Environment Canada Environnement Canada

Canada

Environment Canada Review

A Presentation to the

Lower Churchill Hydroelectric Generation Project Joint Review Panel

Jeffrey Corkum
Acting, Regional Director
Environmental Protection Operations Directorate, Atlantic
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Contents

- EC Team, Role, Mandate, Legislation & Policies
- Atmospheric
- Aquatic
- Terrestrial
- Environmental Emergencies
- Follow-up and Monitoring
- Cumulative Effects
- Concluding Remarks

Environment Canada Team

• Climate Change	Mr. Gary Lines
• Air Issues	Mr. Michael Hingston
• Water Quality	Mr. Charles MacLean
• Mercury	Mr. Neil Burgess
• Waterfowl	Mr. Scott Gilliland
• Wetlands	Dr. Al Hanson
• Species at Risk	Mr. Peter Thomas
• Boreal Caribou	Mr. Paul MacDonald
• Aboriginal Issues	Mr. Roger Pothier
• Emergencies	Mr. Gerard Chisholm

Role in the Assessment

- Environment Canada is participating as an expert Federal Authority under the *Canadian Environmental Assessment Act*
- Environment Canada does not have a specific environmental assessment decision in relation to this project, nor does this project require any permits or authorizations that would be issued by Environment Canada (e.g. disposal at sea permit)

Mandate, Legislation & Policies

- A federal Department with expertise pertinent to understanding impacts and mitigations options
- A federal regulator with responsibility to administer federal legislation:
  - *Canadian Environmental Protection Act*
  - *Migratory Birds Convention Act*
  - *Species at Risk Act*
  - *Fisheries Act* (s. 36-42)
- A federal Department with responsibility to administer the Federal Wetlands Policy

EA Analysis

- Broad review focused on:
  - Air Quality
  - Water Quality
  - Migratory Birds
  - Species at Risk
  - Emergencies
  - Cumulative Effects
- Written panel submission provided, including specific recommendations

Atmospheric Environment

- One of the reasons given for carrying out the Project is the overall reduction in GHG emissions
- Complete GHG assessment must take into account:
  - GHG emissions during construction
  - Loss of GHG Sink in reservoir preparation
  - Displacement of GHG emissions elsewhere
- More detailed presentation for GHG under Reservoir Preparation Topic Specific Session

Atmospheric Environment

- During the site preparation and construction phases, potential air quality effects have been identified in the Environmental Impact Statement
- Various measures may be implemented to reduce dust and particle emissions from the site
- Environment Canada recommends that the use of best management practices can be effective to mitigate air quality effects during the site preparation and construction phase

Aquatic Environment

- Deposit of deleterious substances into waters frequented by fish or birds

- Accumulation of Mercury in fish eating wildlife

Aquatic Environment - Deleterious Substances

- Fisheries Act and Migratory Birds Convention Act prohibit the deposit of a deleterious substance into waters frequented by fish or birds respectively
- Environment Canada review focused on blasting residue, acid rock drainage, storage and handling of hazardous material and waste
- Analysis of deleterious substances satisfactory

Aquatic Environment - Mercury

- Construction of hydroelectric dams on the Lower Churchill River will cause mercury levels in local fish to increase for 10 – 20 years and then decline back to normal

- Detailed Presentation for Mercury, including specific recommendations, will be provided during Aquatic Topic-Specific Session

Terrestrial Environment

- EC Analysis focused on Migratory Birds:
  - Early Spring Staging Waterfowl
  - Species at Risk
    - Common Nighthawk
    - Olive Sided Flycatcher
    - Rusty Blackbird
    - Harlequin Duck
    - Red Wine Caribou Herd
  - Forest Songbirds (Wetland Sparrows & Wetlands)
- Detailed Presentations, including recommendations, will be provided during Terrestrial Topic-Specific Session for Waterfowl, Songbirds and Species at Risk

Environmental Emergencies

- Proponent's commitments made in the Environmental Impact Statement regarding emergency preparedness are satisfactory
- Once the design stage has been finalized and prior to construction, detailed emergency response plans and project specific protocols and standard operating procedures need to be developed
- Prior to construction, detailed emergency response plans, project element specific protocols and standard operating procedures need to be developed and approved by the lead regulatory agency. Response plans should be developed based on worse probable case

Environmental Emergencies

- In the event of an environmental emergency, once the response phase is completed, focus should shift to recovery
- The aim of the recovery phase is to restore the affected area to its previous state
- The Proponent should prepare an Emergency Environmental Effects Monitoring Program (EEEMP) based on scientifically defensible methods. The EEEMP should present testable hypothesis and demonstrate how they will be tested/validated

Follow up and Monitoring

- Environment Canada has identified the need for follow-up programs with regard to mercury accumulation in fish eating wildlife, re-establishment of wetlands, and in preparation for environmental emergencies
- The CEA Act clearly indicates that the details of those programs, including the results of any follow-up programs, are made public
- Environment Canada is concerned that the results of such programs have in the past been provided in synthesized or summary form only

Follow up and Monitoring

- Environment Canada recommends that all follow-up monitoring reports include the raw data on which the reports are based in a tabular form as well as whatever summary form is appropriate to demonstrate the basis of the conclusions of the report
- Environment Canada recommends that detailed design of any follow-up programs be presented to the appropriate lead agency for approval prior to construction. Any required baseline studies in support of follow-up programs must be conducted and approved prior to construction to ensure that wildlife will not be significantly impacted by the project. Environment Canada is prepared to assist in the design of these programs where we have requested them or where our assistance is requested in areas of EC expertise

Cumulative Effects

- Proponent analysis of cumulative effects meets guideline and Canadian Environmental Assessment Act requirements with respect to Environment Canada mandated issues
- Regional framework based on ecosystem approach more informative but beyond scope and scale of project level assessment
- Environment Canada working collaboratively with federal house, provincial and aboriginal partners to develop integrated landscape management tool
- CCME has endorsed Regional Strategic EA as preferred method of cumulative effects assessment

Cumulative Effects

- Monitoring and follow up programs should be designed to allow for the identification of cumulative effects by ensuring appropriate indicators are selected and applicable management plans and tools are utilized
- Development and implementation of regional scale tools and approaches should be promoted

Concluding Remarks

- There are some gaps in aspects of the project, however Environment Canada is of the opinion that these gaps can be addressed as the design process unfolds, provided that the Proponent commits to the recommendations provided
- Overall, if the project and associated mitigation activities are well executed, Environment Canada expects there will not be any significant adverse effects on environmental matters within the Department's mandate.

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