

Information Documents are not authoritative. Information Documents are provided for information purposes only and are intended to provide guidance. In the event of any discrepancy between an Information Document and any Authoritative Document(s) in effect, the Authoritative Document(s) governs.

1 Purpose

This Information Document relates to the following Authoritative Documents:¹

- Rate DTS of the ISO tariff, *Demand Transmission Service*; and
- Rate FTS of the ISO tariff, *Fort Nelson Demand Transmission Service*.

The purpose of this Information Document is to provide information regarding the hourly calculation of the operating reserve charge under Rates DTS and FTS, as described in subsection 4 of each of those rates in the ISO tariff. The hourly calculation of the operating reserve charge became effective on July 1, 2011 as approved in Alberta Utilities Commission (“Commission”) Decision 2011-275.

2 Operating Reserve Costs

Operating reserve is required to respond to temporary shortfalls in supply caused by moment-to-moment fluctuations in load or by the loss of a generating unit or intertie capacity. Operating reserve ensures power remains available when required to match supply and load in the real-time operation of the transmission system, stabilizing and protecting the transmission system in the event of disturbances that affect generators or transmission facilities. Unloaded or partially-loaded generating units can provide operating reserve, as can large loads that can be curtailed.

The AESO procures operating reserve for each hour of the following day to meet the expected requirements of the transmission system under normal operating conditions. The cost of operating reserve varies from hour to hour based on the availability of reserve, the actual volumes included in dispatches, the volumes each provider supplies to the system, the pool price, and the competitive offers for each type of operating reserve procured from providers.

The cost of load shed service for imports (“LSSI”) has been included with the cost of operating reserve since October 1, 2013, as approved in Commission Decision 2013-325 on an interim basis and Commission Decision 2014-242 on a final basis. LSSI is an ancillary service contracted by the AESO to ensure reliable supply to load in an hour, similar to the hourly procurement of operating reserve.

Operating reserve costs are transmission system costs, which are recovered from load market participants in accordance with section 47 of the *Transmission Regulation*. The AESO recovers the costs of operating reserve through Rates DTS and FTS of the ISO tariff, which are the rates charged to load market participants.

¹ “Authoritative Documents” is the general name given by the AESO to categories of documents made by the AESO under the authority of the Electric Utilities Act and regulations, and that contain binding legal requirements for either market participants or the AESO, or both. Authoritative Documents include: the ISO rules, the Alberta reliability standards and the ISO tariff.

3 Hourly Calculation of Operating Reserve Charge

As explained in subsection 4(1) of Rates DTS and FTS, the operating reserve charge equals the sum, over all hours in the settlement period, of the amount calculated in each hour as the product of:

- (a) metered energy for the Rate DTS or Rate FTS market participant in the hour; and
- (b) the total cost of operating reserve in the hour divided by the total metered energy for all Rate DTS and Rate FTS market participants in the hour.

The operating reserve charge in an hour reflects the hourly variability of the cost of operating reserve that the AESO procures, the total load on the transmission system in the hour and the actual load of each individual Rate DTS or FTS market participant in the hour.

The allocation of hourly operating reserve costs to a single market participant over a single day is illustrated in Table 1, below.

Table 1 – Example Allocation of Hourly Operating Reserve Costs

<i>Hour Ending [A]</i>	<i>Market Participant Metered Energy (MWh) [B]</i>	<i>Total Cost of Operating Reserve [C]</i>	<i>Total Rate DTS and Rate FTS Metered Energy (MWh) [D]</i>	<i>Operating Reserve Cost per MWh [E = C ÷ D]</i>	<i>Hourly Operating Reserve Charge [F = B × E]</i>
01	15.2	\$3,556	8,077	\$0.44	\$6.69
02	15.8	\$3,851	7,918	\$0.49	\$7.68
03	15.2	\$4,028	7,836	\$0.51	\$7.81
04	15.6	\$4,921	7,800	\$0.63	\$9.84
05	18.9	\$5,073	7,836	\$0.65	\$12.24
06	24.3	\$6,676	8,056	\$0.83	\$20.14
07	38.4	\$10,056	8,485	\$1.19	\$45.51
08	45.8	\$2,107	9,080	\$0.23	\$10.63
09	44.2	\$2,592	9,195	\$0.28	\$12.46
10	43.3	\$2,144	9,154	\$0.23	\$10.14
11	42.8	\$4,322	9,196	\$0.47	\$20.11
12	35.4	\$2,450	9,165	\$0.27	\$9.46
13	42.8	\$2,090	9,080	\$0.23	\$9.85
14	44.2	\$2,320	9,067	\$0.26	\$11.31
15	43.3	\$2,721	9,010	\$0.30	\$13.08
16	43.7	\$2,986	9,034	\$0.33	\$14.44
17	43.4	\$1,457	9,204	\$0.16	\$6.87
18	40.4	\$912	9,613	\$0.09	\$3.83
19	35.6	\$952	9,608	\$0.10	\$3.53
20	18.3	\$1,537	9,504	\$0.16	\$2.96
21	15.1	\$1,938	9,390	\$0.21	\$3.12
22	15.4	\$2,279	9,096	\$0.25	\$3.86
23	15.8	\$2,392	8,682	\$0.28	\$4.35
24	15.3	\$8,267	8,284	\$1.00	\$15.27
Total	728.2	\$81,627	211,370	\$0.39	\$265.19

At the end of each settlement period, when Rate DTS and Rate FTS metered energy is available for each hour in the settlement period, the AESO calculates the operating reserve charge for each market participant for each hour in the settlement period as in Table 1. The AESO then sums the hourly charge and includes it on the market participant's statement of account for the settlement period.

4 Information Available for Calculation of Operating Reserve Charge

After the end of each settlement period, the AESO posts the hourly operating reserve costs and the hourly total metered energy for all Rate DTS and Rate FTS market participants that are used in the calculation of the operating reserve charge under Rates DTS and FTS. The posted information is similar to the information in columns C and D in Table 1, above. A market participant may use the individual hourly metered energy volumes to calculate the operating reserve charge that appears on the market participant's statement of account for the settlement period.

The information used for the calculation of the operating reserve charge is posted as a supplement to this Information Document, titled in the form *Operating Reserve Charge Supplement - MMM YYYY Prelim (YYYY-MM-DD)* where the first date indicates the settlement period and the second date is the date of preparation.

To ensure the total metered energy reflects the latest volumes on which statements of account are based, the information in the supplement reflects initial, interim and final settlement volumes as described in subsection 3(1) of section 13 of the ISO tariff, *Financial Security, Settlement and Payment Terms*.

The AESO first posts the *Operating Reserve Charge Supplement* as "Prelim" when it issues preliminary statements of account on the fifth business day of the month. The AESO then updates and re-posts the *Supplement* as "Final" when it issues final statements of account on the fifteenth business day of the month. Amounts may change between preliminary and final postings to reflect changes to billing amounts between preliminary and final statements of account.

Stakeholders can access the *Operating Reserve Charge Supplement* posting for the current settlement period on the AESO website by following the path www.aeso.ca ► *Tariff* ► *Current Tariff* ► *Tariff Effective January 1, 2016* (or later date, if a revision to the tariff has since been approved). *Supplement* postings for prior settlement periods are archived in the same location.

5 If Hourly Calculation of Operating Reserve Charge Is Not Possible

In some circumstances, such as a failure of communication links between AESO data systems, the AESO may be unable to calculate the hourly operating reserve charge described above. In such an event, as explained in subsection 4(2) in Rates DTS and FTS, the AESO will estimate the operating reserve charge as the sum, over all hours in the settlement period, of the amount calculated in each hour as the product of:

- (a) metered energy for the Rate DTS or Rate FTS market participant in the hour; and
- (b) pool price in the hour multiplied by a percentage specified in subsection 4(2)(b) of Rate DTS or FTS.

The AESO will then use the amounts estimated under subsection 4(2) in Rates DTS and FTS in the statements of account for market participants. The AESO will replace the estimated amounts with the more detailed hourly calculation of the operating reserve charge in subsequent statements of account or in a later settlement period.

As of February 2016, the AESO has not needed to estimate operating reserve charges using the approach provided in subsection 4(2) of Rates DTS and FTS.

Revision History

Posting Date	Description
2016-04-19	Revised to include LSSi costs, update tariff references, and update format to current guidelines.
2011-08-08	Initial release.