TRU Compliance Equipment Testing Project

Equipment Testing and Certification to Assess Risk

KATIE BRAMAN
kbraman@structint.com

Using a risk-based approach derived from various seismic standards from the Institute of Electrical and Electronics Engineers, TRU and BC Hydro will develop a synthetic test motion in three axes, mount the equipment on a triaxial shake table at TRU's testing partner's facility, and test at increasing levels until various levels of damage are observed.

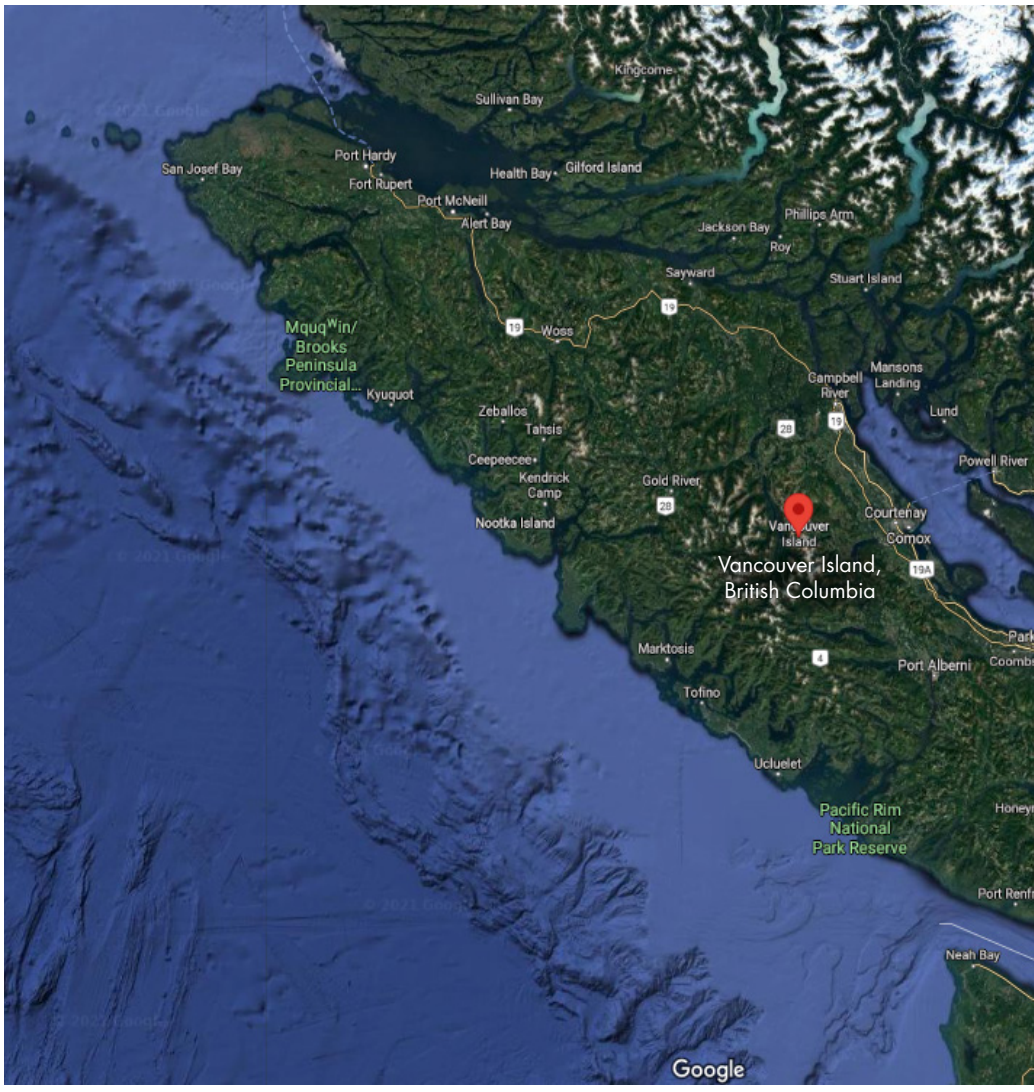

FIGURE 1. Ladore Dam Spillway, Image courtesy BC Hydro
Ref: https://www.mycampbellrivernow.com/wp-content uploads/2021/01/John-Hart-Dam.jpg

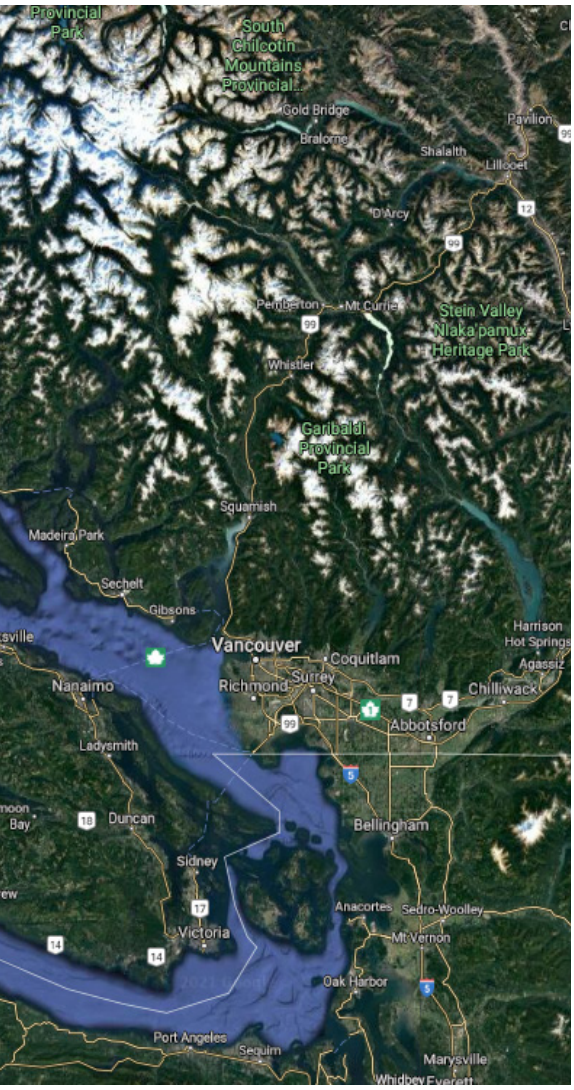

FIGURE 2. Project location

March 18, 2021

TRU Compliance, the accredited product certification body of Structural Integrity Associates, has been awarded a contract to assist BC Hydro in qualifying and better understanding the seismic vulnerability of critical equipment used to control its spillway gates. As part of the larger efforts to seismically upgrade the John Hart, Ladore, and Strathcona dams along the Campbell River system on Vancouver Island, British Columbia, BC Hydro is procuring equipment that allows precise flow control of the water going over the spillway. Reliable equipment is needed to prevent possible overtopping or having uncontrolled water flow through the spillway.

Using a risk-based approach derived from various seismic standards from the Institute of Electrical and Electronics Engineers, TRU and BC Hydro will develop a synthetic test motion in three axes, mount the equipment on a triaxial shake table at TRU's testing partner's facility, and test at increasing levels until various levels of damage are observed. The goal is to document the damage levels until complete failure is observed. The outcomes of this testing will not only qualify the equipment for use in the facilities but will also allow BC Hydro to better estimate the seismic margin of the spillway systems at other generating facilities. The rich test data will allow informed risk-based decision making to guide BC Hydro as it manages its hydroelectric assets into the future and continue to enable them to provide safe and reliable power to its 1.8 million customers.

© Structural Integrity Associates, Inc. a SI SOLUTIONS Company - All Rights Reserved