



NOVEMBER 2, 2021

Northwest Integrated Regional Resource Plan (IRRP)

Local Customer Reliability Focused Discussion

Purpose and Objectives of Today's Discussion

- Purpose: To identify local reliability concerns across the northwest Ontario region
- Objective: To provide an opportunity for stakeholders and communities to share their experiences as they relate to customer reliability and discuss opportunities for the IRRP to incorporate and highlight these issues

Agenda

1. To get started, we will provide an overview of key concepts including:
 - The electricity system and the roles/responsibilities within the electricity sector
 - The definition of customer reliability
 - The scope of regional planning and its role in addressing customer reliability
2. Group discussion to ask questions and share local reliability concerns
3. Break-out discussion to share, hear about, and document comments to be considered in the regional planning process
4. Report back to the broader discussion group to identify common themes or trends

Electricity System Introduction

What the IESO does

The IESO works at the heart of Ontario's power system, balancing supply and demand for electricity on a second-by-second basis and directing its flow across Ontario's high-voltage transmission lines so it's available to you. Ensuring there is enough energy to meet Ontario's demand 24 hours a day, 7 days a week, is highly complex

and requires close coordination of the many parts that make up the system. These include generators, transmitters and distributors that own and operate the lines through which electricity travels, as well as the large and residential consumers that help us respond to changing needs.



The Government of Ontario sets the overall policy for the energy sector and the Ontario Energy Board regulates it.

Electricity System Players

Organisation	Role
Ministry of Energy	Determines the province's energy policy
Ontario Energy Board	Regulates the province's electricity sector
Generators	Generates electricity for Ontario from various technology types such as nuclear, hydroelectric, gas, wind, solar, and bioenergy plants
Transmitter	Delivers power at high voltages across the province to local distribution companies and industrial consumers
Local Distribution Companies	Distributes power at lower voltages from transmitters to homes and businesses. There are over 60 local distribution companies in Ontario.
Independent Electricity System Operator	Plans and operates the Ontario electricity system and market, ensuring sufficient supply, and develops a conservation culture in the province

What is Customer Reliability?

- Customer reliability can be measured in terms of:
 - The **frequency** that power to customers is interrupted and,
 - The **duration** of the interruption
- Interruptions can result from outages and/or contingencies where power is generated, transmitted, or distributed

Who ensures reliable electricity supply?

Many different organization are involved in ensuring a reliable supply of electricity to consumers:



Transmitters are required by the OEB to develop performance standards at their delivery points



Distributors are required by the OEB to report on customer reliability and to either deliver the historical level of performance at a progressively lower cost or superior performance at similar costs



The **IESO** is responsible for planning the IESO-Controlled Grid* in accordance to load security (amount of load interrupted) and restoration (duration of interruption) criteria

*The IESO-Controlled Grid refers to the transmission systems with respect to which, pursuant to operating agreements, the IESO has authority to direct operations.

How can customer reliability be improved?

- Options for improving customer reliability depend on where and under what conditions the loss of supply occurs
- Generally speaking, options include:
 - Redundant supply (e.g. additional transmission circuit)
 - Local generation to reduce the net load downstream of a supply constraint to help manage outage conditions
 - Backup power to mitigate customer impact during loss of supply
 - Devices to help detect/locate faults faster

Local Customer Reliability in the Northwest

- The Northwest region is characterized by load centers, remote communities, and generators dispersed over long distances
- The scope of the IRRP is focused on the IESO-controlled grid and customer reliability is examined through the lens of security/restoration criteria
- No load security/restoration criteria violations have been identified but load interruptions still have high socio-economic costs for impacted communities

Challenges:

- Since there are no criteria violations, “need” is hard to define
- In some cases, performance issues may stem from the distribution system rather than the IESO-controlled grid and may be outside the scope of regional planning
- Infrastructure solutions such as building redundant supply may be cost prohibitive for the impacted customer/community

What can regional planning do? (1/2)

1. The IRRP can document all customer reliability concerns that stakeholders bring to our attention.

While some issues may be outside the scope of regional planning, the IRRP report is a public facing planning document that can serve as the rationale for future initiatives and/or investments.

2. For performance issues outside the scope of regional planning (e.g. distribution system performance), the IRPP can provide information on which entity is best positioned to address concerns.

What can regional planning do? (2/2)

3. For performance issues stemming from the IESO-controlled grid, the IRRP can investigate the cause and document options to improve performance.

IRRP will investigate opportunities for incremental improvements where there is the potential for integration with other system needs and where it is cost effective.

Limitations of Regional Planning

- The IRRP does not determine who pays for implementing recommendations; matters of cost allocation are determined by the Ontario Energy Board
 - While the IRRP can study options to improve performance beyond load security and restoration criteria, the IRRP will not make firm recommendations – these improvements must be customer driven
- The IRRP would not address or explore customer reliability issues due to incidents on the distribution system



Discussion

Group Discussion

What customer reliability concerns do you have in the Northwest? What have you experienced? How has this impacted you and your community?

Breakout Discussions

- **You will be sent out to break-out groups for 20 minutes**
- Each group will have a facilitator/notetaker to ensure that everyone has an opportunity to share and keep the discussion on time
- When you arrive to your breakout group be sure to introduce yourselves
- After the 20 minutes are up, you will be automatically brought back into the broader discussion

Break-Out Discussion Question

What thoughts and ideas do you have for mitigating reliability concerns? What does success look like in terms of resolving these issues? What else would you like to share regarding this topic?

Report Back

- The facilitator to share common themes resulting from their discussion group
- Any other comments from individuals are welcomed

Note:

- The NW regional planning Technical Working Group will document and consider all comments.
- Any themes emerging from this discussion will be shared with attendees at the next regional planning engagement public webinar.

Upcoming Events

- November: Discussion Groups
 1. November 2: 1 to 2:30 pm - Customer reliability concerns
 2. November 18: 10 to 11:30 am – Emerging local initiatives
 3. November 29: 2 to 3:30 pm – Reliability in North of Dryden area
- Q1 2022: Engagement webinar to seek input on options to be considered to meet future needs

Thank You

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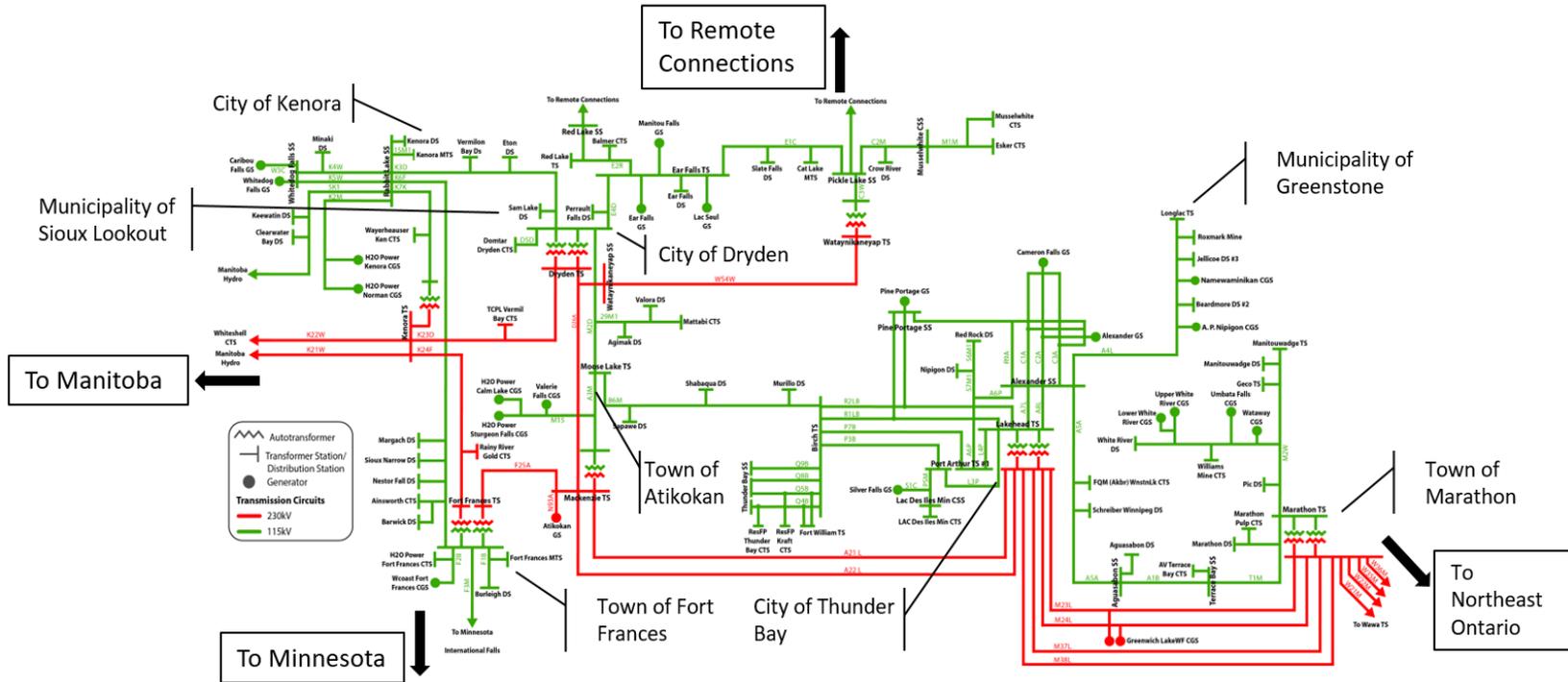


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Appendix

Northwest Region Single Line Diagram



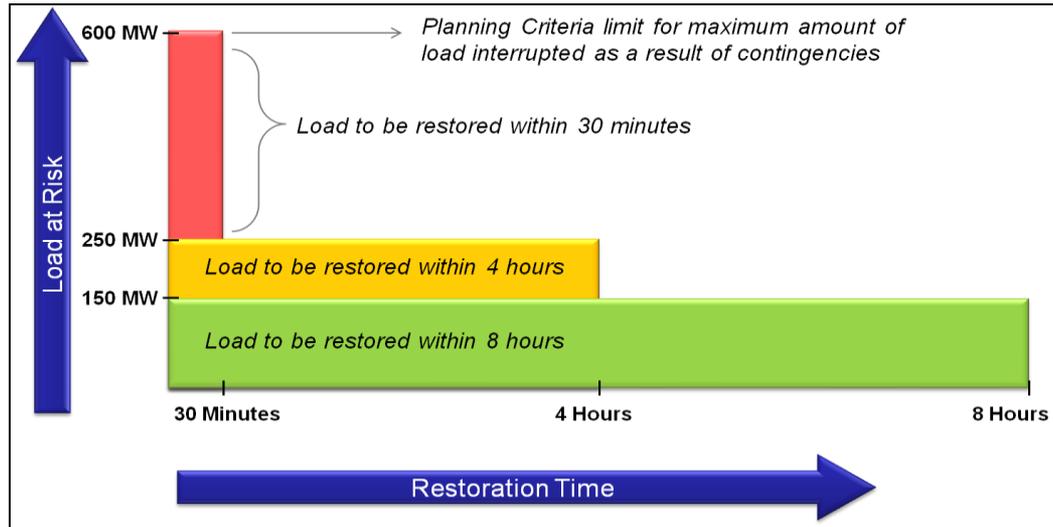
Load Security Criteria

Ontario Resource and Transmission Assessment Criteria (ORTAC) Section 7.1 Load Security Criteria is summarized in the table below:

Number of transmission elements out of service	Local generation outage?	Amount of load allowed to be interrupted by configuration	Amount of load allowed to be interrupted by load rejection or curtailment	Total amount of load allowed to be interrupted by load curtailment, rejection, and curtailment
One	No	≤ 150 MW	None	≤ 150 MW
	Yes	≤ 150 MW	≤ 150 MW	≤ 150 MW
Two	No	≤ 600 MW	≤ 150 MW	≤ 600 MW
	Yes	≤ 600 MW	≤ 600 MW	≤ 600 MW

Load Restoration Criteria

Ontario Resource and Transmission Assessment Criteria (ORTAC) Section 7.2 Load Restoration Criteria is summarized in the table below:



Note that ORTAC 7.2 restoration times are intended for locations that are near staffed centres. In more remote locations, restoration times should be commensurate with travel times and accessibility.