MACD - Ontario Reliability Compliance Program

2016 Reliability Standards Compliance Monitoring Plan

Revised April 2016

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Document Change History

Date	Reason for Issue
December, 2015	Publication of First release
April, 2016	Revisions to standard versions and reporting dates

Introduction

The 2016 MACD Reliability Standards Compliance Monitoring Plan ("MACD CMP") provides market participants with information on the reliability standards that MACD will monitor for compliance in 2016, and the discovery methods that MACD will use during 2016 to assess market participants' compliance with these reliability standards.

The MACD CMP was developed with a view of what matters most for reliability and taking into account the significant changes to the Ontario Reliability Compliance Program that will result from the revised NERC Bulk Electric System ("BES") definition and the adoption of NERC Critical Infrastructure Protection ("CIP") version 5 reliability standards on July 1, 2016.

Ontario's Reliability Compliance Enforcement Framework

The *Electricity Act, 1998* ("*Electricity Act*") grants the Independent Electricity System Operator ("IESO") jurisdiction to maintain the reliability of the IESO-controlled grid[1] and the statutory power to create market rules "establishing and enforcing standards and criteria relating to the reliability of the electricity service or the IESO-controlled grid"[2]. The Government of Ontario has also directed the IESO to coordinate standards development activities with the North American Electric Corporation ("NERC") and the Northeast Power Coordinating Council ("NPCC") by assigning it the statutory object "to participate in the development by any standards authority of criteria and standards relating to the reliability of the integrated power system"[3]. NERC and NPCC are identified in the *Electricity Act* as standards authorities that approve standards and criteria "relating to the reliable operation of the integrated power system"[4]. To communicate changes to standards and criteria and to assist market participants to develop a better understanding of their reliability obligations, the IESO has created the Reliability Standards Standing Committee ("RSSC"). The RSSC provides a forum that engages market participants in the standards development process and notifies market participants of new and developing reliability standards.

In addition to other reliability requirements in the market rules and market manuals, the market rules incorporate NERC and NPCC reliability standards and criteria by reference. Subject to the IESO's applicability determination, these standards and criteria form part of the law in Ontario[5]. The market rules assign to the IESO various functions, powers and authorities to supervise, administer and enforce

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[1] Electricity Act, 1998, S.O. 1998, c. 15, Sched. A, s. 6.(1)(c).

[2] Electricity Act, s. 32.(1)(c).

[3] Electricity Act, s. 6.(1)(d).

[4] Electricity Act, s. 2.(1).

[5] Market Rules, Chapter 5, ss. 1.2.6, 3.2.2, 3.2.5-3.2.7, 3.4.2, 3.5.3, 3.6.2, Chapter 4, s. 2.1.1.

the market rules[6]. The market rules also provided the IESO with the general power to "undertake such monitoring as it considers necessary to determine whether *market participants* are complying with the *market rules*". This power necessarily extends to those provisions mandating reliability standards compliance in Ontario[7]. Within the IESO, this responsibility, as well as compliance assessment and enforcement, has been delegated to the Director of MACD[8]. While the IESO through a Memorandum of Understanding with NERC and NPCC has agreed to "be subject to NERC's compliance monitoring and enforcement processes" in respect of its own reliability standards obligations[9], MACD is responsible for the design and implementation of the Ontario Reliability Compliance Program including the Compliance Monitoring Plan that applies to market participants in Ontario.

Reliability Standards

While market participants are required to comply with and be able to demonstrate compliance with all applicable reliability standards at all times, only a subset of these requirements is monitored for compliance in a given year. To assess compliance with these requirements, MACD will use at least one of the discovery methods described in the following section.

In selecting the list of requirements that will be monitored and establishing the compliance reporting period, MACD takes into account several factors, including:

- the effective date of the standard;
- the assessed reliability risk of the standard at both the continent-wide and regional levels; and
- the compliance history associated with the standard;

For 2016, MACD has selected the following standards for monitoring:

Critical Infrastructure Protection (CIP)					
CIP-002	CIP-003	CIP-004	CIP-005	CIP-006	CIP-007
CIP-008	CIP-009	CIP-010	CIP-011	CIP-014	

Communications (COM)					
COM-002					

[6] Market Rules, Chapter 1, s. 5.3.1.

[7] Market Rules, Chapter 3, s. 6.1.2.

[8] http://www.ieso.ca/Documents/marketComp/Delegation-of-Compliance-20130801.pdf

[9] http://www.ieso.ca/documents/ircp/ero/ero-20061128-MOU_IESO_NERC_NPCC_CBRE_NPCC-INC.pdf

Emergency Preparedness and Operations (EOP)					
EOP-004	EOP-005				

Facilities Design, Connections and Maintenance (FAC)					
FAC-001	FAC-002	FAC-003	FAC-008		

Interconnected Reliability Operations and Coordination (IRO)					
IRO-001	IRO-005	IRO-010			

Modeling, Data and Analysis (MOD)					
		MOD-025	MOD-026	MOD-027	MOD-032

Nuclear (NUC)					
NUC-001					

Protection and Control (PRC)					
PRC-001	PRC-002	PRC-002-NPCC	PRC-004	PRC-005-4	PRC-006
PRC-008	PRC-010	PRC-015	PRC-016	PRC-017	PRC-018
PRC-019	PRC-021	PRC-023	PRC-024	PRC-025	

Transmission Operations (TOP)					
TOP-001	TOP-002	TOP-003	TOP-006		

Voltage and Reactive (VAR)					
VAR-002					

Discovery Methods

The 2016 MACD CMP employs a combination of discovery methods, which include self-reports, self-certifications and spot checks for monitoring Ontario's compliance with reliability standards, as described in the following sections.

SELF-REPORTS

Unlike other discovery methods that are initiated by MACD, such as self-certifications, spot checks and audits, self-reporting relies on the monitoring mechanisms of the market participant's internal compliance program[10] to systematically review their compliance with reliability standards, and to detect potential breaches.

If a market participant believes that they may have breached a reliability standard, they are strongly encouraged to take all reasonable steps to mitigate the impact that the breach may have caused on reliability and self-report the breach to MACD in a timely manner. Such actions may help mitigate the severity of the penalties and other sanctions that could be applied in the event that MACD determines that the market participant was in breach of the market rules.

While strongly encouraged to self-report, market participants that simply notify MACD of a potential breach may not always receive the full self-report credit from MACD. To receive this credit and the benefit of penalty mitigation, self-reports must meet certain content and timing requirements, which include:

- submitting it to MACD in writing[11] and on a timely basis;
- providing details of the activities that were potentially non-compliant;
- providing reasons for the non-compliance;
- identifying all the reliability standards that were potentially breached; and
- describing in detail the timeline and steps to remediate the breach and prevent a similar non-compliance in the future.

MACD applies the following factors to assess the timeliness of a self-report:

- whether the market participant submitted the self-report before MACD became aware of the potential breach;
- the duration between the discovery of the potential breach by the market participant and the filing of the self-report; and
- whether the market participant exercised due diligence in the discovery of the potential breach

[10] For more information on MACD's view on market participant's internal compliance programs, see the Internal Compliance Programs web page on the IESO website

[11] Market participants should use the "Non-Compliance Event Report" (IESO-FORM-1253) or the IESO Reliability Compliance Tool to self-report potential breaches of reliability standards. For more information, visit the IESO website

SELF-CERTIFICATIONS

Self-certifications are written attestations that require market participants to declare their compliance status with specific reliability standards at a particular point in time or over a period of time. Unlike self-reports, whose submission to MACD is initiated by market participants, self-certifications are submitted to IESO upon IESO's request.

Traditionally, the IESO has requested market participants to self-certify based on an annual schedule published in advance on the IESO's website. This schedule included a subset of all reliability standards in effect at that time and identified the market participant classes and the timetable on which these participants were required to self-certify. The IESO did not require that evidence of compliance be submitted with these self-certifications.

In the future, as continental, regional and entity risks are incorporated in its decision-making, MACD will transition to a self-certification program that focuses on the most critical reliability standards and that is tailored to each market participant's risk profile. In addition, to increase the level of compliance assurance, MACD will require market participants to attach evidence of compliance to their self-certifications.

The 2016 MACD CMP includes two self-certification streams with separate compliance reporting schedules that distinguish between market participants that met the IESO applicability criteria for compliance with reliability standards[12] in 2015 ("Pool A") and market participants with newly identified BES elements under the revised NERC BES definition that will meet these applicability criteria starting with July 1, 2016 ("Pool B"). This approach ensures continuity in compliance reporting for the existing owners of Bulk Power System ("BPS") elements, and establishes a compliance baseline for the owners of newly identified BES elements.

Market Participants in Pool A

Market participants that met the IESO applicability criteria for compliance with reliability standards in 2015 are required to self-certify compliance with the following standards, as applicable to their BPS facilities:

Standard	Title	Start of Reporting Period	End of Reporting Period	Due Date
FAC-008-3	Facility Ratings	1/1/2015	12/31/2015	4/1/2016
PRC-001-1.1(ii)	System Protection Coordination	1/1/2015	12/31/2015	4/1/2016
PRC-004-2.1a	Analysis and Mitigation of Transmission and Generation Protection System Misoperations	1/1/2015	12/31/2015	4/1/2016
PRC-005-1.1b	Transmission and Generation Protection System Maintenance and Testing	1/1/2015	3/31/2015	4/1/2016
PRC-005-2(i)	Protection System Maintenance	4/1/2015	12/31/2015	4/1/2016

[12] See *Market Manual 11: Reliability Compliance, Part 11.1: Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria (IESO_GDE_0364)*

MACD requires market participants to self-certify compliance with these standards using the IESO Reliability Compliance Tool. However, MACD does not require market participants to submit evidence of compliance along with these self-certifications.

Market Participants in Pool A and Market Participants in Pool B

Market participants that will meet the applicability criteria for compliance with NERC CIP standards as of July 1, 2016 are required to self-certify compliance with the following standards, as applicable to their BES facilities and/or BES cyber systems. For each standard below, MACD will monitor the version in effect on July 1, 2016.[13]

Standard	Title	Reporting as of	Due Date
CIP-002*	BES Cyber System Categorization	7/8/2016	9/1/2016
CIP-003	Security Management Controls	7/8/2016	9/1/2016
CIP-004	Personnel & Training	7/8/2016	9/1/2016
CIP-005	Electronic Security Perimeter(s)	7/8/2016	9/1/2016
CIP-006	Physical Security of BES Cyber Systems	7/8/2016	9/1/2016
CIP-007	Systems Security Management	7/8/2016	9/1/2016
CIP-008	Incident Reporting and Response Planning	7/8/2016	9/1/2016
CIP-009	Recovery Plans for BES Cyber Systems	7/8/2016	9/1/2016
CIP-010	Change Management and Vulnerability Assessments	7/8/2016	9/1/2016
CIP-011	Information Protection	7/8/2016	9/1/2016
CIP-014*	Physical Security	7/8/2016	9/1/2016

**these self-certifications require evidence of compliance*

MACD will provide further instructions on how to self-certify compliance with these standards at least 30 calendar days in advance of the self-certification due date. With the exception of CIP-002 and CIP-014, MACD will not require market participants to submit evidence of compliance along with these self-certifications.

Market Participants in Pool B

In addition to the self-certifications required in the previous section, market participants with newly identified BES elements under the revised NERC BES definition that will meet IESO applicability criteria for compliance with reliability standards criteria starting with July 1, 2016 are required to self-certify

[13] For effective dates of standard versions, refer to "Milestones in Reliability Standard Development and Lifecycle" document accessible at http://www.ieso.ca/Documents/ircp/Milestones_in_Reliability_Standard_Development_and_Lifecycle_v7_Dec_2015.xlsx

compliance with the following standards, as applicable to their newly identified BES facilities. For each standard below, MACD will monitor the version in effect on July 1, 2016.[13]

Standard	Title	Reporting as of	Due Date
COM-002	Communication and Coordination	7/8/2016	9/1/2016
EOP-004	Event Reporting	7/8/2016	9/1/2016
EOP-005	System Restoration from Blackstart Resources	7/8/2016	9/1/2016
FAC-001	Facility Interconnection Requirements	7/8/2016	9/1/2016
FAC-002	Facility Interconnection Studies	7/8/2016	9/1/2016
FAC-003	Transmission Vegetation Management	7/8/2016	9/1/2016
FAC-008	Facility Ratings	7/8/2016	9/1/2016
IRO-001	Reliability Coordination — Responsibilities and Authorities	7/8/2016	9/1/2016
IRO-005	Reliability Coordination — Current Day Operations	7/8/2016	9/1/2016
IRO-010	Reliability Coordinator Data Specification and Collection	7/8/2016	9/1/2016
MOD-025	Verification and Data Reporting of Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability	7/8/2016	9/1/2016
MOD-026	Verification of Models and Data for Generator Excitation Control System or Plant Volt/Var Control Functions	7/8/2016	9/1/2016
MOD-027	Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions	7/8/2016	9/1/2016
MOD-032	Data for Power System Modeling and Analysis	7/8/2016	9/1/2016
NUC-001	Nuclear Plant Interface Coordination	7/8/2016	9/1/2016
PRC-001	System Protection Coordination	7/8/2016	9/1/2016
PRC-002	Disturbance Monitoring and Reporting Requirements	7/8/2016	9/1/2016
PRC-002-NPCC	Disturbance Monitoring	7/8/2016	9/1/2016
PRC-004	Analysis and Mitigation of Transmission and Generation Protection System Misoperations	7/8/2016	9/1/2016
PRC-005	Protection System and Automatic Reclosing Maintenance	7/8/2016	9/1/2016
PRC-006	Automatic Underfrequency Load Shedding	7/8/2016	9/1/2016
PRC-008	Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance Program	7/8/2016	9/1/2016
PRC-010	Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program	7/8/2016	9/1/2016
PRC-015	Special Protection System Data and Documentation	7/8/2016	9/1/2016

Standard	Title	Reporting as of	Due Date
PRC-016	Special Protection System Misoperations	7/8/2016	9/1/2016
PRC-017	Special Protection System Maintenance and Testing	7/8/2016	9/1/2016
PRC-018	Disturbance Monitoring Equipment Installation and Data Reporting	7/8/2016	9/1/2016
PRC-019	Coordination of Generating Unit or Plant Capabilities, Voltage Regulating Controls, and Protection	7/8/2016	9/1/2016
PRC-021	Under-Voltage Load Shedding Program Data	7/8/2016	9/1/2016
PRC-023	Transmission Relay Loadability	7/8/2016	9/1/2016
PRC-024	Generator Frequency and Voltage Protective Relay Settings	7/8/2016	9/1/2016
PRC-025	Generator Relay Loadability	7/8/2016	9/1/2016
TOP-001	Reliability Responsibilities and Authorities	7/8/2016	9/1/2016
TOP-002	Normal Operations Planning	7/8/2016	9/1/2016
TOP-003	Planned Outage Coordination	7/8/2016	9/1/2016
TOP-006	Monitoring System Conditions	7/8/2016	9/1/2016
VAR-002	Generator Operation for Maintaining Network Voltage Schedules	7/8/2016	9/1/2016

COMPLIANCE AUDITS

MACD conducts compliance audits in accordance with *Market Manual 2: Market Administration, Part 2.17: Compliance Auditing of Reliability Standards for Ontario Market Participants (IESO_PRO_0803)*[14]. In accordance with the process outlined in this manual, MACD identifies the market participants and reliability requirements to be audited using a risk-based approach, which evaluates a market participant's compliance with reliability standards and the potential impact that continued non-compliance may have on reliability. MACD will notify market participants selected for audit in a given year at least 90 days in advance of the scheduled audit start date.

The 2016 MACD CMP does not include any compliance audits. In 2016, MACD's focus will be on further developing its risk-based compliance monitoring and enforcement program, conducting outreach to the market participants that will become subject to reliability standards on July 1, 2016, and ensuring that Ontario transitions to CIP version 5 in an effective manner.

SPOT CHECKS

Spot checks, or unscheduled audits, are similar to compliance audits in that they provide a comparable level of compliance assurance. However, they usually target a more limited number of requirements from the entire set of applicable reliability standards. MACD may conduct spot checks at any time during the year, potentially with very little notice provided to market participants.

[14] This manual is available on the IESO website.

The 2016 MACD CMP will include spot checks, which may or may not be related to the reliability standards identified for monitoring in 2016. MACD will notify the market participants selected for a spot check up to 30 business days in advance, indicating the reliability requirements in scope and the timetable and manner in which a response should be provided.