Q. **Emergency Management**

Provide summaries of all communications and coordination activities to-date with Newfoundland Power to prepare for the 2014/15 winter season.

A. The following is a summary of the communications and coordination activities performed to date with Newfoundland Power to prepare for the upcoming winter peaking season.

The Inter-Utility System Planning and Reliability Committee (IUSPRC) meeting frequency has increased. The committee, made of up senior leaders from Hydro and Newfoundland Power in the areas of Operations and Planning, normally meets twice per year. Thus far in 2014, the utilities have met in May, June, July and September. The meetings focus on action items related to asset and winter readiness.

Hydro and Newfoundland Power share real-time data between control centres to facilitate coordinated operations and response to disturbance events on the power system. By July of this year, Hydro approved, implemented and verified with Newfoundland Power the transfer of some 400 additional points over the data link, from Hydro's EMS to Newfoundland Power's SCADA system.

Operations managers from both utilities have been regularly sharing the status and progress of asset maintenance, additions and replacements. This includes Hydro's major equipment such as Oxen Pond transformers T1 and T3, Sunnyside transformer T1, Western Avalon transformer T5, Transmission Lines TL201 and TL203 and the new Holyrood combustion turbine. As well, the managers have

discussed the timing of the Newfoundland Power generation credit test. Both agree that the test to prove the Newfoundland Power generation capacity is better performed prior to December 1.

Planned equipment outages required by both utilities are coordinated to minimize the impact to power system reliability and customer service. Hydro is targeting to have all critical equipment outages completed prior to December 1.

Hydro shared with Newfoundland Power its new instruction dealing with the Island generation supply ratings and capacity. This instruction, titled *Island Generation Supply - Gross Continuous Unit Ratings*, is used to keep an account of available generating capacity on the Island Interconnected System. The instruction specifies the requirement for testing at various time intervals to confirm generating unit capacities. As well, the instruction requires asset owners to communicate to Hydro's Energy Control Centre the status and capacity of generating units. This instruction is important to the maintenance of adequate generation reserves. Hydro and Newfoundland Power discussed and agreed to an approach on how Newfoundland Power will update Hydro, on a daily basis, of the status and capacity of Newfoundland Power's hydro and thermal generation fleet. Both utilities derived a common understanding regarding Hydro's requests for the use of Newfoundland Power's hydro generation and its standby thermal generation.

Hydro shared with Newfoundland Power its modified instruction that deals with Island generation reserves. The instruction was provided in Hydro's response to CA-NLH-008, as Attachment 1. This instruction titled, *Generation Reserves*, was developed with key input from Newfoundland Power. This instruction details the requirements of Hydro in assessing the available Island Interconnected System generation reserves and communicating to stakeholders when available generation

reserves fall below prescribed thresholds, or levels. Aligned with this instruction, both utilities have developed a common communications strategy to inform key external stakeholders, including customers, when generation reserves are below these defined thresholds. Hydro and Newfoundland Power have worked collaboratively to ensure appropriate understanding and expectations.

Based on a discussion with Newfoundland Power on their lessons learned around rotating outages, Hydro has documented a procedure for handling rotating outages on its distribution system. The new instruction, T-042, is attached as PUB-NLH-397 Attachment 1.

Hydro has kept Newfoundland Power informed of its progress in the area of short term load forecasting and the approach Hydro is taking regarding the forecasting of Island Interconnected generation rather than the traditional System approach.

Hydro and Newfoundland Power corporate communications teams have been working closely on several items including – the development of a joint storm/outage communication process and an advance notification process to advise customers of conservation requests and rotating power outages. Significant research has been conducted with customers and businesses in the province to help guide the development of communications strategies.

Hydro and Newfoundland Power corporate communications teams are meeting on a weekly basis throughout the fall to formalize and implement education/communication plans to inform customers on conservation activities and the advance notification protocol. In addition, formal testing of the joint storm/outage communication process will occur this fall.

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SYSTEM OPERATING INSTRUCTION

STATION:	ERP, GENERAL	**Inst. No.**	T-042
TITLE:	ROTATING OUTAGES **	**Page** 1	**of** 4

Introduction

As part of system operating instruction T-001, rotating outages may be implemented if generation spinning reserves decrease below the minimum level and continue to decline. In order to minimize outages to customers, spinning reserves will be utilized as much as possible, with rotating outages used to maintain the system frequency at 59.8 Hz.

Instruction

Rotating Outage Procedure

The following procedure will be implemented for rotating outages:

1. Request Newfoundland Power (NP) to shed load by rotating feeders. Advise them of the expected generation deficit, the expected duration of the rotations and that the frequency needs to be maintained at 59.8 Hz.
2. Inform Corporate Relations and Customer Services that rotating outages will commence and that each feeder rotation will last 1 hour.
3. Refer to the Feeder List (below) to determine the feeder to be interrupted and the order in the rotation.
4. Open the appropriate feeder (remotely or locally)[1] and record the time in the ECC diary.
5. When 1 hour has elapsed, open the next feeder on the Feeder List (remotely or locally) and record the time in the ECC diary.
6. Restore / close the previously opened feeder (remotely or locally) and record the time in the ECC diary.
7. Throughout steps 4-6, monitor the system frequency, maintain communication with NP (Control Room), Corporate Relations and Customer Services. Advise NP if there are any concerns with system reliability (frequency and voltage) and provide updates to all stakeholders on the status of the generation deficit.

[1] For feeder rotations completed locally, ECC will dispatch crews to the station and direct the operation.

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SYSTEM OPERATING INSTRUCTION

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Instruction (cont'd.)

8. Continue steps 4 – 7 until there is no longer a generation deficit and the system frequency is stable at 59.8 Hz.

Restoration of remaining load

When rotating outages are no longer required, restoration of disconnected feeders will be completed as follows:

1. Advise NP that rotating outages are no longer required and remaining load restoration can begin shortly.
2. Inform Corporate Relations and Customer Service that rotating outages are no longer required and load restoration will begin shortly.
3. Coordinate the restoration of any remaining load between both utilities. Load should be restored in 20 – 25 MW blocks while maintaining system frequency.

Feeder List[2]

On the Island Interconnected System, there are a total of 44 feeders. Each was evaluated to determine if they would be used in the rotating outage process. Through this evaluation, it was determined there are 31 feeders that will be interrupted. The remaining feeders will not be interrupted for the following reasons:

- Given priority due to the customers being supplied by the feeder.
- Not feasible to send crews to locations as the load on the feeders is very low and would not be material.

[2]Depending on system requirements, the ECC may be required to open more than one feeder at a time.

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SYSTEM OPERATING INSTRUCTION

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Feeder List[2] (cont'd)

The following is the list of feeders that will be interrupted, in the order shown, as a part of the rotating outage process:

1. South Brook Terminal Station – Line 7: SB7 – R1
2. St. Anthony Diesel Plant Terminal Station – Line 2: SA2 – R1
3. Plum Point Terminal Station – Line 2: PP2 – R1
4. St. Anthony Diesel Plant Terminal Station – Line 1: SA1 – R1
5. South Brook Terminal Station – Line 1: SB1 – R1
6. Cow Head Terminal Station – Line 1: CH1 – R1
7. Plum Point Terminal Station – Line 1: PP1 – R1
8. Bay d'Espoir Terminal Station – Line 1: BDE – R1 (Local Control Only)
9. Bear Cove Terminal Station – Line 4: BC4 – R1
10. Deer Lake Terminal Station – TL226[3]: B2L26
11. Grandy Brook Terminal Station – Line 1: GB1 – R1
12. Bay d'Espoir Terminal Station – TL220[4]: B13L20
13. Bottom Waters Terminal Station – Line 3: BW3 – R1 (Local Control Only)

[3]There are five feeders interrupted when TL226 is taken out of service.

[4]There are four feeders interrupted when TL220 is taken out of service.

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SYSTEM OPERATING INSTRUCTION

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Feeder List[2] (cont'd)

14. Bottom Waters Terminal Station – Line 2: BW2 – R1 (Local Control Only)
15. Bottom Waters Terminal Station – Line 1: BW1 – R1 (Local Control Only)
16. Roddickton Terminal Station – Line 1: RO1 – R2
17. Bear Cove Terminal Station – Line 6: BC6 – R1
18. Hawkes Bay Terminal Station – Line 3: HB3 – R1
19. St. Anthony Diesel Plant Terminal Station – Line 3: SA3 – R1
20. Parsons Pond Terminal Station – Line 1: PP1 – R1 (Local Control Only)
21. Hawkes Bay Terminal Station – Line 1: HB1 – R1
22. Roddickton Terminal Station – Line 4: RO4 – R1
23. Daniels Harbour Terminal Station – Line 1: DH1 – R1
24. Roddickton Terminal Station – Line 3: RO3 – R2

** Part of the Emergency Response Plan

REVISION HISTORY

Version Number	Date	Description of Change
0	2014-09-26	Original Issue

PREPARED: J. Tobin	**APPROVED:**