Q. **Re: Marine Terminal Refurbishment**

In reply to P2-PUB-NLH-46, Hydro states that after the order had been placed for the HDPE jacket cable, Tyco informed Hydro that the new Electric Heat Tracing cable scheduled to be installed would be running at higher than allowable sheath temperature due to part of the circuit being bypassed by tech cables. Hydro then states that it was asked by Tyco to reduce voltage by ten percent in order to address the jacket heating issue. Please provide a copy of these communications between Tyco and Hydro.

A. There is misuse of the term "jacket" used in the response to P2-PUB-NLH-46. It should be replaced with the term "sheath". The last line should read, "Hydro was asked by Tyco to reduce voltage by ten percent in order to address the *sheath* heating issue."

A copy of the communication between Tyco and Hydro is provided in the attached letter. The letter suggests reducing the voltage by ten percent to mitigate potential overheating of the copper sheath if circuit configuration changes, being contemplated by Hydro at the time, were made. Some circuit changes were subsequently made that did overheat the EHT cable and cause various failures.

The sheath and the jacket are separate components of the EHT cable. The attached letter does not address the application of HDPE jacket to the EHT. At the time the letter was written, Tyco was not aware that Hydro was going to include HDPE jacket for the installation. For additional information please refer to P2-CA-NLH-50.

tyco
Flow Control

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Interoffice Memorandum

Date May 23, 2002

To Keith Russell

From Pete Inglis

Subject Newfoundland Hydro – Holyrood GS

Keith,

Please forward this information to Glen Winsor at Newfoundland Hydro and discuss this with him.

The original design for the 18 inch Oil Delivery Line has changed. The reference drawing we have is Feb 1970 238-05-0210 006-R2.

According to the conversation we had with Glen on Wednesday May 22, 2002 they want to connect 900 feet of new heating cables onto the existing circuit 1A which has 3 each 366 foot cables currently operating.

The existing circuits 1B, 1D and 1E are not operating at this time. There is now a piece of teck cable that jumpers the power from circuit 1A to circuit 1C.

The new design requires installing new heating cables along 900 feet of pipe and connecting them to the existing cables that make up circuit 1A. There would be 3 parallel runs of heater, each 900 foot run made up of 6 each 150 lengths of heater, series connected. At sometime in the year 2003, Newfoundland Hydro wants to redo and reconnect new heaters along the 440 feet of the shore arm and the jetty head. This in effect is half of circuit 1D and all of 1E.

By connecting six each of the heater with reference number B/61CC5162/150/4007/41/7/6/Y in series with the heater that exists as Circuit 1A and using the existing 600 volt power supply, these new referenced heaters are operating at 41 volts, providing 26.7 watts per foot and drawing 98 amps each, with a sheath temperature of 407 deg F. We normally limit the sheath temperature to 392 deg. F.

If Hydro could regulate the front end voltage and lower it by approximately 10% it would allow the heaters to run at a lower wattage/foot and a lower sheath temperature.

Next year when they connect the other cables onto the system the wattage will be lower again and back in the range of 1800 watts per cable and 12 watts/foot.

Please review with Newfoundland Hydro and call me if there are any questions or errors in our understanding of the existing system or their path forward.

Regards,

Pete Inglis
Regional Manager