



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

October 16th, 2014

Subject: Criteria Clarification Directory#3 *Maintenance Criteria for BPS Protection.*

NPCC Full Member Representatives and Alternates:

In accordance with the NPCC *Directory Development and Revision Manual* the Task Force on System Protection (TFSP) has considered a *Request for Criteria Clarification* and has provided the attached response.

The subject request which seeks an explanation of the criteria within various sections of *Directory#3 Maintenance Criteria for Bulk Power System Protection* was reviewed and clarified by the TFSP on October 10th, 2014.

Comments on the TFSP criteria clarifications will be received for forty five days through November 30th, 2014 and all comments will be addressed by the TFSP.

The NPCC Open Process Review may be accessed through the following link:

<https://www.npcc.org/Standards/SitePages/NonStandardsList.aspx>

In accordance with the *Directory Manual* final TFSP responses will be presented to the Reliability Coordinating Committee (RCC) for approval.

Please contact me with any questions regarding *Directory* content or comment procedures.

Thank you.

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Task Force on System Protection Response Request for Criteria Clarification

Note: a Clarification cannot be used to revise the Criteria within a Directory.

Request for a Clarification of Criteria
Date submitted: August 28, 2014 Date revised version submitted:
Contact information for person requesting the clarification:
Name: Reena Goyal
Organization: IESO - Market Assessment and Compliance Division (MACD)
Telephone: (416) 506-2857
E-mail: reena.goyal@ieso.ca
Identify the Directory that contains the Criteria requiring clarification:
Directory Number : Directory 3
Directory Title: Maintenance Criteria for Bulk Power System Protection
Identify specifically what portion of the Criteria needs clarification:
1.6.2 Facilities "These criteria shall apply to all protection of the NPCC bulk power system , including Type I special protection systems and protection required for the NPCC Automatic Underfrequency Load Shedding Program. Automatic underfrequency load shedding protection systems and generator underfrequency tripping relays are not generally located at bulk power system stations; however, they have a direct effect on the operation of the bulk power system during

major **emergencies**, and as such, they are subject to these criteria.”

And

5.7.1

“**Protection group** DC circuit tests, battery bank and charger tests and breaker trip tests for **protection** required by the NPCC Automatic Underfrequency **Load Shedding** Program, need not be performed more frequently than the **protection group** DC circuit tests, battery bank and charger tests and breaker trip tests for other **protection** on the same breaker. Because of the distributed nature of this **load shedding protection**, random failures to trip do not compromise the objectives of the NPCC Automatic Underfrequency **Load Shedding** Program.”

Identify the material impact associated with the lack of clarity:

Directory 3 is unclear about its applicability on the load rejection (LR) protection elements, of Type I SPS, that are not BPS. Also due to the similarity in functionality between the LR protection and the UFLS protection, it is unclear if the provision (exception) given in section 5.7.1 to the UFLS is also applicable on the LR protection elements.

As the entity responsible for enforcing compliance with NPCC Directories and NERC standards in Ontario, IESO-MACD needs to have a clear understanding of all Directory 3 requirements to adequately assess market participants’ compliance with these requirements.

Task Force Response to Request for Criteria Clarification:

Directory 3 for the Independent Electricity System Operator- Market Assessment and Compliance Division

The following clarification of the criteria in Directory 3 was developed by the Task Force on System Protection.

Directory Number and Text of Requirement

1.6.2 Facilities

"These criteria shall apply to all **protection** of the NPCC **bulk power system (BPS)**, including Type I **special protection systems (SPS)** and **protection** required for the NPCC Automatic Underfrequency **Load Shedding (UFLS)** Program.

Automatic underfrequency **load shedding protection systems** and generator underfrequency tripping **relays** are not generally located at **bulk power system** stations; however, they have a direct effect on the operation of the **bulk power system** during major **emergencies**, and as such, they are subject to these criteria."

Question 1:

Please indicate whether Directory 3 applies to those components of Type I SPS that may fall outside of the BPS.

TFSP Response to Question 1:

Directory 3 applies to all protection components of a Type I SPS, regardless of a component designation with respect to the BPS.

Directory Number and Text of Requirement

5.7.1

"**Protection group** DC circuit tests, battery bank and charger tests and breaker trip tests for **protection** required by the NPCC Automatic Underfrequency **Load Shedding** Program, need not be performed more frequently than the **protection group** DC circuit tests, battery bank and charger tests and breaker trip tests for other **protection** on the same breaker. Because of the distributed nature of this **load shedding protection**, random failures to trip do not compromise the objectives of the NPCC Automatic Underfrequency **Load Shedding** Program."

Question 2:

Based on the TFSP interpretation provided to Acumen Engineered Solutions International Inc., we understand that:

- *sections 5.2, 5.3, 5.4, 5.5, and 5.6 of Directory 3 are applicable to UFLS protection equipment, and*
- *Section 5.7.1 of Directory 3 allows UFLS protection equipment to be tested at intervals that may differ from the intervals specified in sections 5.2, 5.3, 5.4, 5.5, and 5.6 of Directory 3.*

Given that the protection related the Load Rejection (LR) component of a Type I SPS can, similar to the UFLS protection, be distributed in nature, IESO-MACD would like to know whether Directory 3 permits LR protection equipment associated with Type I SPS to be tested at intervals that may differ from the intervals specified in sections 5.2, 5.3, 5.4, 5.5, and 5.6 of Directory 3.

TFSP Response to Question 2:

The language in Directory 3 is clear and there is no exception given in Section 5.7.1 for load rejection (LR) as part of a Type I SPS.

TFSP, however, discussed and agreed that requiring the test trip interval for an over-armed distributed load shedding scheme to be the same as the rest of the SPS is not in line with similar distributed systems like the UFLS where random failures to trip do not compromise the objective.



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Task Force on System Protection Response Request for Criteria Clarification

Note: a Clarification cannot be used to revise the Criteria within a Directory.

Request for a Clarification of Criteria
Date submitted: Sept 11, 2014 Date revised version submitted:
Contact information for person requesting the clarification:
Name: Reena Goyal
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Identify the Directory that contains the Criteria requiring clarification:
Directory Number : Directory 3
Directory Title: Maintenance Criteria for Bulk Power System Protection
Identify specifically what portion of the Criteria needs clarification:
7.0 Compliance Monitoring <i>"Adherence to requirements in this Directory must be reported in a manner and form designated by the Compliance Committee. Exceptions to the requirements stipulated herein are acceptable if the exceptions are completely removed within five (5) months of the end of the calendar year in which the testing is due. The intervals specified in this document refer to calendar year in which testing is due regardless of the date."</i>

And

5.5 Breaker Trip Testing Requirements

“The ability of the breaker(s) to trip via each trip coil shall be verified every two years with the following exception. Nuclear plant bulk power system unit breaker trip tests shall be completed at an interval not to exceed three years.”

Identify the material impact associated with the lack of clarity:

Directory 3 is unclear about the applicability of the exception stipulated in Section 7.0 on the various equipment identified in Sections 5.2, 5.3, 5.4, 5.5, 5.6, and 5.7.

As the entity responsible for enforcing compliance with NPCC Directories and NERC standards in Ontario, IESO-MACD needs to have a clear understanding of all Directory 3 requirements to adequately assess market participants' compliance with these requirements.

Task Force Response to Request for Criteria Clarification:

Directory 3 for the Independent Electricity System Operator- Market Assessment and Compliance Division

The following clarification of the criteria in Directory 3 was developed by the Task Force on System Protection.

Directory Number and Text of Requirement

7.0 Compliance Monitoring

"Adherence to requirements in this Directory must be reported in a manner and form designated by the Compliance Committee. Exceptions to the requirements stipulated herein are acceptable if the exceptions are completely removed within five (5) months of the end of the calendar year in which the testing is due. The intervals specified in this document refer to calendar year in which testing is due regardless of the date."

Question 3

Please identify which of Sections 5.2, 5.3, 5.4, 5.5, 5.6, and 5.7 are subject to the exception stipulated in Section 7.0 and which of these sections are not. If applicable, please indicate whether there any exceptions to the application of section 7.0 to parts of sections 5.2, 5.3, 5.4, 5.5, 5.6, and 5.7

TFSP Response to Question 3:

The exception stipulated in Section 7 can be applied to maintenance associated with testing that is due per calendar year(s) in 5.2, 5.3, 5.5, 5.6 and 5.7. Monthly testing in 5.4 and 5.6.2 is not granted the exception identified in Section 7.

Directory Number and Text of Requirement

5.5 Breaker Trip Testing Requirements

"The ability of the breaker(s) to trip via each trip coil shall be verified every two years with the following exception. Nuclear plant bulk power system unit breaker trip tests shall be completed at an interval not to exceed three years."

Question 4

Section 5.5 gives an exception to unit breakers at BPS nuclear plants in that they are allowed to be tested at an interval not exceeding three years. Does Section 7.0 also apply in this case, i.e. are unit breakers at nuclear BPS plants allowed to have their test completed within five months of the end of the calendar year in which the testing is due?

For example, a nuclear unit had their unit breaker tested in 2011 and, based on a

three year cycle, the next test is understood to be required by the end of 2014. If the test is not completed by December 31, 2014, is it admissible that the breaker is tested by May 31, 2015?

TFSP Response to Question 4:

Yes.