Bluefish Dam Replacement
Project Update - March 2010

Background

In 2002, NTPC completed the purchase of Bluefish Hydro from Miramar Con Mine for just under $12 million. The facility consists of two dams, a head gate, penstock, and two power plants that house hydro electric generators.

Under average water conditions Bluefish Hydro has the potential to provide up to 20% of Yellowknife's annual electricity needs that would otherwise be met with 11 million liters of diesel generation. The Jackfish diesel plant is now predominantly a standby plant providing back-up when hydro is unavailable.

Bluefish Hydro has returned many times its acquisition cost in avoided diesel fuel and diesel capital costs for NTPC customers.

The dam is nearly 70-years old. Upgrades have extended the dam's life beyond normally expected periods.

In June 2008, the Mackenzie Valley Land and Water Board (MVLWB) was notified of NTPC's intentions to proceed with emergency repairs under Section (17) of the Mackenzie Valley Land Use Regulations.

Before the orderly replacement of the dam could begin a hole developed in the impermeable barrier that was helping to prevent the dam from leaking. This damage increased the leakage to the point that the dam will eventually fail.

On October 09, 2009 the MVLWB agreed to treat Bluefish Dam Replacement under the emergency regulations. A lot has happened since then and this summary is intended to update the public and our customers.

Environmental and Regulatory Processes

MVLWB

The MVLWB issued a schedule for the approval of the land use permit (normally a relatively short time frame) and the water license (normally a much longer time frame). In order to provide more time for environmental reviews NTPC has requested that the MVLWB split the approval process; proceeding with the land use permit first. This provides other agencies, which expressed concern with the schedule, time to more fully participate in the environmental review.

Department of Fisheries and Oceans (DFO)

DFO must approve the dam replacement by way of a DFO Project Authorization. To date, DFO has received a Fish Study which provides the majority of required information. Additional information was provided the week of February 8. DFO also has an interest in the environment review related to the MVLWB water licensing process.

Environment Canada (EC) and Indian and Northern Affairs Canada (INAC)
EC and INAC do not have any specific approval processes on this project, but are involved in the MVLWB water licensing process and will be provided with the same information as DFO.

Transport Canada (TC) – Navigable Waters Act
An application was filed with TC the week of February 15. The application is for the replacement of the original dam, previously approved under the Act in 1940.

Public Utilities Board (PUB)
NTPC has received a Project Permit from the PUB with the condition that the PUB is provided an updated budget following close of tenders.

Site Preparation

Facilities and equipment must be brought to Bluefish to support the construction of the dam. These include:

- 50-person camp with approved sewage system;
- Office trailer and first aid trailers;
- 750,000 litres of fuel (stored at the site);
- One 450k and three double-walled 100k fuel tanks;
- A front-end loader and two haul trucks;
- Poles, conductor and transformers to provide electrical service to the camp;
- Materials (3/4" minus gravel, concrete aggregate)

These materials will be mobilized in March when the ice road has reached the required capacity. It is anticipated 130 loads will be delivered on the 2010 ice road.

Ice Road Season Impacts Construction Schedule

The biggest challenge to date is the weather. It was originally planned to have the ice road open to heavy loads by the middle of February. However this will not be achieved. The average temperatures in Yellowknife in December 2009 and January 2010 were 8% warmer than the same period in 2008/09. Temperatures in early February have also been unseasonably warm.

The ability to begin construction is dependent on transporting fuel tanks, 750,000 litres of fuel, camps and heavy equipment to site. The road requires 39-44 inches of ice to support a 50 ton load.

Even with significant flooding and co-operating temperatures, the required thickness was not achieved until around the end of February.

It won't be possible to deliver the tanks, camp, fuel, etc. and have them connected and to also deliver the contractor's heavy equipment on the 2010 ice road. As a result of the ice road conditions the successful contractor will complete some on-site work in 2010, marshal equipment in 2010, transport heavy equipment on the 2011 ice road and begin

heavy construction in March 2011. NTPC is also reviewing whether heavy equipment and fuel can be barged in during the summer.

Construction Tenders

An open, pre-qualification process was held in the final quarter of 2009 to evaluate and short list qualified companies and invite appropriate companies to tender. Three companies were selected to bid on the project. North American Contractors, RTL Construction and Nuna Logistics were invited to bid on the project. Tenders will close on April 20, 2010.

Risk Mitigation – Existing Dam

A working group comprised of operations, engineering and the President meet monthly to review the risk associated with the existing Bluefish Dam. This group has developed an emergency operating plan to reduce the risk of a breach and to minimize any damage to equipment and the environment in the event of a breach. The plan includes the following measures: modified operating and water management plan; marshalling of supplies and equipment to respond to an emergency; detailed inspection and monitoring program.

Inspections identified that some erosion has occurred in the downstream buttress below the emergency spillway. Repair work is scheduled for March 2010 when the winter road permits equipment mobilization.

We will continue to provide updates as the project progresses.