

NHA Alaska Regional Meeting

September 19, 2017 Girdwood, Alaska



Tazimina Hydro Project

- Serves Iliamna, Newhalen, and Nondalton Electric Cooperative (INNEC)
- Supplants diesel generation
- Completed in 1998
- HDR design
- Tazimina River @ Tazimina Falls
- Run-of-River Diversion



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Project Features

River intake sill (partial)
Intake structure (220 cfs cap.)
Buried 60" steel penstock
110 cfs present unit capacity 220 cfs maximum system capacity (w/upgrades)
Vertical penstock shaft to turbine room
Underground powerhouse
2 – 412 kW Gilkes Francis units (could be upgraded to 700 kW units)
120 feet head
Tailrace discharge through horizontal tunnel below falls
Above ground control building at top of shaft



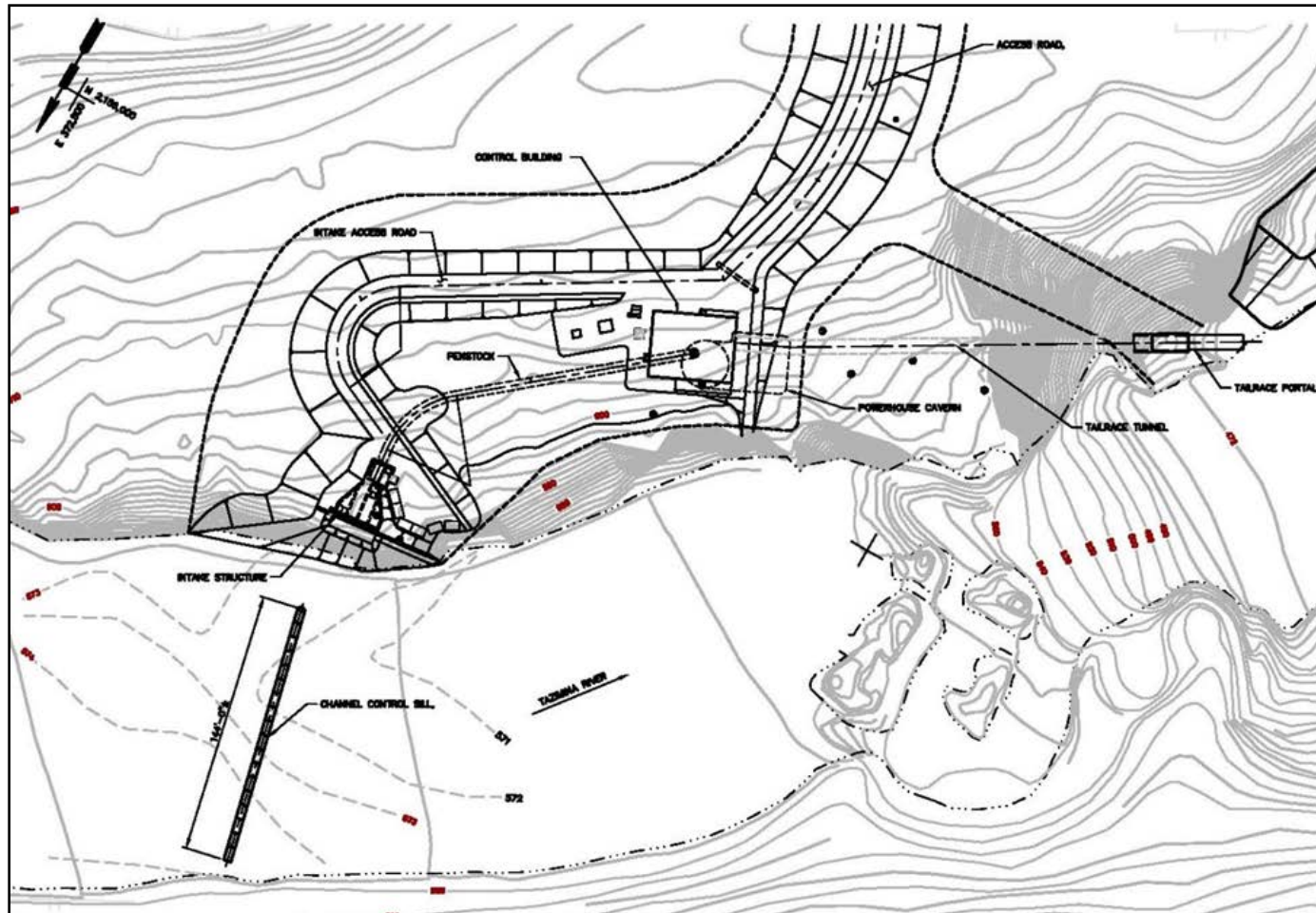
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Project Features

Site Layout



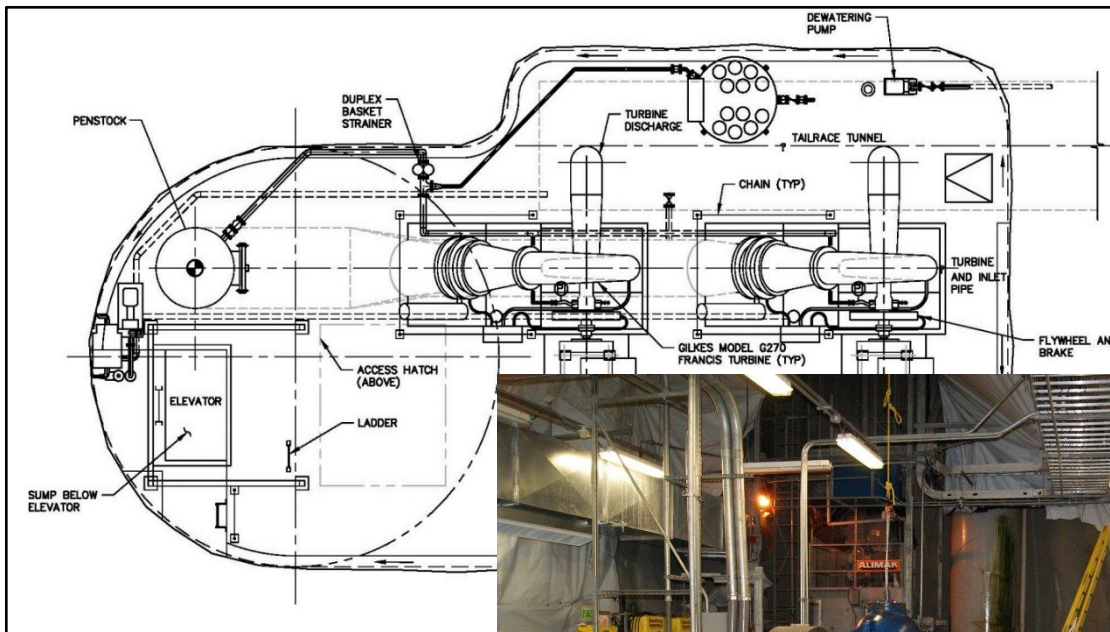
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Project Features

Underground Turbine Room



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Project Upgrades 2009 - 2017

Concrete tailrace channel

Install glycol trashrack heating system

Replace old CAT diesels with Skania diesels & switchgear

Reslope existing rock cuts to minimize boulder and rock shedding into road and into river at intake

Install LED lighting throughout control building and turbine room

Remove abandoned switchgear at hydro and replace

Install additional insulation inside control building

Construct compressor building at intake to provide high air capacity for rack cleaning and ice removal

Redesign and reinstall new trashracks with glycol heating loop

Repair river weir sill from ice damage and extend one block

Project Upgrades 2018 (possible)

Install Obermeyer sill to help hold minimum desired water level at intake

Upgrade to larger turbine unit/s



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Project Upgrades 2009

Concrete tailrace channel



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Project Upgrades 2010

Install glycol trashrack heating system



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Project Upgrades 2010

Install glycol trashrack heating system



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Project Upgrades 2012

Replace old CAT diesels with Skania diesels & switchgear



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Project Upgrades 2017

Reslope existing rock cuts to minimize boulder and rock shedding into road and into river at intake



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Project Upgrades 2017

Reslope existing rock cuts to minimize boulder and rock shedding into road and into river at intake



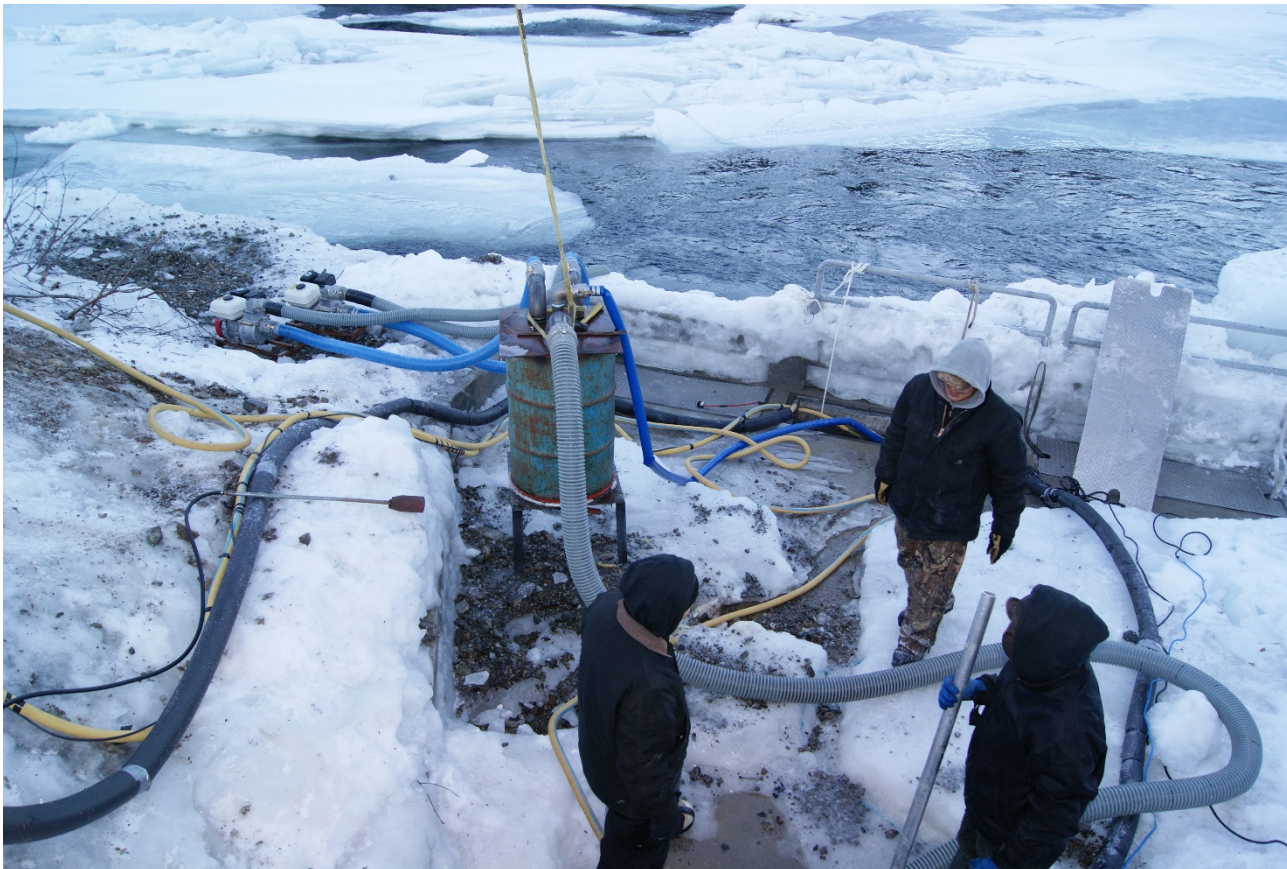
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Project Upgrades 2017

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Project Upgrades 2017

Install LED lighting throughout control building and turbine room



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Project Upgrades 2010

Replace old switchgear & controls at hydro plant



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Project Upgrades 2017

Install additional insulation inside control building



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Project Upgrades 2017

Install additional insulation inside control building



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Project Upgrades 2017

Construct compressor building at intake to provide high air capacity for rack cleaning and ice removal



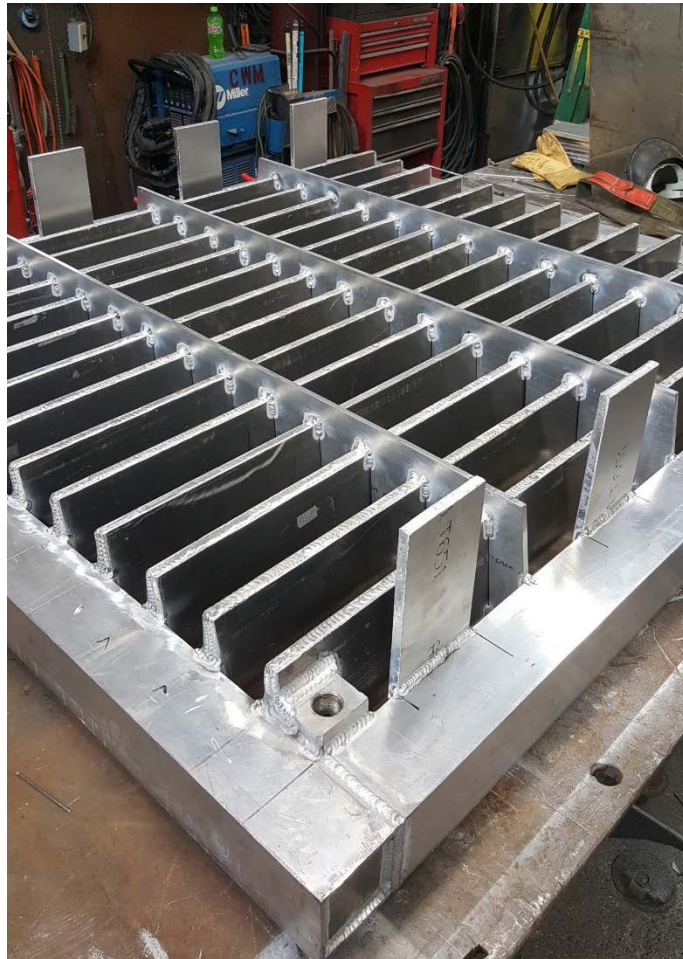
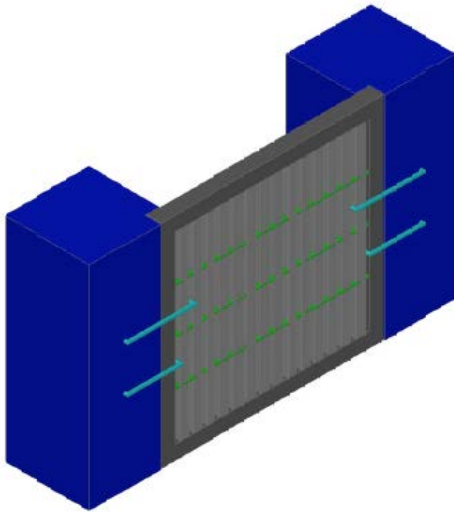
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Project Upgrades 2017

Redesign and reinstall new trashracks with glycol heating loop



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Project Upgrades 2017

Redesign and reinstall new trashracks with glycol heating loop



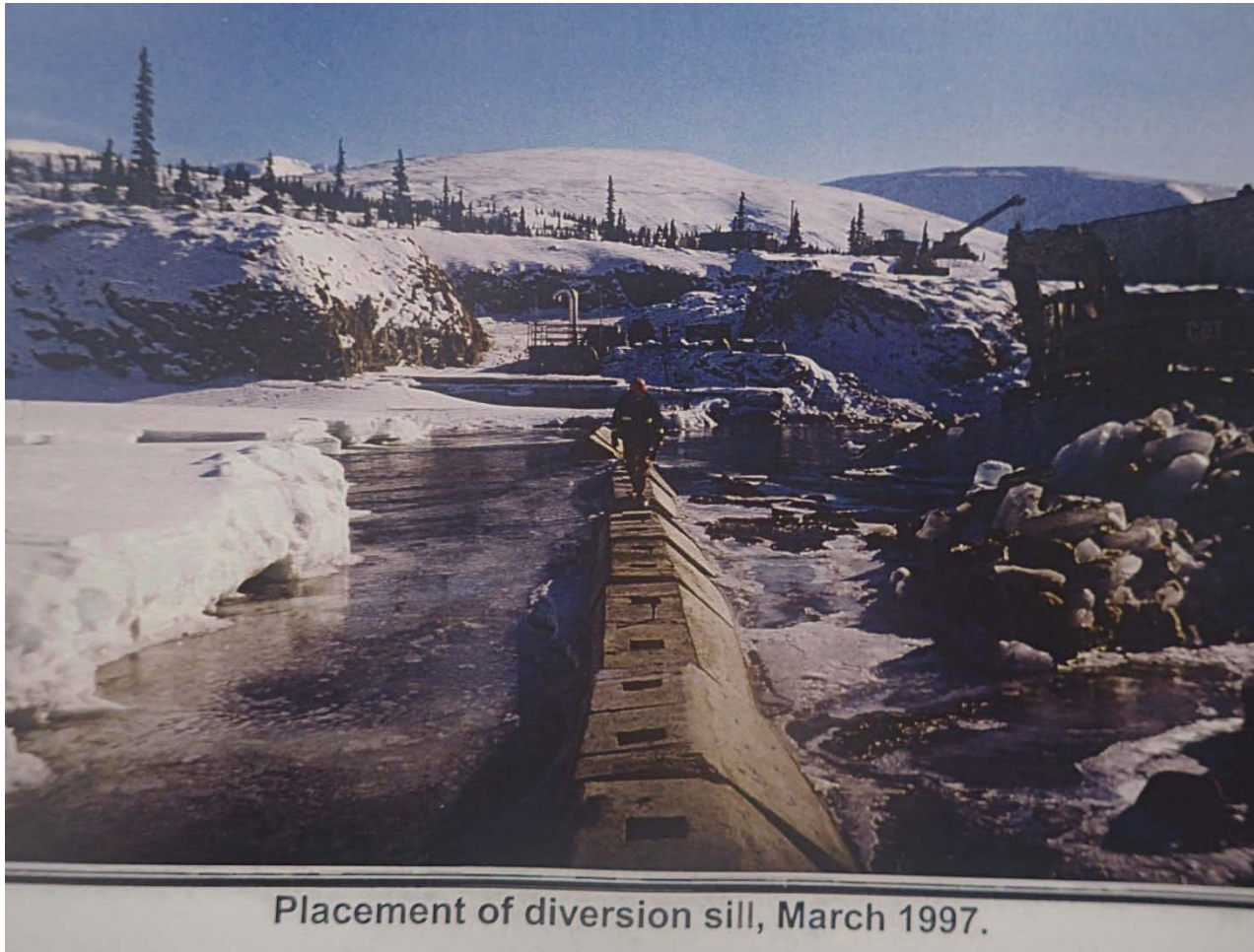
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Project Upgrades 2017

Repair river weir sill from ice damage and extend one block



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Repair river weir sill from ice damage and extend one block



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Project Upgrades 2018 (possible)

Install submerged Obermeyer sill to help hold minimum desired water level at intake



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Project Upgrades 2018 (possible)

Upgrade to larger turbine unit/s



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