3. Northwest – British Columbia

Accepted Rating ☒
Existing Rating ☐
Other ☐

Location:	Washington and southern British Columbia
Definition:	BC Transmission Corporation plans, operates, and manages all transmission equipment owned by BC Hydro in British Columbia. Line — Owner — Metered End Custer (BPA)-Ingledow (BCTC) 500 kV lines 1&2 (Westside Intertie) — Joint — Ingledow (North end) Boundary (BPA)-Waneta (Fortis BC) 230 kV (Eastside Intertie, Normally Open) — Joint — Boundary (South end) Boundary (BPA)-Nelway (BCTC) 230 kV (Eastside Intertie, Normally Close) — Joint — Boundary (South end)
Transfer Limit:	North to South: Up to 3150 MW (all ties). Flow cannot exceed 2850 MW on both Custer-Ingledow lines 1&2 (Westside Intertie) or 400 MW on the Boundary-Nelway line (one of the two Eastside Interties). South to North: Up to 2000 MW (all ties). Flow cannot exceed 2000 MW on both Custer-Ingledow lines 1&2 (Westside Intertie) or 400 MW on the Boundary-Nelway line (one of the two Eastside Interties).
Critical Disturbance that limits the transfer capability:	Depending on the season, load level, direction of transfer and the pattern of generation in the local area, different outages will limit the transfer capability. Typically the most severe outages are on the 500, 345 and 230 kV grid in the Puget Sound area. Typically the limiting facilities are on the 230 and 115 kV system. Recent study work addressing the N-2 common mode outages (breaker failures, common ROW, etc.) has identified the limiting contingencies. Addition of new sectionalizing breakers, reconfiguration of the 230 kV system and uprating of existing lines has improved the operating capability of the Northern Intertie. Work is continuing on further system improvements.
When:	North to South: The 2300 MW path rating was established in January 1989 with the publication of "Facility Rating Studies for Joint BPA-BCH 2300 MW Intertie Uprate Report." The 3150 MW path rating was established with the completion of the 2850 MW Westside BCH-BPA Intertie Project. The Westside BCH-BPA 2850 MW Intertie Uprate WECC Ad Hoc Review Group issued a final report titled "Report On the Accepted Rating Study of the Westside BCH-BPA 2850 MW Intertie Uprate" in May 1994.

System Conditions:	North to South: The two Custer-Ingledow tielines can transmit 2850 MW from Canada to the Northwest when B.C. Transmission Corporation's load (Canada) is between approximately 40% and 70% of its annual peak load. South to North: Restrictions occur during winter peak demand periods due to voltage stability concerns in the Northwest and B.C. Transmission Corporation. However, predominant transfers occur during spring months when voltage stability limitations are not a concern in northwest Washington.
Study Criteria:	All applicable B. C. Transmission Corporation, Bonneville Power Administration, and NERC/WECC Standards.
Remedial Actions Required:	North to South: The maximum amount of generator tripping in Canada (B.C. Transmission Corporation) is about 110% of the scheduled export from Canada to the Northwest. Reactive power equipment switching scheme is used in B.C. Transmission Corporation (Canada) to control voltages when the transfer on the Ingledow-Custer tielines is between 2300 and 2850 MW. South to North: The 230 kV tielines are directly tripped after outages of both 500 kV Ingledow-Custer ties when the South to North total transfer exceeds 400 MW, thus separating the Northwest from Canada.
Formal Operating Procedure:	B.C. Transmission Corporation's System Operating Order #7T-18 "Custer-Ingledow 500 kV Interconnection," BPA Dispatcher Standing Order #320 "Operation of the Northern Intertie" and Standing Order #323 "Bellingham Area-Intalco Load Tripping."
Allocation:	North to South: All of the capacity is allocated to B. C. Transmission Corporation, BPA, and PSE. South to North: All of the capacity is allocated to B.C. Transmission Corporation, BPA, and PSE.
Interaction w/Other Transfer Paths:	North to South: For the Ingledow-Custer intertie 2850 MW accepted rating, there is a potential interaction with the Raver-Paul loading.
Contact Person:	Eric Tse British Columbia Transmission Corporation Suite 1100, Four Bentall Centre 1055 Dunsmuir Street P.O. Box 49260 Vancouver, British Columbia Canada V7X 1V5 (604) 699-7365 (604) 699-7538 - fax eric.tse@bctc.com Kyle Kohne (TPP-DITT-2) Bonneville Power Administration 5411 NE HWY 99 P.O. Box 491 Vancouver, WA 98666-0491 (360) 418-8429 (360) 418-2258 - fax krkohne@bpa.gov