# Welcome

## Public Open House on Modernization Alternatives for Manitoba Hydro's Facilities at Pointe du Bois

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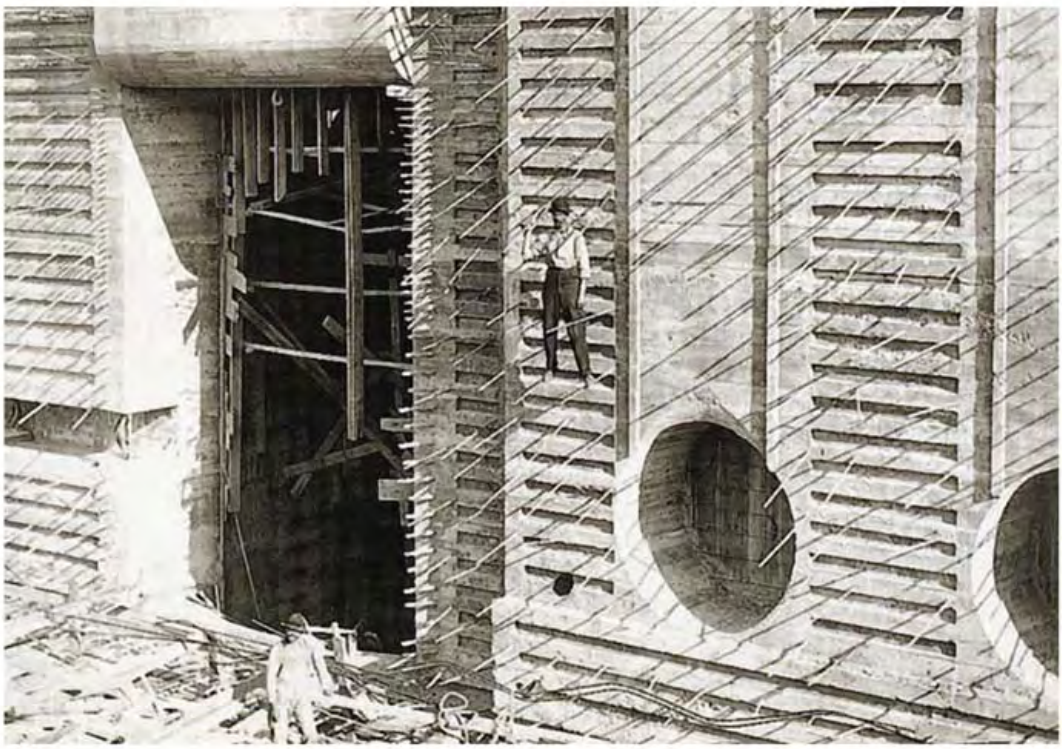
# Why We Are Here

- Manitoba Hydro is reviewing alternatives for the modernization of the Pointe du Bois Generating Station
- The purpose of today's open house is to present information on the modernization alternatives that Manitoba Hydro has identified and to solicit your comments, interests and concerns
- Your feedback will be helpful in finalizing the alternative for modernization

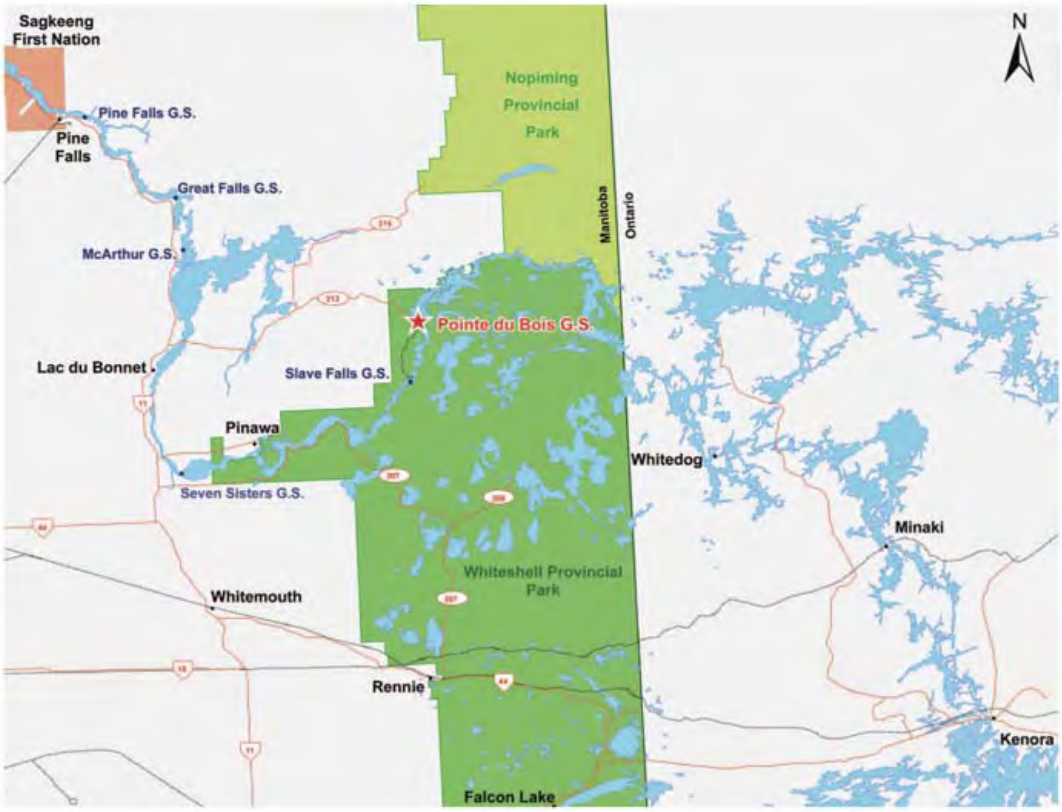
# Pointe du Bois-Manitoba Hydro's Oldest Generating Station

- 1909 - construction started
- 1911 - first power produced with three generating units
- 1914 to 1926 - 13 more generating units added, bringing capacity to 68 MW
- 1999 - unit 1 replaced, increasing capacity to 78 MW
- 2002 - acquired by Manitoba Hydro with the purchase of Winnipeg Hydro



Construction at Pointe du Bois

# Location of Pointe du Bois Generating Station

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# Pointe du Bois Generating Station


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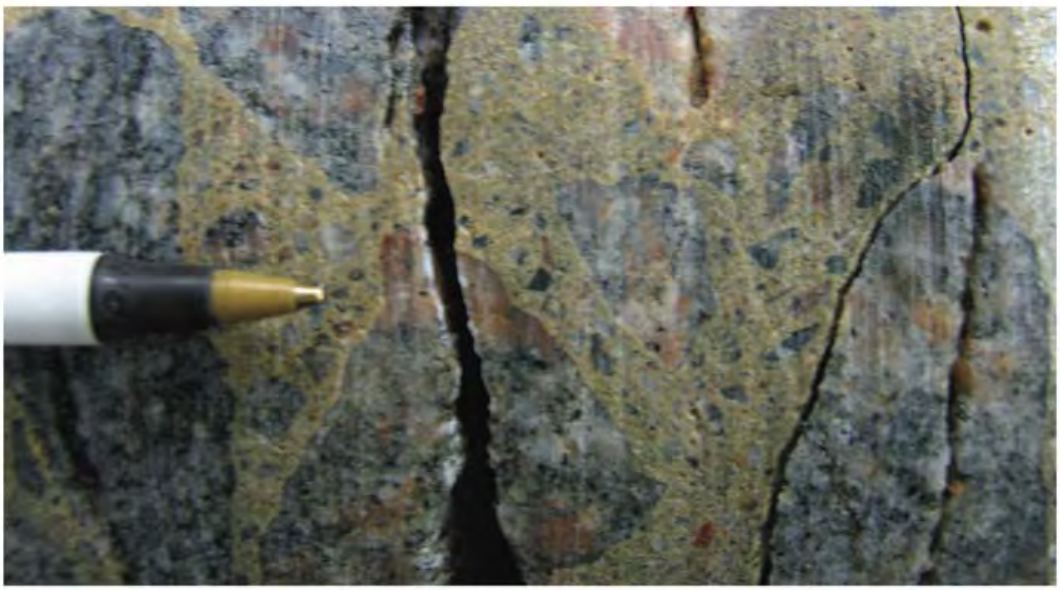
# Why Modernize?
# For Safety and Reliability

- Despite extensive repairs and upgrades over the years, major repair or replacement required to:
  - maintain public and dam safety
  - provide a safer working environment for staff
  - ensure reliable power production
- Equipment is at end of its functional life:
  - wear and tear
  - parts difficult to replace
  - outdated technology
- Plant design does not fully use available water resource to generate electricity

# Concrete Deterioration

- Impacts structural stability and compromises reliability of power generation
- Concrete used at Pointe du Bois was not air entrained and has suffered freeze-thaw deterioration for over 95 years
- Powerhouse and spillway have cracking and deterioration due to Alkali Aggregate Reaction (AAR) and Alkali Silica Reaction (ASR); this problem occurs when the rock in the concrete reacts with the alkali in the cement, producing a gel that cracks the concrete



# Concrete Issues Affect Reliability

- Major effect on alignment of generating units
- Many forced unit outages to repair misaligned bearings
- Movement of the concrete affects reliability
- Production outages impact system reliability and stability in southern Manitoba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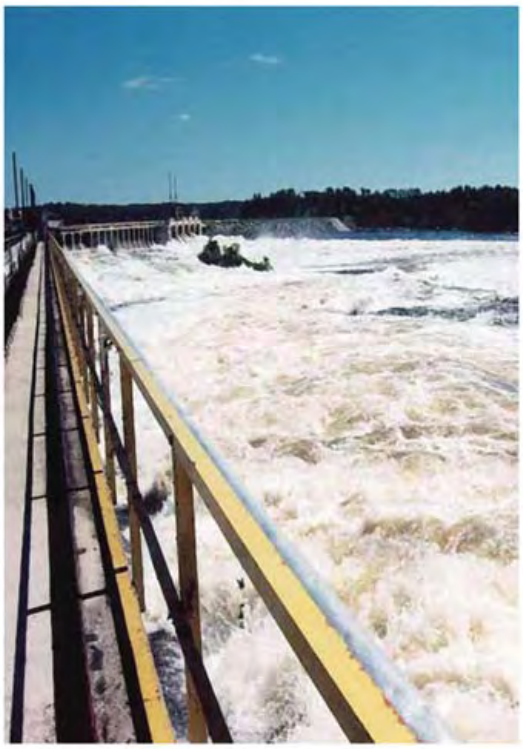
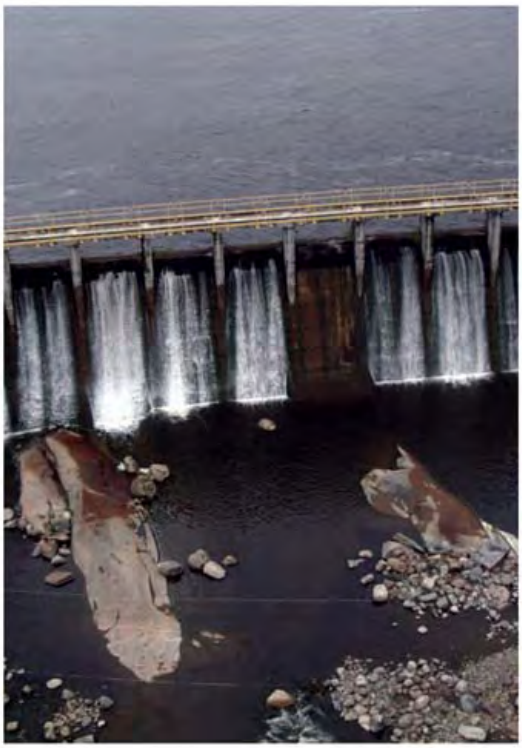
# Spillway

- 97 bay spillway operates as originally built
- Designed in a different era
- Does not meet modern standards
- Manual operations
- Cannot be retrofitted
- Concrete deterioration





# Age and Design Present Challenges for Workplace Safety

- Labour intensive
- Difficult working environment
- Inability to use modern equipment
- Not as safe as a modern generating station

# Modernization Alternatives

- Five alternatives
- Two not feasible
- Three considered

# Two Alternatives Not Feasible

- Remove powerhouse and spillway
  - drastically alters established water regime
  - results in loss of 78 MW generating capacity, negatively impacting energy security and reliability in southern Manitoba
  - no revenue from power production to support capital costs

- Remove powerhouse and existing spillway; build new spillway maintaining current water regime
  - results in loss of 78 MW generating capacity, negatively impacting energy security and reliability in southern Manitoba
  - no revenue from power production to support capital and on-going operational costs

# Three Feasible Modernization Alternatives

- Rebuild
- Renovate
- Repair

- For all three alternatives:
  - project implementation will consider and mitigate environmental effects
  - new spillway is priority component

# Summary of Modernization Alternatives

| | Rebuild | Renovate | Repair |
|---|---|---|---|
| Powerhouse | new | old | old |
| Spillway | new | new | new |
| Generators | new | new | refurbished |
| Concrete | new | on-going problem | on-going problem |
| Capacity (approx.) | 120 MW | 120 MW | 85 MW |
| Production Outages | virtually eliminated | reduced | on-going problem |
| Life span | 100 years | estimated 50 years, but uncertain | estimated 50 years, but uncertain |
| Estimated Cost ($2006) | $760 million | $725 million | $500 million |
| Risk (cost and scope) | low | high | highest |
| Construction Period | 6 years | 12 years | 11 years |
| Construction Employment (person years) | 600 | 700 | 500 |
| Operating Jobs | 10 to 15 | 30 to 35 | 55 to 60 |

# Rebuild: Manitoba Hydro's Preferred Modernization Alternative

- New powerhouse, spillway and dam with modern operating and safety standards
- Existing structures decommissioned
- New modern structures, electrical and mechanical systems
  - superior oil containment and fire prevention
  - improved public, employee and dam safety, functionality, and working conditions
  - concrete problems solved
- Highest confidence in construction costs and plant performance
- Generating capacity optimized to approximately 120 MW

# Renovate Alternative

- New generators and replacement of systems in existing powerhouse, powerhouse rehabilitation, and new spillway
- Modern operating and safety standards
- Install modern generating equipment and optimize power production (capacity 120 MW)
- Improved oil containment
- Concrete deterioration still poses technical challenges/risks
- High cost alternative, with high risks
  - capital and operating cost uncertainty
  - reliability issues
  - uncertain life span for powerhouse

# Repair Alternative

- Replacement or repair of structures and systems to meet minimum modern safety and operating standards
  - existing powerhouse and generating equipment maintained
  - new spillway
  - capacity increased to approximately 85 MW
  - maintenance and safety issues not resolved to same extent as in other alternatives
  - concrete deterioration and aging equipment pose technical challenges and risks
  - large number of employees to operate and maintain
  - does not fully use available water resource to generate electricity
- Lower cost but highest risk
  - capital and operating cost uncertainty
  - power production reliability issues
  - uncertain life span for powerhouse

# Preliminary List of Potential Interests and Concerns

- Dam safety
- Public safety
- Environmental and workplace safety
- Water levels and flows
- Fish, including sturgeon
- Wildlife
- Manitoba Hydro jobs in plant operations
- Construction employment
- Location in a provincial park
- Water quality
- Tourism, waterway use, recreation
- Aesthetics and landscape
- Construction traffic and noise
- Local, regional and Aboriginal business opportunities
- Improved reliability of power supply
- Plant maintenance
- Town site future
- Sustainability of project

# Environmental Assessment of Selected Alternative

- Will commence once a modernization alternative is selected
- Will satisfy the requirements of provincial and federal legislation
- Will include stakeholder consultation

# We Are Interested in Your Views

- We are interested in your thoughts about the modernization alternatives
- You may provide us your feedback:
  - fill out a comment form and leave it with us today
  - mail completed comment form to:

    Pointe du Bois Public Consultation
    Public Affairs
    Manitoba Hydro
    PO Box 815
    820 Taylor Avenue
    Winnipeg, MB R3C 2P4
  - email your comments to: publicaffairs@hydro.mb.ca
- A summary of comments/concerns will be posted on-line at: www.hydro.mb.ca/pointedubois
- Please provide your feedback by March 15, 2007

# What Happens Next

- Manitoba Hydro has not made a decision about Pointe du Bois modernization
- Public feedback received from this initial consultation process will be helpful in finalizing the alternative for modernization
- Once a modernization alternative has been finalized, a project description will be prepared, and further environmental studies and stakeholder consultations will be undertaken

# Remedial Work to Support On-going Pointe du Bois Operations

- Spillway hoist upgrades
- Maintenance to dam and spillway
- Stoplog upgrades
- Fire protection and oil containment
- Potential bridge replacement for vehicle access to spillway for maintenance of existing structures

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# Other Potential Manitoba Hydro Projects in the Area

## Slave Falls Tramway Conversion

- Convert existing tramway from Pointe du Bois Generating Station to Slave Falls Generating Station to private road
- Will improve access to the Slave Falls Generating Station for emergency response, maintenance and operations
- Environmental assessment would be undertaken
- Construction would commence once all permits and approvals are obtained

## Transmission Upgrade

- Existing lines from Pointe du Bois to Winnipeg require upgrade for system reliability purposes
    - independent of Pointe du Bois modernization
- Specific transmission requirements for the modernized Pointe du Bois Generating Station depend upon alternative selected

# Thank You

Thank you for attending today's open house and for providing us your views and comments.

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