ELECTRICITY BUSINESS RULES

Appendix D
Third Party Generator
Dispatch Data Submission

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Part 1   Introduction

1.1   Purpose of Dispatch Data

This Appendix reflects an interim approach to dispatch data in which price quantity pairs are used to indicate generation costs. A future change to use cost per data is anticipated pending a change of the dispatch system.

The purpose of this Appendix is to define the process, documents and forms to be used in relation to the submission and modification of Dispatch Data by Transmission Users who own and schedule a Third Party Generation Facility and the treatment by the SO of Dispatch Data submissions.

Dispatch Data comprises the price and cost information submitted to the SO by the Transmission Users and accepted by the SO, for the use by the SO in settlement with Third Party Generation Facilities in instances when the SO issues a Re-dispatch instruction or Must-Run designation. Re-Dispatch and Must-Run instructions will only be given by the SO after all other resources of the Corporation have been completely dispatched. Note that Dispatch Data submissions do not become Dispatch Data until accepted by the SO.

Note that Dispatch Data is not intended to define the physical operating capabilities and limits of generation facilities. These capabilities and limits are provided to the SO prior to Facility connection and in Outage planning and notification. Dispatch Data should however respect the capabilities and limits of Facilities.

1.2   Applicability

As described above, and for greater certainty in accordance with the Business Rules section 3.3.3, the submission and modification of Dispatch Data is the responsibility of any Transmission User who owns a Third Party generation facility. Generally, this will

include incremental cost estimates including start-up, minimum run costs and incremental production costs for use by the SO in Re-dispatch or Must-Run of such Generating Facilities.

To the extent it deems necessary the SO may request additional information, supporting data or audit data submitted at any time within a year of the Re-dispatch event to which it applies.   The Transmission User shall promptly submit any additional information and or data thus requested, and shall assist the SO in any review or audit.

Part 2   Dispatch Data Requirements and Procedure

2.1   Quantities

2.1.1   All references to energy quantities in this Appendix D refer to the MWh injected into the IES at the relevant Delivery Point in any clock hour.

2.2   Static and Dynamic Dispatch Data

2.2.1   Dispatch Data comprises static Dispatch Data and dynamic Dispatch Data. Standing Dispatch Data includes static Dispatch Data and any dynamic Dispatch Data that is carried over from one day to the next.

2.2.2   Static Dispatch Data is the portion of Dispatch Data that is subject to occasional change only, and is generally dependent on physical characteristics of each Facility or is strictly cost based. Static Dispatch Data shall include, but not be limited to, the following:

a)   start-up costs, expressed in $/start, which would typically comprise the following costs only as they relate to the final two hours immediately prior to synchronization:

   i)   ignition fuel and main fuel costs to bring the Facility from its expected condition two hours prior to synchronization to the condition in which it is ready to be synchronized to the SO-controlled Grid,

   ii)   Cost of electricity required to start up the Facility,

   iii) Variable O&M costs associated with Facility start-up.

Such costs specifically exclude all contributions to fixed costs and profit.

b)   Minimum Run Quantity (MRQ), which shall be the lowest level of output for stable operation of the Generation Facility at the system and ambient conditions then expected to prevail. The MRQ shall generally correspond to the information provided in the Facility registration data unless due to particular changed circumstances.

c)   Minimum Run Time (MRT), which shall be the normal minimum period of operation at no less than the MRQ in order to avoid undue stress and damage to equipment.

d)   Minimum Run Cost (MRC), which is the cost of operating at MRQ, comprising only fuel cost and variable O&M cost.

2.2.3   Dynamic Dispatch Data is the portion of Dispatch Data that relates to the marginal operation of Facilities, and may be modified on a dynamic basis. Dynamic Dispatch Data shall include, but not be limited to, the following:

For each hour of the day, from one to ten P/Q Pairs, such that

- Price $P(1)$ is the incremental price in $ / MWh for each MWh of injection to the SO-controlled Grid in excess of the MRQ but less than or equal to $Q(1)$, in the relevant clock hour.

- Price $P(n)$ is the incremental price in $ / MWh for each MWh of injection to the SO-controlled Grid in excess of $Q(n-1)$ but less than or equal to $Q(n)$, in the relevant clock hour

The following constraints apply:

- $MRQ < Q(1) < Q(2) < \ldots < Q(n_{max}-1) < Q(n_{max})$, where $Q(n_{max})$ is the rated MW output of the Generation Facility.

- $\$0 < P(1) < P(2) < \ldots < P(n_{max}-1) < P(n_{max}) \leq \$1,000$

- $Q(n)$ shall be stated in MW integer values.

- $P(n)$ shall be stated in $ to two places of decimals

2.2.4   Static Dispatch Data shall have the form of standing data, valid for all hours of every day until revised. Dynamic Dispatch Data will be viewed as a 24 hour strip of data to be carried over to the next day in the absence of any new Dispatch Data for that next day.

2.3   Requirements for Dispatch Data for Non-Dispatchable Variable Generators (NDVG)

2.3.1   The Static Dispatch Data required for an NDVG is the as follows:

Start-up costs = $0

Minimum Run Quantity (MRQ) = 0 MW

Minimum Run Time (MRT) = 0 hours

2.3.2   The Dynamic Dispatch Data required for an NDVG is as follows:

Only one P/Q Pair, with P(1) = $0/MWh and Q(1) = rated MW output

A Transmission User for an NDVG may, through its connection of such a Facility, elect the means by which the Dispatch Instruction will be updated as one of the following:

(i)   calculating the total MW output from the Final Hourly Balanced Schedules associated with the Facility,

(ii)   automated forecasting of the MW output by the SO based on telemetry data via the SO's SCADA system in respect of variable factors that affect production.

2.4   Dispatch Data Status and Status Indicators

2.4.1   In view of the carry-forward provisions with respect to Dispatch Data, substantially all Dispatch Data submissions are in effect revisions.

2.4.2   Dispatch Data submissions are subject to:

- Validation to confirm that data entry is complete and conforms to requirements. Dispatch data cannot be submitted until it has completed validation.

- Acceptance for inclusion in the dispatch database. Acceptance is automatic until 11:00 a.m. Atlantic Time of the Day Ahead. Acceptance does not imply acceptance that Dispatch Data satisfy, or are not in conflict with, a Transmission User's obligations under the Business Rules.

2.4.3   When Dispatch Data is accepted in respect of a given Dispatch Day, it replaces the previous submission.

2.4.4   The following status indicators are used to communicate status of a Dispatch Data submission:

- Submitted: submission passed validation and awaiting review by the SO. Previous accepted Dispatch Data remains in effect.

- Submitted by SO: used if the SO enters Dispatch Data on behalf of a Transmission User; the data has not yet been accepted.

- Accepted: submission passed validation and accepted automatically or by SO

- Rejected: submission rejected; previous accepted Dispatch Data remains in effect.

- Modified by SO: used if the SO enters or corrects Dispatch Data on behalf of a Transmission User; the data has been accepted automatically by the SO.

- Standing Data: displayed whenever the accepted Dispatch Data has been carried ahead from a previous date.

In order to remove a Dispatch Data submission, the Transmission User will be required to re-submit zero values. The Dispatch Data for a Facility that is on a Forced Outage or

Planned Outage state does not have to be removed; however, when the Facility becomes available for dispatch by the SO the standing Dispatch Data will be used.

2.5   Submission of Dispatch Data and Revisions to Dispatch Data

2.5.1   Dispatch Data shall be submitted electronically to the SO website.

2.5.2   Dispatch Data in respect of any Dispatch Day shall be submitted no later than 11:00 a.m. Atlantic Time of the Day Ahead. In the event that the SO has received no valid static Dispatch Data by 11:00 a.m. Atlantic Time on the Day Ahead, then the latest previous valid static Dispatch Data shall be brought forward.

2.5.3   A Transmission User may submit revised Dispatch Data prior to 3:00 p.m. Atlantic Time on the Day Ahead, and such revised Dispatch Data shall, if any price or quantity is revised by more than 10%, be subject to review and acceptance or rejection by the SO.

2.5.4   Dispatch Data is required to be a genuine pre-estimate of actual costs and equipment capabilities. The SO may therefore require that a Transmission User provide substantiation of Dispatch Data in respect of any period. Any such Transmission User shall promptly provide such substantiation, and shall resolve any queries to the reasonable satisfaction of the SO.

2.5.5   Only one set of Dispatch Data may exist for any Facility at any one time. The acceptance by the SO of any Dispatch Data for a Facility automatically results in the replacement of the old set by the new set.

2.5.6   A Transmission User for a Third Party Generation Facility may at any time submit to the SO revisions to its Dispatch Data for hours commencing more than 1 full clock hour after the submission of such revisions. The SO shall approve such requests unless the SO determines that such a change would threaten the Reliability of the IES.

2.6   SO Validation of Dispatch Data

2.6.1   The on-line automatic validation of Dispatch Data will be performed as described below. This on-line validation may be carried out on data entry into a field or as part of the pre-submission validation. The pre-submission validation is initiated by the attempted submission of a form, and is carried out before the submission will be permitted.

<div style="background-color:orange; padding:20px; text-align:center;">
View next page for Validation and Description of Static Dispatch Data Fields
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Validation and Description of Static Dispatch Data Fields – Thermal and Other Facilities

Field	Description and Validation	Required/ Optional
Effective Date/Hour	Used to select date/hour for which static dispatch data is to be submitted. The entered date/hour will be validated to ensure it is a valid date/time in prevailing Atlantic time. A submission will not be effective for current or past hours, and valid submission times are limited to today and the next five days.	R
Unit	Used to select the unit for which static dispatch data is to be submitted. The selected unit is validated to ensure that the submitting Market Participant has appropriate rights to be able to submit data for the unit.	R
Min Run Cost	This field is used to input the minimum run cost in Canadian dollars. Validation requires that it be a numeric, non-negative value.	R
Startup Cost	This field is used to input the startup cost in Canadian dollars. Validation requires that it be a numeric, non-negative value.	R
Min Run Quantity	This field is used to input the minimum run quantity in net MW. Validation requires that it be a numeric, non-negative value and be within the physical capability of the unit.	R
Min Run Hours	This field is used to input the minimum run hours. Validation requires that it be a numeric, non-negative value.	R
Comments	This field allows the market participant to enter comments with the submission.	O
Email Notification	This field allows the market participant to indicate the email address that will be used to notify them of any submission status changes.	O

Submit	This button is used to submit the data. If the data passes pre-submission validation then it is stored in the database and the market participant is notified of the status. If validation fails, the market participant is informed of the error(s) that caused the validation to fail, and will be allowed to correct and re-submit the data.	N/A

Validation and Description of Static Dispatch Data Fields – Thermal and Other Facilities

Field	Description and Validation	Required /Optionsl
Date	Used to select date for which dynamic dispatch data is to be submitted. The entered date will be validated to ensure it is a valid date. A submission will not be effective for past hours, and valid submission dates are limited to today and the next five days.	R
Facility	Used to select the facility for which dynamic dispatch data is to be submitted. The selected facility is validated to ensure that the Transmission User has appropriate rights to be able to submit data for the facility.	
Comments	This field allows the Transmission User to enter comments with the submission.	O
Email Notification	This field allows the Transmission User to indicate the email address tht will be used to notify them of any submission status changes.	O

P(n)	These fields allow the Transmission User to enter the price portion of up to ten price/quantity pairs per hour. The price is in Canadian dollars. Validation requires that: • at least one price/quantity pair per hour be entered. Zeroes may be entered for both price and quantity to remove all dynamic dispatch data for the hour. • each non-zero price entered must have a corresponding non-zero quantity (Q) • $P(n) > P(n-1)$ • $-2000 <= P(n) <= 2000$	R
Q(n)	These fields allow the Transmission User to enter the quantity portion of up to ten price/quantity pairs per hour. The quanity is in net MWh. Validation requires that: • at least one price/quantity pair per hour be entered. Zeroes may be entered for both price and quantity to remove all dynamic dispatch data for the hour. • $Q(1) >$ Minimum Run Quantity • $Q(n) > Q(n-1)$ • $Q(n) <=$ Rated Maximum	R
Submit	This button is used to submit the data. If the data passes pre-submission validation then it is stored in the database and the Transmission User is notified of the status. If validation fails, the market participant is informed of the error(s) that caused the validation to fail, and will be allowed to correct and re-submit the data.	N/A

Validation and Description of Static Dispatch Data Fields – Hydraulic Facilities

Field	Description and Validation	Required/ Optional
Effective Date/Hour	Used to select date/hour for which static dispatch data is to be submitted. The entered date/hour will be validated to ensure it is a valid date/time in prevailing Atlantic Time. A submission will not be effective for current or past hours, and valid submission times are limited to today and the next five days.	R
Unit	Used to select the unit for which static dispatch data is to be submitted. The selected unit is validated to ensure that the submitting Transmission User has appropriate right to be able to submit data for the unit.	R
Min Run Quantity	This field is used to input the minimum run quantity in net MW. Validation requires that it be a numeric , non-negative value and be within the physical capability of the unit.	R
Comments	This field allows the market particpantto enter comments with the submission.	O
Email Notification	This field allows the market participant to indicate the email address that will be used to notify them of any submission sttus changes.	O
Submit	This button is used to submit the data. If the date passes pre-submission validation then it is stored in the data base and the Transmission User is notified of the status. If validation fails, the market participant is informed of the error(s) that caused the validation to fail, and will be allowed to correct and re-submit the data.	N/A

Validation and Description of Static Dispatch Data Fields – Hydraulic Facilities

Field	Description and Validation	Required/ Optional
Date	Used to select date for which dynamic dispatch data is to be submitted. The entered date will be validated to ensure it is a valid date. A submission will not be effective for past hours, and valid submission dates are limited to today and the next five days.	R
Facility	Used to select the facility for which dynamic dispatch data is to be submitted. Thye selected facility is validated to ensure that the Transmission User has appropriate rights to be able to sumbit data for facility.	R
Comments	This field allows the Transmission User to enter comments with the submission.	O
Email Notification	This field allows the Transmission User to indicate the email address that will be used to notify them of any submission status changes.	O
P(n)	These fields allow the market participant to enter the price portion of up to ten price/quantity pairs per hour. The price is in Canadian dollars. Validation requires that: • at least one price/quantity pair per hour be entered. Zeroes may be entered for both price and quantity to remove all dynamic dispatch data for the hour. • each non-zero price entered must have a corresponding non-zero quantity (Q) • $P(1) <= 0$ • $P(n) > P(n-1)$ • $-2000 <= P(n) <= 2000$	R

Q(n)	These fields allow the Transmission User to enter the quantity portion of up to ten price/quantity pairs per hour. The quantity is in net MWh. Validation requires that: • at least one price/quantity pair per hour be entered. Zeroes may be entered for both price and quantity to remove all dynamic dispatch data for the hour. • Q(1) > Minimum Run Quantity • Q(n) > Q(n-1) • Q(n) <= Rated Maximum	R
Submit	This button is used to submit the data. If the data passes pre-submission validation then it is stored in the database and the Transmission User is notified of the status. If validation fails, the market participant is informed of the error(s) that caused the validation to fail, and will be allowed to correct and re-submit the data.	N/A

2.6.2   Submissions validated on line, and made before 11:00 a.m. Atlantic Time of the Day Ahead are accepted automatically. Validated submissions before 3:00 p.m. Atlantic Time of the Day Ahead and that do not change relevant parameters by more than 10% are also accepted automatically.

2.6.3   Note that the acceptance by the SO of Dispatch Data does not imply that the submission of such a Dispatch Data is in accordance with, or in any way satisfies, a Transmission User's obligations under the Business Rules.

2.6.4   In the event submission is after 3:00 p.m. Atlantic Time of the Day Ahead, the submission will be subject to review by the SO before acceptance. Acceptance will only be granted in exceptional circumstances.

2.6.5   In accordance with section 3.3.3 of the Business Rules the SO may request additional supporting data and may review or audit data submitted under this section at any time within a year of the Re-dispatch event to which it applies.

2.7   Revision and Withdrawal of Dispatch Data

2.7.1   Only the Transmission User submitting Dispatch Data may revise it or withdraw it.

2.7.2   Revision of Dispatch Data is effected by submission of a revised set of Dispatch Data, and the SO's acceptance of such revised Dispatch Data.

2.7.3   Withdrawal of dynamic Dispatch Data is affected by submission and discretionary acceptance by the SO of a revised set of dynamic Dispatch Data with zero values.

2.7.4   Revision of Dispatch Data will be in accordance with section 4.8.4 of the Business Rules.

2.8   Posting of Dispatch Data Information

Dispatch Data that has been submitted and accepted, but not superseded or withdrawn, will be web-site accessible to the Transmission User that submitted it, for inspection, and downloading. The final Dispatch Data in effect for each day shall continue to be available until the end of the month after the month of the Dispatch Day.

2.9   Publication

The SO publishes no information on individual Dispatch Data.