Powerful Solutions for Data Management and Reporting

Manitoba Hydro

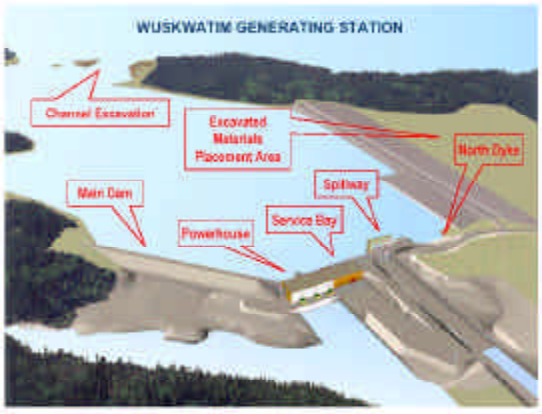
A gINT Case Study

Manitoba Hydro has used gINT exclusively for reporting all of its drilling investigations since 1989, and for its materials testing reporting since 1996.

gINT is Manitoba Hydro's geotechnical data visualization and reporting application of choice.

"gINT is far more than a log-writer," says William T. Reynolds of the Materials and Field Services section of the Civil Engineering Department at Manitoba Hydro. In particular, gINT allows Manitoba Hydro to:

- Provide an accurate record of all field drilling, in-situ testing, lab testing, instrumentation, and interpretation of geotechnical and geological data;
- Provide a reliable, customizable, and repeatable method for producing reports, drawings, tables, and graphs of geotechnical data;
- Provide a consistent and upgradeable method for in-situ and lab testing calculations according to Manitoba Hydro specifications;
- Provide a secure, distributed archive of geotechnical data for consultants, tenderers and contractors; and,
- Provide a GIS compatible database for use in documenting, planning and constructing Manitoba Hydro projects.



The Manitoba Hydro Geotechnical Database consists of over 2.1 GB data in about 160 gINT project files.

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Manitoba Hydro has 16 generating stations: 14 hydroelectric and two thermal, as described here; http://www.hydro.mb.ca/our_facilities/generating_stations.shtml. gINT has been used during geotechnical investigations at all of Manitoba Hydro's Generating Stations to prepare reports involving new construction, rehabilitation, maintenance, and monitoring. Minor investigations have included drilling and testing programs for over two dozen new substation designs, over 1000km of transmission line, and more than thirty environmental investigations, several having more than 100 drill holes apiece.

Manitoba Hydro has also used gINT in several major hydroelectric dam site assessment projects. Three of these projects are at a Stage IV Investigation level. This is the highest level of site assessment investigation Manitoba Hydro performs pre-construction. Each project has sufficient drilling to allow the preparation of detailed engineering cost analyses and construction details. These projects include:

- Wuskwatim Generating Station (Stage IV Investigation)
  200 megawatt, 500 holes 1965 through 2002
- Gull Rapids Generating Station (Stage IV Investigation)
  600 megawatt, 1020 holes 1987 through 2003
- Conawapa Generating Station (Stage IV Investigation)
  1200 megawatt, 1500 holes 1963 through 1991

Besides ongoing and new projects, Manitoba Hydro is using gINT related to:

- creating databases of historical drilling investigations for all the Generating Stations;
- recovering the pre-1996 lab testing digital data and replacing the "final results" with the raw input and readings allowing recalculation, query, and consistent presentation.

Manitoba Hydro actively develops applications to work with gINT, its databases, and its reports. Our current Geotechnical Database programming efforts have these objectives:

- preparing gINT for Stage V investigations "on-line real-time" during construction;
- automated instrumentation readings reporting and update(ODBC databases);
- automated lab measurements interfacing gINT with multiplexed data collectors;
- development of .NET hand-held PC interfaces sharing procedures with gINTRules .

Manitoba Hydro
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