Overview of uranium mining environmental assessments and community engagement

K Scissons Oct 2019
Outline

• This presentation will cover:

  • Application process and where EIA fits in

  • General requirements for the contents of EIA

  • Community Engagement, Public Involvement, Interested Parties

  • EIA Process
EIA Introduction

• The International Association for Impact Assessment (IAIA) defines an EIA as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made"

• Approvals or Authorizations are based on the Country Laws, Acts and Regulations, and are the legal tools used to formally allow a project to proceed in a step wise manner with conditions, after an EIA.
Lifecycle Phases

Modern uranium mining lifecycle phases

These are sometimes defined slightly differently from country to country but essentially can be summarized as:

- Prospecting and Exploration;
- Planning, EIA, and Licensing;
- Construction and Commissioning;
- Operation;
- Decommissioning, and
- Long Term Institutional Control, surveillance and monitoring.
The lifecycle of U mining and milling activities
IAEA Reference Document - Example
(Relates to Regulatory EIA Process)

* BEST PRACTICE IN ENVIRONMENTAL MANAGEMENT OF URANIUM MINING, NF-T-1.2, IAEA 2010:

• “The objective of this report is to provide both operators and regulators with guidelines and examples of the implementation of the principles of best practice to the uranium mining and processing industry.”

• “…requires extensive planning so that they (U facilities) are socially, environmentally and economically sustainable and are accepted by society.”

• “…effective environmental management must anticipate, prevent and correct the causes of environmental degradation.”
Environmental Impact Assessment

As defined by IAEA 2003, RADIOACTIVE WASTE MANAGEMENT GLOSSARY:

• “Environmental impact statement: A set of documents recording the results of an evaluation of the physical, ecological, cultural and socioeconomic effects of a planned facility (e.g. a repository) or of a new technology.”
Further Definitions of an EIA

• An EIA is an examination of a **proposed project and the local environment**, and provides a prediction of the potential positive and negative impacts of the project on the physical, biological and socio-economic environment.

• EIA is a process in which **environmental factors are integrated** into project planning and decision making.

• The objective is to **judge the acceptability of the project** and control the negative impacts to acceptable levels, while maintaining the viability of the project.

• It is critical to understand the **level/details of the EIA are relative to the scale of the project**. Exploration in some countries do **not** require a formal EIA; but a proposed mine, process plant, or tailings facility are very large scale and comprehensive EIAs.
Definitions - Environment

- The environment, in the broadest sense, encompasses humanity and the world, comprising all living organisms and all components of their habitat (surface geography, geology, soils, air, surface water, groundwater, seas, climate)

Canada – Sask.  
(K. Scissons)  

Tanzania  
(K. Scissons)
EIA Overview

• An EIA builds a picture against a range of options and compares their benefits and detriments
• Decision making of new projects needs to consider long-term management and should consider time, funds, human health and environmental improvement vs impacts
• The EIA should highlight any issues that are required for consideration such as: licenses for water use, siting of waste management areas, legal requirements, and monitoring programs.

- N. Tsurikov
Example Announcement:  EA start

• “VANCOUVER, April 29, 2019 /CNW/ - NexGen Energy Ltd. … is pleased to announce the acceptance of a Project Description (Technical Proposal) by the Canadian Nuclear Safety Commission ("CNSC") and the Saskatchewan Ministry of Environment ("MOE"). The acceptance marks the commencement of an Environmental Assessment ("EA") on the Rook I Project (the "Project") in accordance with the requirements of both The Environmental Assessment Act (Province of Saskatchewan) and the Canadian Environmental Assessment Act, 2012 "CEAA 2012" (Government of Canada). The EA will be conducted through a coordinated process between the MOE and the CNSC, which is the Federal life-cycle regulator for all uranium mine and mill projects in Canada.

• NexGen has also filed an Initial Licence Application with the CNSC under the Nuclear Safety and Control Act in order to obtain a Licence to Prepare Site and Construct for the Project.”

• See: https://www.saskatchewanuranium.ca/
Application Steps, with EIA

Company Project Assessment Done:

- Site Characterization, Prelim. Plans
- Pre-Application Discussions *, Scoping
- Application And EIA Submitted
- Reg. Acceptance Review
- Draft EIA out for Public Review

* Includes public, interested parties
Application Steps, with EIA (cont’d)

EIA*: Public Comment*

* NOTE: Country Env’l. Impact Assessment Review Process Followed

Includes Public, Interested Parties understanding

Final EIA and Tech. Reg. Review

Public Hearing or Formal Decision

Licensing Doc. Review, Acceptance

License Hearing Or Decision
Purpose of the EIA

• The purpose of the assessment is to ensure decision makers **consider all environmental impacts first**. Must cover all hazards of the project, i.e. radiation hazards, chemical hazards, industrial hazards, etc.

• The EIA is a **tool** for decision makers:
  • to balance impacts versus the project benefits,
  • to fully understand how they will “**Start with the End in Mind.**”

• EIAs require decision makers to account for environmental values and to **justify those decisions** on the potential environmental impacts of the proposal. (Transparent cost/benefit analysis).
Purpose of the EIA/EIS

• In addition to providing guidelines and requirements for all environmental aspects of a proposed project, the EIS process will also:

  • **Provide information** to interested individuals or groups that may be impacted

  • **Provide a forum** for public consultation and informed comment on a proposed project

  • **Provide a framework** in which decision makers may consider the environmental aspects of a project in parallel with economic, technical and other factors
Regulatory approach

With regard to the EIA process the main roles and responsibilities of the regulatory authority are:

• To ensure that the requirements of the relevant laws and regulations are complied with by the proponent or licensee

• To ensure that the process is clearly set down and involves a minimum of delay in the review and decision making process

• To develop clearly defined standards and guidance for remediation, against which compliance will be assessed (cont’d)
Regulatory approach

The roles and responsibilities of the regulatory authority are:

• To ensure adequate public and interested parties input into the review process

• To document that the relevant requirements (laws and regulations) are applied during the project life.

Namibia coast (K Scissons)
Key characteristics of the EIA process (1/2)

The key characteristics of an ideal environmental assessment process are:

- Single process satisfying the interests of all levels of government
- Clear Terms of Reference for the process
- Strong leadership in the assessing body (regulator, etc.) to keep to the terms of reference
- Appropriate level of assessment as warranted by the risk
- Clearly defined guidelines for the contents of the EIS
- Practical and reasonable requirements

(cont’d)
Key characteristics of the EIA process (2/2)

The key characteristics also include:

- Appropriate **level** of detail required by the guidelines
- Reasonable **schedule**, strictly adhered to
- Opportunity for interested parties, public **input**
- **Not** overly **burdensome** financially
- **Fair** in that all parties are treated equally
Interested Parties - Community

Community Engagement Example

- Effective Public Information Program that covers all activities, outcomes; Openness, Transparent and Timely; Translations; Commitment to Consultation; Community Working Groups; and Engagement of All Parties.

USA, NRC

Tanzania, TAEC
What is stakeholder engagement?

- Stakeholder engagement is the process of informing and involving individuals and organizations that may be affected by decisions being made for a site or project.
Why should a company undertake stakeholder engagement?

• The company wishes to demonstrate they are proposing a safe and viable project, and gain community “buy-in” to their ideas or work programmes.
• They will need someone's approval for the project, and the public/stakeholders demands can influence those decisions.
• You and the company need to build trust.
• There may have been some historical challenges around the company or the industry, and that needs to be addressed.
Stakeholder or Interested Parties Categories

- Include all of the individuals and groups who have or believe they have an interest in the operations that may affect them. This includes:
  - **Political and economic**
    - Governments, customers, local community, shareholders, financial community, native or indigenous populations, Non-government Organizations.
  - **Social**
    - Workforce, local suppliers, contractors, local community, indigenous populations, mining community members.
  - **Technical**
    - Regulators (Nuclear, Environmental, Safety, Transport, etc.), Safety Operators, R&D institutions, Universities, IAEA.
EIA Information

EIA general content:

- Description of the Proposed Activities
- Description of the Affected Environment
- Identification of Adverse or Cumulative Impacts
- Alternatives to the Proposed Action
- Defined study area
- Comments from the public that are received
- Baseline Env’l data
- Environmental effects of malfunctions or accidents
- Transportation issues
- Atmospheric Env.
- Geology, Hydrogeology
- Aquatic Env.
- Terrestrial Env.
- Socio-economic impacts
- Human Health and Safety
- Security and Safeguards
Assess Potential Effects

The EIA should identify how the potential effects of any environmental changes will be monitored, detected:

- on human health or the use of lands, waters and resources;
- describe potential entry of contaminants of concern in air, liquid and airborne waste streams, (radionuclides, heavy metals), into food chains, terrestrial/aquatic environment.
- effects to local resources (e.g., surface and groundwater, fish, food, fur animals and plants), habitat losses and resource disruption that can affect activities.
- EIA must identify and describe technically and economically feasible mitigation measures that may be applied to each likely adverse environmental effect.
Protect the Public and the Env.

✓ Measure key parameters in the environment
✓ Describe how it will be protected
✓ Estimate potential dose to the public
✓ Start with the end in mind…
References


Thank you very much!

K. Scissons
Canada