Q. **B-42, Distribution System Additions, $2,172,100**

Please provide a copy of the most recent version of the *Newfoundland and Labrador Hydro Planning Criteria*.

A. Please see attached document, “NL Hydro Planning Criteria”.

Bulk Transmission Planning Criteria

- Hydro's bulk transmission is planned to be capable of sustaining the single contingency loss of any transmission element without loss of system stability.
- In the event a transmission element is out of service, power flow in all other elements of the power system should be at or below normal rating.
- The Hydro system is planned to be able to sustain a successful single pole reclose for a line to ground fault based on the premise that all system generation is available.

Transformer Capacity

- Transformer additions at all major terminal stations (i.e. two or more transformers per voltage class) are planned on the basis of being able to withstand the loss of the largest unit.
- For single transformer stations there is a bac k-up plan in place which utilizes Hydro's and/or Newfoundland Power's mobile equipment to restore service.

Operating Voltages

- For normal operations, the system is planned on the basis that all voltages be maintained between 95% and 105%.
- For contingency or emergency situations 90% to 110% is considered acceptable.

Radial Transmission System Planning Criteria

- Radial transmission systems are planned to supply peak load with all elements in service
- The single contingency loss of certain transmission elements could result in an interruption to some or all of the customers served by that system.
- The Corporate Business Continuity Planning process has defined maximum Acceptable down times for the various elements of the Radial systems and plans are in place to ensure service restoration within these timeframes

Transformer Capacity

- Most radial systems employ only single transformer stations. There is a back-up plan in place which utilizes Hydro's and/or Newfoundland Power's mobile equipment to restore service.
- In areas where suitable backup transformation can not be identified Installed redundancy is applied.

Operating Voltages

- For normal operations, the system is planned on the basis that all voltages be maintained between 95% and 105%.
- For contingency or emergency situations 90% to 110% is considered acceptable.

Distribution Planning Criteria

A. Normal Voltage – Based on CSA CAN3-C235-83 ("Preferred Voltage Levels...") and the CEA "Distribution Planner's Guide".

B. Load – Equipment loading no greater than 100% rating.
- conductor ampacity adjusted for appropriate temperature during peak.
- short term overloading on transformers permitted.

C. Voltage Flicker Limit – maximum of 5% voltage flicker.

Isolated Diesel Generation Planning Criteria

- The Diesel System should have sufficient firm capacity to supply the peak load of the system. Firm generation capacity is defined as the total installed capacity on the system minus the largest unit.
- In each system Hydro installs a minimum of three units to meet the load requirements of the system.

Island Interconnected Generation Planning Criteria

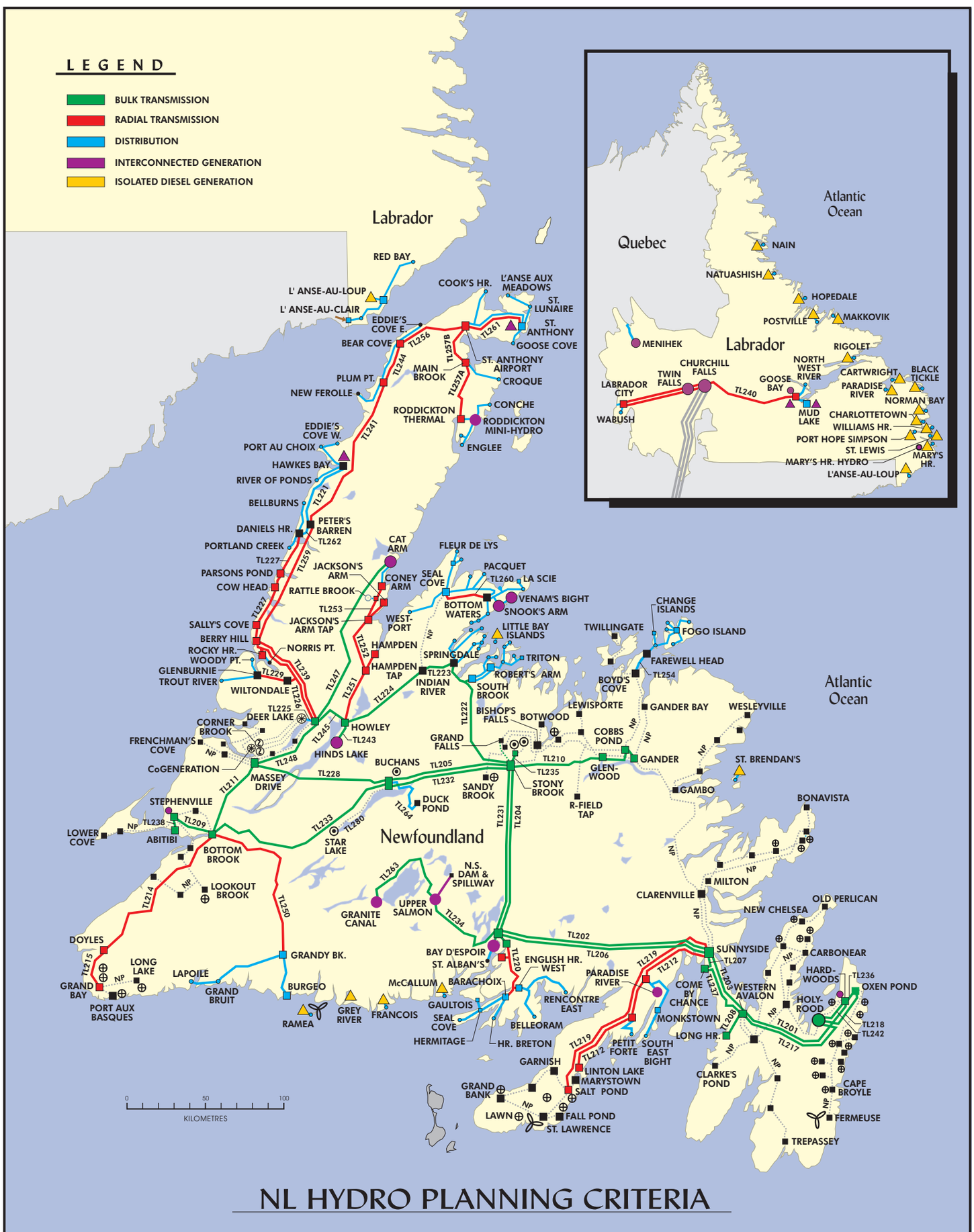
Hydro has established criteria related to the reliability of the total Island Interconnected System and the timing of generation additions. These criteria set the minimum level of reserve capacity and energy installed in the system.

Energy

The Island Interconnected System should have sufficient generating capability to supply all of its firm load requirements with firm system capability.

Capacity

The Island Interconnected System should have sufficient generating capacity to satisfy a Loss of Load Expectation (LOLE) target of not more than 2.8 hours per year.



NL HYDRO PLANNING CRITERIA

Updated Jan. 2009