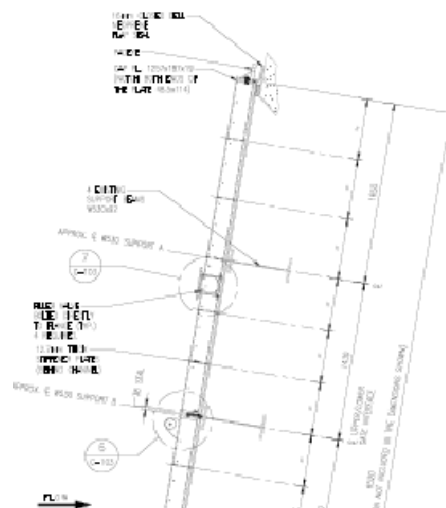


Trashrack Modifications Newfoundland & Labrador Hydro



Description of Services Provided:

Meco was retained by Newfoundland & Labrador Hydro to design a floating gate for the Star Lake Hydro Facility. The Star Lake hydroelectric generating facility was designed in 1998. The single generating unit at Star Lake utilizes approximately 137 meters of head to produce a rated output of 18 MW. The design of Star Lake did not include a system to isolate the intake gates for maintenance and repair; therefore, Meco assessed and designed steel bulkhead gates that seal against the existing steel trash rack guides and concrete intake structure and retain the Star Lake reservoir to complete work on the intake gates and concrete guides. The project included

- Site assessment of the intake structure. Meco provided on-site technical direction to a diving team to obtain all the required information.
- Engineering design including drafting for the four bulkhead gates. Design included a valve, stem and casing arrangement to provide pressure equalization prior to gate removal. The valve is operated in approx. 40ft of water from an operating deck approx. 50ft above the valve. A combination of natural rubber J-seals, compression seals, UHMW bearing guides seals and closed cell neoprene seals to ensure the gate are water tight during operation.
- The preparation of a cost estimate to fabricate and commission the bulkhead gate.
- Completion of a formal report including a detailed description of the intake assessment and diving inspections, a design brief for the bulkhead gate that accompanied the fabrication drawings, as well as, outline procedures for the installation and removal of the gate was completed

All technical and design work, tender specifications and cost estimate including development of the dive work plan and technical support. This project demonstrates Meco's ability and knowledge in the steel design of costume intake gates with an operating head of 50ft. including the design of gate sealing systems and filler valve arrangements.