



# August 26<sup>th</sup> Presentation to IMO Revenue Metering Subcommittee

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# Project: Bringing Revenue Metering Systems within Transformer Stations into Compliance with Chapter 6



- Wonderland TS
- Clarke TS
- Buchanan TS
- Highbury TS
- Nelson TS
- Talbot TS

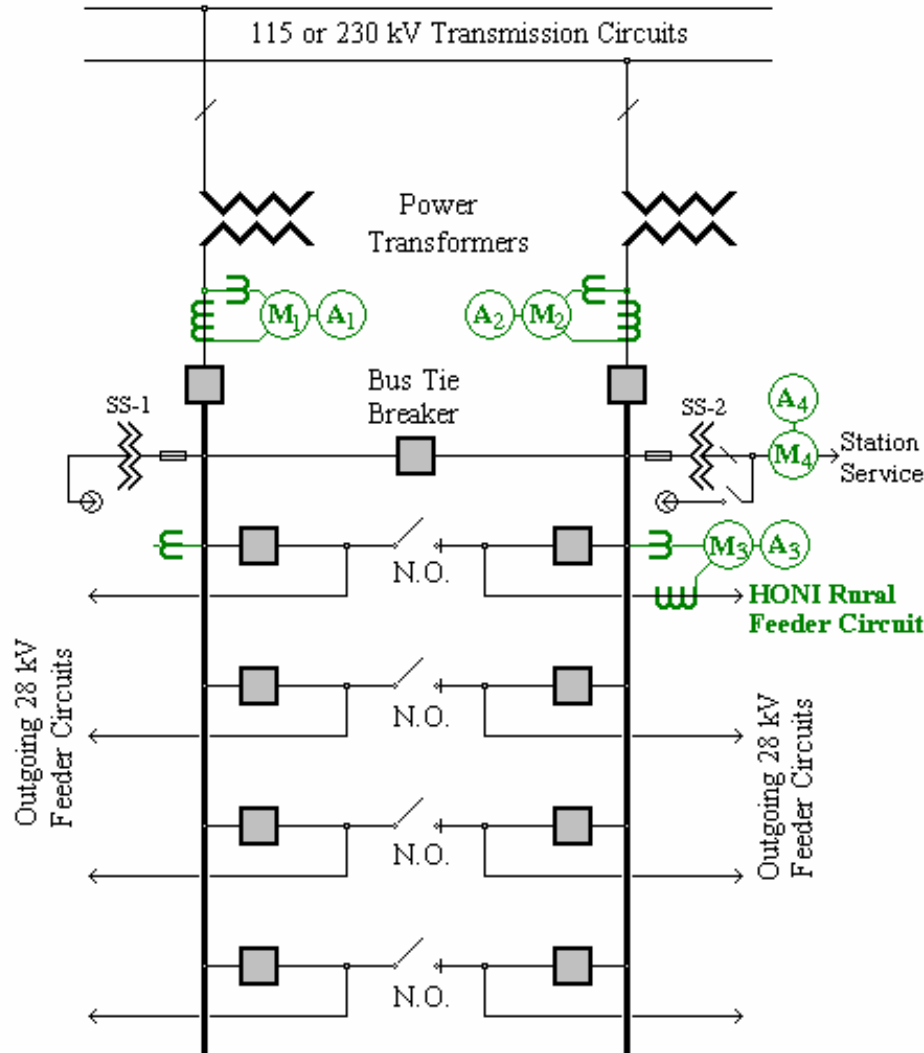
# Today's Two Issues:

- **Station Service Metering –**  
Reference: July 20<sup>th</sup> letter to Neil Wong, re:  
*Transformer Stations Shared by Multiple Local Distribution Companies – Request for Alternative Metering Arrangement for Station Service Loads.*
- **Rationale for Metering Enclosures –**  
Reference: July 27<sup>th</sup> letter to Rowan Jones, re:  
*Wonderland Transformer Station – Project to Bring Wholesale Revenue Metering System into Compliance.*

**Issue #1 -**  
**The Cost of**  
**Station Service**  
**Metering...**



# A (Jones-DESN) shared TS:



- Within London Hydro's franchise service territory, 4 of the 6 transformer stations are shared; meaning that Hydro One Networks occupies one or more feeder breaker positions to supply their rural distribution system.
- For such stations, the station service cost is permitted to be allocated amongst the connected LDC's in proportion to the number of feeder circuit breakers allocated to each LDC.

# Estimated Annual Recovery Amount Versus the Cost of Compliant Station Service Metering.....

<b>Transformer Station</b>	<b>Annual Station Service Energy Consumption</b>	<b>Predicted Annual Cost Allocation to HONI</b>	<b>Cost of Compliant Revenue Meters</b>
Buchanan TS	83,689 kW·h	\$705. <sup>00</sup>	\$14K+
Highbury TS	158,070 kW·h	\$1,165. <sup>00</sup>	\$7K+

# Should the IMO Really Care?....

It is worthwhile to remind ourselves that the accuracy of the overall energy transaction between the provincial transmission grid and the collective group of LDC's is entirely dependent upon the accuracy of the bus revenue metering system that consists of the metering installations designated M1 and M2.

Energy delivered from provincial grid to London Hydro=		$M_1 + M_2 - M_3 - 1/8 \times M_4$
Energy delivered from provincial grid to HONI	=	$\frac{M_3 + 1/8 \times M_4}{}$
Total energy delivered from provincial grid	=	$M_1 + M_2$

The metering installations designated as M3 and M4 only serve to allocate this overall grid transaction properly amongst the two LDCs. Any inaccuracies in these latter two systems means only that the allocation may be incorrect, with one LDC assigned more than their actual energy consumption and the other assigned less than their actual energy consumption.

# London Hydro does have options...

For the installation described, London Hydro does have the option of simply not registering the station service meters on the Site's Totalization Table, and including a reconciliation payment arrangement within some separate agreement (e.g. Transmission Connection Agreement, as long as HONI Transmitter and Rural Distribution remain the same company).

# What is London Hydro looking for:

Relaxation of requirements for station service metering (to 2 alternate-class meters). Since, in a typical TS arrangement, accuracy of these devices has no impact on the accuracy of the transmission grid transaction, there is no reason that requirements need to be more stringent than what is proposed for small distributed generators (re: IMO document, *Changing the Market Rule Technical and Revenue Metering Requirements for Small Facilities*; July 16, 2004)

Issue #2 .

The Real Rationale

for Metering Enclosures...

# Present Wording of Market Rule....

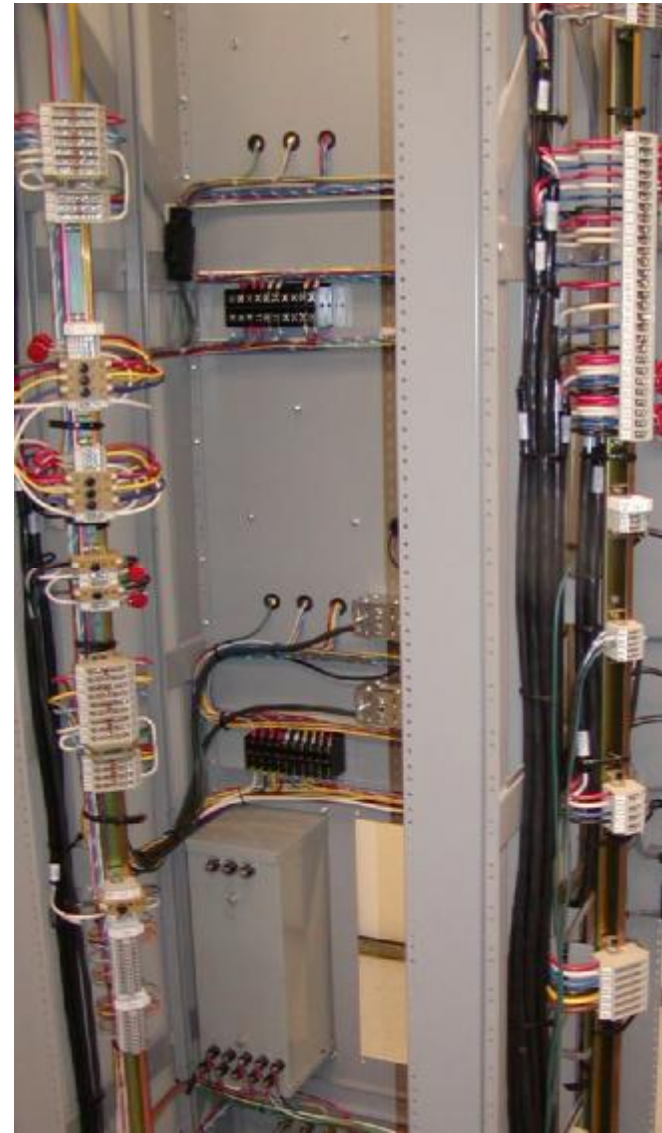
## **10.1.1 Meter Enclosure**

All meters, test links, and fuses shall be contained within a meter enclosure. The communication equipment, such as an external modem or a telephone line switcher, may be located in a separate locked enclosure under strict control of the metered market participant provided that the equipment is supplied from an external power source; otherwise the communication equipment shall be contained in the meter enclosure.

# Existing Relay Rack Arrangement...

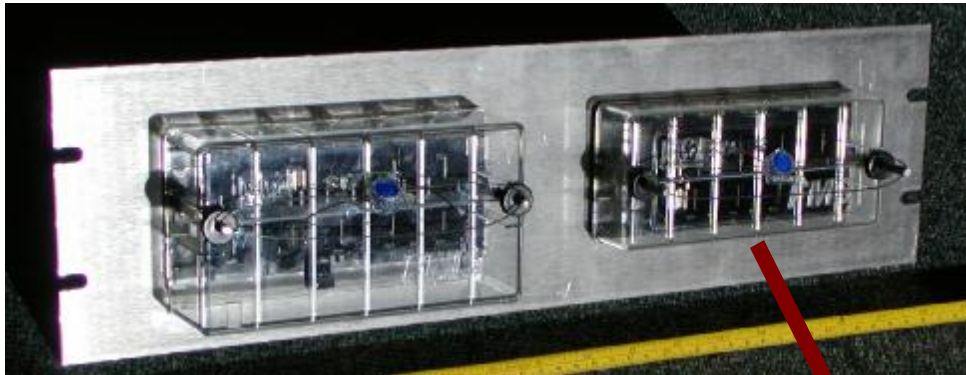


**Front Face of Relay Rack**



**Rear Side of Relay Rack**

# Proposed Additional Seal Provisions....



Clear front covers accommodate standard wire-type meter seals.



# Proposed Additional Seal Provisions....



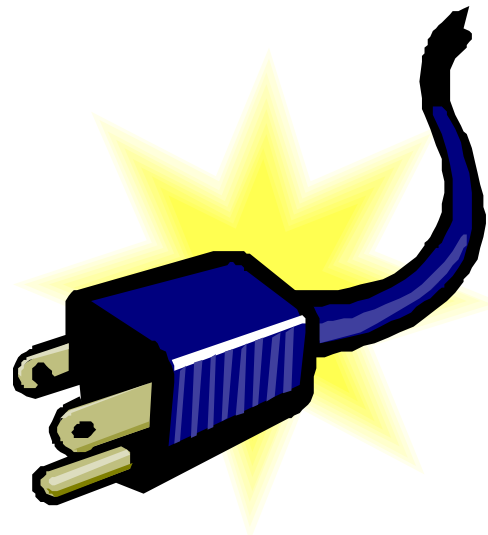
Clear cover plate and wire-type meter seal on back (connection side) of test switch block.

# What is London Hydro looking for:

Recognition that the control building within a Transformer Station fulfills the underlying intent of the Market Rules (provided that appropriate access seals can be provided on transformer test switches, or other connection points on the relay rack).

Thank you for the opportunity  
to address the IMO Revenue  
Metering Subcommittee.

Questions?



**BONUS TOPIC**

**Issue #3 -**

**Who Should Pay for**

**Capacitor Bank Dielectric Losses...**