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Market Manual 11: Reliability Compliance

Part 11.3: Reliability Information Catalogue

Issue 8.0

A catalogue of the information that is to be shared between the *IESO* and *Market Participants* in relation to maintaining the reliability of the *IESO-controlled grid*

Public

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This document may contain a summary of a particular *market rule*. Where provided, the summary has been used because of the length of the *market rule* itself. The reader should be aware, however, that where a *market rule* is applicable, the obligation that needs to be met is as stated in the *"Market Rules"*. To the extent of any discrepancy or inconsistency between the provisions of a particular *market rule* and the summary, the provision of the *market rule* shall govern.

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| ability Information Catalogue |
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| I in advance of Baseline 45.0. Updated to include electricity storage participation. |
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| Issue | Reason for Issue | Date |
|-------|---|--------------------|
| 1.0 | This manual is new, superseding Market Manual 7.5 "Reliability Information Catalogue" | March 6, 2013 |
| 2.0 | Issue released in advance of Baseline 33.1 to update the IESO logo. | March 31, 2015 |
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Document Change History

Related Documents

| Document ID | Document Title |
|-------------|----------------|
| N/A | |

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Table of Changes

| Reference (Section and Paragraph) | Description of Change |
|--------------------------------------|--|
| Throughout | Added reference to electricity storage participation where required. |

Market Manuals

The *market manuals* consolidate the market procedures and associated forms, standards, and policies that define certain elements relating to the operation of the *IESO-administered markets*. Market procedures provide more detailed descriptions of the requirements for various activities than is specified in the "*Market Rules*". Where there is a discrepancy between the requirements in a document within a *market manual* and the "*Market Rules*", the "*Market Rules*" shall prevail. Standards and policies appended to, or referenced in, these procedures provide a supporting framework.

Market Procedures

The "Reliability Compliance Manual" is Series 11 of the "*Market Manuals*", where this document forms "Part 11.3: Reliability Information Catalogue".

- End of Section -

1. Introduction

1.1 Purpose

The *IESO* is required by the "*Market Rules*" to produce a catalogue of the information that is to be shared between the *IESO* and *market participants* in relation to maintaining the *reliability* of the *IESO-controlled grid*.

This catalogue is designed to advise *market participants* on the *reliability*-related information requirements and needs, and to assist them in meeting their obligations for maintaining the *reliability* of the *IESO-controlled grid*.

This document catalogues:

- The information relating to the *reliability* of the *IESO-controlled grid* that is provided by the *IESO* to *market participants*, and
- The information relating to the *reliability* of the *IESO-controlled grid* that is provided by *market participants* to the *IESO*.

1.2 Scope

This document catalogues only the information that relates to the *reliability* of the *IESO-controlled grid*.

1.3 Overview

The following sections of this document describe the information that is shared between the *IESO* and the *market participants*. Each entry in the table identifies:

- To whom the information is provided,
- A description of the information that is provided,
- The frequency with which the information is provided,
- The method by which the information is provided,
- Any referenced documents relating to the information, and
- The "Market Rules" reference relating to the information.

1.4 Contact Information

As part of the participant authorization process, *applicants* are able to identify a range of contacts within their organization that address specific areas of market operations. For system operations, these contacts will most likely be the *authority centre*, *dispatch* or *control centre*, *facility* location operator or the restoration plan coordinator as indicated in the participant registration data. If the *market participant* has not identified a specific contact, the *IESO* will seek to contact the Main

Contact established during the participant authorization process. The *IESO* will seek to contact these individuals for activities within this procedure, unless alternative arrangements have been established between the *IESO* and the *market participant*.

If you wish to contact us, you can email *IESO* Customer Relations at <u>customer.relations@ieso.ca</u> or contact us by <u>telephone or mail</u>. Customer Relations staff will respond as soon as possible.

- End of Section -

2. Reliability Information Provided by the IESO

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|---|--------------------|--|--|---|
| 1. | Market participants | Reliability Standards NERC/NPCC | Ongoing | By email from the <i>IESO</i> or by links to: <u>IESO Internal Compliance</u> <u>Programs</u> <u>NERC website</u> <u>NPCC website</u> | <u>NERC Standards</u> <u>NPCC Criteria</u> | Ch. 4, Sec. 2.1.1 |
| 2. | Market participants | Reliability policy and security for local area supply | Ongoing | "Market manual" (Details upon request of authorized market participants, subject to confidentiality provisions.) | Market Manual 11.1: Applicability Criteria for Compliance with NERC Reliability Standards and NPCC Criteria | Ch. 5, Sec. 5.4 |
| 3. | Market participants | Equipment Performance Standards | Ongoing | <u>IESO website</u> "Market Rules" | N/A | General: Ch. 4, Sec.3.1.1 Ch. 4, Appendix 4.1 Generators and Electricity Storage Participants: Ch. 4, Appendix 4.2 Connected Wholesale Customers and Distributors Connected to IESO-Controlled Grid: Ch. 4, Appendix 4.3 Transmitters: Ch. 4, Appendix 4.4 |

| Table 2-1: Reliability Information Provid | ed by the IESO |
|---|----------------|
|---|----------------|

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|---|--|---|---|--|
| 4. | Market participants | Operating Procedures and Instruction | Ongoing | IESO website Upon request of authorized Market Participants, subject to confidentiality provisions | Market Manual 7.1: IESO-Controlled Grid Operating Procedures For internal procedures: Publicly available System Control Orders (SCO) and Internal Manuals | Ch. 5, Sec. 3.2.3 |
| 5. | Market participants | Requirements for commissioning, inspection and testing of equipment connected to IESO- controlled grid. | Ongoing, as changes occur | <i>IESO</i> website <u><i>OEB</i> website</u> | Transmission System Code (OEB), and Appendices Other reference documents to be added when developed. | General: Ch. 4, Appendix 4.2 to 4.9 Generators: Ch. 4, Sec. 3.4.1.3 Electricity Storage Participants: Ch. 4, Sec 3.6 Connected Wholesale Customers and Distributors Connected to IESO-Controlled Grid: Ch. 4, Sec. 3.5.1.3 and 5 Transmitters: Ch. 4, Sec. 3.3.1.3 |
| 6. | Market participants | Ancillary Service provider performance standards: black start, regulation, voltage control and reactive support, and Operating Reserve. | Ongoing | Market Rules | N/A | Ch. 5, Sec. 4.2.2 and 4.3.2 Ch. 5, Appendix 5.1 |
| 7. | Market participants | Ancillary Services: requirements and procedures for testing ancillary service provider facilities. | Ongoing; within 6 months of Market Rules Chapter 5 being in force | IESO website | Market Manual 7.8: Ontario Power System Restoration Plan | Ch. 5, Sec. 4.9 Ch. 5, Appendix 5.1 (performance standards) |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|--|--|---|--|-----------------------|
| 8. | Market participants | List of equipment and <i>facilities</i> the <i>outage</i> of which must be reported and scheduled with the <i>IESO</i> . | As required | Generic list available in <i>Market Manual</i> Participant specific list available through Outage Management System | Market Manual 7.3: Outage Management. | Ch. 5, Sec. 6.1.3 |
| 9. | Market participants | Planned outage information provided by transmitters, generators and electricity storage participants subject to confidentiality provisions | Refer to reference document for schedule | Included in the <i>security</i> and <i>adequacy</i> assessments | Market Manual 7.3: Outage Management Market Manual 7.2: Near Term Assessments and Reports | Ch. 5, Sec. 6.5.2 |
| 10. | Generators affected | Generation facilities whose outages must be reported to support monthly summaries when their generation facilities are identified by the IESO as affecting the reliability of the IESO- controlled grid but are less than 0.5% of the generator's total capacity and the generator's total capacity is greater than 4000 MW | Ongoing/as required | Hardcopy or electronic advice to generators affected | Market Manual 2.11: Reliability Outlook and Related Information Requirements | Ch. 5, Sec. 6.2.5.2 |
| 11. | Market participants | Dispatch criteria for Remedial Action Schemes (e.g., Load rejection, generation rejection) | Ongoing; updates as criteria changes | IESO website | Market Manual 7.4: IESO-Controlled Grid Policies | Ch. 5, Sec. 8.2.4 |
| 12. | Market participants | Specifications regarding exclusions to load management activities undertaken for the purpose of controlling <i>demand</i> | As required | <i>Market manual</i> s available on the <i>IESO</i> website | Market Manual 7.1: <i>IESO-Controlled</i> <i>Grid</i> Operating Procedures | Ch. 5, Sec. 10.3.6 |
| 13. | Market participants | Specifications regarding exclusions to load management activities undertaken for the purpose of shedding load during under- frequency conditions | As required | <i>Market manuals,</i> available on the <i>IESO</i> website | Market Manual 7.1: <i>IESO-Controlled Grid</i> Operating Procedures | Ch. 5, Sec. 10.4.11 |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|--|---|--|--|--|-----------------------------|
| 14. | Distributors and Connected Wholesale Customers subject to automatic under- frequency load shedding | Specification for automatic under- frequency load shedding discrete MW blocks: number, location, size, associated low frequency settings of these blocks | Annually, by week 24 of calendar year | <i>Market Manuals,</i> available on the <i>IESO</i> website | Market Manual 7.1: <i>IESO-Controlled Grid</i> Operating Procedures Market Manual 7.4: <i>IESO-Controlled Grid</i> Policies. | Ch. 5, Sec. 10.4.7 |
| 15. | Minister of Energy, Northern Development & Mines | Ontario electricity emergency plan and emergency preparedness plan for major market participants – filing with Minister (see subsection 39(1) of the Electricity Act, 1998) | As required | IESO website | <u>Emergency Preparedness link on the</u> <u>IESO website</u> | Ch. 5, Sec. 11.2.2 |
| 16. | Minister of Energy, Northern Development & Mines | Ontario Power System Restoration Plan – filing with Minister | As required | IESO website | Market Manual 7.8: Ontario Power System Restoration Plan | Ch. 5, Sec. 11.3.4 |
| 17. | Market participants | Security limits for all facilities that are part of IESO-controlled grid | Ongoing, updates as changes occur | Upon request of authorized market participants, subject to confidentiality provisions. | System Control Orders <i>IESO</i> Summary of Limits and Transfer Capability | Ch. 5, Sec. 5.1.2.2 |
| 18. | Market participants | Criteria and margins for developing <i>security limits</i> , and a process for reviewing and revising such criteria and margins | Ongoing, updates as criteria changes | IESO website | Market Manual 7.4: IESO-Controlled Grid Policies | Ch. 5, Sec. 5.1.2.3 |
| 19. | Market participants | Transmission transfer capabilities | Ongoing, updates as changes occur | By email. <i>IESO</i> website <u>NERC website</u> <u>NPCC website</u> | <i>Reliability</i> Assessments and Regional/interregional Studies, available on <i>NERC</i> and <i>NPCC</i> websites Reliability Outlooks on <i>IESO</i> website | Ch. 5, Sec. 5.2.1 and 5.2.2 |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|---|--|---|--|-----------------------|
| 20. | Market participant | Demand Forecast Methodology | Ongoing, updated as changes in methodology occur | IESO website | Market Manual 7.2: Near Term Assessments and Reports (Appendix B) Market Manual 2.11: Reliability Outlook and Related Information Requirements Market Manual 2.8: Reliability Assessments Information Requirements | Ch. 5, Sec. 7.1.3 |
| 21. | Market participants | Advance security and adequacy assessments of IESO-controlled grid | For the next 34 days: Refer to reference document for schedule Quarterly: For at least the next 18 months Annually: Exceeding the 18- month timeframe | Market Manuals, Quarterly and Annual assessments, outlooks available on the IESO website Security and adequacy assessments available on website | Daily and weekly assessments: Market Manual 7.2: Near Term Assessments and Reports Monthly assessments: Market Manual 2.11: Reliability Outlook and Related Information Requirements Annual assessments: Market Manual 2.8: Reliability Assessments Information Requirements | Ch. 5, Sec. 7.3 |
| 22. | Market participants | <i>Demand</i> forecasts for Ontario or parts thereof | For the next 34 days: Refer to reference document for schedule Quarterly: For the next 18 months Annually: Exceeding the 18- month timeframe | Market Manuals, Quarterly and Annual assessments available at the IESO website Adequacy assessments available on website | Daily and weekly assessments: Market Manual 7.2: Near Term Assessments and Reports Monthly assessments: Market Manual 2.11: Reliability Outlook and Related Information Requirements Annual assessments: Market Manual 2.8: Reliability Assessments Information Requirements | Ch. 5, Sec. 7.1.1 |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|---|---|--|---|-----------------------|
| 23. | Market participants | IESO-controlled grid emergency operating state anticipated or declared | As required; promptly | Advisory notice, or telephone call if required | List of <i>Emergency Operating State</i> Control Actions (EOSCA) as per Market Manual 7.1: IESO-Controlled Grid Operating Procedures | Ch. 5, Sec. 2.3.3 |
| 24. | Market Participants | Issue NERC Energy Emergency Alerts | As required | Posted on <i>NERC</i> public website Advisory notice | List of Emergency Operating State Control Actions (EOSCA) as per Market Manual 7.1: IESO-Controlled Grid Operating Procedures. NERC Standard EOP-002 Attachment 1. | |
| 25. | Market participants | IESO-controlled grid high-risk operating state anticipated or declared | As required; promptly | Advisory notice, or telephone call if required | Market Manual 7.1: <i>IESO-Controlled</i> <i>Grid</i> Operating Procedures Market Manual 7.3: Outage Management | Ch. 5, Sec. 2.4.3 |
| 26. | Market participants | <i>10-minute Operating Reserve</i> requirements for next day | Refer to reference document for schedule | Adequacy Report | Market Manual 7.2: Near Term Assessments and Reports | Ch. 5, Sec. 4.5.11 |
| 27. | Market participants | Black Start required amounts and location | Before obtaining black start capability service | Contracts | Market Manual 7.8: Ontario Power System Restoration Plan | Ch. 5, Sec. 4.7.2 |
| 28. | Market participants | Conditions on IESO-controlled grid that may require demand reductions by non-dispatchable load | As required, promptly | Advisory notice SCOs upon request of authorized <i>Market</i> <i>Participants,</i> subject to confidentiality provisions | Market Manual 7.1: IESO-Controlled Grid Operating Procedures | Ch. 5, Sec. 10.1.2 |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|--|--|--|--|---|
| 29. | Market participants | Warning of request to reduce <i>demand</i> through voltage reductions or interruptions | By 16:00 of the previous day (whenever possible) | Advisory notice SCOs upon request of authorized market participants, subject to confidentiality provisions | Market Manual 7.1: IESO-Controlled Grid Operating Procedures List of <i>Emergency Operating State</i> Control Actions (EOSCA) as per Market Manual 7.1: <i>IESO-Controlled</i> <i>Grid</i> Operating Procedures | Ch. 5, Sec. 10.3.2 |
| 30. | Transmitters | Conditions on the IESO-controlled grid after load shedding | Immediately after loads have been shed | Advisory notice | Market Manual 7.1: <i>IESO-Controlled</i> <i>Grid</i> Operating Procedures | Ch. 5, Sec. 10.4.5 |
| 31. | Market Participants | Issuance of a System Advisory for under- <i>generation</i> via an advisory notice | Two days prior to <i>dispatch day</i> ; One day prior to <i>dispatch day;</i> Any time thereafter if condition is present | Advisory notice | List of Emergency Operating State Control Actions (EOSCA) as per Market Manual 7.1: IESO-Controlled Grid Operating Procedures Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets, Section 2 and Appendix B. | Ch. 7, Sec. 12.1.1, 12.1.3.2, and 12.1.3.3 |
| 32. | Market participants | Pre-dispatch schedule- reliability related information: total system load and losses, projected hourly energy shortfalls, operating reserve requirements and shortfalls, reliability must-run resources and security constraints | As required under relevant market rules and market manual Initial pre-dispatch schedule by 12:00 EST of each pre- dispatch day | Online IESO <i>Dispatch</i> Workstation Adequacy Report, Transmission Facility Outage Limits Report, and advisory notices | Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets (Section 2 and Appendix D) Market Manual 4.3 Real-Time Scheduling of the Physical Markets | Ch. 7, Sec. 5.5 (5.5.3.1 to 5.5.3.8) |

| Item No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|---------------------|---|--|--|--|--|
| 33. | Market participants | Real-Time schedule- reliability related information: total system load and losses, area operating reserve requirements and shortfalls, list of network and security constraints affecting real- time schedule | As required under relevant market rules and market manual Within five minute period after each dispatch interval for operating reserve, and for other items: within one hour after end of each dispatch hour | Online IESO <i>Dispatch</i> Workstation | Market Manual 4.3: <i>Real-Time</i> Scheduling of the <i>Physical Markets</i> | Ch. 7, Sec. 6.5 (6.5.3.1, 6.5.3.2, 6.5.3.6, and 6.5.3.7) |
| 34. | Market participants | Real-Time dispatch – reliability related information: total load met, transmission capacity, outages of transmission facilities, total operating reserve scheduled and total energy called from such operating reserve | As required under relevant market rules and market manual Within one hour after each dispatch hour | <i>Dispatch</i> Workstation | Market Manual 4.3: <i>Real-Time</i> Scheduling of the <i>Physical Markets</i> | Ch. 7, Sec. 7.8 (7.8.1.1 to 7.8.1.4) |
| 35. | Market participants | To provide to all <i>market</i> <i>participants</i> , the OEB and relevant government authorities, a preliminary and final report (to <i>market participants</i> and the public) related to market suspension and all related steps and actions taken by the <i>IESO</i> | Within 10 <i>business</i> <i>days</i> following the resumption of normal market operations Final report as soon as practicable | By electronic or hard copy to market participants IESO website | Market Manual 4.5: Market Suspension and Resumption | Ch. 7, Sec. 13.7.3 and 13.7.4 |
| 36. | Market participants | Estimate of aggregate load curtailed following return to a normal operating state | As soon as practicable | Online IESO Dispatch Workstation | Market Manual 7.1: <i>IESO-Controlled</i> <i>Grid</i> Operating Procedures | Ch. 5, Sec. 10.3.7 |

| ltem No. | Information To | Information Description | Frequency / Timing | Means of Provision | Reference Document | Market Rule Reference |
|-------------|--|---|-------------------------|---|---|-----------------------------|
| 37. | Market Participants (dispatchable generation facilities) | Real-time Generation Cost Guarantee (RT-GCG) – expected start time, run time, spare generation amount | Hourly basis | Online IESO <i>Dispatch</i> Workstation | Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets Market Manual 4.3: Real-Time Scheduling of the Physical Markets Market Manual 4.6: Real-time Generation Cost Guarantee Program | Ch. 7, Sec. 2.2B, 5.7, 6.3A |
| 38. | Market Participants | Acceptance/Approval of planned Replacement <i>Energy</i> to Support <i>Planned Outages</i> (boundary entity, time period, amount etc.) | Promptly | Online IESO Dispatch Workstation | | Ch. 5, Sec. 6.3.6 - 6.3.10 |
| 39. | Market Participants | RMR (Reliability Must Run) requirements to generators, electricity storage participants, and dispatchable loads | As soon as possible | Telephone call / Electronically | | Ch. 5, Sec. 4.8 |
| 40. | Market Participants | Information/communications during Planned Outage | As required | Telephone call Outage Management System Outage Form | | Ch. 5, Sec. 6.1.7 |
| 41. | Market Participants | To publish the times and quantities of voltage reductions and reductions in thirty minute <i>operating reserve</i> upon scheduling of these sources of reserves | As and when required | IESO website Online IESO Dispatch Workstation | Market Manual 4.3: Real-Time Scheduling of the <i>Physical Market</i> Market Manual 4.2: <i>Dispatch Data</i> in the <i>Real-Time Energy</i> and <i>Operating Reserve Markets</i> | Ch. 5, Sec. 4.5.6A |

- End of Section -

3. Reliability Information Required by the IESO

| Item | Information | | | Provis | ion | | |
|------|-------------------------------|---|---------------------------------------|---------------------------|---|---|---|
| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 1. | <i>Market</i> participants | Complying with <i>reliability</i> related information requirements Results of compliance monitoring and performance testing The <i>IESO</i> is authorized by the <i>Electricity Act</i> (1988) to administer Ontario's <i>reliability</i> compliance program including the specific <i>IESO reliability</i> related information requirements, set forth in the <i>market rules</i> and as listed in this "Market Manual 11.3: <i>Reliability</i> Information Catalogue". The <i>market participants</i> may be required to provide the <i>reliability</i> compliance related information and/or other associated data to the <i>IESO</i> (as per <i>market rules</i>), where applicable. | Upon request of the <i>IESO</i> | Specified upon request | Hard copy to the IESO, or electronic files via the ORCP (Ontario Reliability Compliance Program) mailbox at <u>ORCP@ieso.ca</u> , or the Reliability Compliance Tool (RCT) in Online IESO. To facilitate market participants in the submission of reliability compliance related information, where applicable, a dedicated email link to the Reliability Compliance Program has been established that would be utilized for emailing the information to the IESO via <u>ORCP@ieso.ca</u> . Hard or electronic copy to the ORCP mailbox (<u>ORCP@ieso.ca</u>). | Market Manual 11.0: Reliability Compliance Monitoring and Enforcement Overview Market Manual 11.2: <i>Ontario Reliability</i> <i>Compliance Program</i> | Ch. 5, Sec. 14 and 3 Ch. 4, Sec 1 to 5 |

Table 3-1: Reliability Information Required by the IESO

| Item | Information | Information Description | | Provis | ion | | Market Rule Reference |
|------|---|--|---|--|--|--|--|
| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 2. | Market participants | Network Impact Information for proposed new or modified connection to <i>IESO-controlled grid</i> | For each System Impact Assessment (SIA) study | As soon as the SIA is finalized | As per Connection Assessment and Approval process | Market Manual 1.4: Connection Assessment and Approval | General: Ch. 4, Sec. 6.1.6 Generators and Electricity Storage Participants: Ch. 4, Appendix 4.6 Connected Wholesale Customers and Distributors Connected to the IESO- Controlled Grid: Ch. 4, Appendix 4.7 Registered Facilities providing Ancillary Services: Ch. 4, Appendix 4.8 Transmitters: Ch. 4, Appendix 4.9 |
| 3. | Market participants | All connection-related reliability information regarding all information for a facility to be represented in energy and market systems | As part of <i>facility</i> registration | Required to complete commissioning | Online IESO form supporting document (PDF) Market Registration <u>Market.Registration@ieso.ca</u> | Facility Registration Help File Market Manual 1.5: Market Registration Procedures | Ch. 7, Sec. 2.2 Ch. 4, Appendix 4.5A to 4.9 |
| 4. | Generator, Electricity Storage Participant, and Connected Wholesale Customer (Load) | <i>Connection Agreement</i> with <i>transmitter</i> or <i>distributor</i> for new or modified <i>connection facility</i> | <i>Facility</i> Registration | | Market Registration Market.Registration@ieso.ca | OEB Transmission and Distribution System Codes Facility Registration Help File Market Manual 1.5: Market Registration Procedures | Ch. 4, Sec. 4 and 6 Ch. 7, Sec. 2.2.6.3 |

| Item | Information | | | Provis | ion | | |
|------|--------------------------------------|---|-----------------------|------------------------------------|---|--|---|
| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 5. | Transmitters | Detailed procedures for processing connection requests; and Requirements that must be met for connection to its transmission system or for the modification of an existing connection to such system | For each SIA study | As soon as the SIA is finalized | OEB Transmission Code | OEB Transmission and Distribution System Codes Market Manual 1.4: Connection Assessment and Approval | Ch. 4, Sec. 6.1 |
| 6. | <i>Market</i> <i>participants</i> | IESO Monitoring Requirements | Contin | ual Basis | Control and Monitoring Equipment through <i>real-</i> <i>time</i> network | N/A | General: Ch. 4, Sec. 7.3, 7.4, 7.5, 7.6 Generators: Ch. 2, Appendix 2.2 Ch. 4, Appendix 4.15 and 4.19 Electricity Storage Participants: Ch. 2, Appendix 2.2 Ch. 4, Appendix 4.24 and 4.25 Transmitters: Ch. 2, Appendix 2.2 Ch. 4, Appendix 4.26, 4.20, and 4.21 Connected Wholesale Customers and Distributors Connected to the IESO- Controlled Grid: Ch. 2, Appendix 2.2 Ch. 4, Appendix 2.2 Ch. 4, Appendix 2.2 Ch. 4, Appendix 4.17 and 4.22 Embedded Load Customers: Ch. 2, Appendix 2.2 Ch. 4, Appendix 2.2 |

| Item | Information From | Information Description | | Provis | sion | | Market Rule Reference |
|------|-----------------------------|---|---|--|--|---|---|
| No. | | | Periodicity | Deadline | Format/Means of Provision | Reference Document | |
| 7. | Market participants | Emergency Preparedness Plan and such other emergency preparedness-related information, including the manner in which the market participant will minimize the cutting and expedite the restoration of critical loads and priority loads during short and prolonged emergencies. | At the time of registration and reviewed at least annually thereafter by the market participant. Information to be submitted to the IESO as required. | | Market participant Authorization | Market Manual 7.10: Ontario Electricity Emergency Plan | Ch. 5, Sec. 11.2.3, 11.2.4, and 11.2.5 |
| 8. | Restoration participants | A restoration participant attachment and such other system restoration-related information | At the time of registration and updated at least annually thereafter by the <i>market</i> <i>participant</i> . Information to be submitted to the <i>IESO</i> as required. | | Market participant Authorization | Market Manual 7.8: <i>Ontario</i> <i>Power System Restoration</i> <i>Plan</i> | Ch. 5, Sec. 11.3.5, 11.3.6, and 11.3.7 |
| 9. | Market participants | Emergency Preparedness Plan and/or Restoration Participant Attachment audit and re-file | As and when directed by the IESO | | Hard or electronic copy to the Manager, IESO <i>'Emergency</i> Preparedness Department' at: <u>Emergency.Preparedness@ieso.</u> <u>ca</u> | Market Manual 7.10: Ontario Electricity Emergency Plan | Ch. 5, Sec. 11.4.4 |
| 10. | SPS Owners | SPS Equipment maintenance for previous 12 months | Every 12 months | December 1 st | Hard or electronic copy to the Ontario Reliability Compliance (ORCP) team at <u>ORCP@ieso.ca</u> | NERC Standard PRC-017 (available on NERC website) | Ch. 5, Sec. 14.1.3.3 |
| 11. | SPS Owners | Operating statistics, performance information related to SPS | Annually, or By request by the IESO | December 31 st As specified by the IESO | Hard or electronic copy to the ORCP team at the IESO, <u>ORCP@ieso.ca</u> | NERC Standard PRC- 016 and PRC-017 (available on NERC website) | Ch. 5, Sec. 8.3.1.2 and 8.3.1.3 |
| 12. | SPS Owners | Request and evaluation of request from affected market participant for permanent exemption from connection to SPS | As required | | Exemption Application Form on the IESO website | N/A | Ch. 5, Sec. 8.3.1.4 |

| Item | Information | Information Description | | Provis | ion | Reference Document | Market Rule Reference |
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| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Warket Rule Reference |
| 13. | Market participants | Summary of demand control actions for previous 12 months | Annually, or By request by the IESO | December 31 st As specified by the IESO | Hard or electronic copy to the ORCP team at the IESO, <u>ORCP@ieso.ca</u> , | Information Submittal Form at IESO website when available. Market Manual 7.1: IESO- Controlled Grid Operating Procedures Market Manual 7.3: Outage Management The established procedures/principles in above documents and market rules to be used as guidelines, as applicable). | Ch. 5, Sec. 14.1.3.5 and 10.3 |
| 14. | Market participants | <i>Reliability</i> related performance measures for <i>transmission</i> <i>facilities</i> and connections to <i>IESO-</i> <i>controlled grid</i> | Annually, or By request by the IESO | December 31 st As specified by the IESO | Hard copy to the IESO, or electronic files via the ORCP mailbox at <u>ORCP@ieso.ca</u> , or the Reliability Compliance Tool (RCT) in Online IESO or as otherwise specified by the IESO. | Forms on the IESO website. IESO –Transmitter Operating Agreement with each <i>transmitter</i> . | Ch. 5, Sec. 14.1.3.7 and 5.4 |
| 15. | Market participants | Summary of automatic under- frequency load shedding activities for previous 12 months | Annually, or By request by the IESO | December 31 st As specified by the IESO | Electronic files via the ORCP mailbox at <u>ORCP@ieso.ca.</u> | Operating Agreements | Ch. 5, Sec. 14.1.3.6 |
| 16. | Market participants | Planned change to a setting on a fixed-tap transformer | As required | Within one week prior to scheduled change or within one business day of implementation of change | Outage Management System, Electronic copy to the IESO at: <u>Market.Registration@ieso.ca</u> | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 14.1.3.1 |

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| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 17. | Market participants Parties to connection agreement | Notice of equipment testing that requires change to normal operation of that equipment | As required | As per outage submission timelines outlined in MM 7.3 | Outage Management System | Market Manual 7.3: Outage Management | Ch. 4, Sec. 5.1.5 |
| 18. | Market participants | Report describing proposed or emergency modifications to primary protection relay | As required | Within one week of date for IESO approval of proposed modification or within one week of unplanned, emergency modifications | Outage Management System, Outage Form Electronic copy to the <i>IESO</i> at: <u>Market.Registration@ieso.ca</u> | Market Manual 7.3: Outage Management | Ch. 5, Sec. 14.1.3.4 |
| 19. | Distributor and Connected Wholesale Customer | Estimate of <i>demand</i> reduction that has occurred as a result of disconnecting under-frequency <i>demand</i> | Within two weeks following an incident of under-frequency load shedding | | Hard or electronic copy to ORCP team at the IESO, ORCP@ieso.ca | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 10.4.9 |
| 20. | Generators and Electricity Storage Participants | Frequency excursion ≥ 60.2 Hz or ≤ 59.8 Hz Restoration action to protect equipment, personnel or public safety, environment | As required | As soon as possible | By telephone to IESO Shift Operating Staff | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 10.5.2, 10.5.3 Electricity Storage: Ch. 5, Sec 10.5A.2 and 10.5A.3 |
| 21a. | Generators and Electricity Storage Participants (embedded and non- embedded) | If facilities cannot operate in accordance with agreed schedule | As changes occur | As soon as possible | Telephone call Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 3.6.1.4 Electricity Storage: Chapter 5, Section 3.8.1 |

| Item | Information | | | Provis | sion | | |
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| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 21b. | Generators and Electricity Storage Participants (embedded and non- embedded) | If facilities cannot operate in accordance with agreed schedule | As changes occur, promptly | As soon as possible | Changes in <i>bids/offers</i> | Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets | Ch. 5, Sec. 3.6.1.4 Electricity Storage: Ch. 5, Sec 3.8.1.4 |
| 22. | Generators and Electricity Storage Participants | Any change or anticipated change in the status of any generation facility, <i>electricity storage facility</i> , or related equipment that is under the dispatch control of the IESO, and could have a material impact on the IESO-controlled grid or the operation of IESO-administered markets (list of changes to be reported in Market Rules Chapter 5, Section 3.6.1.3) | As unavailabilities occur | As soon as possible | Telephone call Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 3.6.1.3 Electricity Storage: Ch. 5, Sec 3.8.1.3 |
| 23. | Market participants | <i>Emergency</i> removal from service of equipment or <i>facilities</i> | As removals occur | As soon as possible | Telephone call Outage Management System Outage Form | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.1.6 |
| 24. | Market participants | Notice of forced outage, Nature and cause of forced outage | As outages occur | As soon as possible, and in any event ≤ 48 hours after outage | Telephone call Outage Management System Incident Report | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.3.4 and 6.3.5 |
| 25. | Market participants | Action taken to control <i>demand</i> (list of actions and information to be reported listed in Market Rules Chapter 5, Sections 10.2.2, 10.2.3 and 10.2.4) | As required | Prior notification by 10:00 EST day prior | Through Outage Management System prior, Telephone call to advise of actions | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 10.2.1, 10.2.2, 10.2.3, and 10.2.4 |

| Item | Information | | | Provis | ion | | Mandath Dula Defenses |
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| No. | From | Information Description | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 26. | Market participants | Equipment test information (see Market Rules Chapter 5, Section 6.6.2 for list) | As tests occur | As per outage submission timelines outlined in MM 7.3 | Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.6 |
| 27. | Distributor or Connected Wholesale Customer | Change or anticipated change in its facilities or equipment that could have a material impact on operation of IESO-controlled grid or IESO-administered markets (Connected wholesale customers) Change or anticipated change in capability of distribution facilities that could have a material impact on operation of IESO-controlled grid or IESO-administered markets (Distributors) | As changes occur | As soon as possible, and as per outage submission timelines outlined in MM 7.3 | Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 3.5.1.2 and 3.7.1.2 |
| 28. | Distributors | Event in service territory that could have material effect on the <i>reliability</i> of the <i>IESO-controlled</i> grid | As events occur | As soon as possible | By telephone to IESO System Operations staff | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 3.7.1.3 |
| 29a. | Market participants | Submit <i>planned outage</i> in order to obtain IESO approval of <i>outage</i> ; provide time required to return <i>facilities</i> or equipment to service. | As required | As per outage submission timelines outlined in MM 7.3 | Telephone call Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.4.1 |
| 29b. | Market participants | Notice and request of extension to originally approved <i>planned</i> outage | As extensions occur | As soon as possible | Telephone call Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.4.7 |
| 30. | Market participants | Information and reports to facilitate preparation of disturbance report by IESO for standards authority | As required | Within 48 hours and follow-ups as required | Initially be telephone Hard or electronic copy to the ORCP team at the IESO, <u>ORCP@ieso.ca</u> | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 14.1.5 |

| Item | Information | Information Description | Provision | | | | |
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| No. | From | | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 31. | Transmitters | Frequency values for stations, when under-frequency alarm or indication of declining frequency and voltage Amount and location of load shed and conditions on <i>IESO-controlled</i> <i>grid</i> | As required | As soon as possible after occurrence | By telephone to IESO System Operations staff | Market Manual 7.1: IESO- Controlled Grid Operating Procedures | Ch. 5, Sec. 10.4.2 and 10.4.4 |
| 32. | Transmitters and Distributors | Annual total forecast peak demand by connection point Annual total forecast peak demand that can be disconnected within various time scales, by connection point | Annually | By week 24 of calendar year | Hard or electronic copy to the ORCP team, <u>ORCP@ieso.ca</u> | Market Manual 7.1: <i>IESO-Controlled Grid</i> Operating Procedures Market Manual 7.3: Outage Management (The established procedures/principles in above documents and Market Rules Section 10.2, to be used as guidelines for submission) | Ch. 5, Sec. 10.2.5.3 and 10.2.5.4 |
| 33. | Transmitters, Generators, and Electricity Storage Participants | Outage plans for facilities forming part of the IESO-controlled grid Provide outage information for IESO to review for the purpose of the Reliability Outlook assessments | As required | As per the submission timelines outlined in Market Rules Chapter 5, Sections 6.2.4.1 and 6.2.4.2 | Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.2.4 |
| 34. | Market participants | Schedule of all <i>planned outages,</i> regardless of duration | As required | As per outage submission timelines outlined in MM 7.3 | Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.3.1 |

| Item | Information | Information Description | Provision | | | Defense Desument | |
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| No. | From | | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 35. | Generators and Electricity Storage Participants | Data for IESO reliability assessments and Reliability Outlook. Refer to reference document for specific data requirements | Annually Refer to reference document for schedule | April 1 of each year | Electronic copy to IESO at: <u>Forecasts.Assessments@ieso.ca</u> | Market Manual 2.8: Reliability Assessments Information Requirements | Ch. 5, Sec. 7.2 and 7.5 |
| 36. | Transmitters | Data for <i>IESO</i> Reliability Outlook report. Refer to reference document for specific data requirements | Quarterly; refer to reference documents for schedule | January 1, April 1, July 1, October 1 of each year | Electronic copy to IESO at: Forecasts.Assessments@ieso.ca | Market Manual 2.8: Reliability Assessments Information Requirements Market Manual 2.11: Reliability Outlook and Related Information Requirements | Ch. 5, Sec. 7.2 and 7.5 |
| 37. | Generators and energy limited resources | Data for <i>IESO</i> 34-day <i>adequacy</i> assessments. Refer to reference document for specific data requirements | Weekly | EOB Everyday Tuesday | Electronic copy to <i>IESO</i> via Online IESO | Market Manual 7.2: Near- Term Assessments and Reports | Ch. 5, Sec. 7.5 |
| 38. | Connected Wholesale Customers | Planned outage, closure, test or similar event for next 4 trading weeks that results in change in demand of \geq 20 MW Planned outage closure, test or similar event for next 4 trading weeks of a facility specifically designated by the IESO | Every second trading week | By 2:00 p.m. on last trading day of every second trading week | Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 3.5.1.5 |
| 39. | Market participants | Data required to satisfy request by standards authority | As specified by the IESO | | Hard copy to the IESO, or electronic files via the ORCP mailbox at <u>ORCP@ieso.ca</u> , or the Reliability Compliance Tool (RCT) in Online IESO, or as otherwise specified by the IESO. | Market Manual 11.0: Reliability Compliance Monitoring and Enforcement Overview Market Manual 11.2: Ontario Reliability Compliance Program | Ch. 5, Sec. 14.1.4 |

| Item | Information From | Information Description | Provision | | | | |
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| No. | | | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 40. | Transmitter | Transmission system reliability related information required for scheduling and dispatching in real time | As frequently as necessary in accordance with the requirements of Market Rules Chapter 7, Section 3.9 | 130 minutes prior to the <i>dispatch</i> hour | Real Time Network, Outage Management System, and Market Registration, as applicable | Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets | Ch. 7, Section 3.9 Ch. 7, Appendix 7.4 |
| 41. | Market Participants (dispatchable generation facilities) | Real-time Generation Cost Guarantee (RT-GCG) – start time, minimum run time, minimum load level | As required | During registration and before each activation | Online IESO <i>Dispatch</i> workstation | Market Manual 4.2: Submission of Dispatch Data in the Real-Time Energy and Operating Reserve Markets Market Manual 4.3 Real- Time Scheduling of the Physical Markets Market Manual 4.6: Real- time Generation Cost Guarantee Program | Ch. 7, Sec. 2.2B, 5.7, and 6.3A |
| 42. | Market Participants | Replacement <i>Energy</i> to support <i>planned outages</i> (<i>boundary entity</i> , time period, amount, etc.) | As required | 16:00 EST three business days prior to the commencement of the shortfall week(s) | Online IESO <i>Dispatch</i> workstation Outage Management System | Market Manual 7.3: Outage Management | Ch. 5, Sec. 6.3.6 to 6.3.10 |
| 43. | Market Participants | RMR (<i>Reliability Must Run</i>) amounts, locations, time, etc. | As required | As soon as possible | Telephone call Electronic copy | Market Manual 7.3: Outage Management | Ch. 5, Sec. 4.8 |
| 44. | Market Participants | Information regarding market operations to assist the <i>IESO</i> in analyzing the suspension | As required | Immediately prior to and during the suspension period | Telephone call By electronic or hard copy to Manager, System Operations at <i>IESO</i> | Market Manual 4.5: Market Suspension and Resumption | Ch. 7, Sec. 13.7.2 |

| Item | Information From | Information Description | Provision | | | Defenses Desiment | Marilian Dula Deferrence |
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| No. | | | Periodicity | Deadline | Format/Means of Provision | Reference Document | Market Rule Reference |
| 45. | Market Participants | Information and <i>Request for</i> Segregation for approval to operate its registered facility in a segregated mode of operation | As required | As per the timelines outlined in Market Rules Chapter 7, Appendix 7.7, Section 1.3 | Telephone call Outage Management System | Market Manual 7.3: Outage Management | Ch. 7, Appendix 7.7, Section 1.3 |
| 46. | Market Participants | Information/communications during <i>planned outage</i> | As required | As soon as possible | Telephone call Outage Management System | | Ch. 5, Sec. 6.1.7 |
| 47. | External Reliability Coordinators (RCs) | Network data including, generators, transformers, lines, loads, shunts, breakers, switches, connectivity information, as well as any other equipment supplementary data | Upon request of the IESO (subject to model build frequency of data provider) | Within the first week following the deployment of a production model release | NEMF (North East Modeling Format) via SharePoint | MISO-IESO Operating Instruction: MISO-IESO-C05-R2 MISO-IESO EMS Data Exchange: MISO-IESO C0X-R0 | |
| 48. | External RCs | Real-time telemetry | Continual basis | Next available ICCP build | EIDSN's Elnet, ICCP | MISO-IESO Operating Instruction: MISO-IESO-C05-R2 MISO-IESO EMS Data Exchange: MISO-IESO C0X-R0 EIDSN: Node Responsibilities | |

– End of Section –

References

| Document ID | Document Name |
|----------------------|---|
| | NERC Standards |
| | NPCC Criteria |
| | Reliability Assessments and Regional/Interregional Studies |
| MDP_RUL_0002 | Market Rules |
| MDP_PRO_0048 | Market Manual 1.4: Connection Assessment and Approval |
| PRO-408 | Market Manual 1.5: Market Registration Procedures |
| <u>MDP_PRO_0024</u> | Market Manual 2.8: Reliability Assessments Information Requirements |
| IMP_PRO_0024 | Market Manual 2.11: Reliability Outlook and Related Information Requirements |
| <u>MDP_PRO_0027</u> | Market Manual 4.2: Submission of <i>Dispatch Data</i> in the Real-Time <i>Energy</i> and <i>Operating Reserve</i> Markets |
| <u>IMP_PRO_0034</u> | Market Manual 4.3 Real-Time Scheduling of the Physical Markets |
| <u>MDP_PRO_0030</u> | Market Manual 4.5: Market Suspension and Resumption |
| PRO-324 | Market Manual 4.6: Real-time Generation Cost Guarantee Program |
| <u>MDP_PRO_0040</u> | Market Manual 7.1: System Operating Procedures |
| IMP_PRO_0033 | Market Manual 7.2: Near Term Assessments and Reports |
| <u>IMP_PRO_0035</u> | Market Manual 7.3: Outage Management |
| IMP_POL_0002 | Market Manual 7.4: IESO-Controlled Grid Operating Policies |
| IMO_PLAN_0001 | Market Manual 7.8: Ontario Power System Restoration Plan |
| IMO_PLAN_0002 | Market Manual 7.10: Ontario Electricity Emergency Plan |
| <u>MAN-103</u> | Market Manual 11.0: Reliability Compliance Monitoring and Enforcement Overview |
| <u>IESO_PRO_0874</u> | Market Manual 11.2: Ontario Reliability Compliance Program |

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