FAC-001, FAC-008, FAC-009, MOD-010, MOD-012 and TOP-002) for potential duplication and did not find duplication with the proposed requirements.		
Northeast Utilities	Yes	Standard should be retired.The collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements. The Standard should be retired. Although data can be reliability related sufficient data is collected as dictated by other standards. NERC staff should coordinate and ensure that the

Organization	Yes or No	Question 1 Comment
		collection of this data is incorporated in existing standards projects.
Response: Thank you for your comments. Data provided under FERC Form 1 is not required to be shared with entities that need the data for modeling. **Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements.**		
Northeast Power Coordinating Council	Yes	The collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements. The Standard should be retired. Although data can be reliability related sufficient data is collected as dictated by other standards. NERC staff should coordinate and ensure that the collection of this data is incorporated in existing standards projects.
Response: Thank you for your comments. Data provided under FERC Form 1 is not required to be shared with entities that need the data for modeling. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements.		
American Transmission Company	Yes	The requirements of this standard will provide empirical data that will improve system reliability.
Response: Thank you for your comment. Agree. This is the intent of the standard.		
IRC Standards Review Committee	Yes	The SRC agrees that there is a need for a verification requirement. Given that the GOs are responsible for submitting real power data, there should be a corresponding requirement to verify that data on an as-requested basis. This approach provides the Planners with data that is valid for producing viable forecasts and assessments.
Response: Thank you for your supportive comments. The revised MOD standard (now incorporated into MOD-025) provides a schedule for verifying the data that seems reasonable to both the Generator Owner and the recipients of the data. In most cases, the periodicity for verifications is once every five years.		
Florida Municipal Power Agency and Some Members	Yes	There are two potential reasons for the need to test generator capability related to the standards: 1) MOD-010-0 for accuracy of modeling purposes; and 2) for a potential standard on resource adequacy in the planning horizon (Project 2009-05?).
Response: Thank you for your comments. The reliability-related intent of the MOD-024 requirements is to ensure that planning entities have data for accurate models used to assess the bulk power system. MOD-010 and MOD-011 are focused on the maximum and minimum ratings, which do not		

Organization	Yes or No	Question 1 Comment
necessarily match capabilities. The data verified in the MOD-024 standard (now incorporated in the MOD-025 standard) may be used for resource adequacy studies.		
Consolidated Edison Co. of New York	Yes	There is a need to test the gross and net real power capability because it is a key operating and planning horizon requirement to maintain system reliability. Unit testing is critical to System Operations and their ability to respond to contingencies. Even now, there are concerns with interconnection frequency responses and units not responding to AGC signals as noted in the 2-11-2010 NERC Industry Advisory on interconnection frequency response. In addition, as more and more wind generation is installed, generation capability issues will become more important to System Operators. The standard should not be retired, but the requirements should be incorporated into a new FAC standard or included in FAC-008.
Response: The SDT appreciates your comments and concerns. Frequency response is outside the scope of this standard. The standard requires recording data so that the planner will have both net and gross Real Power generation values. The FAC-008 standard is focused on developing a Facility Rating methodology – which is different from identifying a unit's actual capability.		
SERC Planning Standards Subcommittee	Yes	There is a reliability need to verify real power capability for larger units on the system as discussed in our response to Question 2 below.
Response: Thank you for your comment. The drafting team attempted to limit applicability to those units that do affect reliability of the BES.		
FirstEnergy	Yes	We believe that there is a need for this standard. The argument that "megawatt data is currently collected and reported under several other standards as well as many market rules" is not well founded. All Standard Drafting Teams assigned to revise existing standards that include some form of generator verification are proposing to retire their respective requirements because they intended that MOD-024-2 include these requirements. A specific example is the RTO SDT (Project 2007-03) which has proposed to remove requirements dealing with Real Power generator verification in TOP-002 (R13, R14, and R15) because they believe these requirements should be addressed by this GV SDT. The second part of the argument that these verifications are required by "many market rules" is also problematic because not every entity across the continent participates in a market and market rules are not enforceable Reliability Standard requirements.
Response: Thank you for your comments. Agree. Please see the summary consideration. The drafting team reviewed several standards for potential duplication and did not find duplication with the proposed requirements, in support of your comments.		
Xcel Energy	Yes	We believe there is a reliability need for the Megawatt data collected per this standard and consequently this standard should not be retired.

Organization	Yes or No	Question 1 Comment
Response: Thank you for your comment. Agree.		
Duke Energy	Yes	While data is reported under MOD-010, MOD-024 provides for validation of the data.
Response: Thank you for your comment. Agree.		
North Carolina Electric Membership Corporation	Yes	While we agree that there is a reliability need to verify real power capability for larger units on the system, we are of the opinion that the SDT should direct the verification at units that significantly affect the reliability of the BES.
Response: Thank you for your comment. The drafting team attempted to limit applicability to those units that do affect reliability of the BES.		
Progress Energy	Yes	Yes - there is a reliability need. No, the standard should not be retired.
Response: Thank you for your supportive comment.		
Cowlitz County PUD	Yes	Yes the Standard should be retired. This standard appears to duplicate and complicate FAC-008 and FAC-009. If this standard remains, then should generator rating be removed from FAC-008 and FAC-009?
Response: Thank you for your comment. Please see the summary consideration. The drafting team reviewed several standards (including FAC-008 and FAC-009 for potential duplication and did not find duplication with the proposed requirements.		

2. The SDT believes that verification should be performed on units that are connected down to 100 kV. The SDT believes this is consistent with the current Compliance Registry. The SDT has also provided how verification should be handled in plants/facilities that are greater than 75 MVA in aggregate gross nameplate rating. The Standard requires a separate verification for every unit greater than 20 MVA gross nameplate rating and connected at the point of interconnection of 100 kV or above. The remaining units in a plant/facility can be verified separately or in aggregate as the Generator Owner chooses. Do you agree with the SDT's decision to have the Standard be applicable to facilities connected to 100 kV and above and verified as proposed? Please explain.

Summary Consideration: While most stakeholders who responded to this question indicated support with the proposed applicability, some commenters suggested modifications that would match the compliance registration criteria more accurately, and this suggestion was adopted. The phrase, "connected at point of interconnection" was replaced with "directly connected to the bulk power system".

Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary response to the first question. The need for entities to provide verified unit capabilities was identified and confirmed with the SAR for this project. There was some question that the requirements in MOD-024 may be duplicated by requirements in other standards, and the drafting team researched the other standards and has determined that there is no duplication. Therefore, the team is moving MOD-024 forward, and is integrating the proposed requirements from MOD-024 into MOD-025.		
CenterPoint Energy	No	CenterPoint Energy disagrees with having this Standard be applicable to all units connected to facilities 100 kV and above. CenterPoint Energy recommends it should only be applicable to units interconnected to Bulk Electric System facilities - not all facilities 100 kV and above are considered to be part of a Bulk Electric System.
Response: Thank you for your comment. Please see the summary consideration. The drafting team now proposes the language, "at the point of interconnection at 100 kV or above", in the latest version of the MOD-025-1 draft standard.		
ERCOT ISO	No	ERCOT ISO disagrees with this aspect of the proposal. Although, as a general matter, the relevant set of supply resources for reliability will be interconnected at 100 kV or greater, that is not an absolute rule. In fact, in the ERCOT Region there is a good amount of generation connected at 69 kV. The SDT should not preclude application of the proposed Standard to supply resources connected to facilities below 100 kV. 100 kV can be the default, but the requirement should provide for adequate flexibility to encompass other supply resources the methodology established by the relevant NERC functional entity includes such resources. Furthermore, this is consistent with the NERC Registry methodology, which accommodates facilities below 100 kV where they are necessary for/affect reliability of the Bulk Electric System.

Response: Thank you for your comments. Regions are free to include other facilities through submission of a request for a variance		
The Empire District Electric Company	No	I believe it is redundant to require both summer and winter ratings. Your summer raitings will be your "worst case" for understanding the maximum equipment output. Requireing winter ratings will only waste money and equipment wear.
Response: Thank you for your comment. The SDT has incorporated the real power verification requirements into the revised MOD-025. In the revised standard, the SDT has eliminated the need for seasonal verification. It is expected that only one periodic verification would be required and other data would be calculated based on that one.		
North Carolina Electric Membership Corporation	No	In general there is no reliability need to verify MW values for small units because they don't significantly affect the reliability of the system. The criteria should be to verify individual units which are at least 100 MVA or larger or aggregates of units which are 100 MVA or larger and units that are connected to the transmission at 200 kV and above unless the generating units have been deemed by the Planning Coordinator as critical to the reliability of the BES. This is similar to what has been proposed in the PRC-023 standard under development. All other generators that do not meet this critieria should be exempt.
Response: Thank you for your comment. The intent was to use the same thresholds as included in the compliance registration criteria.		
SERC Planning Standards Subcommittee	No	In general there is no reliability need to verify MW values for small units because they don't significantly affect the reliability of the system. The criteria should be to verify individual units which are 75 MVA or larger or aggregates of units which are 75 MVA or larger. Also provision could be made for the TP or PC to request verification of units which are smaller than 75 MVA for the rare case in which they do impact the reliability of the system.
Response: Thank you for your comment. The intent was to use the same thresholds as included in the compliance registration criteria.		
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Please see the response to the comments provided under Question 1		
Consolidated Edison Co. of New York	No	SDT should not make reference to a specific voltage level. The SDT should indicate that verification should be performed on units that are connected to the Bulk Electric System as determined by the Region.
Response: Thank you for your comment. The intent was to use the same thresholds as included in the compliance registration criteria.		

Hydro-Québec TransEnergie (HQT)	No	See answer to Q1.HQT believes that there are some plants/facilities that are not connected to 100 kV but are material to reliability. These facilities should be subject to data collection, be it in this project Standard or in other existing Standards. The importance of generation to reliability is more related to its power than to its connecting voltage.
Response: Thank you for your comments. The regions are free to include other facilities if they see fit by submitting a request for a variance		
AMEA	No	The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.The many of the regions have identified generators connected below 100 kV that are material to the BES and likewise have identified generators connected at or above 100 kV that are not material to the BES.
Response: Thank you for your comment. The regions are free to include other facilities if they see fit by submitting a request for a variance.		
Consumers Energy	No	The MVA ratings should be based on Net Demonstrated Capabilities (NDC) rather than nameplate. There is no correlation between reliability and nameplate ratings.
Response: Thank you for your comment. The intent was to use the same thresholds as included in the compliance registration criteria. The default language for generating units includes the phrase, "nameplate rating."		
IRC Standards Review Committee	No	There is no need for the SDT to impose a requirement / limitation on what is or is not subject to a NERC standard. The FERC has established those boundaries. To the extent that a PC needs or does not need verification of generators that fall outside those FERC-identified conditions, must be justified on a reliability need or settled outside the NERC-standard process.
Response: Thank you for your comments. The intent was to use the same thresholds as included in the compliance registration criteria for generating units and add the criteria for synchronous condensers, which is not identified in the default registration criteria. If the "facilities" section of the applicability section were limited to only listing the criteria for synchronous condensers, this could have been confusing, thus the criteria for generators was also included.		
Pepco Holdings, Inc	No	There is no need to define what already exists in BES definitions and in the compliance registry rules.
Response: Thank you for your comment. The intent was to use the same thresholds as included in the compliance registration criteria for generating units and add the criteria for synchronous condensers, which is not identified in the default registration criteria. If the "facilities" section of the applicability section were limited to only listing the criteria for synchronous condensers, this could have been confusing, thus the criteria for generators was also included.		

Arizona Public Service Co.	No	There is no need to go down to registry level of 20 MVA. The variation in capacity of these small generators has no measurable impact on the grid planning study results. The studies have onsiderable more uncertainties due to other more significant variables. The minimum size should be 100 MVA for each unit or 250 MVA for a plant.
Response: Thank you for your comments. The intent was to use the same thresholds as included in the compliance registration criteria. 20 MVA is the registry criteria.		
Long island power Authority	No	Units below 100 kV may in the future be registered with NERC under the materiality clause. LIPA suggests relying on the MVA rating only. Additionally, LIPA requests that in the Applicability section a statement clarifying that the point of interconnection may not be a BES element.
Response: Thank you for your comments. The intent was to use the same thresholds as included in the compliance registration criteria. The SDT cannot think of an instance where the interconnection point would not be a BES element. Please see the revised standard.		
Southern Company Transmission/Generation	No	We recommend limiting the unit size requiring real power capability validation in paragraph 4.2 to the following: "Generating Facilities connected at the point of interconnection at 100kV or above, containing an individual generating unit greater than or equal to 75MVA (individual gross nameplate rating)", for the following reasons: o Including only units > 75MVA will represent the vast majority of the total (cumulative) connected MW sources in the country o This cumulative MW class represents the units that are capable of having the largest impact to the stability and reliability of the BES o Excluding the smaller units will avoid unnecessary waste in time and money on the smaller units which individually do not appreciably affect the stability and reliability of the BES. o Stated or assigned values should be sufficient for modeling purposes for units having nameplate ratings < 75 MVA. If the BA or TOP needs validated data on a smaller unit or group of units then these requirements can be made known to the GOP per TOP-002-2 R13.
Response: Thank you for your comments. The intent was to use the same thresholds as included in the compliance registration criteria. 20 MVA is the registry criteria.		
American Electric Power	Yes	
Bauer	Yes	
Bonneville Power Administration	Yes	
Duke Energy	Yes	

Dynegy Inc	Yes	
E.ON U.S.	Yes	
Electric Market Policy	Yes	
GO/GOP	Yes	
Luminant	Yes	
NERC Standards Review Subcommittee	Yes	
PacifiCorp	Yes	
Progress Energy	Yes	
South Carolina Electric and Gas	Yes	
Xcel Energy	Yes	
Manitoba Hydro	Yes	Agree to include units connected to 100 KV and above.
Response: Thank you for your comment. The SDT agrees.		
ITC Holdings	Yes	Comments: The 100 kV reporting for this requirement is consistent with other NERC reporting requirements.
Response: Thank you for your comment. The SDT agrees.		
Indiana Municipal Power Agency	Yes	IMPA agrees that the standard should be consistent with the current Compliance Registry and supports how units are verified in the standard.
Response: Thank you for your comment. The SDT agrees.		
Puget Sound Energy	Yes	Puget Sound Energy agrees with being consistent with the Compliance Registry. It seems that the compliance registry criteria would determine whether an entity has to comply with any of the NERC standards including this one and then the current BES definition would establish what facilities are applicable. The need

		to describe the Faclities under section 4.2 is not clear. We assume that any approved regional definition of the BES would dictate applicability ultimately. Regarding the verification requiremetns as proposed, it is unclear why annual verification (for most units) is necessary as much of the data will not change over an annual timeframe and most change that may occur would likely not cause a reliablity impact as it relates to the study work the Planning Coordinator or Resource Planner uses this information for. We would request that the testing be done on a 5 year cycle which follows other practices for providing data (i.e., WECC has been using a 5 year cycle for testing since 1997, and the results have proven to be entirely adequate).
Response: Thank you for your comments. The SDT agrees. The SDT also agrees with the suggested periodicity included this in the revised standard.		
SERC Generation Subcommittee (GS)	Yes	Stated or assigned values should be sufficient for modeling purposes for units having nameplate ratings < 75 MVA. This should apply to many regions. If the BA or TOP needs validated data on a smaller unit or group of units then these requirements can be made known to the GOP per TOP-002-2 R13.
Response: Thank you for your comments. TOP-002, R13 is proposed for retirement.		
Northeast Power Coordinating Council	Yes	The collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements. The Standard should be retired. Although data can be reliability related sufficient data is collected as dictated by other standards. NERC staff should coordinate and ensure that the collection of this data is incorporated in existing standards projects.
Response: Thank you for your comments. Tariffs, Market Rules, and Interconnection agreements are independent of the reliability obligations being addressed by this standard. Regarding reliability, the SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured. **Also, please see the summary response to Question 1.**		
American Transmission Company	Yes	The generating unit qualifications are consistent with the presently Compliance Registry criteria.

Response: Thank you for your comment. The SDT agrees.		
Florida Municipal Power Agency and Some Members	Yes	There is no need to expand the scope of the standard beyond the registration criteria. As the SDT has pointed out, only about 4% of the power system capacity is connected below 100 kV. Most of these generators are modeled, and many are already tested beyond the scope of the standard. So, causing regulation of generator verification to these generators may only improve accuracy for a small portion of the 4%. Such gain in accuracy at < 100 kV is easily overwhelmed by the inaccuracy of load forecasts, and by the variation of generator output with ambient conditions (e.g., temperature, humidity, barometric pressure, etc.) outside of forecasted ambient conditions. So, such effort is wasted because any supposed gain in accuracy by going below 100 kV is illusory and lost as compared to other forecast inaccuracies outside the control of anyone (e.g., the weather).If anything, the level of verification required in the standards could be reduced for smaller units (e.g., less frequent), even more so than as described in the standard. However, this would create a complex "tiered" standard difficult to understand and monitor. Hence, we congratulate the SDT on developing a balanced perspective that truly focuses on what is important to maintain the reliability of the BES.
Response: Thank you for your comments. The SDT agrees.		
Cowlitz County PUD	Yes	This approach makes it easy for the owner to know when compliance is necessary. However, 20 MVA redline across the board for any single unit seems too low. Any significant generation will be connected at 100 kV or greater, but not all generation is significant just because it is connected at a certain voltage. A simple redline is easy to manage, but is new small generation development being discouraged with this low bar? I am not dead set against this applicable level, but I think some research into discovering the unintended consequences should be made.
Response: Thank you for your comments. The SDT defaulted to using the same thresholds as used for compliance registration.		
Independent Electricity System Operator	Yes	This is a simple approach that should be supported. Notwithstanding our response and consistent with our reply to Q1, where the provision of this information is already required in other standards, those requirements should not be duplicated here.
Response: Thank you for your comment. Agree. Please see the summary response to Question 1.		
Calpine Corporation	Yes	We agree with the demarcation but recommend it be reworded to exclude generation units interconnected at voltages below 100 kV and units below 20 MVA to avoid unnecessary discussion of registration criteria.
Response: Thank you for your comment. The SDT defaulted to using the same thresholds and wording as used for compliance registration. Identifying a list of units that would be excluded does not seem necessary.		

FirstEnergy	Yes	We agree with the proposed thresholds because they are consistent with the NERC compliance registry.
Response: Thank you for your comment. The SDT agrees.		

3. After much discussion the SDT decided to require the verification be performed over a period of at least "one continuous hour" regardless of the type of unit because most units have reached steady state operation within one hour. Do you agree with this approach? If not, please explain.

Summary Consideration: The majority of respondents felt that one hour would meet reliability requirements. A few respondents felt that it was too long while others felt that the Planner should be allowed to request a longer period. There was concern expressed over hydro unit capability varying with reservoir levels. The SDT felt that these variations fall outside the intent of the verifications envisioned for this standard.

Organization	Yes or No	Question 3 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary response to Question1.		
PacifiCorp	No	: Sufficient detail on the data requirements during the one hour sampling period required under the proposed standard has not been provided. Please provide some direction on the required sampling rate and acceptable methods for data collection. It is unreasonable to require that a maximum boiler capacity test be performed twice a year to validate the unit real power capability. Biannual capture of historical data would be the preferred method of unit capability validation. Water resource impacts on hydroelectric facility capability have not been addressed sufficiently by the proposed standard. Please provide clarification on expectations for data collection at hydro facilities when water resources do not support operation at unit capability.
Response: Thank you for your comments. Sampling rate; unit output is integrated over an hour. **On the unreasonableness concern; The standard allows for the temperature adjustment of the summer verification to satisfy the winter requirement. The SDT agrees that unit performance during verification is not a guarantee of future performance. The standard allows the GO to use operating data. The planning coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the planning coordinator from questioning the submitted data. Variable energy units shall report the Real Power obtained that was achieved during the time of the Reactive Power verification. Note that the revised standard requires most verifications only once every five years.**		
IRC Standards Review	No	A Planning Coordinator should be afforded the right to request periods other than one continuous hour as needed for ad hoc evaluations e.g. for Ancillary Service evaluations over a 15 minute period or for special

Organization	Yes or No	Question 3 Comment
Committee		case studies e.g. fuel disruption analysis. The default period may be agreed to as one continuous hour but that should not be the mandated period.
Pepco Holdings, Inc	No	A Planning Coordinator should be afforded the right to request periods other than one continuous hour as needed for ad hoc evaluations e.g. for Ancillary Service evaluations over a 15 minute period or for special case studies e.g. fuel disruption analysis. The default period may be agreed to as one continuous hour but that should not be the mandated period.
Response: Thank you for your comments. If a planning coordinator is performing the ad hoc evaluation for an ISO or RTO then the rules of the ISO or RTO can be structured to meet the intended needs. The SDT agreed that one hour met the needs of modeling data. The standard was drafted to meet reliability needs and not market requirements. Market rules and reliability requirements may be different.		
ERCOT ISO	No	ERCOT ISO disagrees with this aspect of the proposal. The methodology for verification should be left to the relevant NERC functional entities. As noted by the SDT, the Transmission Planner needs to communicate the conditions under which the resource is required to verify its real-power capability. This discretion afforded the TP should apply to all aspects of the verification, including the time period the unit must run. At a minimum, the proposed one-hour time period should be a default and the requirement should provide for alternative time periods to accommodate regional differences and different testing purposes - e.g. for ancillary services.
Response: Thank you for your comments. If ERCOT feels that there is a significant regional difference that requires an enhanced standard for the ERCOT Region then ERCOT ISO should submit a SAR to TRE to develop such a Regional standard. But again the ERCOT ISO is the market that may need different data points and as the market has the right to craft the rules needed to get those data points. The planners on the SDT felt that one hour was a sufficient period for the verification to gather the real power data needed for modeling.		
Luminant	No	Luminant would prefer 30 minutes at full load, as this approach has been utilized effectively in ERCOT for several years.
Response: Thank you for your comment. The planners on the SDT felt that one hour was needed to establish a units' real power capability for modeling, and most stakeholders who responded to this question supported the one hour period.		
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Please see the summary response to Question 1.		

Organization	Yes or No	Question 3 Comment
Duke Energy	No	Need to reword Attachment 1, section 2.1 to add clarity. Suggested rewording: For nuclear and fossil units, record data for at least one continuous hour of normal operation during the winter period. More time may be required or used to achieve stable conditions.
Response: Thank you for your comment. The standard only requires one continuous hour of data. The standard allows for the GO to conduct the verification over any hour they select.		
E.ON U.S.	No	One hour is too short. This period could allow a company to provide more of an "optimum" or "maximum" capability, rather than an average capability (e.g., during one hour soot blowers might not have to be run, etc.). The current 4-hour average test is more reasonable/reliable. Attachment 1 should be revised to specify a verification period of "at least 1 hour." The use of the term "normal operation" in Attachment 1 is not specific enough and is open to interpretation. Since generating capacity has market value, Gen Owners may desire to maximize the verified/reported capability of their units - even if such performance can only be attained for a single hour. This would not be consistent with the notion of dependable or continuous capacity which should be the basis used for reliability planning purposes.
Response: Thank you for your comments. The idea behind the standard is for the planners to get a real power value of what the unit is capable of producing 24/7. The SDT discussed the verification time period at length and concluded, based on its collective knowledge and experience, proposed that one hour was sufficient for modeling purposes, and most stakeholders who responded to this question agreed with this duration. The planner always has the ability to check the number submitted under the standard against actual unit performance to gauge validity. Normal operation is what a unit is called on to produce during normal conditions. The SDT believes that the GO understands what normal means. It does not mean taking actions such as taking heaters out of service to get maximum output that is allowed in some ISOs that have capacity markets. In fact it is in the best interest of the GO to submit a value that it is sure the unit is capable of producing 24/7. The SDT does not believe that four hour verification is any more accurate or reflective of unit capability than one hour verification. Again this verification does not establish market value it establishes the unit's capability for system modeling for reliability studies.		
Arizona Public Service Co.	No	Our experience is that 30 minutes are adequate to reach steady state conditions. There are no benefits to be derived by going beyond 30 minutes.
Response: Thank you for your comment. The planners on the SDT, based on their collective knowledge and experience, proposed that one hour was needed to establish a unit's real power capability for modeling. Most stakeholders who responded to this question supported the one hour period.		
Exelon Generation Co LLC	No	Short duration testing conducted when conditions are the most favorable do not provide an accurate indication of unit preformance under all conditions.
Response: Thank you for your comment. The standard's goal is to capture the unit's performance under normal operating conditions. The intent of		

Organization	Yes or No	Question 3 Comment
the standard is to capture what the unit can do 24/7 without taking measures that would temporarily increase the unit's output. The planner can always review the TOP's EMS data to check the real power number.		
Bauer	No	The intent of the requirement of the previous version was to provide realistic summer and winter generator capability. For hydro units, the process detailed in this version only provides a vague assessment of normal and most likely not be the realistic capability of the generator. The process requires the units to be operated "normally" which is undefined and to adjust the MW to reflect forecasted (summer or winter) reservoir conditions. Hydro units may be "normally" operated throughout their operating range. Without specific guidance that the operation should utilize a normal "full load" condition, the true summer capability may not be known. Specifically, if a generator , at some time other than summer is, operated at 50% gate during the operational snap shot produces xx MW, then the xx MW at 50% gate will be indexed for the summer reservoir level. The true capability of the generator at 100% gate (normal full load) during summer would actually be much higher. The language would need to ensure that the full load would reflect limitations other than those introduced by head.
Response: Thank you for your comments. The standard references maximum nameplate rating as a reference point for performing the verification. Variable energy units do present a challenge. The SDT understands operational and regulatory constraints may exist; run variable units at what capability can be provided. Constraints are implicitly recognized within the standard process. Refer to Attachment 1, section 2.1 language. The combined MOD-024 and 025 require the GO to report the real power capability at the time of the Reactive Power verification. **The planning coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, and indicative of past unit performance. There is nothing in the standard to prevent the planning coordinator from questioning the submitted data. The scope of this standard is focused on verifying the data used in planning models –not in providing updates to capabilities for use in near real-time operations.**		
AMEA	No	The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.
Response: Thank you for your comment. The GV SDT has utilized the NERC Registration Criteria and believes that it is appropriate for this continent wide standard. Individual Regions are free to make adjustments if they are deemed necessary, by submitting a request for a variance		
The Empire District Electric Company	No	The nameplate reating should be sufficient for determining output. In this day of being environmentally friendly, why would we as a country want to subject each generator to these types of tests using precious fuel and expelling pollutants when nameplate ratings have been sufficient for years?
Response: Thank you for your comment. The SDT does not agree that nameplate ratings are sufficient to ensure reliability. The SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the		

Organization	Yes or No	Question 3 Comment
MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured. **Verification should be performed. The standard does not require units to run for verification only. The SDT agrees in general with comments raised regarding environmental stewardship concerns and believes this consideration is rendered moot by requiring verification once every five years. It is reasonable to assume that the unit will run for at least one hour at maximum capability during the five year period. Please see the revised standard.**		
Consolidated Edison Co. of New York	No	The SDT should change the verbiage to “a minimum of one continuous hour of normal operation” to avoid confusion that the unit can be ramping up to full load during the test.
Response: Thank you for your comment. Ramping is not performed during verification. The SDT envisions Generator Owners will first realize steady state conditions at maximum capability before commencing the one hour capability test.		
Progress Energy	No	We agree with the approach as stated in Question 3 but have selected NO here because the proposed standard itself does not reflect the approach stated. For Attachment 1, Sections 1.1, 1.2, 2.1, and 2.2, these should be changed to say “for at least one continuous hour...”
Response: Thank you for your comment. So noted the SDT has made the suggested change.		
SERC Generation Subcommittee (GS)	No	We agree with the approach as stated in the questions but have selected NO here because the standard does not reflect the approach stated. For Attachment 1, Sections 1.1, 1.2, 2.1, and 2.2, these should be changed to say “for at least one continuous hour...” to assure stable conditions.
Response: Thank you for your comment. So noted the SDT has made the suggested change.		
FirstEnergy	No	We do not agree that one hour is sufficient for Fossil and Nuclear units (per Attachment 1 Sec. 1.1 and 2.1). The SDT should consider at least 4 hours or, at a minimum, require that the unit demonstrates it has reached equilibrium.
Response: Thank you for your comment. The idea behind the standard is for the planners to get a real power value of what the unit is capable of producing 24/7. The SDT, using its collective knowledge and experience, discussed the verification time period at length and proposed that one hour		

Organization	Yes or No	Question 3 Comment
was sufficient for modeling purposes. Most stakeholders who responded to this comments agreed with the one hour. The planner always has the ability to check the number submitted under the standard against actual unit performance to gauge validity. The SDT does not believe that four hour verification is any more accurate or reflective of unit capability than one hour verification.		
GO/GOP	No	We feel that one hour is too short. We recommend verification be performed one hour after the unit has reached steady state operation since some units may take different lengths of time to reach steady state.
Response: Thank you for your comment. The idea behind the standard is for the planners to get a real power value of what the unit is capable of producing 24/7. The SDT, using its collective knowledge and experience, discussed the verification time period at length and proposed that one hour was sufficient for modeling purposes. Most stakeholders who responded to this comments agreed with the one hour. The planner always has the ability to check the number submitted under this standard against actual unit performance to gauge validity. The SDT does not believe that four hour verification is any more accurate or reflective of unit capability than one hour verification. Ramping is not performed during verification. The SDT envisions Generator Owners will first realize steady state conditions at maximum capability before commencing the one hour capability test.		
American Electric Power	Yes	
American Transmission Company	Yes	
Bonneville Power Administration	Yes	
Calpine Corporation	Yes	
Consumers Energy	Yes	
Cowlitz County PUD	Yes	
Dynegy Inc	Yes	
Electric Market Policy	Yes	
Florida Municipal Power Agency and Some Members	Yes	
Independent Electricity System	Yes	

Organization	Yes or No	Question 3 Comment
Operator		
Long island power Authority	Yes	
NERC Standards Review Subcommittee	Yes	
North Carolina Electric Membership Corporation	Yes	
Oglethorpe Power Corporation	Yes	
Puget Sound Energy	Yes	
SERC Planning Standards Subcommittee	Yes	
South Carolina Electric and Gas	Yes	
Southern Company Transmission/Generation	Yes	
Indiana Municipal Power Agency	Yes	IMPA agrees with the one hour testing and the reasoning that the SDT used to decide on this time period.
Response: The SDT agrees, and thank you for your comment.		
ITC Holdings	Yes	None
Manitoba Hydro	Yes	One hour testing is sufficient, and does not expose the unit to unnecessary stress or take excessive time to complete.
Response: The SDT agrees and thank you for your comment.		
Hydro-Québec TransEnergie (HQT)	Yes	See answer to Q1.

Organization	Yes or No	Question 3 Comment
Response: The SDT agrees, and thank you for your comment.		
Northeast Power Coordinating Council	Yes	The collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements. The Standard should be retired. Although data can be reliability related sufficient data is collected as dictated by other standards. NERC staff should coordinate and ensure that the collection of this data is incorporated in existing standards projects.
Response: Thank you for your comments. Please see the summary consideration of comments on Question 1.		
Xcel Energy	Yes	While we agree that one hour of data is adequate to verify the capability, in our experience it takes at least 30 minutes for a steam turbine unit to stabilize if it has been operating at a lower load. We believe the criteria should take into consideration of an applicable "stabilization period" prior to data collection.
Response: Thank you for your comment. Ramping is not performed during verification. The SDT envisions Generator Owners will first realize steady state conditions at maximum capability before commencing the one hour capability test.		

4. The SDT felt that units that cannot sustain continuous operation, oftentimes known as intermittent, variable or limited energy units, such as a Wind Generating Station or run-of-river hydro, etc., should be exempt from this standard because such units are typically represented in studies with "on average" or "discounted" values. Do you agree with this approach? If not, please explain.

Summary Consideration: While most stakeholders who responded to this question supported the original proposal, several commenters disagreed with the exemptions for intermittent, variable and limited energy units, and indicated that these units do impact reliability and should be included in the standard if they meet the default thresholds identified in the compliance registration criteria. The SDT revised the standard to require testing of all generating units greater than 20 MVA and all generating plants/facilities containing greater than 75 MVA (gross aggregate name plate rating), directly connected to the bulk power system at 100 kV or above. The standard applies to all generation technologies.

Organization	Yes or No	Question 4 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary consideration of comments on Question 1.		
American Electric Power	No	AEP believes that it is important to have intermittent, variable, and limited energy units to be in compliance with this standard. Technical assumptions made for studies are important, but it is important to ensure that the stated capabilities for such units are verified.
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
Consolidated Edison Co. of New York	No	All units meeting the voltage level and output level as specified in Section 4.2 should be tested. From both an operating horizon and planning horizon, it is important to have an accurate model of the system.
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
CenterPoint Energy	No	CenterPoint Energy disagrees with exempting certain types of generation resources from Requirement 1 and Requirement 3; therefore, CenterPoint Energy recommends deleting 4.2.3 "Variable energy units such as

Organization	Yes or No	Question 4 Comment
		wind generators, solar, and run of river hydro are exempt from the requirements of this Standard." CenterPoint Energy agrees that oftentimes such generation resources are represented with "on average" or "discounted" values. However, all planning models do not use "on average" or "discounted" values as there are needs to study expected generation patterns. For example, wind generation typically peaks in the early morning hours in west Texas and should be modeled at a lower output in planning models which represent the peak load hour which occurs in the summer, typically around 5 PM. Transmission planners would need to ensure that there is adequate transmission when west Texas wind is operating at its peak output in the early morning hours. For this purpose, there is a need for a planning model with all wind generation operating at peak output. In addition, wind generation typically reaches a peak coincident with the peak load hour in the Gulf Coast area. So, this generation would be modeled at peak output in a planning model representing the peak load hour. In both of these cases, planning models need the net real power capability of wind units verified by actual unit testing.
Response: Thank you for your comments. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
ITC Holdings	No	Comments: A one hour typical rating/capability should be provided by the generators for run of river hydros.
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies		
ERCOT ISO	No	ERCOT ISO disagrees with this aspect of the proposal because the performance/capability of all resources, including variable output resources, effects system planning and operations. Accordingly, contrary to the position of the SDT, the data from variable energy resources (e.g. intermittent renewable) is also needed for reliability. Although these resources are subject to the variability in terms of their fuel source (e.g. wind), there are methods of estimating the capacity and energy from these resources. These estimates provide value for the purposes of this standard. Variable energy resources should not be exempt from this requirement. The Standard should include these resources, provided that they are subject to rules that reflect the variability of their production. The verification methodologies established by the respective NERC functional entities can accommodate variable resources in a manner that is consistent with the practices within their respective regions.
Response: Thank you for your comments. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
Calpine Corporation	No	If there's truly a reliability need for verification of capability, this segment of generation needs to be addressed.

Organization	Yes or No	Question 4 Comment
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
Indiana Municipal Power Agency	No	If these units cannot sustain continuous operation, then they can report/record the highest hour or an average output for the hour.
Response: Thank you for your comment. The SDT understands operational and regulatory constraints may exist; run variable units at what capability can be provided. Constraints are implicitly recognized within the standard process. Refer to Attachment 1, section 2.1 language.		
Bauer	No	It is not appropriate to consider the variability of wind generating stations comparable to the operation of a run of the river hydro. Run of the river hydro tends to be less variable and pose a lower regulation burden on the BES than wind generation. We justify this position in that the operator can estimate the energy produced during a month and even schedule the capacity at which the generator is operated, whereas wind cannot. As such an operator is able to provide a verification of the capability of our run of the river plants.
Response: Thank you for your comments. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Based on the views of the SDT and the preponderance of industry comments the SDT is recommending retaining the requirement to verify generator real power capability.		
North Carolina Electric Membership Corporation	No	Peaking units that have a limited cumulative energy per year (i.e. low capacity factor below 5%) should be provided the same treatment. The SDT should consider providing the PC with the flexibility for designing tests “needed” for verification such that all units are either handled in the same way.
Response: Thank you for your comment. The SDT has modified the standard to require verification of the real power capability for all generator technologies.		
Pepco Holdings, Inc	No	Providing the Planning Coordinator with the flexibility for designing tests “needed” for verification provides the opportunity to handle all units the same way (i.e. how the PC asked).
Response: Thank you for your comment. The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator’s responsibility to share the data with other planning entities. The Planning Coordinator has the		

Organization	Yes or No	Question 4 Comment
ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.		
FirstEnergy	No	We believe that capabilities of intermittent units such as wind and solar can be adequately verified by testing, tracking of operational data, or calculations if testing or operational data is not possible or incomplete. Furthermore, it has been forecasted that utilization of these types of units will expand and most states will have Renewable Energy requirements of 20-25% of generation in the future. This would represent a large percentage of generating unit Real Power Capability not being verified. Excluding these units from verifying their capability will not improve reliability but will reduce it. The goal of this standard is to determine the capabilities of all generating units. The Generator Owner of intermittent units should provide their maximum capability through verification, test or calculation along with capacity factor data. This information could then be used by the Transmission Planner to plan for a reliable system based on the Transmission Planner's engineering judgment and considering other factors as the units Interconnection Agreement contractual arrangements (i.e. energy only unity, participates in a capacity market, etc.) Therefore, we suggest that this SDT incorporate requirements to verify intermittent, variable, and limited energy units. We also suggest the SDT should consider language similar to RFC standard MOD-024-RFC-01 Requirement R2.2.3 to accomplish verification of intermittent, variable, and limited energy unit capabilities.
Response: Thank you for your comments. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies.		
Southern Company Transmission/Generation	No	We recommend all hydro units be excluded since capability is dependent on available water levels. GOP's with appreciable hydro capacity have established procedures or processes to predict the capability of these units.
Response: Thank you for your comment. Based on the views of the SDT and the preponderance of industry comments the SDT is recommending retaining the requirement to verify generator real power capability		
SERC Generation Subcommittee (GS)	No	While intermittent resources may not make up a significant portion of supply in most regions at this time, future development may result in significant portions of supply being made up of these resources, and relying only on design or nameplate values, for the purposes of transmission planning, will be as inappropriate for these units as it is for existing generation.The standard should focus on determining the appropriate generator ratings to be supplied to the planning processes, not how they are ultimately used.
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all		

Organization	Yes or No	Question 4 Comment
generator technologies.		
Progress Energy	No	While we have indicated that we disagree with the exemption, it may be more appropriate to address testing of “intermittent” resources separately due to their different use in planning and operational studies. However, we think the basis for exemption by the SDT is incorrect. The SDT has confused the issue of rating with how that rating is used in planning studies. There are two fundamental questions that must be answered for each resource in any planning study: (1) what is the resource capable of producing under some standard set of conditions, and (2) how much will it produce under the conditions assumed in a planning study. Historically, these two questions are merged for resources which are dispatchable and controllable to a sustained output level. In other words, if we test a conventional fossil or nuclear generator and determine it can produce X MW under the test conditions, we assume it can produce X MW under study conditions like peak demand, off-peak or shoulder load conditions. However, we might model the unit as producing zero or something less than its capability due to economic or some other dispatch consideration. We do not try and represent some average value of its production over time.When intermittent resources are considered, we still need to know how much a unit is capable of producing at its maximum output. We would not size the interconnection for “average” output. We need to know what it might produce under ideal conditions. Taken further, we know that at some point in its operation, the intermittent resource will produce at its tested value, and it will be up to the planner to determine if that condition needs to be studied. For example, 100 MW of nameplate generation may produce 30 MW on the average over a year’s time, but it might produce the full 100 MW at an off-peak hour, and that may need to be studied. How do we assure ourselves that the 100 MW of nameplate is actually capable of 100 MW?While intermittent resources may not make up a significant portion of supply in most regions at this time, future development may result in significant portions of supply being made up of these resources, and relying on design or nameplate values will be as inappropriate for these units as it is for existing generation.The standard should focus on determining the appropriate generator ratings to be supplied to the planning processes, not how they are ultimately used. As the standard itself states:3. Purpose: To ensure that planning entities have accurate generator Real Power capability modeling data used in system planning studies
Response: Thank you for your comments. The SDT fundamentally agrees with comments on how planners utilize data. The requirements being incorporated into MOD-025-1 aim to determine unit capability which will be different than nameplate rating in most cases. It is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured. **The majority of industry agrees variable resources require verification. The SDT understands operational and regulatory constraints may exist; run variable units at what capability can be provided. Constraints are implicitly recognized within the standard process. Refer to Attachment 1, section 2.1 language. Capability as determined for variable resources is better representative of expectation for normal planning than rating information or**		

Organization	Yes or No	Question 4 Comment
momentary peak values recorded. The SDT has modified the standard to require verification of the real power capability for all generator technologies.		
American Transmission Company	Yes	
Arizona Public Service Co.	Yes	
Consumers Energy	Yes	
Duke Energy	Yes	
Dynegy Inc	Yes	
Electric Market Policy	Yes	
Exelon Generation Co LLC	Yes	
Florida Municipal Power Agency and Some Members	Yes	
GO/GOP	Yes	
Hydro-Quebec TransEnergie (HQT)	Yes	
Long island power Authority	Yes	
Luminant	Yes	
NERC Standards Review Subcommittee	Yes	
Northeast Power Coordinating	Yes	

Organization	Yes or No	Question 4 Comment
Council		
PacifiCorp	Yes	
Puget Sound Energy	Yes	
SERC Planning Standards Subcommittee	Yes	
South Carolina Electric and Gas	Yes	
The Empire District Electric Company	Yes	
We Energies	Yes	
Xcel Energy	Yes	
E.ON U.S.	Yes	E.ON U.S. believes that this is reasonable at the present time but with the proposed massive build-out of wind generation this may need to be re-visited in the future.
Response: Thank you for your comment. Based on the views of the SDT and the preponderance of industry comments the SDT is recommending extending the requirement to verify generator real power capability to all technologies including variable, intermittent, and energy limited generators.		
Bonneville Power Administration	Yes	It seems like Wind and Solar should do a report for their peak generation for Summer and Winter on a periodic basis.
Response: Thank you for your comment. The SDT agrees and has modified the standard to require verification of the real power capability for all generator technologies. The revised standard does not require seasonal (summer and winter) verifications – rather the revised standard requires verifications once every five years.		
AMEA	Yes	The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.

Organization	Yes or No	Question 4 Comment
Response: Thank you for your comment. The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator's responsibility to share the data with other planning entities. The Planning Coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.		
Independent Electricity System Operator	Yes	We do not have any concern with the proposed approach. Individual Regions or markets that identify a need to verify such units to meet local requirements can establish regional specific criteria and market rules as they see appropriate.
Response: Thank you for your comment. Based on the views of the SDT and the preponderance of industry comments the SDT is recommending extending the requirement to verify generator real power capability to all technologies including variable, intermittent, and energy limited generators.		
Manitoba Hydro	Yes	Wind generation and run of the river hydro units should be exempted.
Response: Thank you for your comment. Based on the views of the SDT and the preponderance of industry comments the SDT is recommending extending the requirement to verify generator real power capability to all technologies including variable, intermittent, and energy limited generators.		
Cowlitz County PUD	Yes	Wind generation can't buttress reliability in a pinch, therefore should not be included. Agree with the run-of-river argument. However, there are other generation plants that are limited by FERC license to the maximum cubic feet per minute of water permitted to flow through the tail race. Such generation will have name plate ratings well above the allowed possible power generation considering the available prime mover. Therefore the limiting factor is not the ambient temperature, or the thermal aspects of the generation units, but the efficiency of the generation plant to convert the maximum allowed prime mover into electrical power. This efficiency will not change much, if at all, over time. Such units should also be exempt except for a single test at maximum allowed flow.
Response: Thank you for your comments. The SDT understands operational and regulatory constraints may exist; run variable units at what capability can be provided. Constraints are implicitly recognized within the standard process. Refer to Attachment 1, section 2.1 language. Capability as determined for variable resources is better representative of expectation for normal planning than rating information or momentary peak values recorded. The SDT has modified the standard to require verification of the real power capability for all generator technologies.		

5. The SDT has developed a separate periodicity approach for identical units at the same site in Number 4.4 of Attachment 1. The Generator Owner would only be required to verify 20% of these units per year. Do you agree with this approach? If not, please explain.

Summary Consideration: Most stakeholders who responded to this question indicated support for the proposal. In response to other questions, stakeholders indicated that the frequency for testing all units should be once every five years. The SDT is planning to combine the requirements of MOD-024 and MOD-025 into MOD-025. Under the combined standard, all applicable units will be verified once every five years. To avoid having many units requiring verification in any one year, the initial implementation period proposed requires 20% of an entity's units to be done each year.

Organization	Yes or No	Question 5 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary response to comments submitted for Question 1.		
Exelon Generation Co LLC	No	By using information already gathered through the EMS during unit operations for market reasons would elimiate the need for "testing only" runs redusing unnecessary fuel, emmissions and start up stresses on units.
Response: Thank you for your comment. Combining the MOD-024 and MOD-025 verifications will also accomplish minimizing the need for testing runs. Please see the revised standard as it allows use of operational data provided that data meets certain criteria.		
PacifiCorp	No	Current policies within the WECC require a testing interval of five years. This interval has been sufficient for stability studies to date. We suggest incorporation of a five year interval for generator real power capability validation in the proposed standard.
Response: Thank you for your comment. The GV SDT agrees, and has proposed 5 years in the combined (MOD-024 and MOD-025) standard.		
Florida Municipal Power Agency and Some Members	No	Degradation of capacity depends on more factors than design parameters, such as hours of run-time, time from last major maintenance, etc.
Response: Thank you for your comment. The SDT agrees and the new standard will require verification for all applicable units once every five years		

Organization	Yes or No	Question 5 Comment
ERCOT ISO	No	ERCOT disagrees with this aspect of the proposal. The assumption that all units of similar type at a plant are going to perform identically is not valid in all situations. Accordingly, to ensure any potential variances between similar units at the same site are accurately captured all such units should be required to provide verification annually.
Response: Thank you for your comment. Several commenters made the same observation. The GV SDT believes that since under the combined standard all applicable units are tested at some point during the 5 year cycle, this will be accounted for under the requirements.		
South Carolina Electric and Gas	No	Even though units may be identical in nature, variables such as actual in service time could lead to deratings and make two identical units unique. If the intent of the standard is to ensure unit generating capabilities are correct for studies, then shouldn't verification be made for all units?
Response: Thank you for your comment. Several commenters made the same observation. The GV SDT believes that since under the combined standard all applicable units are tested at some point during the 5 year cycle, this will be accounted for under the requirements.		
Pepco Holdings, Inc	No	Identically designed units will not necessarily perform the same.
Response: Thank you for your comment. Several commenters made the same observation. The GV SDT believes that since under the combined standard all applicable units are tested at some point during the 5 year cycle, this will be accounted for under the requirements.		
FirstEnergy	No	Item 4.4 of Attachment 1 should begin with the statement "For units that require annual verification ..." This would better clarify that the identical unit exemption is aimed at units that qualify under item 4.1 and 4.2. We agree that not all identical units should be required to be verified annually . However, the proposal should include a statement by the Generator Owner annually confirming which units that are deemed identical when providing annual verification updates for one of the identical units. Also, the wording proposed in 4.4, "approximately 20%", is ambiguous and up for interpretation in an audit. We suggest 4.4.1 be removed. We suggest replacing items 4.4.1 and 4.4.2 with the following: "The Generator Owner of identical generator units shall verify unit capability of at least one unit annually, such that all units are verified over a five year period."
Response: Thank you for your comments. Under the revised standard (which combines MOD-024 and MOD-025), all applicable units would be verified in the 5 year cycle.		
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.

Organization	Yes or No	Question 5 Comment
Response: Thank you for your comment. Please see the summary consideration in response to comments on Question 1.		
The Empire District Electric Company	No	Nameplate data should be sufficient and verification is an overburdon to industry.
Response: Thank you for your comments. The SDT acknowledges that if the correct system operations circumstance exists then the data obtained by performing the Real Power capability verification required by the MOD-024 standard (now incorporated into the MOD-025 standard) for system planning purposes may yield the same results as could be obtained by using equipment nameplate ratings, unit operational data, EMS data, forecast information, etc. required to be provided to the ERO by other standards. Recognize this alternate set of data is collected for other reliability purposes and is not guaranteed to represent actual capability. As such, there is a reliability need to specifically require Real Power capability verification. The SDT also acknowledges it is acceptable to utilize reasonable assumptions when performing long term planning analysis however the SDT also believes it is prudent from a reliability concern to incorporate established unit operational constraints into the planning model when relevant. Units may be derated or constrained for a variety of legitimate long term reasons. Likewise, units derated or constrained today may have restrictions released in the future. Only by performing a Real Power capability verification to determine what the unit is capable of supplying can accuracy of needed reliability data be assured.		
Consolidated Edison Co. of New York	No	Please see response to question 4. In addition, terms such as “identical significant control systems settings” and “similar verified capabilities” are ambiguous. Section 4.4 of Attachment 1 should be removed.
Response: Thank you for your comment. The SDT agrees, and the new standard will require verification of all applicable units once every five years.		
AMEA	No	The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.
Response: Thank you for your comment. Response: The GV SDT used the NERC Registration Criteria and believes that it is appropriate for this continent wide standard. Individual Regions are free to propose adjustments if they are deemed necessary, by submitting a request for a variance. **The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator’s responsibility to share the data with other planning entities. The Planning Coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.**		
North Carolina Electric	No	The SDT should not be concerned with administrative details.

Organization	Yes or No	Question 5 Comment
Membership Corporation		
Response: Thank you for your comment. The SDT agrees, and the new standard will require verification of all applicable units.		
IRC Standards Review Committee	No	The SDT should not be concerned with administrative details. The PC should be responsible for requesting verification when verification is needed as opposed to mandating artificial (i.e. one test for all conditions) verification for the sake of artificial verification.
Response: Thank you for your comment. The SDT agrees, and the new standard will require verification of all applicable units with greater flexibility as to when the verification is conducted **The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator's responsibility to share the data with other planning entities. The Planning Coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.**		
Xcel Energy	No	We are in agreement with the concept as long as the caveats that the major components and control systems are identical and that the verified capabilities are similar remain in the wording.
Response: Thank you for your comment. The revised standard will require verification of all applicable units once every five years.		
American Electric Power	Yes	
American Transmission Company	Yes	
Arizona Public Service Co.	Yes	
Bauer	Yes	
Bonneville Power Administration	Yes	
Calpine Corporation	Yes	
Cowlitz County PUD	Yes	

Organization	Yes or No	Question 5 Comment
Duke Energy	Yes	
Dynegy Inc	Yes	
Electric Market Policy	Yes	
GO/GOP	Yes	
Hydro-Quebec TransEnergie (HQT)	Yes	
Independent Electricity System Operator	Yes	
Indiana Municipal Power Agency	Yes	
Long island power Authority	Yes	
Luminant	Yes	
Northeast Power Coordinating Council	Yes	
Oglethorpe Power Corporation	Yes	
Progress Energy	Yes	
SERC Generation Subcommittee (GS)	Yes	
SERC Planning Standards Subcommittee	Yes	
Southern Company	Yes	

Organization	Yes or No	Question 5 Comment
Transmission/Generation		
Manitoba Hydro	Yes	Can the verification frequency of units be lowered to less than 20% for indentical units. Can it be 10% of identical uinits, as deterioration of unit real capacity is a very slow process unless a failure occurs (and failures are picked up by other standards)
Response: Thank you for your comments. The new standard will require verification for all applicable units on a five year schedule.		
Puget Sound Energy	Yes	However, we encourage this approach to test over a 5 year period for more that just identical units as discussed in our response to question 1. A 5 year cycle for testing is adequate.
Response: Thank you for your comment. The GV SDT agrees, and the combined standard's cycle is five years.		
ITC Holdings	Yes	None
NERC Standards Review Subcommittee	Yes	Please revise 4.4 of Attachment 14.4. Alternatively for multiple units installed at the same site where the units have identical designs, identical major components, identical significant control system settings and similar "tested" verified capabilities "per MOD-024": 4.4.1 Verify approximately 20 percent of all such units annually with all units being verified over a five year period. 4.4.2 Verify at least one unit each year if fewer than five units meet the criteria in 4.4.
Response: Thank you for your comments. The revised standard will require verification for all applicable units on a five year schedule.		
E.ON U.S.	Yes	The language of 4.4 isn't clear -E.ON U.S. suggests revising to "If 5 or more units are at a single site, verify....". Does "approximately 20 percent" imply rounding to the closest whole number? If 2 identical units are at the same site - no annual test is required but both units need to be verified within a 5 year interval?
Response: Thank you for your comment. The revised standard will require verification for all applicable units on a five year schedule.		

6. The SDT believes that every Resource Planner and Planning Coordinator does not necessarily perform studies involving generating unit verified capability at the same time each year nor do they necessarily need current verified information at the same time. The SDT has developed Requirement R2 that requires the Resource Planner and Planning Coordinator to provide a schedule for receiving verified information that best fits the schedule and needs for performing studies. Do you agree with this approach? If not, please explain.

Summary Consideration: The majority of respondents supported having the Resource Planner/Planning Coordinator provide a schedule. One respondent suggested a 5 year periodicity. The SDT, based on this comment and others around the need for this standard, has combined the real and reactive power verifications in the proposed draft of MOD-025. The SDT has also dropped the planning entities (both the Resource Planner and the Planning Coordinator) from the applicability of this standard since the periodicity was revised to 5 years and no longer requires the RP or PC to provide a schedule for verifications.

Organization	Yes or No	Question 6 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary response to the comments submitted for Question 1.		
PacifiCorp	No	: Scheduling of generator capability verification should be set by the generator owner and generator operator within the five year cycle suggested in the Item 5 comments.
Response: Thank you for your comment. The SDT aggress with PacifiCorp on a 5 year cycle. The proposed next draft on MOD-024 combines MOD-024 with MOD-025 reactive power verification. Both the real and reactive power will be scheduled and verified at the same time.		
FirstEnergy	No	It is unclear if R2 is intended to be a one-time submission of temperature adjustment information and schedule by the RP and PC or if this is something that is required each and every time the RP and PC would "seek" the data. Requirement R2 brings into question if the GO is simply holding verification data until requested to provide by an entity who "seeks" the data. Also, as written the RP and PC could provide conflicting temperature data and schedule expectations that would needlessly overburden the GO. As described in our item 4 in our Q9 response, FE suggests that R1 is ambiguous in regards to who the GO is to provide data to on an annual or every 5 year basis. FE suggests the team modify requirement R1 or Attachment 2 to clarify the intended recipients for either annual or 5-year generation verification data. In our opinion the GO should automatically provide the data to the intended recipients. Additionally, we propose the team to set a firm expectation that summer and winter verifications would be

Organization	Yes or No	Question 6 Comment
		provide to the appropriate entities within 90 days of the conclusion of the applicable summer or winter peak period. In regards to temperature adjustment, the GO should simply provide any applicable temperature adjustment data used for the data provided and respond to inquiries from data recipients as needed and upon request.If the team elects to accept FE's proposed changes it is our opinion that R2 can be removed from the standard.
Response: Thank you for your comments. The SDT removed the requirement for the planning entity to provide the Generator Owner with a temperature adjustment. The revised standard now requires the Generator Owner to record the ambient temperature and any adjustment to the temperature and provide this information to the Planning Coordinator. **The revised standard clearly states that the Generator Owner must provide the data to the Planning Coordinator and requires verification of each unit once every five years.** **The revised standard does not require separate winter and summer verifications.** **The SDT revised the standard to require that the data be submitted to the Planning Coordinator within 90 days of conducting verification.** **The SDT did remove Requirement R2 in support of your suggestion.**		
Luminant	No	Luminant believes the test results should be submitted within 30 days of completion of the annual verification. Luminant submits the following modification to Requirements R1 and R2 to address this issue. R1. Each Generator Owner shall verify the summer and winter Real Power generation capability for each of its units in accordance with MOD-024-02 Attachment 1, Verification of Sumer and Winter Generating Unit Capability,and record and submit the verification information via MOD-024-02 Attachment 2, One-line Diagram, Table and Summary for Verification Information Reporting (or similar diagram and form), to the Resoruce Planner and Planning Coordinator within 30 calendar days of the completion of the Real Power capability verification. R2. Each Resourc Planner and Planning Coordinator that seeks verified generating unit Real Power capability data shall provide each Generator Owner: - the desired temperature to which the data is to be adjusted - the calendar dates that encompass the summer period and winter period.
Response: Thank you for your comments. The SDT considered Luminant's recommendation and has modified the standard to require submission of data within 90 days of the verification. Since the data is intended for use in planning studies, the need for the data within 30 days is not clear. **Please see the revised standard – the drafting team made significant changes including the removal of Requirement R2.**		
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.

Organization	Yes or No	Question 6 Comment
Response: Thank you for your comment. Please see the summary consideration of comments on Question 1.		
Consumers Energy	No	Testing is arranged around scheduled unit outages. Unit ratings can be normalized to specific temperatures/conditions so results can be sent at any time.
Response: Thank you for your comment. The revised standard is written in such a way as to allow for the GO to conduct the verification at a time that is convenient to the GO, and requires the GO to record the ambient temperature and any adjustments to that temperature. The revised standard does not have any requirements for the planning entities.		
North Carolina Electric Membership Corporation	No	The concept that regular period-specific verification is not necessary. If the SDT is insistent on such a schedule established by the RP/PC, we would ask the SDT to consider circumstances where the same GO owns generators in multiple operating areas thus having to comply with varying requirements by multiple PCs. This would potentially result in the GO having to comply with different schedules of these multiple PCs which could be very difficult for the GO to comply with.
Response: Thank you for your comment. Agree. The revised standard is written in such a way as to allow for the GO to conduct the verification at a time that is convenient to the GO. The revised standard does not have any requirements for the planning entities.		
E.ON U.S.	No	The fundamental concept is correct; but, rather than ambient temperature, seasonal back pressure is much more appropriate to use for corrective factors. (e.g. with temperatures - is it wet bulb/dry bulb; humidity or not; how clean are the condenser/cooling tower?) All of these factors are satisfied by correcting to back-pressure conditions).
Response: Thank you for your comment. The standard does not preclude the GO from including condenser back pressure. The revised standard requires the Generator Owner to record the ambient temperature at the time of verification and to record any adjustments to the temperature.		
AMEA	No	The MOD-024-2 draft removes the regions and entities like the Planning Coordinator from the decision making ability as to which generators are material to the BES but instead provides a blanket approach that will include generators that are and are not material to the BES.
Response: Thank you for your comment. The SDT followed the compliance registration guidelines in establishing section 4.2 Facilities. **The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator's responsibility to share the data with other planning entities. The Planning Coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.**		

Organization	Yes or No	Question 6 Comment
IRC Standards Review Committee	No	The SRC believes with the concept that regular period-specific verification is not necessary, but does not agree with the SDT's requirement. Rather the SRC would propose that R1 and R2 be replaced by the following 3 requirements: R.1. Each Planning Coordinator that requires validation of a Generator Owner's reported generator capability for use in a NERC-mandated assessment shall submit a request to the Generator Owner specifying the applicable conditions. These conditions may include such parameters as: o Gross or Net data o Time (season) required o Boundary conditions (temperature, wind if appropriate) R.2. Each Generator Owner shall verify the Real Power generating capability for each of its units in accordance with requests from their Planning Coordinator. R.3. The Planning Coordinator shall distribute the verified data to the Resource Planners that request the data, or are known by the PC to use that data. Note: CAISO does not support the proposed R3.
Response: Thank you for your comments. As a result of reviewing other responses the SDT has revised the standard to eliminate the Applicability to the PC and has required that the data be submitted to the Planning Coordinator.		
Dynegy Inc	No	The Transmission Planner also needs this generator data. These planning entities should not be required to provide the desired temperature to which the data needs to be adjusted. Generator Owners should simply adjust the actual test data using average temperature data from a location near the plant. This provision has been incorporated in the related RFC Regional Standard MOD-024-RFC-01.
Response: Thank you for your comments. Agree – all of the planning entities need the data. The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator's responsibility to share the data with other planning entities. **The revised standard does not require the planning entities to provide temperature adjustments to the Generator Owners – in response to suggestions from stakeholders, this requirement was removed. The revised standard requires the Generator Owner to record the ambient temperature at the time of verification and to record any adjustments made to that temperature.**		
Bauer	No	This standard is not consistent with the NERC functional model in that it requires the submission of information is not consistent with the role of the Resources Planner. The Resource Planner's role is to

Organization	Yes or No	Question 6 Comment
		develop a long term plan for resource adequacy of specific loads within a Resource Planners area. The information furnished under this requirement would be valid for less than one year. Forecast reservoir operations are notoriously inaccurate at more than 9 months. The forecast seasonal variation is relevant for TOP and BA functions. Resource Planners would interested in average seasonal variations and any physical changes to generator capability (e.g. de-rating, up-rating, etc).
Response: Thank you for your comments. The Functional Model assigns all three of the planning functional entities, including the Resource Planner, with the responsibility for collecting data from the Generator Owner. The SDT modified the standard and now requires the Generator Owner to provide the verification data just to the Planning Coordinator. The Planning Coordinator is responsible for sharing data with other planning entities. **The frequency of verification has been changed to once every five years which more closely fits the planning entities.**		
We Energies	No	To the extent there are multiple reporting requirements for generator capacity data, a standard timeframe for reporting the information should be developed in order to minimize the potential for conflicting data on the same generator from being used for similar modeling purposes. In addition, to the extent that generator capability data will be adjusted based upon ambient conditions, the requirement to verify the summer gross Real Power generating capability only during the summer period is overly restrictive. Current standards for generator testing allows the results from any period of time to be used as long as the results are adjusted based upon ambient conditions at the time of the test to the ambient conditions that would exist during the summer.
Response: Thank you for your comments. Please see the revised standard. The SDT simplified the standard's requirements by giving the Generator Owner greater latitude on 'when' to conduct its verifications. Several commenters provided sound reasons for granting the Generator Owner latitude in conducting tests or using historical data as an alternative to a test on a schedule that permits the Generator Owner to collect the data more efficiently than under the originally proposed MOD-024. The concept of having the Generator Owner conduct the verifications in accordance with various schedules set by planning entities was not carried over into the next draft of MOD-024 (now integrated into MOD-025). **The revised standard does not require seasonal (summer and winter) verifications – rather the revised standard requires verifications once every five years.**		
Exelon Generation Co LLC	No	Using real time data from EMS would allow planners to have access to dat for anytime of year and system conditions elimiating the need to schedule testing.
Response: Thank you for your comment. The SDT recognized this and debated this issue at length. The revised standard allows the use of historical data provided that data meets specific criteria.		
Independent Electricity System	No	We agree with the RPs and PCs to specify the schedule for receiving verified information to suit their needs.

Organization	Yes or No	Question 6 Comment
Operator		However, we have concerns with the applicability which relates to the purpose of the standard. a. The purpose of the existing MOD-024-1 is: "To ensure accurate information on generator gross and net Real Power capability is available for steady-state models used to assess Bulk Electric System reliability." This implies that the data is also used for accurate modeling of the BES which the TPs, TOPs and RCs use to assess transmission system performance. The purpose of the proposed MOD-024-2 appears to have been changed somewhat: "To ensure that planning entities have accurate generator Real Power capability modeling data used in system planning studies." This change was not mentioned in the SAR for the project (posted for comment in April 2007). We have two concerns with this change and the corresponding requirements: (i) The data is not only used for planning, it is also used for operational planning and near-term adequacy assessments (ii) If the intent of the existing standard is to continue, then the data is used for transmission reliability assessment as well. Other applicable entities need to be added. We suggest the SDT to assess the intended users of the generator's real power capability data. Is the data used for resource adequacy assessment only, or is it also used for system model for transmission reliability/adequacy assessment? If it is the former, then RPs and PCs would be the only users. If it's the latter, then TPs, TOPs, and RCs can be the other users.b. In the Background Information section of the comment form, the SDT indicates that it "has taken the approach that the Transmission Planner needs to communicate the conditions under which the Generator Owner is to provide verified values." The proposed requirement does not include TPs. We wonder if the Background Information quoted the incorrect entities, or the standard is missing the TP as an applicable entity.
Response: Thank you for your comments. The SDT removed the reference to Transmission Planner from the Standard. It is the SDT's view that the RP, and TP can obtain any data that they need from the Planning Coordinator. Each Reliability Coordinator and Transmission Operator is required to have a data specification that it issues to the entities required to submit data – and if the RC or TOP needs data from the GO, this is a mechanism for the RC or TOP to receive data from the GO. The data used by the TOP and RC for real-time monitoring must be more accurate than the data used for planning studies. There are other requirements in other standards that require the Generator Owner or Generator Operator to keep the Transmission Operator informed of generator availability, changes to output, etc. **The purpose of the standard has not changed. The SDT views steady state models as a type of planning model.**		
GO/GOP	No	We do not agree with this approach. Validation should be performed during a period which is mutually agreed upon by both the GO and TOP to take into account seasonality. For the other periods, validations should not be required.

Organization	Yes or No	Question 6 Comment
Response: Thank you for your comment. Please see the revised standard. The SDT simplified the standard's requirements by giving the Generator Owner greater latitude on 'when' to conduct its verifications. Several commenters provided sound reasons for granting the Generator Owner latitude in conducting tests or using historical data as an alternative to a test on a schedule that permits the Generator Owner to collect the data more efficiently than under the originally proposed MOD-024. The concept of having the Generator Owner conduct the verifications in accordance with various schedules set by planning entities was not carried over into the next draft of MOD-024 (now integrated into MOD-025).		
Puget Sound Energy	No	While R2 allows flexibility in determining when the data is submitted, the Resource Planner/Planning Coordinator may not need this information each year. If that is the case, this annual requirement imposes an unnecessary burden on Planners and Generators to provide this information more frequently than necessary.
Response: Thank you for your comment. The STD has combined MOD-024 and 025 and moved the real power test to a 5 year periodicity in support of your suggestion.		
American Electric Power	Yes	
American Transmission Company	Yes	
Bonneville Power Administration	Yes	
Calpine Corporation	Yes	
Duke Energy	Yes	
Electric Market Policy	Yes	
Florida Municipal Power Agency and Some Members	Yes	
Hydro-Quebec TransEnergie (HQT)	Yes	
Long island power Authority	Yes	
Northeast Power Coordinating	Yes	

Organization	Yes or No	Question 6 Comment
Council		
Pepco Holdings, Inc	Yes	
Progress Energy	Yes	
SERC Generation Subcommittee (GS)	Yes	
SERC Planning Standards Subcommittee	Yes	
South Carolina Electric and Gas	Yes	
The Empire District Electric Company	Yes	
Xcel Energy	Yes	
Cowlitz County PUD	Yes	As long as it does not conflict with operational constraints of the generation plant.
Response: The SDT agrees. Thank you for your comment. The revised standard gives the Generator Owner more latitude in determining when to conduct its verifications.		
ERCOT ISO	Yes	ERCOT ISO supports this aspect of the proposal. The verification methodology and timing should be left to the discretion of the relevant NERC functional entities. As noted by the SDT, the needs for different Resource Planners and Planning Coordinators may vary. The Standard should enable the relevant entities to respect those needs, including the timing of the verification tests. By simply stating these entities should provide a schedule, the proposal provides adequate flexibility to respect regional differences. To accommodate the potential need for ad hoc testing, the requirement should provide for testing pursuant to the contemplated schedules “or as requested by the RP or PC”.
Response: The SDT agrees. Thank you for your comments. The revised standard gives the Generator Owner more latitude in determining when to conduct its verifications.		

Organization	Yes or No	Question 6 Comment
Indiana Municipal Power Agency	Yes	IMPA agrees with this approach as long as it is for only receiving the verified information and not allowing these entities to specify any type of testing period or requirements outside of this standard.
Response: The SDT agrees. Thank you for your comment. The revised standard gives the Generator Owner more latitude in determining when to conduct its verifications.		
Consolidated Edison Co. of New York	Yes	In addition, different regions of the country may have summer or winter peaking periods and will schedule tests accordingly.
Response: The SDT agrees. Thank you for your comment. The revised standard gives the Generator Owner more latitude in determining when to conduct its verifications and eliminates the requirement to conduct both summer and winter verifications.		
ITC Holdings	Yes	None
NERC Standards Review Subcommittee	Yes	R2 should be redacted to include variables and not be so constrained to temperature since there might be other variables besides temperature. These variables would be specified at the Planning Coordinator and Resource Planner discretion.
Response: The SDT agrees. Thank you for your comments. The drafting team removed Requirement R2 from the revised standard (MOD-024 now merged into MOD-025).		
Manitoba Hydro	Yes	State clearly who provides a schedule to whom. Is it Planning coordinator will provide a schedule to Resource planner for verified capability information of units? We would prefer that the requirement be to complete the testing at the required frequency, and to delete the requirement for creation and submission of a plan.
Response: The SDT agrees. Thank you for your comment. The revised standard gives the Generator Owner more latitude in determining when to conduct its verifications.		
Arizona Public Service Co.	Yes	The need for verification should also be left on the Planning Coordinator.
Response: The SDT agrees. Thank you for your comment. The revised standard requires verification of all applicable units once every five years.		
Southern Company Transmission/Generation	Yes	We agree with this requirement.

Organization	Yes or No	Question 6 Comment
Response: The SDT agrees. Thank you for your comment.		

7. Are you aware of any regional variances that would be required for this standard?

Summary Consideration: An overwhelming majority of responders believe there are no regional variances that would be required for this standard. A few responders suggested that winter validation would not be necessary or that the annual testing requirement was too frequent. The SDT addressed both in the revisions to MOD-024. The language specifying both summer and winter validations was not included in the revised standard and the testing periodicity was changed to once every five years. MOD-024 was combined with MOD-025.

Organization	Yes or No	Question 7 Comment
American Transmission Company	No	
Arizona Public Service Co.	No	
Bonneville Power Administration	No	
Calpine Corporation	No	
Consolidated Edison Co. of New York	No	
Consumers Energy	No	
Cowlitz County PUD	No	
Duke Energy	No	
Dynegy Inc	No	
Exelon Generation Co LLC	No	
Florida Municipal Power Agency and Some Members	No	

Organization	Yes or No	Question 7 Comment
Generators Supporting Elimination of MOD-024	No	
Hydro-Quebec TransEnergie (HQT)	No	
Independent Electricity System Operator	No	
Indiana Municipal Power Agency	No	
IRC Standards Review Committee	No	
Long island power Authority	No	
Luminant	No	
North Carolina Electric Membership Corporation	No	
Northeast Power Coordinating Council	No	
Northeast Utilities	No	
PacifiCorp	No	
Pepco Holdings, Inc	No	
Progress Energy	No	
SERC Planning Standards Subcommittee	No	

Organization	Yes or No	Question 7 Comment
South Carolina Electric and Gas	No	
The Empire District Electric Company	No	
ERCOT ISO	No	As discussed above, ERCOT ISO believes that there may be regional differences in the planning and operational studies where this information provides value. However, if the Standard is drafted to prescribe the reliability "end" result or obligation, and it provides for adequate flexibility with respect to how the means implemented by the relevant entities to comply with the obligation, there should not be a need for regional differences. Revising the Standard in accordance with this general principle and the specific comments provided herein should affect this result and obviate, or at least mitigate to a great extent, the need for regional variances.
Response: Thank you for your comments. The SDT believes the reliability end result and flexibility exists in the standard to allow for implementation by all regional entities. The standard is focused on providing data for planning studies, not necessarily for operational studies.		
NERC Standards Review Subcommittee	No	N/A
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Please see the summary consideration of the comments submitted in response to Question 1.		
ITC Holdings	No	None
E.ON U.S.	No	Summer peaking regional requirements are different than winter peaking regional requirements
Response: Thank you for your comment. The SDT believes it has provided the flexibility for the MW capabilities to be adjusted to temperatures expected in each area to satisfy regional needs.		
American Electric Power	No	There are no additional variations known beyond those variations already accommodated in the draft standard.
Response: Thank you for your comment.		

Organization	Yes or No	Question 7 Comment
Electric Market Policy	No	We are not aware of any regional variances, but are aware that regional standards are under development.
Response: Thank you for your comment. The SDT is aware that regional standards are under development. Some parts have been taken from those regional standards as useful and have been made part of the MOD-024-2 Draft.		
GO/GOP	Yes	Different regions have different peak seasons depending on the climate.
Response: Thank you for your comment. The SDT believes it has provided the flexibility for the MW capabilities to be adjusted to temperatures expected in each area to satisfy regional needs.		
FirstEnergy	Yes	Our preference is that RFC retire their regional standard for Real Power verification (MOD-024-RFC-01) upon completion of this continent-wide standard. However, if RFC believes their standard is still needed after this NERC standard is completed, then there may be potential regional variances required as follows: 1. The threshold for periodicity of verification for RFC is 85 MVA; NERC is proposing 75 MVA. The gap between 75 and 85 MVA would need to be addressed. 2. RFC explicitly allows for testing, including commissioning tests for new units, in lieu of operational tracking. 3. The applicability for RFC is the Generator Operator while NERC proposes applicability to the Generator Owner. 4. RFC explicitly allows for exemptions and delays in verifications when system conditions or generator issues prevent verification.
Response: Thank you for your comments. It is expected that regional standards would be revised if necessary to account for differences between them and the NERC standard - or retired if no longer needed. **The applicability in the revised standard (MOD-024 was merged into MOD-025) uses the same thresholds as those used in the compliance registration criteria.** **The SDT believes the current draft does not preclude the GO from doing either operational tracking or staged testing as long as the required data is taken.** **The SDT considered both the GO and GOP and originally chose the GOP as well. The applicability was changed to GO under advisement from NERC, to align with the Functional Model.** **The revised standard requires verification of applicable units once every five years – eliminating the concept of a fixed schedule for verifications.**		

Organization	Yes or No	Question 7 Comment
Manitoba Hydro	Yes	Regions with considerable hydraulic generation require verification of unit output that will be modified by calculation for rated head output for comparison. Exempting run of river plants removes this need for exemption.
Response: Thank you for your comment. After discussions with the Integration of Variable Generation Task Force, IVGTF, the SDT has modified the standard to require verification of the real power capability for all generator technologies. Consideration of modifications for rated head output will be reviewed.		
Electric Power Supply Association (EPSA)	Yes	See answer to question 9.
Response: Thank you for your comment. Please see the response to comments on Question 9.		
Xcel Energy	Yes	Some Regional Entities have developed their own requirements as directed under MOD-024-1. These would presumably take precedence over MOD-024-2. Some RTO's (e.g. MISO) have their own requirements for capability verification.
Response: Thank you for your comment. NERC's MOD-024-2, if approved or combined into MOD-025-2, may necessitate revisions to some regional standards if they are less restrictive than the NERC Standard. RTO's should review their requirements for consistency as well.		
AMEA	Yes	The current MOD-024-1 allows the regions to determine which generators must provide the requied data. Regions like SERC have developed regional supplemental standards that identifies such generators. The draft MOD-024-2 contradicts SERC's regional supplemental standards and totally removes SERC and other regions from the decision making process.
Response: Thank you for your comment. The revised standard duplicates the language of the compliance registry criteria. Regions are free to include other facilities if they see fit, by requesting a variance		
SERC Generation Subcommittee (GS)	Yes	The SERC Region is a summer peaking load region. Since unit capability (excluding hydro) is either independent of seasonal differences or will exhibit increased capacity for non summer periods, winter validation is not necessary. This would apply to summer peaking entities or regions.
Response: Thank you for your comment. The SDT has incorporated the proposed real power verification requirements into the revised MOD-025. In that revised standard, the SDT eliminated the need for seasonal verification. As envisioned, only a periodic verification would be required and other data would be calculated based on that one.		

Organization	Yes or No	Question 7 Comment
Southern Company Transmission/Generation	Yes	The SERC Region is a summer peaking load region. Since unit capability (excluding hydro) is either independent of seasonal differences or will exhibit increased capacity for non summer periods, winter validation is not necessary.
Response: Thank you for your comment. The SDT has incorporated the proposed real power verification requirements into the revised MOD-025. In that revised standard, the SDT eliminated the need for seasonal verification. As envisioned, only a periodic verification would be required and other data would be calculated based on that one.		
Puget Sound Energy	Yes	The WECC may want to continue using a 5 year cycle for testing. From the WECC experience testing annually for most units would be unnecessarily frequent.
Response: Thank you for your comment. The GVSDT agrees. In the proposed revisions to MOD-024 (now integrated into MOD-025) the real power verification frequency would be on a five year cycle, in support of your suggestion.		

8. Are you aware of any conflicts between the proposed standard and any regulatory function, rule, order, tariff, rate schedule, legislative requirement, or agreement?

Summary Consideration: An overwhelming majority of respondents were not aware of any conflicts. A few specific conflicts were identified such as with regional standards which will have to be revised when the NERC standard is approved, a maximum hydraulic flow rate by licensing issue with some hydros and a diesel generator law in Kansas. A couple of general conflicts were suggested such as with TOP-002 and CIP standards but the drafting team could not specifically identify those conflicts.

Organization	Yes or No	Question 8 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary consideration of comments in response to Question 1.		
ERCOT ISO		See response to Question 7 - if the Standard provides adequate flexibility with respect to the means for complying with the reliability end prescribed by the requirements, this should mitigate any potential conflict.
Response: Thank you for your comment. The SDT believes the reliability end result and flexibility exists in the standard to allow for implementation by all regional entities.		
American Transmission Company	No	
Arizona Public Service Co.	No	
Bonneville Power Administration	No	
Calpine Corporation	No	
Consolidated Edison Co. of New York	No	
Consumers Energy	No	

Organization	Yes or No	Question 8 Comment
Duke Energy	No	
Dynegy Inc	No	
Electric Market Policy	No	
Exelon Generation Co LLC	No	
FirstEnergy	No	
Florida Municipal Power Agency and Some Members	No	
GO/GOP	No	
Hydro-Quebec TransEnergie (HQT)	No	
Independent Electricity System Operator	No	
Long island power Authority	No	
Luminant	No	
North Carolina Electric Membership Corporation	No	
Progress Energy	No	
Puget Sound Energy	No	
SERC Generation Subcommittee (GS)	No	

Organization	Yes or No	Question 8 Comment
SERC Planning Standards Subcommittee	No	
South Carolina Electric and Gas	No	
Southern Company Transmission/Generation	No	
Xcel Energy	No	
Manitoba Hydro	No	MAPP was requiring unit capability tests in MRO region prior to MOD-024 NERC standard. The overlap with FAC-008 and FAC-009 should be carefully examined to avoid confusion.
Response: Thank you for your comment. FAC-008 and FAC-009 reference facility ratings while MOD-024 proposes capability verification. The SDT is constantly vigilant of potential confusion or conflicts however if there is confusion on a specific point please bring it to our attention.		
NERC Standards Review Subcommittee	No	N/A
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Please see the summary consideration of comments submitted in response to Question 1.		
American Electric Power	No	No known conflicts.
Response: Thank you for your comment.		
ITC Holdings	No	None
Response: Thank you for your comment.		
Northeast Power Coordinating Council	No	The collection of this data is already addressed through tariffs, Market Rules, and Interconnection Agreements. The Standard should be retired. Although data can be reliability related sufficient data is collected as dictated by other standards. NERC staff should coordinate and ensure that the collection of this

Organization	Yes or No	Question 8 Comment
		data is incorporated in existing standards projects.
Response: Thank you for your comments. Tariffs, Market Rules, and Interconnection agreements are independent of the reliability obligations being addressed by this standard. Please see the summary consideration of comments submitted in response to Question 1.		
E.ON U.S.	No	This information requires some duplicate reporting. For example, the Kentucky Public Service Commission requires resource adequacy planning and reporting of the same data.
Response: Thank you for your comment. The GV SDT agrees, some coordination may be required by the GO and various organized markets to avoid conflicts.		
PacifiCorp	Yes	: Again, water resource impacts on hydroelectric facility capability have not been addressed sufficiently by the proposed standard and may result in conflict with other regulatory standards. Please provide clarification on expectations for data collection at hydro facilities when water resources do not support operation at unit capability.
Response: Thank you for your comment. The revised standard (MOD-024 is now incorporated into MOD-025) Attachment 1, 2.2 allows for a one hour test at any time during the year and for adjustments to the data for expected resource conditions.		
Pepco Holdings, Inc	Yes	As noted in Question 1, this data is already being collected under other standards and in various organized markets. Coordination will be required to avoid conflicts
Response: Thank you for your comment. The GV SDT agrees, some coordination may be required by the GO and various organized markets to avoid conflicts. The SDT reviewed the requirements identified by stakeholders as potentially redundant with the proposed standard, and found no conflicts.		
IRC Standards Review Committee	Yes	Certain Regional Entities are currently developing or have developed standards to comply with MOD-024-1 and close coordination will be necessary to ensure that no compliance conflicts are created with the approval of this updated standard.
Response: Thank you for your comment. It will be up to the Regional Entities to review their standards to be sure they are not in conflict with the NERC's standard (MOD-024 now integrated into MOD-025) when it is approved.		
The Empire District Electric Company	Yes	I am aware the state of Kansas has a current law that forbids units that start on Diesel fuel. This could cause some issues with smaller generators in the state of Kansas.
Response: Thanks for your comment. The law, as referenced, may be more restrictive but does not appear to conflict with MOD-024-2 (now integrated		

Organization	Yes or No	Question 8 Comment
into MOD-025-2) as proposed.		
Cowlitz County PUD	Yes	Maximum hydraulic flow constraints by operation license can legally prevent maximum name plate capacity verification tests.
Response: Thank you for your comment. The standard does not require maximum name plate capacity verifications.		
AMEA	Yes	Since SERC's supplemental standards have not yet been approved by FERC I consider them proposed standards. The current MOD-024-1 allows the regions to determine which generators must provide the requied data. Regions like SERC have developed regional supplemental standards that identifies such generators. The draft MOD-024-2 contradicts SERC's regional supplemental standards and totally removes SERC and other regions from the decision making process.The draft MOD-024-2 conflicts with the new CIP standards regarding the size of significant generators.
Response: Thank you for your comments. FERC did not approve the current MOD-024 Standard calling it a fill-in-the-blank standard and directed that it be re-written as a continent wide standard. Regional standards may have to be revised. Regions would still be allowed to include requirements that are not included in the NERC version. The GV SDT does not believe there is a conflict with the CIP Standards as written. If you could be more specific as to the nature of the potential conflict the SDT will review it.		
Indiana Municipal Power Agency	Yes	This standard conflicts with the RFC approved standard, MOD-024-RFC-01. The NERC draft version of MOD-024 has the Generator Owner submitting reports to the proper entities. This conflicts with the RFC standard which has the Generator Operator submitting the reports to the proper entities. IMPA believes that NERC should resolve this issue by having the RFC standard agree with the NERC MOD-024 standard and the Functional Model. The SDT may not be able to resolve this issue, but it needs to be resolved or two different entities could be in non-compliance in the RFC region if a report is not submitted.
Response: Thank you for your comments. The RFC standard does not appear to have been approved by the NERC BOT or by FERC. Regional Standards may have to be revised to be in compliance with the NERC Standard once it is approved. **Note that the SDT consulted with the Functional Model, and it is the Generator Owner that is responsible for providing data on its units.**		
Bauer	Yes	This standard conflicts with TOP-002
Response: Thank you for your comment. The GV SDT does not believe there is a conflict with TOP-002. Please see the summary consideration of comments submitted in response to Question 1.		

9. Do you have any other questions or concerns with the proposed standard that have not been addressed? If yes, please provide a reference to the section, requirement or subrequirement that you believe should be changed, added or deleted and the rationale for your proposal.

Summary Consideration: Many of the respondents made numerous suggestions for edits or changes that would provide clarity to the standard. The SDT has reviewed all comments, provided explanations and made the following edits to the revised standard (MOD-024 was merged into MOD-025):

- Edited Requirement and attachment language.
- The Generator Owner record the ambient temperature at the time of the verification and documents any adjustment to that temperature.
- The Generator Owner submits verified data within 90 days to the Planning Coordinator.
- The standard does not reference seasonal requirements.
- The revised standard does not require staged tests, and only requires verification once every five years.
- Flexibility has been given to modify the attachment-2 diagram (refer to MOD-025-1).
- Requirement R2 was not carried forward into the revised standard.
- The threshold was modified, and now includes two aspects – first the change must be expected to last at least six months, and second the change must be at least 10% of the last verified capability.
- Lower VRF defined for each Requirement.
- 5 Year verification cycle specified.
- Modified the applicability section of the standard to more closely align with the criteria in the compliance registry.

Organization	Yes or No	Question 9 Comment
Generators Supporting Elimination of MOD-024		NA. This standard is not needed for reliability.
Response: Thank you for your comment. Please see the summary consideration of comments submitted in response to Question 1.		
American Electric Power	No	

Organization	Yes or No	Question 9 Comment
Exelon Generation Co LLC	No	
Hydro-Quebec TransEnergie (HQT)	No	
IRC Standards Review Committee	No	
Long island power Authority	No	
Northeast Power Coordinating Council	No	
Pepco Holdings, Inc	No	
Puget Sound Energy	No	
South Carolina Electric and Gas	No	
The Empire District Electric Company	No	
Public Service Electric and Gas Company	No	N/A as MOD-024 should be retired as demonstrated by PSE&G response to Question 1.
Response: Thank you for your comment. Please see the summary consideration of comments submitted in response to Question 1.		
ITC Holdings	No	None
Oglethorpe Power Corporation	Yes	
PacifiCorp	Yes	: Suggest language in Section 2.2 to read “the resource planner will assess the stated winter generating capability based on a test hour of generation corrected for actual vs forecasted water elevations and flows.”
Response: Thank you for your comment. The GV SDT agrees that clarification is necessary and eliminated the identified language in the combined		

Organization	Yes or No	Question 9 Comment
MOD-024 and MOD-025 standard.		
Dynegy Inc	Yes	1. Applicability 4.1- Transmission Planner needs to be added as a Functional Entity. All Planning related entities (i.e. Planni ng Coordinator, Resource Planner and Transmission Planner) need the maximum demonstrated capability of generating units for inclusion in their planning models. 2. Requirement R2- Adjustment of generating verification data should not be dependent on a request from a planning entity. This data should be adjusted to an average temperature in all cases and recorded on Attachment 2. 3. Attachment 1, Item 3.4.5- Modify this item to correspond to recommended changes in Requirement R2 (see above comment #2). 4. Attachment 1, Item 4.5- The phrase "does not run with the periodicity described in 4.1 through 4.4" " is ambiguous. No "periods" are included in Items 4.1 through 4.4 in Attachment 1. The intent of this provision needs to be clarified.
Response: Thank you for your comments. The SDT believes that the Planning Coordinator is the most appropriate entity to receive the data. The Planning Coordinator works cooperatively with Resource Planners and Transmission Planners. The SDT removed the need for the planning entity to provide the Generator Owner with a temperature adjustment. The revised standard has the Generator Owner record the ambient temperature at the time of the verification and documents any adjustment to that temperature. **The phrase "does not run . . ." is not used in the revised standard.**		
Electric Market Policy	Yes	1. Requirement R1 states to "submit" the Real Power generating capability: however Requirement R2 appears to suggest that the data be submitted only when requested by the Resource Planner and/or Planning Coordinator. Therefore, we suggest you remove the words "and submit" from R1. 2. Requirement R2 - the first bullet should be revised to indicate "desired condition" to which the data is to be adjusted.2. "Summer period" and "summer season" appear to be used interchangeably in Attachment 1. The same comment applies for winter.
Response: Thank you for your comments. The revised standard is clear that the Generator Owner must submit its verified data within 90 days of the date of verification to its Planning Coordinator. **The revised standard does not reference summer period or summer season - or does it reference winter periods or winter seasons.**		
Southern Company Transmission/Generation	Yes	1. The subject standard should not require annual staged full load capability demonstration for verifying MW capability. There are many factors such as system load, economic dispatch, etc that determine if a unit is

Organization	Yes or No	Question 9 Comment
		expected to be called to full load. This is especially true for the smaller (<75 MVA) units. 2. The requirement for ambient temperature monitoring during the verification period is unreasonable. The ambient temperature is not needed for unit operation, and may not be tracked, and in some cases may not be reliable. In these cases, either inaccurate data would be collected or added investment would be required. (The official ratings mentioned above are based on performance data taken at or adjusted to specified ambient conditions.) 3. Allowances for different reporting format from that in attachment 2 should be permitted. We prefer a tabular reporting method due to the number of units in our fleet. An allowance for tabular reporting of the same information as indicated in attachment 2 should be permitted. 4. In Paragraph 3 of Page 5, we recommend replacing “Number” with “Paragraph”. 5. The following comments relate to Attachment 2: a. On Page 7 we recommend the following: o moving the “Date of Report” and the associated blank line to the same line as “Unit No”. o changing “Auxiliary Transformer(s)” below point A to “Unit Auxiliary Transformer(s)” o changing “Auxiliary Transformer(s)” below point C to “Station Auxiliary Transformer(s)” o splitting the bus just below the “Point of Interconnection” and eliminating the single line diagram associated with point D. o adjusting single line diagram to fit on the page (displayed on a PC monitor) o change “MW (tertiary load, if any)”, to “MW (GSU tertiary load, if any)” at the bottom of the page b. On Page 8, we recommend the following: o delete the point D measurement line from page 8 c. On Page 9 (Summer Verification Data), we recommend the following: o Insert a blank line between the “Date of Verification...” line and the “Verification End Time...” line.- in other words, make the summer and winter verification forms identical with respect to the Date of Verification, Verification Start Time, Verification End Timed. On Page 9 & 10 (Summer and Winter Verification Data), we recommend the following: o specify if the Aux Power (MW*) column in the table is “the sum of the auxiliary loads shown

Organization	Yes or No	Question 9 Comment
		on page 7” 6. R2 is not a requirement as currently written. It is a choice that the RP or PC makes. If he seeks verfied data, then he must provide certain things to the GO. If he chooses to not seek verified data, then he is not required to do anything. This means that M2 is wrong. The RP and PC should not be required to have evidence if they chose not to seek the data. 7. R1 requires the GO to submit information but it does not indicate to whom the data should be submitted. 8. R3: The threshhold for reporting a change in MW output is too high. A change of 10 to 50 MW in a generator's output could have an impact to system stability. The threshhold should be 10 MW. 9. Paragraph 2.4 in Att 1: The first word grouping is not a sentence and reads awkwardly. It is suggested that the words "an acceptable value can be obtained" be place in front of the words "by making a temperature". 10. Paragraph 3.4.2 in Att 1: Replace the word "since" with "if" for better clarity. 11. Paragraph 3.4.4 in Att 1: Move the words "in Attachment 2" to the position just after the word "flows". This will make it clear that the sentence refers to flows in Attachments 2 rather than units in Attachment 2.

Response: Thank you for your comments.

1. **The revised standard does not require staged tests, and only requires verification once every five years.**
2. **The SDT feels that the ambient temperature could significantly affect the performance of some units, especially combustion units and should be recorded and averaged for the one hour test.**
3. **Flexibility has been given to modify the diagram which could include adding a table if all of the required data is included. The SDT modified the diagram to incorporate some of your suggestions. As a note, point D was meant for units that may have part of their aux load supplied from a different bus than the point of interconnection such as on some units that have had large emissions control retrofits. Although this load would not be subtracted from the gross/net load capability of the unit, it should relieve the confusion of where it should be grouped.**
4. **The revisions made to Attachment 1 did not include carrying forward the language proposed for modification.**
5. **The SDT agrees with several of your suggestions for clarity of Attachments 1 and 2 and adopted several of your suggestions. The SDT adopted those suggestions that seem most likely to have widespread applicability.**
6. **Requirement R2 was not carried forward into the revised standard.**
7. **Requirement R1 was modified to clarify that the Generator Owner must provide the data to the Planning Coordinator.**
8. **The threshold was modified, and now includes two aspects – first the change must be expected to last at least six months, and second the change must be at least 10% of the last verified capability.**

Organization	Yes or No	Question 9 Comment
9. Paragraph 2.4 in Att 1: The phrase proposed for revision is not included in the revised standard. **10. And Paragraph 3.4.2 in Att 1: this has been replaced with the following for improved clarity:** **a. If metering does not exist to measure specific reactive auxiliary load(s), provide an engineering estimate and associated calculations.** **11. Paragraph 3.4.4 in Att 1: The phrase proposed for clarification is not used in the revised standard.**		
Indiana Municipal Power Agency	Yes	A clarification under number five, the effective date is needed. Under effective date, both sentences need to be clarified. Is the effective date the first day of the first calendar quarter after or part of the six months after applicable regulatory approval. For example, if regulatory approved is received on June 28, 2011 and then six months after is December 28, 2011, is the standard effective on January 1, 2012 (first day of the first calendar quarter after six months) or a date in the six months (before December 28, 2011).
Response: Thank you for your comments. The SDT took the basic wording for "Effective Date", common in other standards, and applied it to this standard. The effective date is the first calendar day of the first quarter one calendar year after regulatory approvals. So, if FERC approved the standard in January of 2012, the first calendar day of the first quarter one calendar year after regulatory approvals would be April 1, 2013.		
Cowlitz County PUD	Yes	Ambient temperature correction calculation requirements may incur significant compliance costs with little return for the effort. Will the Planner be asking for operation output vs. ambient temperatures way beyond normal levels? If the required ambient temperature is beyond the operational testing ability (i.e. 500 year high), how will the engineering analysis be established and verified?
Response: Thank you for your comments. The revised standard does not include the requirement for the planning entities to give the Generator Owner a temperature adjustment – instead the Generator Owner is required to document the temperature at the time of the verification and note any adjustments made to that temperature.		
SERC Generation Subcommittee (GS)	Yes	Assuming this standard is not retired, the first bullet item under R2 should be deleted. If it is not, it should be revised as follows: o The data is to be adjusted for conditions normally experienced for summer and winter peak periods, as applicable. Industry guidance is needed on how to adjust recorded test data in Requirement R2 and Section 3.4.5 on Attachment 1. Section 3.4.5 should be expanded to allow for adjusting of data for factors other than ambient air temperature. It's unclear what is being sought by "adjusting" data to a desired temperature. For steam turbines, ambient air temperature may not impact output nearly as much as coolant temperature, when the machine is not air cooled.
Response: Thank you for your comments. As you implied, generator ratings could vary significantly with ambient temperature. Combustion turbines may also be significantly affected by ambient temperatures. Affects on other units may not be as significant so some engineering judgment and/or historical data may be required to estimate a change in capability due to changes in coolant temperature and how those coolant temperatures change		

Organization	Yes or No	Question 9 Comment
with ambient temperature. The SDT believes that the GO is the best qualified to adjust unit output for temperatures other than that at the time of the test. The objective is to give the planning entities the best estimate of Unit real power capability for the desired ambient temperatures used in planning studies. The revised standard requires the Generator Owner to document the ambient temperature at the time of the verification and to document any adjustments made to that temperature. The revised standard does not include any requirement for any planning entity to give the Generator Owner a temperature adjustment.		
Bonneville Power Administration	Yes	Attachment 2 needs modification: Attachment 2 should have a measurement point on their diagram for the gross generator output, and the table should specify what values to use in the calculation of each column (Gross capability power = new point F, Aux power = A+B+C+D, Net Power = F-A-B-C-D) Because this standard is paired with MOD-025(reactive), BPA believes they should be commented together.
Response: Thanks for your comments. The SDT agrees that some modifications were needed on Attachment 2 and has modified accordingly. After thorough consideration of all responses, the SDT is proposing to merge the requirements for MOD-024 with the requirements for MOD-025, to obtain real power verification data at the same time as reactive power verification data. To perform the reactive power verification it is necessary to go to the rated real power operating point. Therefore, recording and reporting both the real and reactive power data as part of the MOD-025 verification only makes sense. **Note that in the revised standard, the attachment does collect gross real and gross reactive generator capability.**		
Calpine Corporation	Yes	Combined cycle power plants are often built with peaking capability such as steam injection for power augmentation. The term "normal operation" should be defined and include a statement that peaking capability is included only if the unit routinely operates in this mode. Combined cycle plants are sensitive to a variety of ambient conditions in addition to temperature, such as relative humidity. The standard should be revised to include other ambient data required by the generator to adjust output.
Response: Thank you for your comments. The SDT does not believe that "normal operation" needs to be defined. **The SDT felt that ambient temperature had the most significant impact on unit capability. Adjustments made to the ambient temperature must be documented.**		
Progress Energy	Yes	COMMENT 1-The first bullet item under R2 should be revised as follows: o the desired temperature to which the data is to be adjusted for conditions normally experienced for summer and winter periods. COMMENT 2- R3 should be revised as follows:"Each Generator Owner shall report to its Resource Planner and Planning Coordinator any change that is greater than 50 MW in the gross Real Power generating capability of any unit compared with the last verification submittal that is expected to last more than six months. The Generator Owner shall make such report within 15 calendar days of the determination that the

Organization	Yes or No	Question 9 Comment
		change in capability is expected to last more than 6 months." COMMENT 3- For Attachment 1, Section 4.3, in “For each individual generating units...” change “units” to “unit”. COMMENT 4- Attachment 2, Requirement 3 provides for the RP and PC to provide the GO “the desired temperature to which the data is to be adjusted”. Attachment 2 provides a blank to record that value for adjustment in each of the Summer and Winter Verification Data sections stated as: “The recorded MW values were adjusted for the following average temperature conditions:” We suggest removing the word "average” which is inconsistent with R3. COMMENT 5- In Footnote 1, revise as follows for clarification: 1- If the winter verification is based on Summer data, provide only the date of the “summer” verification “used” not the start and end times. COMMENT 6- The standard does not address validation of initial Real Power Capability for new units.
Response: Thank you for your comments. **The SDT removed Requirement R2 from the revised standard.** **The revised standard requires the Generator Owner to report any change affecting its last verified Real Power or Reactive Power capability by more than 10% if that change is expected to last for more than six months. In the revised standard, the data is only reported to the Planning Coordinator, with the expectation that the Planning Coordinator will share that data with other planning entities.** **The typographical error does not exist in the revised standard.** **The term, ‘average’ is not used in the revised standard.** **The revised standard does not require and does not reference summer or winter verifications.** **The intent of this standard is to verify data previously provided under the MOD standards.**		
Electric Power Supply Association (EPSA)	Yes	EPSA agrees with many of the SDT’s findings in its review of current verification and data reporting practices. Entities that use generator real power capability data already receive and depend on the necessary data. The SDT’s review confirms that capability data is often already being provided due to existing requirements that should reduce the frequency for real power capability testing set forth in MOD-024. While planners have asserted the need for the data to improve modeling accuracy - the SDT review of different planning models finds that they have inconsistent needs and don’t facilitate a standard that supports reliability. EPSA respectfully requests that the SDT recognize the following objectives in crafting a standard that is responsive to FERC’s directives in Order No. 693 (see 1310): 1. MOD-24 should not preempt or duplicate the real power verification procedures that already exist in the

Organization	Yes or No	Question 9 Comment
		organized markets. 2. the frequency of real power verification in the organized market regions is driven by the annual capacity markets. System planning is a longer-term endeavor and as such real power verification for system planning purposes does not require the same annual frequency or level of precision. Thus, annual verification should not be required for any units, but rather all units should verify their real power capability on a longer cycle - i.e., the five (5) year cycle currently proposed for certain smaller and low capacity factor units. A longer verification cycle reduces the need for unnecessary fuel burn and the uniformity results in better clarity as well as ease of implementation for Generator Operators.(note below) The SDT in its review also found that enhanced communication between entities will best facilitate the exchange of generator capability data. Further, it is worth noting that the Transmission Operator (TOP), Reliability Coordinator (RC), Balancing Authority (BA) and Regional Transmission Organization (RTO) / Independent System Operator (ISO) have access to a unit's real time output through their Energy Management System (EMS). The EMS provides updated information on a real-time basis, making further testing and reporting under MOD-24 duplicative and unnecessary. In addition, the GOP is required by other reliability standards to report unit de-rates to the TOP, RC, BA or ISO immediately after they occur, again making more frequent testing and data reporting under MOD-24 unnecessary. In addition, several existing Standards require the GOP to provide data related to generating unit capability status. Note: The capacity factor limitation simply may not be implementable if a unit has a capacity factor that fluctuates from year (i.e., if a 25 MVA unit has a CF less than 5% in years 1&2, but then exceeds 5% in year 3, then it needed to be tested annually and is non-compliant).
Response: Thank you for your comments. While there is no intent to duplicate requirements that may exist within markets, some duplication may exist – the data addressed in the proposed standard is needed for reliability. **Several commenters indicated that a five-year cycle for verification should still provide reliable data for system models, and the drafting team adopted the five-year cycle in the revised standard.** **The drafting team reviewed all of the standards and requirements identified as potentially having requirements redundant with those in the proposed MOD-024 (now merged with MOD-025) and did not find any duplication.**		
ERCOT ISO	Yes	ERCOT ISO believes R1 should clearly state to whom the Generator Owner of the Attachment 1 and Attachment 2 data should be submitted.
Response: Thank you for your comment. The revised standard clearly states that the Generator Owner must provide the data to the Planning Coordinator.		

Organization	Yes or No	Question 9 Comment
FirstEnergy	Yes	FirstEnergy offers the following additional suggestions and comments: 1. We question the applicability to the Generator Owner (GO) instead of the Generator Operator (GOP). We believe the standard should apply to the GOP because the operation of the unit (operational verification and testing) impacts reliability more directly than ownership. In addition multiple ownership confuses responsibility and compliance. Only one GOP will operate a unit and perform the required verification, testing and data reporting. 2. The proposed requirements in this standard do not specifically allow for testing in lieu of operational tracking. We suggest the team add testing as an explicit alternative. 3. Several terms used in this standard should be defined to alleviate any varying interpretations; we suggest the following definitions: a. Summer/Winter Peak Period - For the summer season, the Peak Period extends from the first day of June to the last day of August. For the winter peak season, the Peak Period extends from the first day of December to the last day of February. b. Peak Period Hours - The four summer hours ending at 3 PM, 4 PM, 5 PM and 6 PM. The four winter hours ending 8 AM, 9 AM, 7 PM and 8 PM. c. Capacity Factor (expressed as a percent) - Is the net actual energy generation (MW-hours) divided by the product of the period (hours) and the net max capacity rating (MW) 4. R1 - It is not clear to whom the GO must submit this information. We suggest that the SDT add language in R1 that states the GO be required to submit verification information "as requested, in accordance with a predetermined schedule and format specified by a requesting Resource Planner, Planning Coordinator, or Transmission Planner". 5. R2 - First Bullet - The phrase "The desired temperature" is too broad; we suggest a change to "The desired ambient temperature". 6. R2 - If R2 is retained (see proposal to remove in our response to Q6), FE suggests the phrase "that seeks" be replaced with "having a reliability need for" since as written could have the unintended meaning that any RP or PC could request information of a particular generator unit owner. 7. R3 - Regarding the 50MW level, it should be clear that this would be for situations where the MW level decreased by more than 50 MW. Significant increases in MW levels could violate interconnection agreements and be used by an entity to sidestep the required studies for facility uprates 8. Att. 2 - Diagram - The transformer downstream from the GSU should be the Start-Up Transformer, not Aux Transformer as currently shown.9. In the background information provided by the SDT on pg.2 it states "... the

Organization	Yes or No	Question 9 Comment
		SDT has taken the approach that the Transmission Planner needs to communicate the conditions under which the Generator Owner is to provide verified values..". It is not clear how this standard requires the TP to communicate the conditions. Was it the SDT's intent to say the PC or RP needs to communicate the conditions as stated in R2?
Response: Thank you for your comments. **1. After consulting with the Functional Model Working Group, the SDT was directed to make the GO responsible for reporting the data.** **2. Although not explicitly stated, operational tracking has always been considered a permissible means of testing. This is clearer in the revised standard (now merged with MOD-025).** **3. The following terms are not used in the revised standard:** o **Summer/Winter Peak Period** o **Peak Period Hours** o **Capacity Factor** 4. **The revised standard clearly states that the verified data must be provided to the Generator Owner's Planning Coordinator.** 5. **Requirement R2 from the initial draft of MOD-024-2 is not included in the second draft of the standard (now incorporated into MOD-025).** 6. **Requirement R2 from the initial draft of MOD-024-2 is not included in the second draft of the standard.** 7. **The 50 MW level was modified so that instead of having a MW level to trigger the reporting requirement, a change of 10% to the last verified capability that is expected to last at least six months is the trigger for reporting the change to the Planning Coordinator.** 8. **The SDT agrees that there are many different configurations in use, which is why the standard specifically allows for customization of the diagram.**		
American Transmission Company	Yes	For R1, R2, & R3, we propose a Violation Risk Factor of "Lower" and a Time Horizon of "Operations Planning, Long-Term Planning". We propose "Lower" for the VRF because more accurate real power capability values will be assured by this requirement, but reasonably accurate values are likely without this requirement. We propose "Operations Planning, Long-Term Planning" for the TH because RCs and TOPs will use this data in their operations planning studies and PCs and TPs will use this data in their transmission planning studies. For R2, replace "desired temperature to which the data" with "desired ambient coolant temperature to which the summer and winter data" for added clarity. In Attachment 1, 3.2; replace "ambient air temperature" with "ambient coolant (air, water, etc.) temperature" because the capability of different types of generators is affected by the temperature of different cooling medium. In addition, consideration may need to be given to the average pressure level of generating units

Organization	Yes or No	Question 9 Comment
		that use hydrogen for equipment cooling. Requirement 1: ATC believes that some additional clarity is needed as to those entities that will receive the information. Suggestion: "...submit to the Resource Planner and/or Planning Coordinator the information view MOD-024-2 Attachment 2..." General Comment:It should be made clear that a GO validating and reporting a change in a unit's gross Real Power capability, in particular an increase in output, to comply with this standard, does not enable or give a GO the right to inject said incremental output onto the transmission system. Any MW increase (regardless of duration or ambient conditions) must be formally considered via separate mechanisms for study and verification of the BES's ability to reliably support any such increase beyond that previously approved and included in a generation-transmission interconnection agreement.
Response: Thank you for your comments. **The SDT has proposed a "Lower" VRF for both Requirement R1 and Requirement R2 in the revised standard (now merged with MOD-025). The team did not adopt the suggestion to include both Operations Planning and Long-term Planning because the intent of the data in this standard is for use in long-range planning studies. The data is not provided to any operating entities.** **Several commenters had objections to various aspects of Requirement R2 and the drafting team has not included this requirement in the revised standard.** **The SDT feels that it is up to the GO to provide the adjusted unit capability for a specific ambient temperature and coolant pressures or temperatures. The SDT agrees that clarity was needed on who should receive the data, and the revised standard is clear that the data must be provided to the Planning Coordinator.**		
Duke Energy	Yes	Industry guidance is needed on how to adjust recorded test data in Requirement R2 and Section 3.4.5 on Attachment 1. It's unclear what is being sought by "adjusting" data to a desired temperature. Ambient air temperature may not impact output nearly as much as coolant temperature, when the machine is not air cooled. Also, Section 3.4.5 should be expanded to allow for adjusting of data for factors other than ambient air temperature (e.g. steam leaks, condenser cooling water temperature, out of service reheaters, condenser fouling, turbine blade wear....). Planners need to model to the unit's expected sustained capability. If tests are conducted under degraded plant or equipment conditions the test results need to be adjusted. Otherwise planners could plan the system for less than the full capability of the unit, which would yield a non-conservative result. Guidance is needed on how to report (i.e. actual data, adjusted data and a prognosis for sustained capability that may be achieved). The test should represent the actual condition of the equipment. If it is degraded then the unit would have less capability. However capability could be restored during a repair or outage, and demonstrated with another test.

Organization	Yes or No	Question 9 Comment
Response: Thank you for your comments. **Requirement R2 was not carried over into the next version of the standard. The SDT recognizes that ambient temperature affects some units more than others. The SDT also feels that it would be unreasonable to expect the Planning Coordinator to be able to convert coolant temperature to ambient temperature as that is best understood by the GO. In the revised standard the Generator Owner is required to document the ambient temperature at the time of the verification and any adjustments made to that temperature.** **The SDT agrees that accurate model data is needed and is attempting to capture the most relevant data with this standard. The SDT added a "remarks" section to the attachment so the Generator Owner can document any special conditions that should be considered when interpreting the verification data.**		
Consolidated Edison Co. of New York	Yes	MOD-024-2 requires bi-annual testing, while at the same time exempted intermittent units (e.g. wind generators) and stations with multiple units (section 4.4). A reliability standard should support reliability; therefore, all units should be tested at the same frequency. The DT should consider a reliability standard that has an annual test requirement only that tests all generation units, regardless of type (including intermittent units or stations with multiple units). A region can also develop bi-annual requirements for a summer and winter test if they see a reliability benefit and/or have a market requirement. Concerning R1: The requirement does not specifically state who should receive the generator unit capability data. The PC? The RP?
Response: Thank you for your comments. After thorough consideration of all responses, the SDT has proposed requiring the Generator Owner to verify real power capability data at the same time as reactive power capability data, and proposed merging MOD-024 requirements with MOD-025. In the revised standard, both verifications occur with the same five year re-verification cycle. **The SDT decided to revise the standard and require the Generator Owner to provide the data to the Planning Coordinator – it is then the Planning Coordinator's responsibility to share the data with other planning entities. The Planning Coordinator has the ability to review past unit performance to insure that the verification value submitted is reasonable, indicative of past unit performance. There is nothing in the standard to prevent the Planning Coordinator from questioning the submitted data.**		
North Carolina Electric Membership Corporation	Yes	R2 is not a requirement as currently written. It is a choice that the RP or PC makes. If he seeks verfied data, then he must provide certain things to the GO. If he chooses to not seek verified data, then he is not required to do anything. This means that M2 is wrong. The RP and PC should not be required to have evidence if they chose not to seek the data. This situation can be fixed by revising R2 to read: "Each Resource Planner and Planning Coordinator shall request verified generating unit Real Power capability data and shall provide each Generator Owner..." R1 requires the GO to submit information but it does not indicate to whom the data should be submitted. We recommend that R1 be changed to read: "Each Generator Owner shall verify the summer and winter Real

Organization	Yes or No	Question 9 Comment
		Power generating capability for each of its units in accordance with MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability and record and submit the information to its Resource Planner and Planning Coordinator via MOD-024-2 Attachment 2 - One-line Diagram, Table and Summary for Verification Information Reporting." Paragraph 2.4 in Att 1: The first word grouping is not a sentence and reads awkwardly. It is suggested that the words "an acceptable value can be obtained" be place in front of the words "by making a temperature". Paragraph 3.4.2 in Att 1: Replace the word "since" with "if" for better clarity. Paragraph 3.4.4 in Att 1: Move the words "in Attachment 2" to the position just after the word "flows". This will make it clear that the sentence refers to flows in Attachments 2 rather than units in Attachment 2.
Response: Thank you for your comments. The SDT did not carry Requirement R2 into the revised standard. **Requirement R1: The revised standard clearly states that the verified data must be provided to the Planning Coordinator. The Planning Coordinator is responsible for sharing its data with other planning entities.** Paragraph 2.4 in Att 1: **The revised standard does not require seasonal (summer and winter) verifications – rather the revised standard requires verifications once every five years.** **Paragraph 3.4.2 in Att 1: this has been replaced with the following for improved clarity:** o **If metering does not exist to measure specific reactive auxiliary load(s), provide an engineering estimate and associated calculations.** **Paragraph 3.4.4 in Att 1: The phrase proposed for clarification is not used in the revised standard.**		
SERC Planning Standards Subcommittee	Yes	R2 is not a requirement as currently written. It is a choice that the RP or PC makes. If he seeks verfied data, then he must provide certain things to the GO. If he chooses to not seek verified data, then he is not required to do anything. This means that M2 is wrong. The RP and PC should not be required to have evidence if they chose not to seek the data. This situation can be fixed by revising R2 to read: "Each Resource Planner and Planning Coordinator shall request verified generating unit Real Power capability data and shall provide each Generator Owner..." R1 requires the GO to submit information but it does not indicate to whom the data should be submitted. We recommend that R1 be changed to read: "Each Generator Owner shall verify the summer and winter Real Power generating capability for each of its units in accordance with MOD-024-2 Attachment 1 - Verification of Summer and Winter Generating Unit Capability and record and submit the information to its Resource Planner and Planning Coordinator via MOD-024-2 Attachment 2 - One-line Diagram, Table and Summary for Verification Information Reporting." R3: The threshhold for reporting a change in MW output is too high. A change of 10 to 50 MW in a generator's

Organization	Yes or No	Question 9 Comment
		output could have an impact to system stability. The threshhold should be a 10 MW change or greater. Paragraph 2.4 in Att 1: The first word grouping is not a sentence and reads awkwardly. It is suggested that the words "an acceptable value can be obtained" be place in front of the words "by making a temperature". Paragraph 3.4.2 in Att 1: Replace the word "since" with "if" for better clarity. Paragraph 3.4.4 in Att 1: Move the words "in Attachment 2" to the position just after the word "flows". This will make it clear that the sentence refers to flows in Attachments 2 rather than units in Attachment 2. The comments expressed herein represent a consensus of the views of the above named members of the SERC Planning Standards Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board or its officers.
Response: Thank you for your comments. The SDT did not carry Requirement R2 into the revised standard. **Requirement R1: The revised standard clearly states that the verified data must be provided to the Planning Coordinator. The Planning Coordinator is responsible for sharing its data with other planning entities.** **Requirement R3: The revised standard does not use a MW threshold as a trigger for reporting a change to verified capabilities – the revised standard uses a threshold of 10% change from the last verified data that is expected to last at least six months. This should limit the reported changes to just those that will be large enough to impact the validity of the models.** **Paragraph 2.4 in Att 1: The revised standard does not require seasonal (summer and winter) verifications – rather the revised standard requires verifications once every five years.** **Paragraph 3.4.2 in Att 1: this has been replaced with the following for improved clarity:** o **If metering does not exist to measure specific reactive auxiliary load(s), provide an engineering estimate and associated calculations.** **Paragraph 3.4.4 in Att 1: The phrase proposed for clarification is not used in the revised standard.**		
NERC Standards Review Subcommittee	Yes	Requirement R1 - The requirement should be clarified that in the case of Joint-owned-units, the Operator of the unit is responsible for verifying the capability of the unit. For R1, R2, & R3, we propose a Violation Risk Factor of “Lower” and a Time Horizon of “Operations Planning, Long-Term Planning”. We propose “Lower” for the VRF because more accurate real power capability values will be assured by this requirement, but reasonably accurate values are likely without this requirement. We propose “Operations Planning, Long-Term Planning” for the TH because RCs and TOPs will use this data in their operations planning studies and PCs and TPs will use this data in their transmission planning studies.

Organization	Yes or No	Question 9 Comment
		For R2, replace “desired temperature to which the data” with “desired ambient coolant temperature to which the summer and winter data” for added clarity.In Attachment 1, 3.2; replace “ambient air temperature” with “ambient coolant (air, water, etc.) temperature” because the capability of different types of generators is affected by the temperature of different cooling medium. In addition, consideration may need to be given to the average pressure level of generating units that use hydrogen for equipment cooling. Introduction, Section 4.2 - As written, small diesel generators at applicable Generating Facilities could be expected to be tested as part of this standard, even if these small generators are intended only for local site power, and are only capable of reaching a 100 KV interconnection by back-feeding through local site distribution circuits and auxiliary transformers. Based on the MVA metrics provided, it would appear their inclusion is not the intent, but the standard is ambiguous as written. On the Implementation Plan for MOD-024-2 for units that are to be verified every five years, they state the verification “will begin five years after the compliance implementation date for annual units.” Wouldn’t it make more sense to make them verify in the first year after the MOD-24-02 is adopted or approved and then do it every five years after that? On page 2 of 10, A.5. Effective Date, it seems unclear when they say verification “will begin 30 calendar days following the first summer or winter peak period” . For example, if the summer peak occurs in June and you expect a higher peak in July or August and it doesn’t occur, then you would be in violation. The same applies for the winter period. They don’t define the summer and winter period. On page 5 of 10, MOD-024-2 Attachment 1. 2. Verify generating unit winter gross Real Power generating capability as follows: 2.1. They don’t define the winter period and what the conditions should be for the verification test period. Please Clarify. On page 5 of 10, MOD-024-2 Attachment 1. 2. Verify generating unit winter gross Real Power generating capability as follows: 2.4. “by making a temperature correction to the most recent summer gross Real Power generating capability verification.” Under what conditions can temperature corrections be made?

Response: Thank you for your comments. After conferring with the Functional Model Working Group, the SDT was directed to change the applicability to Generator Owner based on roles and responsibilities assigned to the Generator Owner.

The SDT is proposing a Lower VRF for both requirements in the revised standard (MOD-024 now merged into MOD-025). However the team did not adopt the suggestion to propose two different time horizons. The data addressed by this standard is limited to data used in planning studies – the data is not provided to any operating entities, just to the Planning Coordinator in the revised standard. Therefore, only the long-term planning time horizon has been proposed.

Several comments identified issues with Requirement R2 in the first draft of MOD-024-2, and the SDT did not carry R2 into the second draft of the standard.

Organization	Yes or No	Question 9 Comment
The SDT modified the applicability section of the standard to more closely align with the criteria in the compliance registry. **The standard was revised to require verification of each applicable unit once every five years – references to annual verification were not carried over into the revised standard and its implementation plan.** **The revised standard does not include any references to seasonal verifications, and doesn't use the terms, "summer period" or "winter period."** **The SDT intended for the unit capability to be adjusted to that expected under the ambient temperature conditions where the PC would model the system. The SDT feels that it would be unreasonable to expect the PC to be able to convert coolant temperature on individual units to capability expected for an ambient temperature as that is best understood by the GO. It is expected that units will be at the nominal hydrogen pressure at which they would normally run. That pressure would not be expected to change during the duration of the test.**		
Independent Electricity System Operator	Yes	The detailed requirements in Attachment 1 are overly prescriptive. Specifically, the requirements listed in Item 3 are too detailed, and most of them are not needed for reliability. We believe Attachment 1 needs only to specify the sustainability (Items 1 and 2), periodicity (Item 4) and the ambient conditions of the verification (some of Item 3). Using the form and the one-line diagram do not contribute to reliability. A requirement to ask for both gross and net capability would suffice.
Response: Thank you for your comments. The SDT believes that attachment one does not contain requirements but provides clarity to the Requirements of the Standard. The SDT felt that providing the diagram would help to clearly show the power flows of each unit and thus contribute to reliability.		
AMEA	Yes	The draft MOD-024-2 removes the decision making ability of the only entities (PC, regions, etc.) that actually know which generators are material to the BES. Instead the draft uses a blanket approach to basically include all generators 20 MVA and above connected at 100 kV and above. This approach will reduce the reliability of the BES due to distraction caused by the deluge of data from a multitude of generators that are not material to the BES and will exempt material generators that are connected below 100 kV.
Response: Thank you for your comments. To determine which generating units to include in the standard, the SDT has adopted the same criteria as used in the compliance registry. Regions are free to include other facilities if they see fit by submitting a request for a variance		
E.ON U.S.	Yes	The first bullet under R2 should be modified as follows: "the desired temperature and/or backpressure to which the data is to be adjusted."Other criteria may also be required during the test. (e.g. MVARs, etc.) Clarify R3 language that 50MW is the change in unit rating - not any unit greater than 50MW. E.ON U.S. questions whether a 50MW threshold for capability change is less meaningful than using a percent of unit capacity threshold. Is the need to report such changes to NERC consistent with any Regional requirement? On Attachment 2, are data measuring points A,B,C and D to be reported as peak or average (over the

Organization	Yes or No	Question 9 Comment
		verification period) values? MOD-024 and MOD-025 are linked and the STD has decided to revise each standard independently. This makes compliance difficult to maintain and test while the two linked standards are undergoing revision.
Response: Thank you for your comments. **Requirement R2: Several comments identified issues with Requirement R2 in the first draft of MOD-024-2, and the SDT did not carry R2 into the second draft of the standard.** **Requirement R3: The revised standard does not use a MW threshold as a trigger for reporting a change to verified capabilities – the revised standard uses a threshold of 10% change from the last verified data that is expected to last at least six months. This should limit the reported changes to just those that will be large enough to impact the validity of the models.** **As currently drafted the data points are to be reported as average.** **The SDT adopted your suggestion and merged MOD-024 and MOD-025 into a single standard (MOD-025).**		
Manitoba Hydro	Yes	The requirement R1 should be rewritten to include derivation of Summer and Winter ratings for Thermal units, and measured capacity corrected to design net head for Hydraulic units. R3 should be clarified to ensure it is only changes greater than 50MW that must be reported, not "any change for units that are greater than 50MW".
Response: Thank you for your comments. **Requirement R1 no longer includes any references to summer or winter ratings. See the revisions to Attachment 1 for additional clarity with respect to verifications for hydro units.** **Requirement R3: The revised standard does not use a MW threshold as a trigger for reporting a change to verified capabilities – the revised standard uses a threshold of 10% change from the last verified data that is expected to last at least six months. This should limit the reported changes to just those that will be large enough to impact the validity of the models.**		
Bauer	Yes	The requirement will result in continuous reporting by the Generator Owner for its hydro units. The capability of hydro units can vary seasonally by more than 50 MW in less than 6 months. It is unclear what reliability purpose is served by this requirement. As stated in the general comment section, Generation capability is forecast, adjusted, and provided to TOP's and BA's under TOP-002-2.
Response: Thank you for your comment. It is not the intent of the standard for continuous reporting by any units. Please see the revised standard – it requires verification of each applicable unit once every five years. For reporting changes to capabilities, the revised standard includes two thresholds that must be met before the Generator Owner is required to report a change in its capabilities – the change must be expected to last more than six		

Organization	Yes or No	Question 9 Comment
months, and second the change must be 10% or more of the last verified capability. These changes should minimize the number of times a change must be reported. **The SDT feels that the data requested under TOP requirements refers to the short time horizon and would be the proper place to report changes in capability based on water levels. Reporting under this standard would be changes in capability due to other plant constraints and are for a much longer planning time horizon.**		
Arizona Public Service Co.	Yes	This standard is contradictory to new NERC policy of “results-based reliability standards." NERC should not be developing a standard which it will have to withdrawa in a future review. If it is decided to go ahead with the standard, the reliabiltity benefits should be expalined.
Response: Thank you for your comment. The reliability-related need for this standard was justified when the SAR was posted for stakeholder review and comment. Results-based requirements are not limited to requirements for real-time system performance.		
We Energies	Yes	Under requirement R3, we question the necessity of reporting a 50 MW reduction in a unit within 15 calendar days of the determination that the reduction is expected to last more than 6 months. Given the current wording, this requirement would need to be understood by a very broad base of individuals who may not typically be aware of this reporting requirement (e.g. a maintenance supervisor evaluating the impact of damage to a mill) and the current wording is unclear as to when the 15 day clock would begin. Prior to making this a requirement, an evaluation should be done to determine how big of a problem this is currently causing to any system modeling, what the risks are of waiting until the next test date to report the issue, and whether or not the concerns change if a RTO has an annual testing requirement.
Response: Thank you for your comments. For reporting changes to capabilities, the revised standard includes two thresholds that must be met before the Generator Owner is required to report a change in its capabilities – the change must be expected to last more than six months, and second the change must be 10% or more of the last verified capability. These changes should minimize the number of times a change must be reported. **Note that in the revised standard, the periodicity for verifying a unit’s capabilities is once every five years.** **The SDT believes that with a five year reporting cycle, reporting changes in capability at the next test date would not be adequate.**		
Luminant	Yes	Upon approval of MOD-024, Verification of Real Power and the companion standard MOD-025, Verification of Reactive Power, the applicability to Generator Owners and/or Generator Operators needs to be removed from FAC-008 and FAC-009. With actual verification of Real and Reactive Power, the FAC-008 and FAC-009 requirements become redundant for generators. Attachment 1 verbage needs to be consistent between the words "period" and "season". They are currently used interchangeably.

Organization	Yes or No	Question 9 Comment
		Attachment 1, section 4.5, needs to be expanded so that when a lessor utilized unit is started up, it does not necessarily have to immediately run a maximum capacity test. The unit could have been brought online for capacity and the BA may not allow it to run at maximum output. Emergency situations may preclude running the test. This type of unit should be tested based on a schedule coordinated with the BA. All references to Attachment 2 should also include the "or similar diagram and form" language.
Response: Thank you for your comments. The requirements in FAC-008 and FAC-009 are aimed at providing facility ratings, which may not be the same as a unit's capabilities. **The SDT also agrees with your edits for period and season, and for references to the diagram. The terms, "period" and "season" are not used in Attachment 1 of the revised standard.** **After thorough consideration of all responses, the SDT is proposing that the Generator Owner provide real power verification data at the same time as reactive power verification data, and is proposing to merge MOD-024;s requirements into MOD-025. With the merging of the two standards we are proposing that the real power verification be completed on the same five year frequency as the reactive power verification. This relaxed frequency of testing should allow most units to be scheduled for testing.** **Verification should be performed. The standard does not require units to run for verification only. The SDT believes it is reasonable to assume that the unit will run for at least one hour at maximum capability during the five year period.** **The attachment includes language clarifying that alterations to the diagram are acceptable provided those alterations still include all required information.**		
GO/GOP	Yes	We believe this standard should be retired in its entirety.
Response: Thank you for your comment. Please see the summary consideration of comments in response to Question 1.		
Xcel Energy	Yes	With regard to Attachment 2, the only ambient condition that is required to be reported is ambient air temperature. This has a significant impact on combustion turbines, but little effect on steam turbines. Condenser cooling water temperature has much more impact on steam turbine capability and we feel this should be recorded for that type of prime mover. Also, we would like to request that a description of the process for performing ambient compensation be included either in Attachment 1 or in a separate Technical Guideline to improve the quality and consistency of the information that is reported.
Response: Thank you for your comments. The SDT agrees that ambient temperature has a more significant impact on combustion turbines than steam turbines. The SDT feels that the GO is uniquely qualified to estimate the expected capability of a unit based on ambient temperature or the expected coolant temperature based on sustained ambient temperatures.		