

Distribution Generator Interconnections

Closed Transition Transfer (CTT) Fact Sheet

Ship to Shore Connections

Closed transition transfer (CTT) is a method by which a customer can operate a generator at their facility in parallel with the BC Hydro Distribution System for a short duration of time (< 20 seconds), during the transfer of critical load to/from the BC Hydro system from/to the generator, without power interruption. CTT is also called make-before-break, bumpless, or seamless load transfer.

A CTT System is classified as either “Certified Momentary” or “Extended,” based on the specifications of its automatic transfer switch (ATS). The technical requirements are simplified for Certified Momentary CTT systems (see Application Checklist 1), compared to Extended CTT systems (see Application Checklist 2).

BC Hydro does not need to review facilities or site information related to standby generation as long as it is operated in open-transfer mode and not operated in parallel with the BC Hydro system. A generator must not under any circumstances run in parallel or synchronized with the BC Hydro system until all the requirements of the Closed-Transition review process are met including the completion of Site Acceptance Testing and a Declaration of Compatibility.

How long will my CTT project take to complete?

A typical CTT project can take between 3 to 5 months.

We also publish a *CTT Process Flowchart* on www.bchydro.com on the [Distribution Generator Interconnections page](#) so that you can effectively navigate our connection process.

What does a CTT project cost?

BC Hydro collects a \$10,500 deposit (\$10,000 plus applicable taxes) before any work can begin. CTT Projects are billed on actual. Cost reconciliation will be done at project completion. Any unused balance will be refunded and overages will be billed.

What are the technical interconnection requirements of a CTT interconnection project?

You can review the *Technical Interconnection Requirements for Closed Transition Transfer of Power Generators* on www.bchydro.com on the [Distribution Generator Interconnections page](#).

What project outcome can I expect?

Once BC Hydro accepts your CTT application, we will issue you a signed Declaration of Compatibility (DoC), which permits you to operate your generator in parallel with the BC Hydro Distribution System in CTT manner.

Important: Customers are not permitted to operate generators in parallel with the BC Hydro Distribution System prior to receiving a signed DoC. Rule 84-002 of the Canadian Electrical Code.



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How can I contact the distribution generator interconnection team?

Please contact us with any questions. You can visit our website to review and/or download application forms, reference guides and fact sheets.

Payments must be sent to the address below or we cannot guarantee your payment will be received.

Distribution Generator Interconnections (CTT)

BC Hydro

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Application Requirements

Applications for interconnection of a generator(s) in closed transition mode must include the following certified documents and drawings, along with the **\$10,000 deposit** (plus applicable taxes). Electronic forms (PDFs) are preferred.

- a) An **Application for Interconnection, Power Generator(s) in Closed Transition Transfer Mode**. This form can be found on www.bchydro.com (on [the Distribution Generator Interconnections page](#)) and must be signed and sealed by a Professional Engineer.
 - **The Utility Interconnection Protection** provided on the Application must be located on the shore/port side.
 - **The size of the generator** provided can be just the largest one (in all the ships) that is to be docked at that site. (i.e. The largest MVA of all generators that will be connected in parallel with the BC Hydro system.)
- b) An **overall facility electrical power distribution one-line diagram** showing: service entrance, major power distribution equipment, all onsite generators, CTT switches, BC Hydro revenue metering, key interlock scheme(s), mechanical interlocks, entrance disconnect devices with assigned tag (aka identification) numbers, point of interconnection, voltage levels and equipment ratings.
- c) A **narrative description** of the closed transition transfer system operating modes (normal, auto, manual and/or test mode) including utility intertie protection, normal and maximum closed transition transfer times. To lesser level of detail, a description of the facility power scheme and generator(s) operation.
- d) **Technical specification(s)** (or data sheets) of CTT ATs, and relays used for utility interconnection protection
- e) An **electrical protection & control one line diagram** showing
 - Facility entrance protection with associated breaker(s)
 - Interconnection System(s) of the CTT scheme(s): protection relays with function numbers, sensing points, controlled devices, type of signals (permissive, trip, close), mechanical and electrical interlocks, as applicable to the CTT
- f) **Facility site plan(s)** to show the location of service entrance and major electrical equipment (incoming vaults, generators, switchgear, CTT switches).
- g) **Schematic(s)**, or P&C 1-line diagrams, or 3-line diagrams, of CTT transfer switch to show protective devices, their functions and sensing points, number of phases, controlled devices, type of signals (trip, permission, close).