

1 Q. Hydro's 2011 Capital Budget (Volume 1, C-151) notes that CBPP's Frequency
2 Converter is a 25 MVA rotating motor-generator set. Separately, a final report
3 prepared by Acres International Limited on Condition Assessment of 50/60 Cycle
4 Frequency Converter (September 1998) states that the unit was operating "at
5 approximately 20 MVA maximum output, about 2/3 of its rating". The report also
6 notes that "the machine should be able to operate up to its rating of 28 MVA if it
7 were cleaned." (2007 Capital Budget, RFI PUB-NLH-44,
8 <http://www.pub.nf.ca/hydro2007cap/files/rfi/PUB-44.pdf>) Please reconcile these
9 capacity values and confirm that the nameplate rating for the machine is 28 MVA.

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12 A. The nameplate for both the 50 and 60 Cycle sides of CBPP's Frequency Converter is
13 25 MVA as per IC-NLH-162 Attachment 1. This unit is currently derated to 19 MVA.
14 Prior to considering moving the rating back to its nameplate, discussions have taken
15 place with CBPP in the last quarter of 2014, and it was agreed by both parties to
16 complete an overall condition assessment to help determine the safe operating
17 capacity for this unit. The plan was originally to complete this assessment in early
18 2015, but to ensure maximum available generation within the Province during the
19 high load months, it was decided by Hydro to defer the start of this work until the
20 April/May 2015 timeframe.

PART I

DESCRIPTION

25/25 MVA SYNCHRONOUS FREQUENCY CHANGER

Sets supplied on S.O. 1-S-1290 & 1-S-1293

The rating of the 50 cycle generators supplied on S.O. 1-S-1290-1 and S.O. 1-S-1293-1 is as follows:-

25,000 KVA, 50 CPS, 600 RPM, 0.8 PF, 6600 volts, frame 10-108 X 59. The motor capability is 27,200 HP, 0.8 PF, or 33,800 HP, 1.0 PF.

The rating of the 60 cycle generators supplied on S.O. 1-S-1290-2 and 1-S-1293-2 is as follows:-

25,000 KVA, 60 CPS, 600 RPM, 0.8 PF, 6600 volts, frame 12-108 X 54. The motor capability is 27,200 HP, 0.8 PF, or 33,800 HP, 1.0 PF.

ADDITIONAL RATING & DESCRIPTION OF UNITS

DIRECTION OF ROTATION

The units rotate in a clockwise direction (when viewed from the collector end of the 60 cycle unit. The EMF'S for both units reach their maximum voltage in the order T1, T2, T3.)

LUBRICATION

The lubrication system is of the "Flood" type utilizing a Bowser Oil Pump. Complete details of the system are shown on the Bearing Flood Oil Piping drawing 735-D-893. Data is also provided on the Bowser TE3299 flood lubrication system in Section 4.

BEARING OIL

Use a good grade of turbine oil with a viscosity of 200-250 SSU at 100°F.

BEARING PROTECTION

Type HQ thermostatic type relays are used to give overtemperature protection of the bearings. The HQ relay is a device designed to "make" or "break" a circuit at a predetermined temperature. (further data is contained in Section 4.)

To provide a constant check of bearing temperature, "KOVAR" resistance temperature detectors are provided. The resistance of each temperature detector is 10.0 ± 0.05 ohms at 25°C.