

Record of Proceedings, Including Reasons for Decision

In the Matter of

Applicant COGEMA Resources Inc.

Subject Application for open-pit mining and milling of the
Sue E orebody at COGEMA's McClean Lake
Operation

Date December 9, 2005

RECORD OF PROCEEDINGS

Applicant: COGEMA Resources Inc.

Address/Location: P.O. Box 9204 – 817, 45th Street West, Saskatoon, SK S7K 3X5

Purpose: Application for open-pit mining and milling of the Sue E orebody at COGEMA's McClean Lake Operation

Application received: October 20, 2003

Date(s) of hearing: August 17, 2005
October 19, 2005

Location: Canadian Nuclear Safety Commission (CNSC) Public Hearing Room, 280 Slater St., 14th. Floor, Ottawa, Ontario

Members present: L.J. Keen, Chair A.R. Graham
C.R. Barnes M. J. McDill
J.A. Dosman M. Taylor

Secretary: M.A. Leblanc

Recording Secretary: P-D. Bourgeau

General Counsel: J. Lavoie

Applicant Represented By	Document Number
<ul style="list-style-type: none">• B. Pollock, Vice-President, Environment, Health and Safety• J. Corman, General Manager of McClean Lake Operation• D. Hoffman, Manager of Special Projects and Radiation Protection	CMD 05-H19.1 CMD 05-H19.1A CMD 05-H19.1B
CNSC staff	Document Number
<ul style="list-style-type: none">• B. Howden• K. Scissons <ul style="list-style-type: none">• R. Forbes	CMD 05-H19
Intervenors	
See appendix A	
Other Advisors	
Saskatchewan Labour	

Licence: Amended
Date of Decision: October 19, 2005

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1. Introduction

COGEMA Resources Inc. (COGEMA) has applied to the Canadian Nuclear Safety Commission (CNSC¹) for an amendment to its Uranium Mine and Mill Operating Licence at its McClean Lake Operation in northern Saskatchewan to allow the open-pit mining of the Sue E ore body and the processing of that ore at the McClean Lake Operation JEB mill.

COGEMA is currently authorized by the CNSC to operate a uranium mine and mill at the McClean Lake Operation and to maintain the facilities necessary to support its operation. The current licence, UMOL-MINEMILL-McClean.01/2009 (valid until May 30, 2009), also authorizes COGEMA to possess, store, transfer, import, use, and dispose of nuclear substances and radiation devices.

On June 29, 2005, the Commission held a public hearing to consider the results of an Environmental Assessment (EA) Screening of COGEMA's proposed Sue E mine project. The EA was conducted in accordance with the *Canadian Environmental Assessment Act*². Based on that assessment, the Commission concluded that the proposed Sue E mine project, taking into account identified mitigation measures, is not likely to cause significant adverse environmental effects³. In addition, following a one-day public hearing held on July 13, 2005, a panel of the Commission approved COGEMA's application to carry out limited, weather-sensitive surface preparatory activities at the proposed Sue E uranium mine site⁴. The current application, and subject of this public hearing, is for the remainder of the Sue E mine project, including the recovery and milling of the ore at the McClean Lake Operation.

Issues

In considering the application, the Commission was required to decide, pursuant to subsection 24(4) of the *Nuclear Safety and Control Act*⁵ (NSCA),

- a) if COGEMA is qualified to carry on the activity that the amended licence would authorize; and
- b) if, in carrying on that activity, COGEMA would make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed.

¹ In this *Record of Proceedings*, the *Canadian Nuclear Safety Commission* is referred to as the "CNSC" when referring to the organization and its staff in general, and as the "Commission" when referring to the tribunal component.

² S.C. 1992, c. 37

³ Canadian Nuclear Safety Commission, July 12, 2005, *Record of Proceedings, Including Reasons for Decision*, In the Matter of COGEMA Resources Inc., Screening Environmental Assessment for the McClean Lake Operation Sue E Project.

⁴ Canadian Nuclear Safety Commission, July 21, 2005, *Record of Proceedings, Including Reasons for Decision*, In the Matter of COGEMA Resources Inc. Application to conduct weather-sensitive surface preparation activities at the proposed Sue E pit Uranium Mine.

⁵ S.C. 1997, c. 9

Public Hearing

The Commission, in making its decision, considered information presented for a public hearing held on August 17, 2005 and October 19, 2005 in Ottawa, Ontario. The public hearing was conducted in accordance with the *Canadian Nuclear Safety Commission Rules of Procedure*. During the public hearing, the Commission received written submissions and heard oral presentations from CNSC staff (CMD 05-H19) and COGEMA (CMD 05-H19.1, CMD 05-H19.1A and CMD 05-H19.1B). The Commission also considered oral and written submissions from intervenors. See Appendix A to this *Record of Proceedings* for a detailed list of the interventions.

2. Decision

Based on its consideration of the matter, as described in more detail in the following sections of this *Record of Proceedings*, the Commission concludes that COGEMA is qualified to carry on the activity that the amended licence will authorize. The Commission is also satisfied that COGEMA, in carrying on that activity, will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Canada has agreed. Therefore,

the Commission, pursuant to section 24 of the *Nuclear Safety and Control Act*, amends the Uranium Mine and Mill Operating Licence for the McClean Lake Operation held by COGEMA Resources Inc., Saskatoon, Saskatchewan to allow for the open-pit mining of the Sue E ore body and subsequent processing of the ore at the McClean Lake mill.

The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 05-H19.

3. Issues and Commission Findings

In making its licensing decision under section 24 of the NSCA, the Commission considered a number of issues relating to COGEMA's qualifications to carry out the proposed activities, and the adequacy of the proposed measures for protecting the environment, the health and safety of persons, national security and international obligations to which Canada has agreed. The Commission's findings on these issues are summarized below.

3.1 Radiation Protection

As part of its evaluation of the adequacy of the provisions for protecting the health and safety of persons, the Commission considered whether the proposed Sue E project would pose any risk from radiation to the workers or the public.

In this regard, COGEMA stated that, based on experience from similar mining activities at the McClean Lake Operation, it estimates that the average annual radiation dose to the workers during the proposed mining of the Sue E pit will be approximately 0.7 mSv, a level well below the regulatory limit⁶. COGEMA estimates that 70% of the total dose would be from external radiation sources and 30% from internal exposures to inhaled radon progeny and long-lived radioactive dust.

CNSC staff stated that COGEMA's McClean Lake Operation Radiation Protection Program and its implementation meet requirements. CNSC staff reported that the McClean Lake Operation has had no incidents of external radiation exposures or internal contamination that exceeded action levels or regulatory limits during the current licence period. CNSC staff further noted that its inspections conducted during the current licence period found COGEMA to be consistently compliant with the radiation protection program.

Noting that some excavation equipment operators would be working for extended periods in very close proximity to the uranium ore in the bottom of the pit, the Commission questioned how the radiological safety of those operators would be assured. In response, COGEMA stated that it closely monitors the exposures of all its workers and sets up mining operations based on the layout of the ore body to keep exposures at very low levels. As an example, COGEMA noted that the operators would typically work on top of the ore with additional shielding provided in the floor of the equipment cabs.

In its intervention, the Communications, Energy and Paperworkers Union of Canada (CEP) expressed concern about the radiological health and safety of workers and made several recommendations with respect to workplace and medical monitoring. In response to the Commission's examination of the CEP's intervention, COGEMA stated that it would welcome the opportunity to further discuss workplace monitoring with the CEP. CNSC staff noted that its regulatory focus is on the quality of the individual dose monitoring data, and on the adequacy of worker training and qualifications in radiation protection, all of which is satisfactory in CNSC staff's assessment. Concerning the issues of longer-term medical monitoring that are raised in the intervention by the CEP, CNSC staff noted that a study conducted in 2005 concluded that a further epidemiology study on modern uranium miners would not be conclusive and thus was deemed not feasible. However, CNSC staff indicated that an epidemiology study on historic miners is near completion and will be presented at a future Commission proceeding. Saskatchewan Labour stated that, as a result of a 2003 revision of the Saskatchewan Mines Regulations in which industry, unions and government participated, there remain minimal requirements for medical monitoring of miners under those regulations. Saskatchewan Labour also stated that they were prepared to meet with CEP to discuss monitoring issues further.

⁶ The effective dose limit for a Nuclear Energy Worker, as specified in the *Radiation Protection Regulations [SOR/DORS/2000-203]*, is 50 mSv/year, or 100 mSv over a five year period.

Based on the information received, the Commission concludes that COGEMA has made, and will continue to make during the proposed licence period, adequate provision for the protection of persons from radiation at the Sue E mine project. The Commission notes the willingness of the various parties, including the union, to continue discussions on the topic of long-term health effects on workers.

3.2 Environmental Protection

To determine whether COGEMA will make adequate provisions to protect the environment during the proposed activities, the Commission considered the potential for those activities to adversely affect the environment.

COGEMA reported that no substantive changes were expected to the environmental protection programs at the McClean Lake Operation as a result of the proposed Sue E mine project. CNSC staff noted that the environmental protection program and its implementation continue to meet requirements. CNSC staff reported that there were no environmental regulatory exceedances during the current licensed period. However, there was one environmental action level exceedance and one reportable spill. Corrective actions were taken in both cases with minimal environmental concern.

With respect to the potential environmental risks posed by the planned waste rock pile on the surface, the Commission questioned how high the waste stockpile was expected to be. COGEMA stated that the present design is for a single 10-meter lift while a second lift may be necessary depending on the ability to segregate clean waste from special waste⁷. In this regard, COGEMA indicated that if it became operationally difficult to segregate clean and special waste, it would dispose of all suspect waste rock in the nearby Sue C pit along with the special waste rock. In response to the Commission's follow-up question regarding the capacity of the Sue C to hold the potential additional clean waste rock, COGEMA stated that there is abundant capacity in the Sue C pit for this contingency. CNSC staff noted that COGEMA will undertake to sort clean waste rock from the special waste rock directly in the mine during excavation.

With respect to the status of the previously approved developments and environmental protection measures on the surface, COGEMA reported that the partial dewatering of Sils Lake was complete and that overburden material was being placed in Sils Lake. COGEMA added that the water from Sils Lake had been transferred to the Sue C pit and was currently being treated at the Sue Water Treatment Plant prior to release to the environment. The Commission questioned if the proposed dike had been completed across Sils Lake prior to placing the overburden stockpile. COGEMA replied that the final design assessment demonstrated that the dike was not necessary to control the water and protect the environment and therefore the fill was placed into the lake, creating a shore face that moved progressively out into the lake.

⁷ "Special Waste Rock" is mineralized rock that is relatively more chemically reactive when exposed to oxygen at the surface and thus more likely to produce acid drainage and to release metals and other contaminants to the environment. Management measures centre on storage that will preclude or limit oxygen exposure to the extent practical.

Regarding waste water management, COGEMA reported that the Sue site has been designed to collect and contain all contaminated or potentially contaminated water that may result from the mining activities. CNSC staff noted that the amount of water expected to flow into the proposed Sue E pit is manageable and about the same as that which flows into the existing Sue C pit. CNSC staff also noted that COGEMA will, to the extent possible, be diverting clean surface run-off away from the Sue E pit to the Sue C pit and Sue Water Treatment Plant.

The Commission sought the CNSC staff's view on whether the Sue C Water Treatment Plant would be able to accommodate the projected increase in volume from the proposed activities, as well as from any severe precipitation events. CNSC staff confirmed that the Sue C pit and treatment plant have adequate throughput and buffer capacity for both projected and contingency purposes. The treatment plant has been approved to treat 10,000 cubic meters of water per day and COGEMA has tested the systems to provide assurance that they meet the requirements.

Noting that sulfuric acid is used in the processing of ore at the mill, the Commission asked if significantly more acid would be required to process the additional ore from the Sue E mine, and whether this ultimately could have an adverse impact on the performance of the water treatment plant. In response, COGEMA stated that the amount of acid used at the mill would not change significantly as a result of the additional ore. COGEMA explained that the leach circuit in the JEB Mill has been designed to accommodate a large range of ores with various levels of acid consumption and that the water treatment plant facilities and tailings management facilities can readily accommodate the processing of the ore from Sue E.

In its intervention, the Northern Saskatchewan Environmental Quality Committee expressed satisfaction that the environment will be adequately protected during the proposed development.

Based on the information received, the Commission concludes that COGEMA has made, and will continue to make, adequate provision for protecting the environment during the proposed development of the Sue E mine.

3.3 Conventional Health and Safety

With respect to the protection of persons at the McClean Lake Operation, and the proposed Sue E mine in particular, the Commission examined the planned program and past performance of COGEMA in the area of conventional (i.e., non-radiological) health and safety.

In this regard, COGEMA reported that no technical changes are expected to the Occupational Health and Safety Program in place at the McClean Lake Operation. CNSC staff reported that two recent inspections found no significant issues and confirmed compliance with the program. Although there was one loss time accident in the mill due to a slip and fall, the CNSC staff is satisfied that issues are being addressed in a timely manner. CNSC staff stated that it is satisfied COGEMA's Occupational Health and Safety Program meets, and will continue to meet, the applicable regulatory requirements.

The Commission questioned how safety matters are dealt with in the Management Organization Structure. In response, COGEMA stated that there was a reporting structure in place which places the responsibility on the safety group of each department to report to the Safety Superintendent.

In a related line of questioning, the Commission asked whether the same safety requirements apply to contractors on the site, and what safety training was in place for those contractors. In response, COGEMA stated that contractors were subject to the same safety requirements and training as its own workers. COGEMA also stated that the safety risks are similar to previous operations at the McClean Lake Operation and that measures to mitigate such risks are being addressed by hiring back experienced workers whenever possible, providing heavy equipment simulation training and using reminder tools, such as a 5-point safety card for each worker. The Commission sought further information on how regulatory safety inspections are carried out. In response, CNSC staff stated that it carries out inspections four to six times a year with the assistance of Saskatchewan Labour and a worker representative of the Occupational Health and Safety Committee.

The Commission sought the views of the unions on the recent restructuring of the Occupational Health and Safety Committee. The Canadian Nuclear Worker's Council and the Communications, Energy, Paperworkers Union Local 48S responded that the structure of the joint committee, now consisting of an equal number of non-executive COGEMA management and the unions, will enable it to be more effective and productive in striving for a safer working environment. The Communications, Energy and Paperworkers Union of Canada agreed with the need to restructure the Occupational Health and Safety Committee in order to allow more meaningful input from the union.

Based on this information, the Commission concludes that COGEMA has made, and will continue to make, adequate provision for the protection of workers from conventional (i.e. non-radiological) hazards during the proposed Sue E mine development.

3.4 Operational Compliance

As further indication of how COGEMA is likely to perform during the proposed mining and milling of the Sue E ore, the Commission examined COGEMA's past operating performance at the McClean Lake Operation, as well as COGEMA's quality assurance and training programs.

In this regard, CNSC staff reported that there were no events reported pursuant to section 29 of the *General Nuclear Safety and Control Regulations* during the current licensed period. Inspections carried out during this period have found consistent compliance in all safety program areas. In light of the above, CNSC staff reported that COGEMA's performance has been satisfactory and that the operations program and its implementation continue to meet requirements.

In response to the Commission's questions on the status of the previously-authorized surface activities, COGEMA stated that it is on schedule to complete the overburden stripping and the preparatory work by the end of 2005.

Regarding quality assurance, COGEMA reported it has developed and is implementing an Integrated Quality Management System (IQMS). This includes the development of a quality assurance manual to meet the objectives and requirements defined by the Corporate IQMS. CNSC staff reported that COGEMA is making satisfactory progress in addressing the outstanding action notices arising from the CNSC staff's audit of the Quality Assurance Program in September 2004. As a result of that progress, CNSC staff upgraded the rating for implementation of the Quality Assurance Program from a "C" (below requirements) to a "B" (meeting requirements). Based on this information, CNSC staff concluded that, overall, the McClean Lake Operation Quality Assurance Program and its implementation meets requirements.

With respect to training as another important factor in assuring future operational compliance, the Commission sought further information on how often radiation protection training is offered to the workers on site. COGEMA stated that radiation protection training is offered immediately to new workers. Advanced radiation protection training is usually held within three months of a worker's start date and refresher training is held every three years thereafter. COGEMA noted that workers who return after one year of absence must repeat the same training from the beginning.

Based on the information received, the Commission concludes that the operating performance and quality assurance measures at the McClean Lake Operation provide a positive indication of COGEMA's ability to adequately carry out the proposed mining and milling of the Sue E ore.

3.5 Emergency Preparedness

With respect to the protection of persons and the environment during emergencies that could arise at the proposed mining of the Sue E pit, COGEMA reported that the existing program at the McClean Lake Operation for emergency preparedness and response will apply.

CNSC staff reported its satisfaction with the Emergency Preparedness Program and COGEMA's consistent compliance with it.

Based on the information received, the Commission concludes that, for the proposed mining of the Sue E pit at the McClean Lake Operation, COGEMA will be adequately prepared for emergencies that could arise.

3.6 Security

With regard to the maintenance of security at the project site during the proposed activities, CNSC staff reported that COGEMA has in place, and is successfully implementing, an acceptable Security Program.

Based on the information received, the Commission concludes that COGEMA will continue to make adequate provision for maintaining security at the McClean Lake Sue E pit.

3.7 Safeguards and Non-Proliferation

Concerning the matter of whether COGEMA will make adequate provision to ensure maintenance of Canada's international obligations for safeguards and non-proliferation, CNSC staff reported that COGEMA meets, and is expected to continue to meet, all applicable requirements.

The Commission concludes, therefore, that COGEMA has made, and will continue to make in respect of the proposed activities under the licence, adequate provision for maintaining Canada's applicable international obligations.

3.8 Canadian Environmental Assessment Act

Before making a licensing decision, the Commission must be satisfied that all applicable requirements of the *Canadian Environmental Assessment Act* (CEAA) have been fulfilled.

In this case, the application was assessed under the CEAA. An EA Screening Report was prepared in accordance with the CEAA and approved EA Guidelines. The Commission considered the Screening Report at a public hearing held on June 29, 2005⁸. The Commission determined that the project was not likely to cause significant adverse environmental effects taking into account the available impact mitigation measures.

The Commission therefore concludes that all applicable requirements under the CEAA have been fulfilled for the purpose of this licensing decision.

3.9 Decommissioning and Financial Guarantee

With respect to the decommissioning plan and related financial guarantee for the proposed mining of the Sue E pit, CNSC staff reported that the Sue E project has been included in the Preliminary Decommissioning Plan and Financial Guarantee for the McClean Lake Operation⁹.

⁸ Canadian Nuclear Safety Commission, July 12, 2005, *Record of Proceedings, Including Reasons for Decision*, In the Matter of COGEMA Resources Inc., Screening Environmental Assessment for the McClean Lake Operation Sue E Project.

⁹ April 2005, Version 4.

CNSC staff stated that the decommissioning plan is acceptable and that a letter to that effect was issued to COGEMA on August 10, 2005.

COGEMA noted that a financial assurance for the amount of \$35 million has been provided to Saskatchewan Environment in the form of irrevocable letters of credit and that Saskatchewan Environment has indicated that their requirements have been met.

Based on the information received, the Commission is satisfied that COGEMA has adequate decommissioning plans and financial guarantees in place for the purpose of the application.

3.10 Public Information Program

The Commission requires, among other things, that licensees maintain acceptable public information programs. In this regard, CNSC staff reported on the various types of public information activities that COGEMA engages in on a routine basis and for the purpose of the proposed mining of the Sue E pit.

In particular, CNSC staff noted that COGEMA publishes a monthly information report, as well as a newsletter three times per year. These are distributed to the northern communities, the media, the Environmental Quality Committee and the Athabasca Working Group members. COGEMA also sponsors a magazine and participated in public meetings to update the public on current performance, plans and concerns.

CNSC staff indicated that COGEMA continues to meet the criteria for an acceptable Public Information Program and its implementation.

Based on the information received, the Commission is satisfied that COGEMA has an adequate Public Information Program in place for the purpose of the proposed Sue E mine project.

4. Conclusion

The Commission has considered the information and submissions of COGEMA Resources Inc., CNSC staff and intervenors as presented in the material available for reference on the record.

The Commission is satisfied that COGEMA is qualified to carry on the activity that the proposed amended licence will authorize. The Commission is also satisfied that COGEMA will make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and the measures required to implement international obligations agreed to by Canada.

The Commission therefore amends, pursuant to section 24 of the *Nuclear Safety and Control Act*, the Uranium Mine and Mill Operating Licence for the McClean Lake Operation held by COGEMA Resources Inc., Saskatoon, Saskatchewan, to allow open-pit mining and milling of the Sue E orebody.

The Commission includes in the licence the conditions recommended by CNSC staff, as set out in the draft licence attached to CMD 05-H19.

Marc A. Leblanc
Secretary,
Canadian Nuclear Safety Commission

Date of decision: October 19, 2005

Date of release of Reasons for Decision: December 9, 2005

Appendix A – Intervenors

Intervenors	Document Number
Canadian Nuclear Workers' Council and the Communications, Energy, Paperworkers Union (CEP) Local 48S, represented by D. Shier, D. Pingert and D. Nesbet	CMD 05-H19.2
Northern Saskatchewan Environmental Quality Committee, represented by F. McDonald	CMD 05-H19.3
Communications, Energy and Paperworkers Union of Canada, represented by W. Manning	CMD 05-H19.4