

DER Protection Philosophy Checklist

This document describes the technical details that are expected to be provided in a Protection Philosophy document as part of the initial COVER submission for new or modified DER projects. These items are general and not exhaustive or prescriptive. Please review Hydro One's **"Distributed Generation Technical Interconnection Requirements – Interconnections at Voltages 50KV and Below"** to ensure all applicable requirements are met. Please see accompanying Single Line Diagram sample.

Project Description

Project Name

Hydro One Project ID#

Project Location

Project Type

DER Technology

Capacity

Utility Feeder of Connection

Protection Requirements

Please describe in writing the details of the following protection schemes and systems:

- Breaker Fail (BF) Scheme and Timing
- Phase and Ground Fault Protection
 - All internal faults (3ph and 1ph) within the DG Facility
 - All external faults (3ph and 1ph) on the interconnected feeder including single phase lateral taps
- Open Phase Protection (3ph)
 - Method for detecting loss of voltage in one or more phases of Hydro One's distribution system and automatically cease to energize all phases from the interconnected system
 - Method for maintaining balanced 3-phase output under all operating conditions
- Over Frequency/Under Frequency Protection
- Overvoltage/Undervoltage Protection
- Anti-Islanding Protection

- Transfer Trip (If applicable)
- Distributed Generator End Open (DGEO) (If applicable)
- Low Set Block Signal (LSBS) (If applicable)
- Protection Scheme Failures (If applicable)
- Disconnecting and Interrupting Device Details
- Synchronization (If applicable)
- Automatic Reconnection of Generation and HV Ground Sources

Control And Monitoring Requirements

- Control Facilities
- Operating Data, Telemetry and Monitoring
- Telemetry Reporting Rates

Tripping Matrix

Please include a tripping matrix in table format detailing which protection relays and associated circuit breakers trip for short circuits in all sections of the electrical system.