



Department of consumer and corporate affairs / Ministère de la consommation et des corporations



SPE-271

1143-57/087

Ottawa, May 28, 1973

SPECIAL APPROVAL

**Granted to:** Ontario Hydro,  
620 University Avenue,  
Toronto 2, Ontario.

**Subject:** Temporary metering system on 230 KV  
tie line with Detroit Edison Company  
at Windsor, Ontario.

**Attention:** Mr. R. A. Thompson,  
Protection and Control Engineer,  
Power System Operations Division,  
Ontario Hydro.

Special Approval has been granted by the Standards Branch to Ontario Hydro for the use of the following temporary installation for billing purposes:

1. Installation. The metering equipment is located at the J. Clark Keith GS on the Export-Import 230 kV tie line known as J5D. The American terminal of this line is at Waterman SS in Detroit, Michigan.
2. Meters. Two G.E. polyphase watthour meters, type VW64A, three element, Y, 0.12 - 10 amp., 120 volts, 60 Hz, kh (sec.) 1.8, kh (pri.) 1,152,000, PT 138000/69 volts, CT 1600/5 amp., detent equipped, 5D x 10,000 = kWh, Serial Nos. 3689392, 3690028. These meters are calibrated at and will be operated at 69 volts. The gear trains for the five-dial registers and for the impulse device (type D-41) in each meter have been changed.

One meter will register export energy, and the other import energy.

3. Voltage Transformers. Potential to the meters will be supplied by three ASEA Capacitor Voltage Transformers, type CUFA220, Capacitor Voltage Dividers type CTOAL/220, Intermediate Voltage Transformers type EOCD24A,

serial nos. 62-62-044, 62-62-045, 62-62-046.  
The X1-X3 windings give overall ratio of 2000-1,  
the X2-X3 windings give overall ratio of 2200-1.  
The transformers will be used on the 2000-1 ratio.  
Primary rated voltage H1-H2 151.8 - 138 kV.

4. Current Transformers. Current for the meters will be supplied by three Westinghouse type OPC-230 current transformers, 3200/2400/2000/1600/1000 - 5 amps, rated insulation class 230 kV, FW impulse level 1050 kV, 60 Hz, outdoor, oil-filled, single phase. Metering accuracy at 60 Hz at ratios listed in table below 0.3Bl.8, relay accuracy at 60 Hz 2.5L2000 at 3200 amp, 2.5L800 at 1200 amp.

X1-X6	3200	rating factor 1.0
X1-X5	2400	rating factor 1.33
X1-X4	2000	rating factor 1.33
X1-X3	1600	rating factor 1.5
X4-X6	1200	rating factor 1.5
X1-X2	1000	rating factor 1.5

All ratios below 1000 amps, rating factor 1.5.  
There are three other similar windings designated W, Y, Z respectively - their data are similar to the X winding above. Serial No.'s 739667, 739670, 739677. They will be connected for a 1600-5 amp ratio.

It is understood that the capacitor voltage transformers will be replaced at an early date by magnetic voltage transformers to supply the proper 115 volt potential to the meters. These VT's will have a ratio of 138000 - 115 volts (1200 - 1) ratio. This Special Approval will terminate when these new transformers are in service.

*W.J.S. Fraser*

W.J.S. Fraser  
Chief,  
Electricity and Gas Division.

c.c. Mr. F. Mason, Toronto  
Mr. J. Fleming, London