

An information document is for information purposes only and is intended to provide guidance. In the event of any discrepancy between the information document and a related authoritative document in effect, the authoritative document governs. Please submit any questions or comments regarding this information document to [informationdocuments@aeso.ca](mailto:informationdocuments@aeso.ca).

## 1 Purpose

The AESO issues information documents to provide additional information and interpretation regarding certain subject matters set out in the AESO's authoritative documents.

The purpose of this information document is to explain the hourly calculation of the operating reserve charge under Rates DTS and FTS, as described in subsection 4 of those rates in the 2011 ISO tariff.

## 2 Related Authoritative Documents

The AESO's authoritative documents consist of ISO rules, the ISO tariff and reliability standards. Authoritative documents contain binding rights, requirements and obligations for market participants and the ISO. Market participants and the ISO are required to comply with provisions set out in authoritative documents.

Market participants are encouraged to review the authoritative documents related to this information document, which include:

- *ISO Tariff – Rate DTS: Demand Transmission Service*
- *ISO Tariff – Rate FTS: Fort Nelson Demand Transmission Service*

## 3 Operating Reserves Cost

Operating reserves are required to respond to imbalances between supply and demand or to the loss of a generating unit or intertie capacity. Operating reserves ensure power remains available when required to match supply and load in 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 as well as large loads that can be curtailed can provide operating reserves.

The AESO procures operating reserves for each hour of the following day to meet the expected requirements of the transmission system under normal operating conditions. The cost of operating reserves varies from hour to hour based on the availability of reserves, 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 reserves procured from providers.

In accordance with section 47 of the *Transmission Regulation*, load market participants pay the cost of operating reserves. The AESO recovers the cost of operating reserves through Rates DTS and FTS of the ISO tariff, which are the rates charged to load market participants.

## 4 Hourly Calculation of Operating Reserve Charge

As explained in subsection 4(1) in 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 reserves in the hour divided by the total metered energy for all Rate DTS and FTS market participants in the hour.

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

The allocation of hourly operating reserves cost to a single market participant over a single day is illustrated in Table 1 below.

*Table 1: Example Allocation of Hourly Operating Reserves Cost*

<i>Hour Ending [A]</i>	<i>Market Participant Metered Energy (MWh) [B]</i>	<i>Total Cost of Operating Reserves [C]</i>	<i>Total Rate DTS and Rate FTS Metered Energy (MWh) [D]</i>	<i>Operating Reserves 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
<b>Total</b>	<b>728.2</b>	<b>\$81,627</b>	<b>211,370</b>	<b>\$0.39</b>	<b>\$265.19</b>

At the end of each settlement period, after 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.

## 5 Information Available for Calculation of Operating Reserve Charge

After the end of each settlement period, the AESO will post the hourly operating reserves cost and the hourly total metered energy for all Rate DTS and Rate FTS market participants, as used in the calculation of the operating reserve charge under Rates DTS and FTS. The posted information will be similar to columns C and D in Table 1 above. A market participant may then use individual hourly metered energy volumes to calculate the operating reserve charge appearing on the statement of account for the settlement period.

The AESO will post the information for the calculation of the operating reserve charge as a supplement to this information document, titled in the form *Operating Reserve Charge Supplement - MMM YYYY (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 will reflect initial, interim and final settlement volumes as described in subsection 4(1) of section 13 of the ISO tariff, *Financial Security, Settlement and Payment Terms*.

The AESO will first post the *Operating Reserve Charge Supplement* when it issues preliminary statements of account on the fifth business day of the month. The AESO will then update the *Supplement* 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](http://www.aeso.ca) ► *Tariff* ► *Current Tariff* ► *Tariff Effective July 1, 2011*. *Supplement* postings for prior settlement periods are archived in the same location.

## 6 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 2.35%.

The AESO would then use the amounts estimated under subsection 4(2) in Rates DTS and FTS in the statements of account for market participants. The AESO would 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.

The AESO expects that it will rarely need to estimate operating reserve charges using the approach provided in subsection 4(2) of Rates DTS and FTS.

## Revision History

Effective	Description
2011-10-07	Released final version.