

IESO PERFORMANCE TESTING

Demand Response Working Group

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Overview

- Background
- OR Testing
- Capacity Testing for Contracted Facilities
- Testing for Unit Readiness
- Testing of Ancillary Services
- Monitoring of Compliance to Dispatch Instructions

Background

- IESO generally has the ability to test resources' capability of meeting their obligations procured via markets or contracts
- The nature of the testing protocols depends on how frequently resources are activated to provide the service:
 - If the resource is activated regularly, testing may be more focused on addressing performance issues
 - If the resource is activated infrequently, testing is performed to verify that the IESO can rely on the capacity when needed
- Non-performance implications vary depending on the nature of the obligation (e.g. contract vs market rule)

Operating Reserve (OR) Testing

- As per *Market Rules Ch. 5, Sec. 4.9 & 4.10*, the IESO may conduct unannounced tests of any market participant's (MP) facility registered to provide OR and currently scheduled to provide OR
- IESO tests OR providers whose performance during in market activation has been less than satisfactory as well as OR providers that have not been activated for a period of time
- A test is deemed pass if the OR provider meets its OR dispatch target within the prescribed time depending on the OR category (10 minute or 30 minute reserve)
- In the event the OR provider fails a test, the IESO may take the following actions:
 - Direct OR provider to remove OR offers and schedule re-test; and/or
 - Suspend the provider from participating in the OR market (*Ch. 7, Sec 7.5.9*)

Capacity Testing for Contracted Facilities

- Facilities are tested prior to commercial operation.
 - Contract counterparties must demonstrate its Contract Capacity by generating electricity for four continuous hours at defined delivery points.
 - Performance test to certify commercial operation.
 - A facility that fails performance test will require retesting, or possibly facility modifications.
 - Financial penalties can arise if the Commercial Operation Date is delayed due to performance test failure.
- Capacity Check Test after commercial operation
 - Facilities can be tested up to two times per Contract Year.
 - In the event of failure, the contract counterparties may be subject to further testing, temporary reduction in Contract Capacity or default risk, depending on the test results.

Testing for Unit Readiness

- To ensure readiness of dispatchable, non-quick start generation facilities are ready for peak season, the IESO tests any such facilities that have not been started in the past 31 days or greater, or have history of failing to start when scheduled
- Facilities selected for testing are provided notification ahead of the test day
- Facilities are expected to reach their technical minimum loading point for their minimum run time to pass the test
 - Facilities that fail to comply are subject to re-testing
 - At the IESO's discretion, repeat failure by a facility can be referred to MACD for non-compliance

Testing of Ancillary Services

- As per *market rule Ch. 5, Sec 4.9.1* the IESO can test facilities providing ancillary service
- Ancillary services include Black Start, Reactive Support and Voltage Control (RSVC), and Regulation
- IESO testing schedule:
 - Black Start providing facilities are tested annually
 - RSVC and Regulation providing facilities are tested if they have not demonstrated their contracted capacity through real-time dispatch
- Facilities that fail to comply with the testing requirement will be subjected to financial penalties and sanctions as per their contract or applicable market rules

Monitoring of Compliance to Dispatch Instructions

- As per *market rules Ch. 7, Sec 7.5*, market participants (MP) must follow dispatch instruction (within an applicable deadband)
- MPs are obligated under the market rules to notify IESO when its facility will materially depart from its dispatch instruction
- If facilities fail to follow dispatch instructions, IESO can report to MACD for non-compliance

Appendix

- **Black Start Facilities:** Black start facilities help system reliability by being able to restart their generation facility with no outside source of power
- **Regulation Service:** Regulation service acts to match total system generation to total system load (including transmission losses) and helps correct variations in power system frequency. This service corrects for short-term changes in electricity use that might affect the stability of the power system.
- **Reactive Support and Voltage Control Service:** Reactive support and voltage control service is contracted from generators and allows the IESO to maintain acceptable reactive power and voltage levels on the grid.