COMMENT FORM
Proposed Frequency Response Standard

This form is to be used to submit comments on the proposed Frequency Response Standard Authorization Request. Comments must be submitted by **February 17, 2005**. You may submit the completed form by emailing it to: sarcomm@nerc.com with the words "Frequency Response SAR Comments" in the subject line. If you have questions please contact Mark Ladrow at mark.ladrow@nerc.net or by telephone at 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:

DO: **Do** enter text only, with no formatting or styles added.
Do use punctuation and capitalization as needed (except quotations).
Do use more than one form if responses do not fit in the spaces provided.
Do submit any formatted text or markups in a separate WORD file.

DO NOT: **Do not** insert tabs or paragraph returns in any data field.
Do not use numbering or bullets in any data field.
Do not use quotation marks in any data field.
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information **(Complete this page for comments from one organization or individual.)**		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		**Registered Ballot Body Segment**
☐ ERCOT ☐ ECAR ☐ FRCC ☐ MAAC ☐ MAIN ☐ MAPP ☐ NPCC ☐ SERC ☐ SPP ☐ WECC ☐ NA - Not Applicable	☐	1 - Transmission Owners
	☐	2 - RTOs, ISOs, Regional Reliability Councils
	☐	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

Group Comments (Complete this page if comments are from a group.)

Group Name: RTO/ISO Standards Review Committee

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Ed Riley	**CAISO**	**WECC**	**2**
Sam Jones	**ERCOT**	**ERCOT**	**2**
Peter Henderson	**IESO**	**NPCC**	**2**
Peter Brandien	**ISO-NE**	**NPCC**	**2**
Bill Phillips	**MISO**		**2**
Karl Tammar	**NYISO**	**NPCC**	**2**
Bruce Balmat	**PJM**	**MAAC**	**2**
Charles Yeung	**SPP**	**SPP**	**2**

* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

Background Information:

Posted for comments is the first posting of the Frequency Response SAR. The Frequency Task Force of the NERC Resources Subcommittee has identified the transient frequency response characteristics as degrading over time and potentially threatening the reliability of the bulk electric system. This Standard Authorization Request was initiated to address this concern by developing a standard to specify a measuring convention for frequency response and by specifying a minimum required response to system disturbances based on the convention.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Frequency Response SAR Comments" by February 17, 2005.

Question 1: Do you agree there is a reliability need for a specifying the quality and quantity of frequency response?

☒ Yes

☒ No

If no, please explain in the space provided below.

Comments

We agree in general that there is a reliability need to have frequency response, particularly during disturbances, islanding and restoration. The standard should provide the process for a technically sound calculation of frequency response and bias (both fixed and variable).

Any new standards on frequency response need not and should not be onerous by finding BAs noncompliant with response less than average or below some un-validated norms.

If performance is significantly less than an Interconnection norm, the standard should not trigger an automatic non-compliance. In these situations the BA should perform an internal review/assessment that ensures governors are working as designed, that the BA knows which resources are frequency responsive (so the information can be included in restoration plans), whether governors can be triggered to be more responsive during disturbances, etc and satisfy the Interconnection requirement. If the Interconnection requirement is not met within a reasonable timeframe then the BA should be deemed as non-compliant.

When required, the validation of governor performance could be achieved either through online monitoring in an EMS or periodic testing (both methods should be explained in a reference document to support the standard).

The standard should acknowledge that some units might not provide response under normal operations (e.g. nuclear units operating at full load) and that response is highly variable event-to-event based on simultaneous load changes.

The standard should acknowledge the differing Interconnection requirements (smaller Interconnections need greater response).

The standard should also track Interconnection and BA areas response over time (years) and be reevaluated as performance changes.

Question 2: Do you agree with the scope and applicability of the proposed standard?

☐ Yes

☒ No

If no, please explain in the space provided below.

There is a general need for a standard, but the outcomes and expectations should address the comments raised in question 1.

While we agree that the standard should not preclude market solutions (e.g. allow purchasing of response as long as deliverability and restoration criteria can be met), we have concerns with the statement *There must be a means for sale/purchase of frequency response as for any other quantity.*

It is not clear what is meant by *A method of allocation must be developed"* Is this an allocation of Interconnection response to BAs, BA allocation to generators or something different?

Comments

Question 3: Do you believe these standards are more appropriately additions to existing standards as opposed to creating new standards?

☐ Yes

☒ No

If yes, please identify the location you believe would be the most appropriate for the proposed standard.

Comments

Unless the Version 0 (BAL-003-0 — Frequency Response and Bias) can be clarified and brought in line with this proposed standard, it should be stand-alone.

Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?

☒ Yes

☐ No

If yes, please share those comments in the space provided below.

We appreciate the opportunity to comment and believe there is a need for such a standard.

It needs to be recognized that there are two objectives for governor response, namely, to provide response on an interconnection wide basis to maintain an acceptable frequency and secondly to control frequency in island situations. The former may allow for averaging over an area of the response requirement but the latter may limit the extent of averaging.

Published studies show frequency response is declining when it should be increasing with load. The main concerns with this decreasing performance are:

There may be areas unable to withstand severe disturbances.

Following a grid separation or collapse, control areas may be unable to fulfill their blackstart and restoration responsibilities, thereby becoming a burden to neighbors.

Because engineering models use theoretical frequency response, they are likely over optimistic and may misstate grid stability limits.

This standard would allow the industry to determine whether the decline is local or global.

Rather than implementing a complicated infrastructure or process, we would suggest that NERC automate the calculation of frequency response by either:

Asking BAs to save their CPS-source data in a common format so a common tool can be used (MAPP BAs and some others use a common tool that can calculate frequency response with CPS-source data).

Embed the calculation in the NERC ACE-monitoring application.

Refer to our earlier comments the structure of the standard (where lower amounts of BA response trigger an internal assessment rather than automatic assignment of non-compliance). BAs (and ultimately generators) would only be initially non-compliant if their response was low AND the BA failed to perform a reliability assessment in conjunction with its TOP. Non compliance should be assessed if the BA does not alleviate the deficiency within a reasonable timeframe. This default assessment would be at the BA level, but could be on an area basis (likely islanding area or where a TSP has responsibility for frequency responsive and black start ancillary services).

The standard should employ a methodology that not only captures initial response (first few seconds after the event) but also the sustained response until AGC action takes over

Each Interconnection should have the ability to add and further define the standard to meet its needs.

Providing visibility on where and when performance is substandard will likely initiate sufficient action to arrest the decline in performance. Minimum performance standards could be implemented after the industry has identified what is reasonably achievable and technically justified.