



Environmental Assessment Guidelines (Scope of Project and Assessment) Environmental Assessment of the Operation of the McClean Lake Mine and Mill Facility



May 17, 2003

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Prepared by the Canadian Nuclear Safety Commission
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1.0 PURPOSE

As a result of the Federal Court Decision issued on September 23, 2002, in response to an application by the Interchurch Uranium Committee Educational Cooperative (ICUCEC) for judicial review of a 1999 licensing decision by the Atomic Energy Control Board (AECB), COGEMA has applied for a new operating licence for the McClean Lake uranium mine and mill facility, in northern Saskatchewan (reference 1 and 2). Considering the proceedings currently pending before the Federal Court of Appeal, and applying an abundance of caution, CNSC staff has agreed, as an extraordinary measure, to conduct an environmental screening assessment under the *Canadian Environmental Assessment Act (CEAA)*.

The purpose of this document is to provide guidance on the scope of the environmental assessment (EA) to be conducted in relation to the operation of the McClean Lake mine and mill facility.

Under the *CEAA*, the scope of the project and the scope of the assessment are to be determined by the Responsible Authority (*RA*) which is, in this case, the Canadian Nuclear Safety Commission (CNSC).

The EA Guidelines describe the basis for the conduct of the EA and focus the assessment on relevant issues and concerns. This document also provides specific direction to the proponent, COGEMA Resources Inc. on how to document the technical environmental assessment study which will be delegated to them by the CNSC staff pursuant to subsection 17(1) of the *CEAA*. Finally, the Guidelines provide a means of communicating the CNSC's environmental assessment process to stakeholders.

2.0 BACKGROUND

The McClean Lake site is currently licensed by the CNSC as a uranium mine and mill facility through a uranium mine operation licence (UMOL-MINEMILL-McClean.09/2005), issued pursuant to s. 24 of the *Nuclear Safety and Control Act (NSCA)*.

The McClean Lake Operation is a uranium mine and milling facility located in the Athabasca basin area of Saskatchewan. Access to the site is by means of an all-weather road connecting with the provincial highway system (Highway 905). Workers commute to and from the site by aircraft landing at Points North, and by bus from Points North to the mine site. While at work, workers reside in the camp facilities on site. The nearest permanent community is Wollaston Post, about 50 km from the mine site on the other side of Wollaston Lake.

The main facilities and operations at McClean Lake mine and mill facility are an open pit mine near Sue Lake (Sue site), the JEB mill located near the mined-out JEB pit (JEB site), a tailings management facility, various supporting facilities for activities such as tailings management and water treatment, and site infrastructure such as roads, electricity distribution and camp facilities. As of early 2002, the Sue 'C' pit was completed. Recovered ore is stockpiled at the Sue site, and

transported periodically to the JEB site for feeding into the mill. A 12 km haul road connects the Sue and JEB sites. The camp facilities are located adjacent to the haul road near the JEB site.

The proposal to operate the McClean Lake uranium mine and mill project was subjected to an environmental assessment pursuant to the *Environmental Assessment and Review Process Guidelines Order* (EARPGO). A Joint Federal-Provincial Review Panel considered the proposal and submitted its recommendations pursuant to the EARPGO in 1993 and 1997 (*reference 3 and 4*). The Joint Panel recommended that approval for operation as described in the 1991 Environmental Impact Statement and Complementary Information be granted, subject to several conditions (*reference 3*).

The licence authorizing operation of the mill and tailings management facility was issued by the AECB in June 1999. COGEMA made application for renewal of its operating licence in 2001, and also requested an amendment to allow mill production up to 8 million pounds per year of U₃O₈. Prior to a licensing decision by the CNSC, an environmental screening under *CEAA* was required for the increase in the mill production limit. This was completed by CNSC staff following submission of an Environmental Assessment Study Report by COGEMA. The Commission, pursuant to Section 20(1)(a) of *CEAA* decided that the project, taking into account appropriate mitigation measures, was not likely to cause significant adverse environmental effects. The Commission then, pursuant to Section 24 of the *Nuclear Safety and Control Act*, issued the current licence, CNSC operating licence UMOL-MINEMILL-McCLEAN.09/2005, valid from September 1, 2001 to August 31, 2005.

On March 17, 2003, COGEMA submitted a request (*reference 1*) for a licence to operate the McClean Lake uranium mine and mill facility in Northern Saskatchewan as it is currently authorized to do under licence uranium mine operation licence (UMOL-MINEMILL-McClean.09/2005). The licence application (*reference 1*) states that : 1) the licensed activities remain unchanged by this application, from those currently approved for McClean Lake mine and mill facility (*Attachment 1, reference 1*); and 2) this application involves no changes to physical activities or their management, including the approved operating policies, actions levels, organization management and key programs for protection of health, safety and environment, relative to those approved through the current licence.

CNSC approval of this application to operate the McClean Lake uranium mine and mill facility would require the issuance of a uranium mine facility operating licence (UMOL) for the McClean Lake facility, pursuant to ss. 24(2) of the *NSCA*.

The environmental assessment to be completed under the *CEAA* will provide part of the information that the CNSC will use in considering COGEMA's application for an operating licence for the McClean Lake facility. The application will also be subjected to a thorough evaluation under the provisions of the *NSCA* and its regulations. The CNSC licensing process provides the public with the opportunity to input to the Commission prior to any licensing decision being made on the project.

3.0 APPLICATION OF THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

The *uranium mine operating licence* requested by COGEMA would be issued pursuant to subsection 24(2) of the NSCA.

With the promulgation of the NSCA, amendments to the regulations under the CEAA are needed to replace references to the *Atomic Energy Control Act* and its regulations by appropriate reference to the provisions of the NSCA. Pending completion of the amendment process by the Canadian Environmental Assessment Agency (Agency), section 44 of the *Interpretation Act* deems references to the former legislation to be references to the analogous provisions of the NSCA.

In this case, the former provision authorizing the issue of a licence to construct a mine was sub section 8(1) of the *Uranium and Thorium Mining Regulations*, which is listed as a ‘trigger’ for an assessment under the *Law List Regulations* of the CEAA. Reading the NSCA in analogous fashion, the issuance of the operating licence for the COGEMA McClean Lake project is a ‘trigger’ pursuant to ss. 5(1)(d) of the CEAA under the *Law List Regulations*.

There are no other CEAA ‘triggers’, such as funding, being a proponent or disposing of an interest in land to support the proposed project, that involve the CNSC.

The project involves activities relating to a physical work, namely the operation of the McClean Lake uranium mine and mill facility, and thus there is a ‘*project*’ as defined in s. 2 of the CEAA.

The project is not of a type identified in the *Comprehensive Study List Regulations* of the CEAA. The requested licence is only in respect of the operation of the McClean mine and mill facility. It does not entail any proposed construction, decommissioning or abandonment of a uranium mining facility, nor any expansion of such a facility that would result in an increase in production capacity. Furthermore the site on which the proposed McClean Lake mine and mill facility will be operated lies entirely within the boundaries of the existing licensed McClean Lake uranium mine and mill facility (*reference 1 and 2*), as identified through UMOL-MINEMILL-McClean.09/2005.

The proposed operations of McClean Lake uranium mine and mill project, contained in the application for an operating licence, are the same as those currently authorized in licence UMOL-MINEMILL-McClean.09/2005. In August 2001, in its reasons for decision in respect of the said licence UMOL-MINEMILL-McClean.09/2005, the Commission accepted the CNSC staff conclusion set out in CMD 01-H18, that except for the then proposed increase in the production limit at the JEB Mill (that was assessed under the CEAA and determined not likely to cause significant adverse environmental effects), all the proposed operations in respect of which the licence was sought fell within the category of projects described in section 2, Schedule I, of the Exclusion List Regulations. In such a case, and in accordance with paragraph 7(1)(a) of the CEAA, an environmental assessment of the project would not be required.

However, considering the proceedings currently pending before the Federal Court of Appeal, and applying an abundance of caution, CNSC staff has agreed, as an extraordinary measure, to nevertheless conduct a screening that will meet the requirements of the CEAA (*reference 5*).

At this time, CNSC staff has not identified any issues associated with this project which would suggest a need to have it referred to a mediator or review panel pursuant to s. 25 of the CEAA. In this respect, CNSC staff notes that the project has undergone a public panel review process under the EARPGO, which involved extensive public hearings and public participation in the decision-making process. In addition, the previous licensing process by the CNSC that was completed in August 2001 included public notification and involvement in CNSC 2-day Hearing process before the Commission.

Following completion of the Screening Report, the CNSC will make a decision on the environmental assessment and related public concerns, consistent with its obligations under ss. 20(1) of the CEAA.

4.0 IDENTIFICATION OF OTHER FEDERAL AND PROVINCIAL EXPERT DEPARTMENTS

The CNSC is the only Responsible Authority under the CEAA identified to date for this screening.

Pursuant to the CEAA *Federal Coordination Regulations*, Health Canada; Environment Canada; Natural Resources Canada; the Department of Fisheries and Oceans; and the Department of Indian and Northern Affairs have been notified of the project, and have been requested to make a determination of their role, either as RA or as expert federal authority (FA).

All federal agencies consulted have indicated that they are not responsible authorities pursuant to CEAA, but that they wish to participate in the environmental assessment process as expert federal authorities.

CNSC staff have confirmed that there are no provincial environmental assessment requirements under the Saskatchewan *Environmental Assessment Act* that are applicable to the proposal (*reference 6*). The CNSC will keep Saskatchewan Environment informed of the process of the assessment and welcome their involvement in the technical review.

5.0 DELEGATION OF ASSESSMENT STUDIES TO COGEMA

The CNSC staff, pursuant to subsection 17(1) of the CEAA, will delegate to COGEMA the conduct of the technical support studies for the environmental assessment, the development and implementation of a public consultation program, and the preparation of an EA Study Report.

COGEMA will submit its EA Study Report for review and analysis by CNSC staff and by federal and provincial authorities. Once the EA Study Report has been accepted by CNSC staff, an EA Screening Report will be drafted. The draft Screening Report will then be made available for public review and comment. The EA Screening Report will then be finalized taking into consideration comments received and submitted by CNSC staff to the Commission for consideration and decision, at the environmental assessment hearing for the operation of the McClean Lake mine and mill facility. The public will also have an opportunity to comment and make interventions before the Commission on the final EA Screening Report.

6.0 PUBLIC REGISTRY

The CNSC has established a public registry for the assessment as required by section 55 of the *CEAA*. This includes identification of the assessment in the Federal Environmental Assessment Index (FEAI), which can be accessed on the Internet Web site of the Agency (www.ceaa.gc.ca). The FEAI number for this project is 37074.

As part of the registry, the CNSC must also maintain a list of documents pertaining to the environmental assessment. Interested parties may obtain copies of specific documents on the list by contacting the CNSC (see Section 12.0).

7.0 SCOPE OF THE PROJECT

In determining the scope of a project for an assessment under the *CEAA*, it is necessary to determine the physical works (e.g., facilities) that are involved in the proposal and any specific undertaking(s) to be carried out in relation to those physical works. The physical works in this case are the McClean mine, mill and associated facilities as described in the project description (*reference 2*). The proposed undertaking, in relation to that physical work is the operation of the McClean Lake mine and mill facility. While decommissioning is not part of the project, a preliminary decommissioning plan for the facility will also be included in the assessment.

Associated operations and activities that are within the scope of the project are those listed in the current CNSC operating licence UMOL-MINEMILL-McCLEAN.09/2005 and summarized in the Project Description. They include:

- a) operating a uranium mine and mill facility consisting of a mine, mill, waste management systems and associated site facilities located on Surface Lease S200095 as registered with the Saskatchewan Department of Energy and Mines;
- b) mining Sue C orebody and mining Sue A and B orebodies, subject to the condition of submitting a revised Preliminary Decommissioning Plan and Financial Guarantee for Commission approval prior to the mining of Sue A and B orebodies;
- c) producing a concentrate;

- d) possessing, storing, using, transferring, importing, and disposing of nuclear substances and radiation devices that are required for, or associated with the laboratory studies, fixed gauge usage and bore hole logging activities;
- e) packaging and transporting nuclear substances; and
- f) modifying the facility described in (a), subject to the condition that no significant modifications to, or deviations from, the design operating conditions, policies, programs, and/or methods as described in the approved documentation listed in the licence may be made without the prior written approval of the Commission or a person authorized by the Commission.

“Mine Sue C orebody”, in item (b), is broadly defined in the licence and, as described in the relevant lower tier licensing documents, mining involves a number of activities including actual mining of ore and other complementary activities. The complementary or related activities include ore storage and handling, and waste rock management, (including deposition of certain inventories back into the mined out pit); and supporting activities such as water collection and treatment, and environmental monitoring.

The project does not involve the milling of ore or the management of tailings or waste rock from ore deposits other than those that have been mined, or have the regulatory approval to be mined, at the McClean Lake mine and mill facility. The project does not involve any changes to the reference facilities or to their management described in the approved licensing documents.

8.0 FACTORS TO BE CONSIDERED IN THE SCREENING

The scope of the screening assessment under the *CEAA* must include all the factors identified in paragraphs 16(l)(a) to (d) of the *CEAA* and, as provided for under paragraph 16(l)(e), any other matter that the CNSC requires to be considered.

Paragraphs 16(l)(a) to (d) require that the following factors be included in the screening:

- the environmental effects (see section 13.0 Glossary of Terms) of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- the significance of the effects identified above;
- comments from the public that are received in accordance with the *CEAA* and its regulations; and
- measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects of the project.

With the discretion allowed for in paragraph 16(1)(e) of the *CEAA*, the CNSC requires that the following additional factors be included in the environmental assessment:

- the purpose of the project;
- the need for, and requirements of a follow-up program in respect of the project; and
- the capacity of renewable resources that are likely to be significantly affected by the project to meet the needs of the present and those of the future.

9.0 ASSESSMENT METHODOLOGY

9.1 Structure of the Screening Report

A recommended structure for the Screening Report is provided below as a framework for explaining how the assessment factors are to be systematically considered in the screening study. The information about the project and the existing environment is necessary to permit that consideration, and the results of that consideration will be documented in the Screening Report to be prepared by the CNSC staff.

The parts of the assessment that have been delegated by CNSC staff to COGEMA, pursuant to subsection 17(1) of the *CEAA*, are to be documented in the form of an EA study report in a manner consistent with this structure. This EA study report will be attached to the Screening Report as a support document. *Section Headings for the Screening Report:*

- 1) Introduction
- 2) Application of the *CEAA*
- 3) Scope of the Project
- 4) Scope of the Assessment
- 5) Project Description
- 6) Spatial and Temporal Boundaries of the Assessment
- 7) Description of the Existing Environment
- 8) Assessment and Mitigation of Environmental Effects
 - description of assessment methodology
 - effects of normal operations, malfunctions and accidents, and natural hazards
 - preliminary decommissioning
- 9) Cumulative Environmental Effects
- 10) Significance of Residual Effects
- 11) Stakeholder Consultation
- 12) Follow-up Program
- 13) Conclusions and Recommendations for Decision
- 14) References.

The following subsections in this section provide details on the information to be provided in the EASR, and correspond to the section headings labeled from (5 to 12) in the Screening Report, as listed above.

9.2 Specific Information Requirements

9.2.1 Project Description

An adequate description of the project is necessary to permit a reasonable consideration in the screening of the environmental effects of the project. The main objective of the project description is to identify and characterize those specific components and activities that have the potential to interact with, and thus result in a likely change or disruption to the surrounding environment during normal operations and as a result of malfunctions and accidents.

The description of the project will refer to, and elaborate upon, the items identified in the project scope, supported with appropriate maps and diagrams.

The description of the project will include proposed major activities for the operation of the McClean Lake mine and mill facility. The assessment is to consider changes in contaminant loadings to the environment at different stages of the project. The assessment is to evaluate effects for periods when the contaminant loadings are at maximum levels.

The McClean Lake mine and mill facility is an existing licensed facility with an operating history. Actual environmental performance information, in addition to future performance predictions, will therefore be considered in describing the characteristics of the project to the extent that it is relevant to the assessment.

The following information will be provided in summary form; where applicable, reference may be made to more detailed information.

General Information, Design Characteristics and Normal Operations:

- the location of the project;
- the basic configuration, layout, and design of the facility;
- the key operational components of the facility;
- a description of the facilities that currently exist at the project site and current inventories of ore, tailings, waste rock, clean rock, and hazardous materials;
- predictions of tailings volumes to be generated, tailings characteristics, and a summary of the McClean Lake tailings optimization and validation program;
- the sources, types and quantities of radiological and non-radiological waste predicted to be generated by the project, and the on-site processes for the collection, handling and disposing of radioactive and non-radioactive wastes to be generated by the project, with emphasis on the management of tailings and waste rock; the sources, quantities, contaminant loadings and concentration, and points of release from the project of routine radiological and non-radiological emissions and effluents;
- sources and quantities of all wastewater, and description of wastewater treatment plants and related facilities (Sink/Vulture Treated Effluents Management System) and expected effluent quality;
- the sources and characteristics of any noise, odour, dust and other likely nuisance effects from the project;

- the sources and characteristics of any risks to workers or the environment, and predicted radiation exposures for the workers and the public during all phases of the project;
- the types and quantities of hazardous materials required for the operation of the facility such as reagents, fuels, explosives, etc.;
- project related and other traffic volumes and the types of goods carried, including the transportation of dangerous goods;
- the aspects of the existing physical works associated with the project that, by their design, prevent or reduce potential interactions between the project and the environment;
- summary of current control programs for environmental protection, radiation protection, safety, security and emergency response, etc.;
- the results of past emission and effluent monitoring and environmental evaluation studies at the McClean Lake mine and mill facility as relevant to determining pre-project environmental baseline, the current operational baseline, and making future predictions of environmental performance. Limitations in the coverage and/or accuracy of past monitoring information should be discussed; a description of the relevant organizations and management structure, quality assurance programs and staff qualification requirements with emphasis on safety and environmental management programs; and
- a description of the preliminary decommissioning plan.

Malfunctions and Accidents

Information on project malfunctions and accidents is also necessary to permit consideration of relevant environmental effects in the screening. The information on malfunctions and accidents may be included in the general project description or presented in a separate section of the Screening Report, and will include:

- a discussion of past abnormal plant operations, accidents and spills to the extent that they are relevant to the current assessment;
- a description of specific, important malfunction and accident events that have a reasonable probability of occurring during the life of the McClean Lake mine and mill facility, including an explanation of how those events were identified for the purpose of this environmental assessment;
- a description of the form, quantity, and characteristics of contaminants and other materials (physical, chemical and radiological) likely to be released to the surrounding environment during the postulated malfunction and accident events;
- a description of existing and proposed contaminant containment facilities to limit effects of the malfunctions and accidents; and
- a description of any contingency, clean-up or restoration work in the surrounding environment that would be required during, or immediately following, the postulated malfunction and accident events.

Preliminary Decommissioning Plan

A preliminary decommissioning plan for the facility will be included in the assessment. The preliminary plan will document the preferred decommissioning strategy and end-state objectives; the major steps including dismantling of the mill and other physical structure, closure of the TMF and waste rock disposal locations, and remediation of disturbed areas; the approximate quantities and types of waste generated and their disposition; and an overview of the principal hazards and protection strategies envisioned for decommissioning.

9.2.2 *Spatial and Temporal Boundaries of the Assessment*

The consideration of the environmental effects in the screening needs to be conceptually bounded in both time and space. This is more commonly known as defining the assessment *study areas* and *timeframes*, or spatial and temporal boundaries of the screening.

The geographic study areas for this screening must encompass the areas of the environment that can reasonably be expected to be affected by the project or which maybe relevant to the assessment of cumulative environmental effects. Study areas will encompass all relevant components of the environment including the people, land, water, air and other aspects of the natural and human environment. Study boundaries will be defined taking into account ecological, technical and social/political considerations.

The following geographic study areas are suggested:

Site Study Area: This area is to include all areas within the bounds of the McClean Lake mine and mill facility surface lease-held land.

Local Study Area: The local study area is defined as the area existing outside of the site boundary where there is a reasonable potential for impacts due to either ongoing normal activities or to possible upset conditions. The local study area is to include Collins Creek and Moffat Creek drainage area in the vicinity of the McClean Lake mine and mill facility.

Regional Study Area: The regional study area is to include the Athabasca Basin and the associated communities.

The temporal boundaries for this assessment must establish over what period of time the project specific and cumulative effects are to be considered. The initial time frame for the assessment will be the duration of the project; that is, the planned operating life and of decommissioning based on the preliminary decommissioning plan. Where the effects of the project are anticipated to continue beyond the operation of the facility, then a time frame appropriate for describing the extent of the longer-term residual effects must be defined, including time frames appropriate for assessing long term protection of the environmental from disposal of tailings and waste rock.

Both the study areas and time frames will remain flexible during the assessment to allow the full extent of a likely environmental effect to be considered in the screening. For instance, should the results of modeling demonstrate it is likely for an environmental effect to extend beyond the boundaries identified above; it will be taken into account in the assessment.

9.2.3 Description of the Existing Environment

A description of the existing environment is needed to determine the likely interactions between the project and the surrounding environment; and likewise between the environment and the project. Both the biophysical environment and the socio-economic (human, cultural) environment are to be considered.

An initial screening of likely project-environment interactions will be considered in identifying the relevant components of the environment that need to be described.

The general components of the environment that should be described in the various study areas include, but should not necessarily be limited to:

- meteorology and climate;
- air quality;
- noise;
- physiography and topography;
- geology;
- hydrogeology;
- groundwater quality (physical and chemical);
- surface hydrology;
- surface water quality (physical and chemical);
- aquatic ecology; and
- terrestrial ecology.

The description of the human components of the above environment should include, but should not necessarily be limited to:

- population (including relevant demographic characteristics);
- economic base;
- existing and planned land use;
- renewable and non-renewable resource use;
- health;
- heritage, cultural or archaeological sites;
- use of lands and resources for traditional purposes by aboriginal persons.

Any Valued Ecosystem Components (VECs) that have been identified should be included in the environmental assessment analysis. VECs are environmental attributes or components identified as having a legal, scientific, cultural, economic, human health or aesthetic value. The required level of detail in the description of the existing environment will be less where the potential

interactions between the project and various components of the environment are weak or remote in time and space.

Relevant existing information may be used to describe the environment, including both information collected for the original environmental assessment and information collected since project operation commenced, through the routine environmental monitoring program and the periodic state of the environment assessments.

9.2.4 Assessment and Mitigation of Environmental Effects

The consideration of environmental effects in the screening will be done in a systematic and traceable manner. The assessment methodology will be summarized. The results of the assessment process should be clearly documented using summary matrices and tabular summaries where appropriate.

Assessment of Effects Caused by the Project

The assessment will be conducted in a manner consistent with the following general method:

- 1) Identify the potential interactions between the project activities outlined in section 9.2.1 and the existing environment during further operation of the McClean Lake mine and mill facility, during identified relevant malfunctions and accidents, and during and subsequent to future decommissioning.***

Specific attention should be given to interactions with any identified VECs.

In this step, the standard design and operational aspects from the project description that prevent or significantly reduce the likelihood of interactions occurring with the environment should be reviewed. Opportunities for additional impact mitigation measures are addressed in step 3 below.

- 2) Describe the resulting effects that likely would occur to the components of the environment as a result of the identified interactions with the project***

Each environmental effect must be described in terms of whether it is direct, indirect, positive or adverse, and significant.

Identified changes in socio-economic conditions and various aspects of culture, health, heritage, archaeology and traditional land and resource use may be limited to those that are likely to result from the predicted effects that the project is likely to cause to the environment. The consideration of public views, including any perceived changes attributed to the project should be recognized in the assessment methodology.

Quantitative as well as qualitative methods may be used to identify and describe the likely adverse environmental effects. Professional expertise and judgement may be used in interpreting the results of the analyses. The basis of predictions and interpretation of results, as well as the importance of remaining uncertainties, is to be clearly documented in the EA study report.

- 3) ***Identify and describe mitigation measures that may be applied to each likely adverse effect (or sequence of effects), and that are technically and economically feasible.***

Mitigation strategies should reflect precautionary and preventive principles; that is, emphasis should be placed on tempering or preventing the cause or source of an effect, or sequence of effects, before addressing how to reverse or compensate for an effect once it occurs.

Where the prevention of effects cannot be assured, or the effectiveness of preventive mitigation measures is uncertain, further mitigation measures in the form of contingency responses, including emergency response plans, will be described.

Where cost/benefit analyses are used to determine economic feasibility of mitigation measures, the details of those analyses will be included or referenced.

- 4) ***Describe the significance of the environmental effects that likely will occur as a result of the project, having taken into account the implementation of the proposed mitigation measures.***

The criteria for judging and describing the significance of the remaining post-mitigation effects should include some or all of the following: magnitude, duration, frequency, timing, probability of occurrence, ecological and social context, geographic extent, and degree of reversibility. Specific assessment criteria proposed in the EA methodology for this project will be reviewed and accepted by CNSC staff in the early phases of the EA study.

Existing regulatory and industry standards and guidelines may be useful as points of reference for judging significance. However, professional expertise and judgment should also be applied in judging the significance of any effect. All applicable federal and provincial laws must be respected.

The analysis must be documented in a manner that readily enables conclusions on the significance of the environmental effects to be drawn. The CNSC, as the Responsible Authority for the EA project, must document in the Screening Report a conclusion, taking into account the mitigation measures, as to whether the project is likely to cause significant adverse environmental effects.

9.2.5 Assessment of the Effects of the Environment on the Project

The assessment must also take into account how the environment could adversely affect the project; for example from severe weather. The assessment must also take into account any potential effects of climate change on the project, including an assessment of whether the project is sensitive to changes in climatic conditions during its life span.

This part of the assessment will be conducted in a step-wise fashion, similar to that described for the foregoing assessment of the project effects. The possible important interactions between the natural hazards and the project will be first identified, followed by an assessment of the effects of those interactions, the available additional mitigation measures, and the significance of any remaining likely adverse effects on the project.

9.2.6 Assessment of Cumulative Effects

The effects of the project must be considered together with those of other projects and activities that have been, or will be carried out, and for which the effects are expected to *overlap* with those of the project (i.e., overlap in same geographic area and time). These are referred to as *cumulative environmental effects*.

An identification of the specific projects and activities considered in the cumulative effects will be included in the Screening Report. In general, the cumulative effects assessment will consider the combined effects of the project with the existing development and other potential future developments in the region. It is noted that, the McClean Lake Project was reviewed by the Joint Panel according to the terms of reference which included the assessment of “the cumulative impacts of existing operations and the proposed developments” (reference 4).

With regards to past and current projects, the consideration of cumulative effects in the assessment should acknowledge the extent to which past and current projects, including those directly related to the activities to date at McClean Lake mine and mill facility, have contributed to the conditions documented in the description of the existing environment (see section 9.2.3 above).

The consideration of cumulative environmental effects may be at a more general level of detail than that considered in the assessment of the direct project-environment interactions.

Where potentially significant adverse cumulative effects are identified, the consideration of additional mitigation measures may be necessary.

9.2.7 Assessment of the Effects on the Capacity of Renewable Resources

The assessment must also take into account whether the likely project-related environmental effects will impact on the capacity of renewable resources to meet the needs of the present and those of the future. The potential interactions between the project and the environment will be identified and assessed in order to determine the likelihood of interactions between the project and resource sustainability.

Among the environmental aspects associated with renewable resources that may be affected by the project are the following three: the terrestrial environment; surface water and groundwater resources; and the aquatic environment.

9.2.8 Significance of the Residual Effects

The preceding steps in the screening will consider the significance of the environmental effects of the project on the environment; of the environment on the project; of project malfunctions and accidents; and of other projects and activities that could cause cumulative effects.

The screening will consider all of the effects discussed in sections 9.2.4 through 9.2.7 in coming to a final conclusion as to whether the project, taking into account the mitigation measures, will likely cause significant adverse environmental effects. The CNSC, as the Responsible Authority, will document this conclusion in the Screening Report.

9.2.9 Stakeholder Consultation

The assessment will include notification of, and consultation with, the potentially affected stakeholders, including the local public. Various media will be used to inform and engage individuals, interest groups, local governments and other stakeholders in the assessment. The stakeholder consultation program is to be submitted for review by CNSC staff, to determine its acceptability, at an early stage of the EA process. COGEMA will be expected to organize public consultation activities, whereby both comments and concerns received during these activities, and comments and concerns that have been made during previous public consultation activities are identified, and if necessary, clarified, so that they may be appropriately addressed in the EA study report.

Throughout the environmental assessment process, various stakeholders from the following categories will be consulted:

- federal government
- provincial government
- local government
- First Nations and aboriginal communities
- established committees
- COGEMA employees at McClean Lake site
- general public
- non-government organizations and interest groups.

The stakeholder consultation processes that have occurred through the development of the McClean Lake mine and mill facility to date, including the environmental assessment of the project under the *EARPGO* by the panel, and licensing of the project by the AECB and more recently by the CNSC, are to be summarized and included in the EASR.

The Screening Report will contain a summary review of the comments received during this and previous environmental assessment and licensing processes. The Screening Report will indicate how issues identified have been considered in the completion of the assessment or, where relevant, how they may be addressed in any subsequent regulatory licensing and compliance process.

The CNSC will also establish a public consultation process in the review and decision-making process for the Screening Report. This will include opportunities for the public to review and comment to CNSC staff on the draft Screening Report. The public will also have the opportunity to present interventions before the Commission on the EA Guidelines and final Screening Report.

9.2.10 Follow-up Program

The existing follow-up program will be reviewed and recommendations for changes, if any, will be provided in the EA study report and addressed in the Screening Report.

The purpose of the follow-up program is to assist in determining if the environmental and cumulative effects of the project are as predicted in the screening report. It is also to confirm whether the mitigation measures are effective, and to determine if any new mitigation strategies are required.

If an operating licence is granted under the *NSCA*, the CNSC licensing and compliance program will be used as the mechanism for ensuring continued implementation of any follow-up program and the reporting of the program results. The program would be based on regulatory principles of compliance, adaptive management, reporting and analysis.

10.0 ENVIRONMENTAL ASSESSMENT PROCESS

The following points indicate the key steps likely to be followed by CNSC staff during the environmental assessment process. Some steps have already been completed:

- Determination of the application of *CEAA* to the project, including application of the Federal Coordination Regulation; establishment of the Public Registry; and stakeholder notification;
- Preparation of the draft EA Guidelines for distribution to proponent and federal and provincial authorities; receipt of comments; revision of Guidelines;
- Submission of the EA Guidelines to the Commission of CNSC for approval;
- CNSC staff delegation of consultation activities and technical studies to COGEMA for preparation of draft the EA study report;
- Distribution of the draft EA study report to technical review team (CNSC staff, federal and provincial authorities); revision as appropriate; CNSC staff preparation of the screening report;
- CNSC staff submission of screening report Commission Member Document (CMD) for Commission consideration; public notification of Commission Hearing;

- CMD presentation of the screening report to a 1 day Commission Hearing, at which written and oral submissions from interested parties are also considered;
- Commission Hearing Record of Decision.

11.0 CONCLUSIONS AND RECOMMENDATIONS FOR DECISION

The Screening Report will present a CNSC staff conclusion as to whether the project is likely to cause significant adverse environmental effects, taking into account the appropriate mitigation measures. Recommendations to the Commission on making decisions on the environmental assessment and project-related public concerns, consistent with section 20 of the *CEAA*, will be provided. Decisions by the Commission may be made following a one day hearing on the EA or as part of its licensing hearings on COGEMA’s application for an operating licence.

12.0 CONTACTS FOR THE ASSESSMENT

Anyone wishing to obtain additional information or provide comments on any aspect of the environmental assessment being conducted on the proposed, operation of the McClean Lake facility can do so through the following CNSC staff contacts:

<p>Mr. Rick Forbes Project Officer Canadian Nuclear Safety Commission Suite 307, 101 – 22nd Street East Saskatoon, SK S7K 0E1 Phone: (306) 975-6386 Fax: (306) 975-6385</p>	<p>Mr. Guy Riverin Environmental Assessment Specialist Canadian Nuclear Safety Commission 280 Slater Street P.O. Box 1046 Ottawa, Ontario K1P 5S9 Phone: 1 -800-668-5284 Fax: (613) 995-5086 Internet: ceaainfo@cnsccsn.gc.ca</p>
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13.0 REFERENCES

1. Letter R. Pollock (COGEMA to M. Leblanc (CNSC), *McClean Lake Operation Application for a Licence to Operate*, March 17, 2003.
2. *Project description for Operation of the Existing McClean Lake Operation*, prepared by COGEMA Resources Inc., March 2003.
3. *Uranium Mining Development in Northern Saskatchewan: Dominique-Janine Extension, McClean Lake Project, and Midwest Joint Venture – Report of the Joint Federal-Provincial Panel on Uranium Mining Developments in Northern Saskatchewan*, Minister of Supply and Services Canada, October 1993, ISBN 0-662-21044-45.

4. *Midwest Uranium Mine Project; Cigar Lake Uranium Mine Project; Cumulative Observations - Report of the Joint Federal-Provincial Panel on Uranium Mining Developments in Northern Saskatchewan*, Minister of Public Works and Government Services Canada, November 1997, ISBN 0-662-26209-3.
5. Memo, D. Metcalfe, (CNSC) to R. Forbes (CNSC), April, 2003, “*Request by COGEMA for Licence to Operate the Existing McClean Lake Facility - CEAA Project Determination*”.
6. Letter D. McNaughton (CEAA) to G. Riverin (CNSC) *Potential Provincial Environmental Assessment Involvement in the Operation of the McClean Mine and Mill Project*”, May 2003 and attached letter from Saskatchewan Environment, May 12, 2003 (BITS 1143326).

14.0 GLOSSARY OF TERMS

1. “environmental effect” means, in respect of a project,
 - (a) any change that the project may cause in the environment, including any effect of any such change on health and socio-economic conditions, on physical and cultural heritage, on the current use of lands and resources for traditional purposes by aboriginal persons, or on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, and
 - (b) any change to the project that may be caused by the environment, whether any such change occurs within or outside Canada.