



Electromagnetic Induction Studies

Powertech conducts electromagnetic studies at Substations supported by state of the art 3D modelling and field measurements.

Low frequency electromagnetic fields are associated mainly with the supply of electricity, through the generation, distribution and use of alternating current (AC), and they are always present in our surroundings. Electric power stations, high-voltage and medium-voltage lines, transformers, electric motors and railway lines are the main sources of these electromagnetic fields.

High voltage transmission lines create electromagnetic fields around the energized conductors. Electromagnetic fields induce voltages on any metallic objects located in close proximity of transmission lines. The induced voltages can endanger the safety of public and field workers in the area influenced by electromagnetic fields. Besides the safety concerns, induced voltages can cause corruptions on the surface of pipelines, penstocks, and railways. In the case of pipelines, if the coating is not strong enough to withstand the excessive stress exerted by induced voltages, it can lead to mechanical breakdown.

The electromagnetic fields can also cause interferences on the communication networks.

Powertech services

Powertech utilizes state of the art 3-dimensional mathematical modeling software to study safety

hazards associated to Electromagnetic fields. We can calculate the electric field density and magnetic field density in the volume of the understudied system with comprehensive details. In the case of substations, the impact of electromagnetic interference from overhead transmission lines on all existing electrical equipment such as circuit breakers, disconnect switches, transformers, insulators, etc. can be modelled.

Asset Sustain Management Benefits

By early identifying the hot spots within the area influenced by the electromagnetic fields, safety of field workers and a significant reduction of repair downtime can be achieved. Powertech uses IEEE C95.6 standard and best industry practices to determine the permissible thresholds for the electromagnetic fields density. In case, the calculated and measured values exceed the tolerable limits, Powertech can develop mitigation strategies to modify the electromagnetic field profiles.

Personal Safety

Workers' exposure to electromagnetic fields must be monitored for their safety in a wide range of industrial areas, machinery, and manufacturing processes.

ABOUT POWERTECH LABS:

Powertech Labs Inc. is one of the largest testing and research laboratories in North America, situated in beautiful British Columbia, Canada. Our 11-acre facility offers 15 different testing labs for a one-stop-shop approach to managing electrical utilities, and testing gas components, pressure vessels and systems.

Outside of the utilities industry, Powertech provides routine testing capabilities, product development, research and consulting services to support an array of industrial-type operations, electrical equipment manufacturers and automotive original equipment manufacturers.

www.powertechlabs.com



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