



UNITED STATES

NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE  
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DENVER, COLORADO 80225

MAR 14 1994

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Docket No. 40-8943  
SUA-1534, Amendment No. 23  
04008943540E  
X61247E

MEMORANDUM FOR: Docket File 40-8943

FROM: Joel P. Grimm, Project Manager

SUBJECT: LICENSE AMENDMENT NO. 23 - BASELINE GROUND-WATER QUALITY IN  
MINE UNIT NO. 4

BACKGROUND

Ferret Exploration Company of Nebraska, Inc. (Ferret) has partially completed installing wells in mine unit No. 4 at its Crow Butte ISL facility. On February 7, 1994, Ferret submitted baseline ground-water quality data for all monitor wells in the mining unit, as well as 43 production and injection wells in the ore zone. These data were submitted to support a license amendment request to approve proposed monitor-well locations, Upper Control Limits (UCLs) for the monitor wells, and restoration standards for the mining unit. The submittal was made in accordance with License Condition No. 44.

DISCUSSION

Ferret developed mine unit No. 4 by drilling wells in two areas of the Crow Butte facility separated by the processing facilities. The total area involved is approximately 42 acres. All the newly developed well fields are found adjacent to mine unit Nos. 2 and 3. Each of the well fields developed earlier encompassed 12 to 15 acres. License Condition No. 42 requires that each production unit include two shallow monitor wells. Conversely, Ferret's license application specifies that each 5 acres of well field would include one shallow monitor. Owing to its larger size, Ferret proposes nine shallow monitor wells in mine unit No. 4. License Condition No. 42 should be modified to reflect the appropriate shallow monitor-well density, as cited in the licensee's application.

Each monitor well was sampled at least three times on biweekly intervals. The licensee calculated the UCLs for each monitor well, equal to 120 percent of the highest analytic value for each of five monitored constituents. Additional baseline ground-water data were provided from 43 wells inside the

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mine unit. The data included analyses for constituents including major ions, trace metals, and radionuclides. Ferret proposed a list of restoration standards for the constituents calculated in accordance with State of Nebraska permit requirements.

Certain perimeter monitor wells circling each mine unit become ineffectual owing to the location of subsequent mine units. Therefore, sampling requirements should be suspended in several perimeter monitor wells from mine unit Nos. 1, 2, and 3, because they are now located in or too close to mine unit No. 4 to be effective.

#### CONCLUSION

NRC's review of the submittal indicates that all required data was provided. Proposed monitor wells are appropriately located, and calculated UCLs are correct and should be approved. Restoration goals based upon drinking water standards are not adequate as a primary standard. As specified in License Condition No. 51, baseline water quality, on a mine unit average basis, shall remain the primary restoration standard for the Crow Butte project.

In accordance with the categorical exclusion contained in paragraph (c)(11) of 10 CFR 51.22, an environmental assessment is not required for this licensing action. That paragraph states that the categorical exclusion applies to issuing amendments to licenses provided that (1) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite, (2) there is no significant increase in individual or cumulative occupational radiation exposure, (3) there is no significant construction impact, and (4) there is no significant increase in the potential for or consequences from radiological accidents.

The licensing action discussed in this memorandum meets these criteria because the proposed amendment addresses specific monitoring requirements in compliance with an approved general plan. An environmental report is not required from the licensee because the amendment does not meet the criteria of 10 CFR 51.60(b)(2).

Therefore, in accordance with 10 CFR Part 40, License Condition Nos. 44 and 45 should be amended to read as follows:

44. At least 2 months prior to mining in each mine unit, the licensee shall submit baseline ground-water quality data to the NRC, Uranium Recovery Field Office. The data shall be established in each mine unit at the following minimal density:
  - A. one production or injection well per acre,
  - B. one upper aquifer monitor well per 5 acres, and
  - C. all perimeter monitor wells.

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The data shall consist, at a minimum, of the sample analyses indicated in Appendix 2.9(a) of the October 7, 1987, license application. The baseline data shall support a request for a license amendment establishing upper control limits (UCLs) and restoration standards for each mine unit.

Current UCLs, restoration standards, and monitor well locations are designated in:

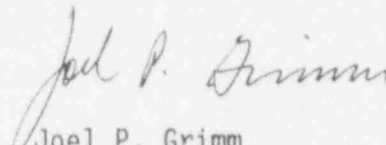
<u>Submittal Date</u>	<u>Mine Unit No.</u>
December 31, 1990	1
January 23, 1992	2
November 19, 1992	3
February 7, 1994	4

[Applicable Amendments: 13, 19, 23]

- 45. All designated monitor wells shall be sampled and tested on a biweekly basis. If two UCLs are exceeded in a well or if a single UCL value is exceeded by 20 percent, the licensee shall take a confirming water sample within 48 hours and analyze it for the excursion indicators. If the second sample does not indicate exceedance, a third sample shall be taken within 48 hours. If neither the second or third indicate exceedance, the first sample shall be considered in error.

If the second or third sample indicates an exceedance, the well in question shall be placed on excursion status, and the NRC shall be notified by telephone within 24 hours and within 7 days in writing from the time the confirmation sample was taken. Upon confirmation of an excursion, the licensee shall implement a corrective action and increase the sampling frequency for the excursion indicators to once every 7 days. An excursion is considered concluded when the concentrations of excursion indicators are below the concentration levels defining an excursion for three consecutive 1-week samples.

[Applicable Amendments: 10, 13, 19, 23]

  
 Joel P. Grimm  
 Project Manager

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