

February 6, 2004

Ms. Donna L. Wichers, General Manager  
COGEMA Mining  
P.O. Box 730  
Mills, WY 82644

SUBJECT: COGEMA MINING INC., 2003 ANNUAL SURETY UPDATE - AMENDMENT 9  
SUA-1341 (TAC NO. LU0002)

Dear Ms. Wichers:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of your proposed annual surety update, as revised by letter dated January 22, 2004, for the COGEMA Mining, Inc. (COGEMA) Irigaray and Christensen Ranch *In Situ* Leach Uranium Projects. The review is documented in the enclosed Technical Evaluation Report (TER) (Enclosure 1). As discussed in the TER, the staff recommends that the Wyoming Department of Environmental Quality Guideline 12 not be used for the next surety update.

Your 2003 restoration/reclamation cost estimates, including the groundwater sweep cost, result in a total surety amount of \$12,120,120. In your letter of January 22, 2004, you again asked that the NRC reconsider and allow removal of the groundwater sweep cost, but the policy has not changed. The staff review and approval of the restoration report must precede deletion of the groundwater sweep from the surety amount. The proposed amount has been approved and License Condition 9.5 has been revised to require a surety for \$12,120,120. The amended license is enclosed (Enclosure 2).

An environmental review was not performed since this action is categorically excluded under 10 CFR 51.22(c)(10)(i), as a change to a surety requirement.

If you have any questions or comments, contact Elaine Brummett, the NRC project manager for the Irigaray and Christensen Ranch facilities, at (301) 415-6606 or by e-mail to [esb@nrc.gov](mailto:esb@nrc.gov).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

***/RA/***

Gary S. Janosko, Chief  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No: 40-8502

License: SUA-1341

Enclosures: 1. Technical Evaluation Report  
2. Amendment 9

cc: D. McKenzie, WDEQ - District III

D. Wichers

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cc: D. McKenzie, WDEQ - District III

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\*see previous concurrence

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<b>NAME</b>	E. Brummett*		B. Garrett*		R. Nelson		G. Janosko	
<b>DATE</b>	1/29/04		2/2/04		2/5/04		2/6/04	

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**TECHNICAL EVALUATION REPORT  
FOR COGEMA MINING, INC., 2003 SURETY UPDATE FOR  
IRIGARAY AND CHRISTENSEN RANCH**

**Docket No.:** 40-8502      **License No.:** SUA-1341

**DATE:** January 26, 2004

**FACILITY:** Irigaray and Christensen Ranch facilities in Wyoming

**TECHNICAL REVIEWERS:** Elaine Brummett, Jill Caverly, Ron Linton

**PROJECT MANAGER:** Elaine Brummett

**SUMMARY AND CONCLUSIONS:**

COGEMA Mining, Inc. (COGEMA) submitted a surety update, in compliance with License Condition 9.5 in NRC license SUA-1341, on August 18, 2003. The NRC staff acceptance review resulted in 10 comments dated September 11, 2003, and COGEMA provided draft responses September 26, 2003. Additional NRC staff review resulted in a request for additional information dated December 16, 2003. A revised surety update and response was submitted January 22, 2004. The staff determined that the revised surety amount for decommissioning the two sites was appropriate and that the submittal complies with 10 CFR Appendix A, Criterion 9 and guidance provided in NUREG-1569, Appendix C. Therefore, the surety amount, including groundwater sweep costs, should be \$12,120,120, as proposed.

**BACKGROUND:**

The Irigaray and Christensen Ranch uranium *in situ* leach facilities are located in east-central Wyoming. Wellfield operations ended at Irigaray in 1994 and at Christensen Ranch in 2000. The final surface decommissioning plan for the sites was approved December 31, 2001, and a detailed review of the decommissioning cost estimates for the surety was done at that time. By letter dated January 28, 2003 (License Amendment No. 7), the approved surety amount for 2002 was \$13,695,730. This amount reflected the assumed increased cost due to inflation (change in consumer price index since 2001) and the completion of decommissioning the site 517 ponds.

The COGEMA submittal of August 18, 2003, proposed a surety of \$11,652,503 because many individual cost rates had been revised (re-baselined) and credit was taken for completion of groundwater sweep (\$394,737) in all wellfields at both sites. The acceptance review of this document by staff (September 11, 2003) resulted in comments related to the consistency and completeness of estimates. Further review resulted in a request for additional information dated December 16, 2003. As part of that request, staff noted that the proposed surety amount did not include the cost for groundwater sweep and the COGEMA letter justified that omission. In a telephone call to the licensee concerning the groundwater sweep costs, staff referred to the letter of September 27, 2002, a response to the previous request to delete the cost for the

groundwater sweep from the surety amount. The additional information from COGEMA did not change the policy that the staff needs to approve the restoration report and not give credit for any one portion of restoration.

#### **TECHNICAL EVALUATION:**

The NRC staff review was performed in accordance with NUREG-1569, "Standard Review Plan for *In Situ* Leach Uranium Extraction License Applications," Appendix C. Also, cost calculations were spot checked.

COGEMA provided the basis for its assumptions and 19 pages of spreadsheets for the 8 categories of decommissioning activities at the two sites. The staff review of these are addressed by category below. The individual costs estimates are from actual billings, estimates from contractors in the past several months, from a previous known cost that has been inflation adjusted, or from the WDEQ Land Quality Division's Guideline No. 12, "Standardized Reclamation Performance Bond Format and Cost Calculation Methods." Although WDEQ indicated that this 2001 guideline could be used for two or three years, the NRC staff recommends that COGEMA find current cost information for its next surety update, or apply the change in consumer price index to increase costs for inflation. The licensee indicated that the availability of an up-to-date cost for an activity was the reason a particular method was chosen. The staff determined that significant bias due to methodology was unlikely.

#### Groundwater Restoration

Worksheet 1 was reviewed in accordance with NUREG-1569, Appendix C (II), "Ground-water Restoration and Well Plugging." Appendix C (II) items (A) through (E) were adequately summarized and calculated. Worksheet 1 values calculated by COGEMA were spot checked using Microsoft Excel and found to be correct. The aquifer parameters such as volume of aquifer required to be restored, area and thickness of aquifer, and volume of the exploited ore zone used in the "Technical Assumptions" section for Worksheet 1 were the same as the 2002-2003 bond estimate submission.

Worksheet 1 lists costs for six categories: groundwater sweep, reverse osmosis, waste disposal well, stabilization, labor, and capital. The number of pore volumes used to calculate costs for groundwater sweep and reverse osmosis treatment reflect values in the approved restoration plan (Section 6 of the 1996 license renewal application). Total labor costs are included for 2.6 years of groundwater restoration operations. Groundwater stabilization monitoring costs are included for nine months. Brine water disposal costs are included.

Cost estimates for repair and maintenance were derived from known operating costs from the previous 12 months. Restoration capital costs for deep injection well abandonment were based on a December 2003 quote from Wyoming vendors.

COGEMA references the use of an on-site trailer used for office project management in its 2003 Annual Report, Reclamation Bond Assumptions, page 5. Donna Wichers of COGEMA confirmed that the trailer is owned by COGEMA (personal communication, November 2003). The trailer is fixed in place with the wheels removed and has a weather skirt around the base.

The trailer is part of the property and not a temporary trailer so a cost for an office does not need to be itemized.

#### Plant Equipment Removal

Worksheet 2 lists the cost for decontamination, removal, transportation, and disposal of equipment from the main process and satellite plants and associated buildings. The rates to rent pressure washers, front-end loaders, etc., and the landfill costs were from sources contacted from June to August of 2003. Also, included were over-size charges due to the permits required at the Port of Entry. COGEMA assumed that 20 percent of the material would not be decontaminated and would need to go to the tailings cell at Pathfinder Shirley Basin. Appropriate categories were itemized and values for transportation and disposal were calculated correctly. Revised worksheets (2, 3, 4, and 6) have the transportation cost for round-trips to the licensed disposal site and to the landfill, based on actual costs incurred during November and December 2003. In addition, COGEMA indicated that the contract for the licensed disposal does not expire until the end of 2006.

#### Building Demolition and Disposal

Worksheet 3 provides the costs for demolition and disposal of all buildings, including concrete decontamination, demolition, and disposal, using mainly estimates from Guideline No.12. This is conservative because COGEMA could leave some buildings in place for the landowner. The costs for contaminated soil removal and cleanup verification (radiation surveys and soil analysis) are also on this sheet and reflect recent estimates by contractors.

#### Pond Reclamation

Worksheet 4 contains the costs for decommissioning the evaporation ponds; i.e., removal of sludge, leak detection system, and the liner; transportation to the tailings cell; disposal; radiation surveys; and backfilling. The item list appears correct for this activity and estimates are based on 2003 prices.

#### Well Abandonment

Worksheet 5 itemizes materials and labor needed, and equipment rental required to abandon 2,526 wells. The individual costs are based on 2003 billings or quotes from suppliers in August 2003. Labor costs are representative for Wyoming. The calculations reviewed were correct.

#### Wellfield Equipment Removal

Worksheet 6 includes the costs for removal and disposal of all wellfield piping, submersible pumps, etc. Survey and decontamination costs for the pump and other equipment is included. Equipment rental and landfill charges are based on July and August contractor/supplier quotes. Costs reflect that all wellfield piping will be disposed at the licensed site (Pathfinder Shirley Basin Tailings Cell), which is appropriate.

## Topsoil Restoration

Worksheet 7 lists costs to replace topsoil in areas where the topsoil was stripped and stockpiled, cleanup verification, and re-vegetation. WDEQ Guideline No. 12 and current costs were used for the estimates. COGEMA conservatively estimated that 50 percent of already re-vegetated areas will need remedial action and re-vegetation. Radiation surveys have shown that soil contamination on the two sites is limited (see 2001 Decommissioning Plan). COGEMA also used the conservative Guideline 12 value of \$491.71/acre for re-vegetation instead of the 2000 actual cost of \$195/acre.

## Miscellaneous Reclamation

Worksheet 8 itemizes costs for removal and disposal of fences, transformers, culverts, guardrails, etc. The removal of the low water stream crossing structures is based on recent quotes for equipment rental and labor rates. Other removal and disposal rates were appropriately inflated estimates that were obtained in previous years.

## TABLE 1 - Summary of Bond Estimate

The "Groundwater Restoration" and "Decommissioning and Surface Reclamation" categories reflect the total cost estimate from each worksheet. The "Miscellaneous Costs Associated with Third Party Contractors" category lists percentages assigned to items (project design, contractor profit and mobilization, pre-construction investigation, etc.) most of which are required and approved by WDEQ. The contingency amount is, as required by NRC, a minimum of 15 percent to cover unknown conditions that could occur during decommissioning/reclamation. The total for this category is 34.5 percent that is applied to the subtotal for restoration and reclamation (\$9,011,242) for a total bond estimate of \$12,120,120.

## **CONCLUSIONS:**

The staff determined that itemized activities reflect the anticipated efforts needed to implement the approved decommissioning and restoration plans. The individual cost estimates were based on several methods, but most were recent charges or estimates from vendors or contractors. Various calculations were checked by staff and some costs were compared to references for construction prices and found acceptable.

Revise License Condition 9.5 to include the surety amount of \$12,120,120.