

Intake Replacement | Design

Newfoundland Power



Description of Services Provided:

Meco was contracted by Newfoundland Power (NP) to design a replacement intake for the Heart's Content Hydroelectric Development, located on the Avalon Peninsula, Newfoundland and Labrador. The Heart's Content development has a single unit powerhouse rated at 2.7 MW. The facility was constructed in the 1920's. Through the DSR process, capital improvements were identified to extend the life of the facility. Capital improvement recommendations required upgrades to the canal, replacement of the intake and the penstock. Responsibilities included:

- Preparation of demolition drawings for the existing intake.
- Design of hydraulic improvements to the intake approach channel to mitigate both the frazzle and floating ice problems.
- Design of a new intake structure with adequate submergence and improved hydraulic efficiency.
- Design of trashracks to meet DFO requirements to prevent fish impingement.
- Design of an operating gate to allow for dewatering of the penstock and a maintenance gate upstream of the operating gate to facilitate any repairs required.
- Design of penstock thimble.

Meco completed the design within the schedule window established at project initiation. Deliverables from Meco included Conceptual design, design development of the concept to tender documents, including project specifications. Meco worked closely with NP, who procured the penstock separately, to ensure a proper handshake at the thimble, and cooperation with contractors.