

# Taltson Hydro Pulse Flow Standard Operating Procedure

The annual shutdown for the Taltson Twin Gorges Generating Station (occurs in August for a period of 2 to 3 weeks) results in the stranding and death of fish (420 kilograms/year (kg/yr) of Age 1 equivalents) in the tailrace below the plant

To maintain compliance with the *Fisheries Act* NTPC obtained *Fisheries Act* Authorization 18-HCAA-01487-Taltson GS from Fisheries and Oceans Canada (DFO) for the death of fish that occurs as part of the annual shutdown. FAA 18-HCAA-01487 contains conditions to mitigate and offset for the death of fish. The required mitigation measures are outlined in Condition 2.1.1. of FAA 18-HCAA-01487.

## *2.1.1. Measures to be implemented during shutdown:*

*2.1.1.1. Implement pulse flows, where the time between the cessation of flow and the start of the pulse flow is approximately 72 minutes, to allow fish to emigrate out of the shallow waters into deeper waters immediately prior to shutdown.*

*2.1.1.2. Implement night-time shutdown, conducting the final step of the shutdown by 05:00h.*

## **The operational details for the required mitigation is outlined below:**

- Taltson unit is brought down to station service (20cms)
- Taltson unit is shut off before 5:00am
  - This based off mid August sunrise; if shutdown timing is different the initial shutdown should be as close to sunrise as possible during the low light period when fish are likely to be higher in the water column
- Temperature of the thrust bearing within the turbine is monitored; when it has cooled to 40 degrees Celsius (should take ~60 minutes) the unit is restarted back up to station service (20cms)
- Unit runs at station service (20cms) for one hour
- Unit is shut off and maintenance work begins

## **Photos of the Pulse Flow from the tailrace below the Taltson Twin Gorges Generating Station**



## **Reporting to DFO**

- For each annual shutdown the following information must be reported to DFO
  - Date and time of initial shutdown
  - Timing of pulse flow
  - Time of secondary shutdown
  - Time of restart for unit (end of shutdown)
- The following details can be reported to reported to the NTPC Senoir Environmental Licensing Specialist, Matthew Miller ([mmiller@ntpc.com](mailto:mmiller@ntpc.com))

*Fisheries Act* Authorization 18-HCAA-01487-Taltson GS applies to the annual shutdown during August for a period of approximately 2 to 3 weeks. Additional shutdowns and/or longer shutdowns may require additional consultation with DFO.