NPCC, Inc.

NORTHEAST POWER COORDINATING COUNCIL, INC.
1040 AVE OF THE AMERICAS, NEW YORK, NY 10018 TELEPHONE (212) 840-1070 FAX (212) 302-2782

September 30th, 2013

Dave and TFSS,

Please find attached final responses to the clarification requests on the NPCC Regional Standard for Automatic UFLS PRC -006-NPCC-1 as reviewed and approved during the TFSS meeting on Friday September 27th, 2013.

Task Force responses will be posted on the NPCC website at:

https://www.npcc.org/Standards/SitePages/ApprovedStandardsList.aspx

Thanks.

Gerry Dunbar
Northeast Power Coordinating Council, Inc.
212.840.1070 (p)
212.302.2782 (f)

gdunbar@npcc.org

PRC-006-NPCC-1
Automatic Under frequency Load Shedding

Responses to Clarification Requests

(As reviewed by the NPCC Task Force on System Studies)

September 30th, 2013

Task Force on System Studies (TFSS) Review of Responses to Requests for Clarification on NPCC Regional Standard PRC -006-NPCC-1 Automatic Under frequency Load Shedding.

Background:

In accordance with the NPCC Regional Standard Development Procedure, requests for clarification will be addressed by the originating Task Force which acted as the drafting team for the Regional Standard.

The Task Force on System Studies (TFSS) would like to thank those entities who have submitted clarification requests.

The Task Force responses to individual clarification requests are provided below.

Request for Clarification from – Granite State Electric

1) Currently National Grid reports GSE load shedding program within their program.

However, after next year GSE will be responsible for reporting their own program.

This situation came up when National Grid evaluated the program versus the way we evaluated the program.

National Grid uses a different forecast to consider difference between coincidental versus non-coincidental load. Using the National Grid forecast with coincidental load we have difficulty coming up with a program that works. In addition we have some feeders that use a loop schema which reduces the actual measured load off from the feeder.

Based on the discussions with National Grid it occurred to us that there are several conditions that are not clear in the NPCC program that were probably not thought of by the drafting team.

- Is a LSE/DP supposed to use the forecast at system wide peak or their low local peak?

Task Force response:

Thank you for the comment.

The Drafting Team considered these scenarios and Requirement R4 of the standard addresses your question:

Requirement R4 reads:

R4 Each Distribution Provider and Transmission Owner in the Eastern Interconnection portion of NPCC shall implement an automatic UFLS program reflecting normal operating conditions excluding outages for its Facilities based on frequency thresholds, total nominal operating time and amounts specified in Attachment C, Tables 1 through 3, or shall collectively implement by mutual agreement with one or more Distribution Providers and Transmission Owners within the same island identified in Requirement R1 and acting as a single entity, provide an aggregated automatic UFLS program that sheds their coincident peak aggregated net Load, based on frequency thresholds, total nominal operating time and amounts specified in Attachment C, Tables 1 through 3. [Violation Risk Factor: High] [Time Horizon: Long Term Planning]

R4 requires an LSE/DP to use their own local peak load.

- Is a LSE/DP supposed to adjust the forecast on the feeders up to the BES voltage considering transformer loss?

Task Force response:

Thank you for the comment.

Requirement R4 of the standard also addresses this question.

Requirement R4 reads:

R4 Each Distribution Provider and Transmission Owner in the Eastern Interconnection portion of NPCC shall implement an automatic UFLS program reflecting normal operating conditions excluding outages for its Facilities based on frequency thresholds, total nominal operating time and amounts specified in Attachment C, Tables 1 through 3, or shall collectively implement by mutual agreement with one or more Distribution Providers and Transmission Owners within the same island identified in Requirement R1 and acting as a single entity, provide an aggregated automatic UFLS program that sheds their coincident peak aggregated net Load, based on frequency thresholds, total nominal operating time and amounts specified in Attachment C, Tables 1 through 3. [Violation Risk Factor: High] [Time Horizon: Long Term Planning]

R4 requires an LSE/DP to use their net load or the metered load on the feeder.

- Is the LSE/DP supposed to use a forecast at the feeder, the last year's peak, or the all-time peak at the feeder?

Task Force response:

Thank you for the comment.

The Drafting Team considered these scenarios and Requirement R12 of the standard addresses your question:

Requirement R12 reads:

R12 Each Transmission Owner and Distribution Provider shall annually provide documentation, with no more than 15 months between updates, to its Planning Coordinator of the actual net Load that would have been shed by the UFLS relays at each UFLS stage coincident with their integrated hourly peak net Load during the previous year, as determined by measuring actual metered Load through the switches that would be opened by the UFLS relays. [Violation Risk Factor: Lower] [Time Horizon: Long Term Planning]

R12 requires the DP/LSE shall provide the coincident peak net load during the previous year.

Follow –up Request for Clarification from – Granite State Electric

2.) Based on your responses above the load at the feeders is to be measured at the GSE coincidental peak load for the prior year rather than a forecast or the all- time peak load.

Yes.

3.) I will assume that if we are included in National Grids load than it would use National Grids last year's peak. Please confirm.

Yes. Since the obligation is to use last year's peak, the initial assessment would be last year's peak for GSE as determined by National Grid.

4.) In addition it appears we are not to use the all- time peak which means if the prior year was much more moderate than the previous than we would need to reduce the load being shed. Seems odd but I suppose that the auditors need a bright line versus reasonableness.

Yes.

Request for Clarification from – Iberdrola Renewables

1) Our wind farm facility within the NPCC region is currently compliant with this standard and has had each generator under frequency trip relay set below the appropriate generator under frequency trip protection settings threshold curve in Figure 1. However, we do have a question regarding the under frequency trip relay location.

> R13 – Each Generator Owner shall set each generator under frequency trip relay, if so equipped, below the appropriate generator under frequency trip protection settings threshold curve in Figure 1, except as otherwise exempted in Requirements R16 and R19.

Our question is: is R13 applicable to each under frequency trip relay at the facility regardless of the location of the relay, for example, on a feeder line on the low side of the transformer connected at 34.5KV or is this applicable only to relays on the high side of the step up transformer at a voltage higher than 75kV?

Task Force response:

Thank you for the comment.

The standard does not address the location of the relay.

Therefore compliance should be maintained on the generator under frequency trip relay, regardless of where it is located.