

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant Cigar Lake Mining Corporation

Subject Application for a Uranium Mine Site Preparation
Licence

Date July 26, 2001

1. Introduction

The Cigar Lake Mining Corporation (CLMC) of Saskatoon, Saskatchewan, applied to the Canadian Nuclear Safety Commission for a licence to continue currently authorized activities at its Cigar Lake Project. The Cigar Lake Project site is located in the Athabasca region of northern Saskatchewan at the south end of Waterbury Lake.

The Cigar Lake Project is an underground test mine that has been developed over the past 10 years to evaluate mining methods and to verify if the high-grade Cigar Lake uranium ore can be mined while protecting the health and safety of workers and the environment.

CLMC applied for a 3-year *Uranium Mine Site Preparation Licence*, during which time the main activity would be the care and maintenance of the mine with the possibility of further test mining activities.

2. Decision

The Canadian Nuclear Safety Commission, in making its decision, considered information presented at a public hearing held on May 29, 2001 and June 28, 2001 in Ottawa, Ontario.

Based on its consideration of the matter, as described in more detail in the following sections,

The Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, issues a Uranium Mine Site Preparation Licence to Cigar Lake Mining Corporation, Saskatoon, Saskatchewan, for the Cigar Lake Project. The licence, UMSL-Excavate-Cigar.05/2004, is valid from August 1, 2001 to July 31, 2004, unless suspended, amended, revoked or replaced.

The Commission includes in the licence the conditions of the previous licence for the Cigar Lake Project (AECL-MFEL-152-4.4), revised to be consistent with the requirements of the *Nuclear Safety and Control Act*, and the following three additional conditions recommended by CNSC staff:

- C the licensee shall submit a revised Financial Assurance Decommissioning Plan and financial guarantee to the Commission no later than March 1, 2002.
- C the licensee shall submit to the Commission, by November 30, 2001, a procedure that identifies when and how a spill of hazardous substance to the surface and subsurface environment will be reported to the CNSC, and what measures will be taken to remediate the impact of the spills on the environment.
- C the licensee shall submit, by September 29, 2001, a proposal and schedule for the completion of a Quality Assurance Program, acceptable to the Commission.

3. The Public Hearing Process

The public hearing, conducted under the *Nuclear Safety and Control Act* and the *Canadian Nuclear Safety Commission Rules of Procedure*, was held in Ottawa, Ontario over two days; May 29, 2001 and June 28, 2001. The Commission received written submissions and heard oral presentations from CNSC staff (CMD 01-H14 and CMD 01-H14A) and Cigar Lake Mining Corporation (CMD 01-H14.1). The Commission also considered written submissions from three intervenors: Ms. Maisie Shiell (CMD 01-H14.2); Ms. Mary Pyne (CMD 01-H14.3); and Dr. W.R. Adamson (CMD 01-H14.4).

4. Issues and Commission Findings

4.1 Radiation and Environmental Protection

The Commission considered information on the past performance of the Cigar Lake Operation to assess whether the licensee (Cigar Lake Mining Corporation - CLMC) has demonstrated its ability to adequately provide for the protection of workers, the public and the environment. The Commission specifically examined CLMC's performance in the areas of: conventional health and safety; radiation protection; and environmental protection.

4.1.1 Protection of Workers

The Commission considered the specific challenges that the operator must address in protecting workers involved in the underground mining of high-grade uranium ore; in particular, in protecting workers from the effects of direct radiation exposure, and from the inhalation of radon progeny.

The CLMC and CNSC staff presented information which demonstrated that the remote mining methods and ventilation systems being developed by CLMC appear to be effective in controlling radiation doses to workers from both direct exposure and inhalation. The maximum effective dose to a worker during the past licensing period was less than 5% of the annual limit, and the average annual effective dose to all workers was less than 0.5% of the regulatory limit.

The Commission specifically examined the risk to workers that may be encountered in the event that they need to attend to a blockage in the ore slurry pumping system. After consideration of information presented at the hearing about the design of the system, the dilute nature of the slurry and procedures in place to control doses to workers in such an event, the Commission concludes that workers will be adequately protected.

4.1.2 Protection of the Environment

During the hearing, the Commission examined the CLMC and CNSC staff on the Jet Boring System proposed for continued testing at the mine. In particular, the Commission sought clarification on the

source, recycling, treatment, and disposal of the volumes of water used in that system. On consideration of the information provided, the Commission is satisfied that ongoing testing of the Jet Boring System will not pose a significant risk to the environment.

The Commission requested additional documentation on the test results of the Jet Boring mining method, but concluded that this information was not required for the purpose of considering the application currently before the Commission.

The Commission also explored the question of whether alpha-emitting contaminants may be having an adverse effect on aquatic life in the receiving water bodies. Based on information provided by CNSC staff, the Commission concluded that, although it is not currently possible to distinguish in the field the effects of alpha radiation from the possible effects from other contaminants in the facility effluents (i.e., metals), the results of the environmental effects monitoring program indicate that the facility is not having, and likely will not have a significant adverse impact on the aquatic environment.

The Commission questioned the proponent on a series of small spills that occurred at the facility during the past licensing period. The Commission concluded that those spills did not pose a significant risk to people or the environment. However, to monitor this, and to reflect the current requirements of the *Nuclear Safety and Control Act*, the Commission is including a condition in the licence requiring CLMC to submit to the Commission, by November 30, 2001, a procedure that identifies when and how a spill of a hazardous substance to the environment will be reported to the CNSC, and what measures will be taken to remediate the impact of the spills on the environment.

4.2 Quality Assurance

The Commission questioned CLMC on the current deficiencies in the Cigar Lake Project quality assurance program. CLMC's current actions and commitments to develop a more comprehensive quality assurance program were also considered by the Commission. The Commission is satisfied that the management processes of the applicant are acceptable for the current state of operations. However, to ensure the deficiencies in the quality assurance program are addressed appropriately, the Commission is including a condition to the licence requiring CLMC to submit by September 29, 2001, a proposal and schedule for completion of a Quality Assurance Program, acceptable to the Commission.

4.3 Financial Guarantee

The Commission concludes that the Financial Assurance Decommissioning Plan, and the associated financial guarantee for the facility, must be revised and updated. The Commission was informed that the documentation currently in place does not comply with all of the provisions in the recently published CNSC Regulatory Guides R-206 and R-219. Accordingly, and to ensure that the financial assurances are updated in an appropriate period of time, the Commission is including a condition to the licence requiring CLMC to submit a revised plan and guarantee prior to March 1, 2002.

4.4 Canadian Environmental Assessment Act

During the hearing, the Commission requested CNSC staff to clarify how staff determined that the requirements of the *Canadian Environmental Assessment Act* do not apply to the proposed continued activities at the Cigar Lake Mine. On consideration of supplementary information on this subject (CMD 01-H14.A), the Commission concludes that, due to the application of Schedule I, Part I, Section 2 of the *Exclusion List Regulations*, an environmental assessment of the proposed activities is not required pursuant to the *Canadian Environmental Assessment Act*.

4.5 Public Consultation

CLMC and CNSC staff presented information to the Commission about CLMC's efforts at involving local communities, recognizing that the population around the facility is relatively sparse and widely dispersed. It was explained that the applicant is part of a working group, together with two other licensed uranium mine operators, whose purpose is to involve the various communities in the Athabasca region in discussions concerning environmental protection, worker health and safety, training programs and employment opportunities. In addition, the Commission was informed of newsletters produced by the applicant and of various other initiatives aimed at ensuring comprehensive public information exchanges. Based on the information provided, the Commission is satisfied that the applicant has an acceptable public consultation program.

5. Conclusion

The Commission has considered the information and submissions of Commission staff and all participants as set out in the material available for reference on the record file as well as the submissions provided or made by the participants at the hearing. The Commission accepts the information set out in CMDs 01-H14 and 01-H14.A prepared by CNSC staff and the submissions, statements of law, conclusions and recommendations set out in these documents.

The Commission is of the opinion that the applicant satisfies the requirements of subsection 24 (4) of the *Nuclear Safety and Control Act*.

The Commission therefore issues, pursuant to section 24 of the *Nuclear Safety and Control Act*, licence UMSL-Excavate-Cigar.05/2004 to Cigar Lake Mining Corporation. The licence will be valid from August 1, 2001 to July 31, 2004, unless suspended, amended, revoked or replaced.

George C. Jack
Secretary,
Canadian Nuclear Safety Commission

Date of decision: June 28, 2001

Date of release of Reasons for Decision: July 26, 2001