

Regulatory Oversight for Cluff Lake Mine
Reclamation, Closure, and Long-Term Management
Saskatchewan Ministry of Environment

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Thank you for the opportunity to present today. The information that I plan to share regards the regulatory oversight for the Cluff Lake uranium mine and mill site as it has moved through its life cycle past decommissioning and into Institutional Control

Overview

1. History (how we got here)
2. Oversight of Decommissioning and Reclamation
3. Institutional Control



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As part of the discussion, I think it's a good idea to provide a bit of information on how we arrived at this point, so I'll share some history of the regulatory oversight that has been provided since the project started. I'll describe work done to support the decommissioning and reclamation and provide some information on how institutional control works in Saskatchewan, as it's something that we are proud to have as an option for the end state of sites.

Provincial Environmental Legislation Applicable to Mining

- [Environmental Assessment Act](#)
- [Environmental Management and Protection Act, 2010](#)
- [Mineral Industry Environmental Protection Regulations \(MIEPR\)](#)
- [Hazardous Substances and Waste Dangerous Goods Regulations \(HSWDGR\)](#)
- [Waterworks and Sewage Works Regulations](#)
- [Reclaimed Industrial Sites Act](#)
- [Saskatchewan Environmental Code](#)



For reference, this is a list of Saskatchewan legislation applicable to mine regulation.

Cluff Lake Board of Inquiry

- A public inquiry as a means to review and respond to the environmental assessment
- Presented May 31, 1978
- Made recommendations regarding provisions for decommissioning and reclamation criteria in legislation, among other things



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Regulatory oversight of the Cluff Lake project began in earnest in the late 1970's. As a response to environmental assessment information presented by the company and public concern respecting uranium mining in Saskatchewan, the Cluff Lake Board of Inquiry was established to examine, among other things, the probable environmental effects of this project. As part of this work, recommendations were made regarding monitoring requirements and for the provision of decommissioning and reclamation criteria in legislation that were adopted by the province.

Operational Monitoring

- Requirements for ongoing monitoring with provisions for comparison to baseline conditions and legislated standards
 - Air
 - Water (both surface and groundwater)
 - Soils and Sediments
 - Aquatic and terrestrial organisms



Throughout the construction and operation period, monitoring of environmental effects was key to regulatory oversight. Comparisons to baseline data helped determine effects levels and fed into plans for remedial work. The company measured effluent and emission releases and compared those to regulatory standards to ensure compliance was being maintained and that effects were still within the scope of assessment predictions.

Joint Federal Provincial Panel

- Examined implications of expansion of uranium mining and milling in Saskatchewan
- Made recommendations regarding new projects and expansion at existing projects
- Key recommendations regarding provisions for decommissioning and reclamation plans and financial assurance
- Saskatchewan incorporated provisions in *The Mineral Industry Environmental Protection Regulations, 1996*



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Along the way, other uranium mine development was assessed and evaluated. The 1990's saw some substantial new mines being proposed and some significant expansion projects at existing mines being contemplated. This proposed increase in mine activity led to increased scrutiny of the industry and in the mid 1990's, a joint federal/provincial panel was established to examine the implications of this development. The panel resulted in many recommendations for consideration of the regulators and affected stakeholders. Key to these recommendations were that decommissioning and reclamation requirements be provided for in legislation and that the planning for decommissioning and reclamation include cost estimates for financial assurances. Financial assurances were a major regulatory enhancement and provided insulation for taxpayers from the issues seen with some projects that were undertaken before these things were considered.

With this backdrop, we can see how decommissioning and reclamation planning was an important component in the regulation of the Cluff Lake project right from the initial contemplation of the development.

Decommissioning and Reclamation Planning

- Decision made to cease production at Cluff Lake in 1998
- Operation until end of 2000 with decommissioning and reclamation work following
- Canadian Nuclear Safety Commission determined that the decommissioning and reclamation plan would need to be assessed under the *Canadian Environmental Assessment Act*



As a result of depressed uranium prices and the increased costs to the continued operation of the Cluff Lake Project, in 1998 a decision was made to cease production and close the mine at the end of 2000. Although the project had an approved decommissioning and reclamation plan, the Canadian Nuclear Safety Commission determined that an assessment of that plan would be required before it could be reaffirmed. Hence a comprehensive study under the Canadian Environmental Assessment act was undertaken.

Assessment of the Decommissioning and Reclamation Plan

- Comprehensive Study for Decommissioning published in December 2000
- Operations extended until end of 2002



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The comprehensive study was published and presented in December 2000. Much of the work that was described in the decommissioning and reclamation plan was confirmed and the company began scheduling the reclamation work. While the reviews were being undertaken, the company extended the operational life of the mine and mill until the end of 2002.

Reclamation Work

- Decommissioning work commenced in 2002 with active reclamation work conducted until the end of 2006
- Site monitoring continued throughout the decommissioning period as per the Approval to Operate issued by Saskatchewan
- Monitoring adjusted to evaluate adequacy of decommissioning work



The bulk of the active decommissioning and reclamation work was conducted from the end of 2002 to the end of 2006. The province maintained the Approval to Operate for the project throughout the decommissioning work in the same manner that it used the approval to regulate the project during operations. Site facilities for managing effluent and emission discharges were maintained until they were no longer required and they themselves were decommissioned.

Post Decommissioning and Transition Monitoring

- Monitoring from 2006 to 2020
- For release consideration, monitoring must indicate that site conditions are stable and improving
- Additional site cleanup work conducted during this period



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Monitoring programs were maintained throughout decommissioning and reclamation and then extended into the post decommissioning period to determine the suitability of the decommissioning work. Criteria for release from decommissioning and reclamation requirements are contingent on site conditions being stable and improving. Where need was indicated, additional site cleanup work was completed. Scheduled reporting as required by provincial approvals continued throughout the post decommissioning monitoring period.

Release from Decommissioning and Reclamation Requirements

- Orano Canada Inc.: Cluff Lake Project – End State Report for Provincial Institutional Control issued September 2022
- CNSC provided licensing exemption for site on May 10, 2023 (exemption from CNSC licensing is a requirement for release)
- Ministry of Environment issued the release on September 5, 2023



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In September 2022, the company submitted the site end state report, which form the basis for the company's request for release from decommissioning and reclamation requirements. This document described the work undertaken to meet the decommissioning and reclamation plan requirements and to get the site into a state where the environmental conditions were stable and improving. The information underwent review by both the province and the CNSC. The CNSC established that the work undertaken met requirements and exempted the site from licensing requirements under the *Nuclear Safety and Control Act* on May 10, 2023. This exemption is a requirement for the site to be considered for entry into the Saskatchewan Institutional Control Program as described in *The Reclaimed Industrial Sites Act*. The provincial review also established that the work met requirements and a Release from Decommissioning and Reclamation Requirements as per *The Mineral Industry Environmental Protection Regulations* was issued September 5, 2023.

Institutional Control

- Release allows company to apply for entry into Institutional Control
- Under Institutional Control, the Ministry of Energy and Resources manages the long term monitoring and maintenance of the site



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In Saskatchewan, sites on provincial Crown land, once released from decommissioning and reclamation requirements, can apply for entry into the Institutional Control Program. The Institutional Control Program was established by Saskatchewan to provide a means for the company to relinquish responsibility for a reclaimed site so long as certain conditions are met. The Ministry of Energy and Resources then maintains the site and ensures that ongoing monitoring and maintenance work is conducted.

Institutional Control

- To enter the Institutional Control Program, a company is required to provide contributions to two funds
 1. Monitoring and Maintenance Fund (site specific)
 2. Unforeseen events fund (pooled)
- Amounts for fund provisions are negotiated and based on plans provided by the companies
- Companies must also surrender mineral and surface dispositions for areas entered into the program



In order for a site to be considered for institutional control, the company must have obtained a release from the Ministry of Environment. For uranium, the site must also be exempted from licensing requirements from the Canadian Nuclear Safety Commission. The company must provide a plan and funds to ensure ongoing monitoring and maintenance work and contingency for potential unforeseen events. The company must also surrender the mineral and surface dispositions for the areas that will be entered into the program.

Institutional Control

- Company covers costs for long term monitoring and maintenance
- Plan is negotiated and agreed to before entry is granted
- Monitoring and maintenance work is conducted using funds from the site specific fund
- Companies also contribute to a pooled fund to cover unforeseen events
- Provisions for engagement with local stakeholders



Funds for institutional control are provided entirely by the company. The Ministry of Energy and Resources and the Ministry of Environment review the monitoring and maintenance plan developed by the company to ensure that it meets requirements. The plan is cost estimated and future projected and once agreement on the amount is reached, the company provides funds to the Ministry of Energy and Resources. The Monitoring and Maintenance Fund is used to conduct monitoring work, publish reports, and provide scheduled maintenance as per the plan. Companies also contribute to a pooled fund that is intended to provide for coverage of unforeseen events. Recently, provisions of funds have also been included to cover future stakeholder engagement.

Institutional Control

- Ministry of Energy and Resources maintains site and registry, and acquires dispositions for mineral and surface rights to the sites so that access to the sites can be tracked and managed
- Ministry of Environment regulates and ensures compliance



Once a site is accepted into Institutional Control, the Ministry of Energy and Resources maintains the site and a registry of all the information available on the site for a permanent record. The Ministry Of Energy and Resources also acquires the mineral and surface access rights to the site so that it can manage any future site access and activities. The Ministry of Environment maintains regulatory oversight of all properties in Institutional Control and assists the Ministry of Energy and Resources with monitoring report reviews and recommended follow up work where required.

Institutional Control

Information Collected for Institutional Control

- Location
- Former Operator(s)
- Supporting documents & copies of all federal and provincial approvals related to the operation, clean up, and release
- Schedules and results of inspections and monitoring
- Allowable future land uses



Information collected for institutional control includes: location of the sites, former operators, supporting documents & copies of all federal and provincial approvals related to the operation, clean up, and release of the site, the schedules and results of inspections and monitoring, and notes regarding allowable future land uses.

Institutional Control

Institutional control registry will:

- Commission and supervise property monitoring and maintenance
- Ensure information is available for public access
- Oversee the management of the *Institutional Control Management Fund*
- Prepare and issue an Annual Report



The institutional control registry will: commission and supervise property monitoring and maintenance work, ensure information on the site is available for public access, oversee the management of the Institutional Control Management Fund, and prepare and issue an Annual Report on the program.

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