

APPENDIX B

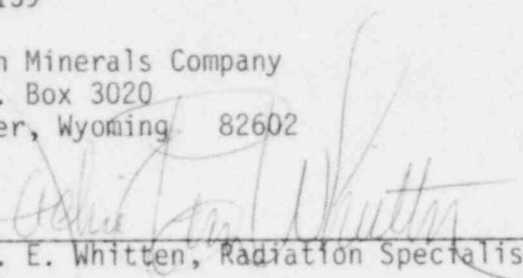
U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

License: SUA-1139

Docket: 40-8102

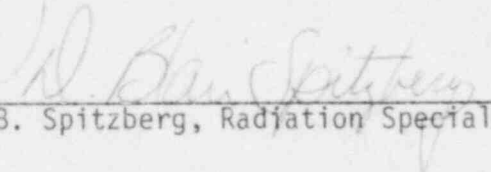
Licensee: Exxon Minerals Company
P. O. Box 3020
Casper, Wyoming 82602

Inspectors:



J. E. Whitten, Radiation Specialist

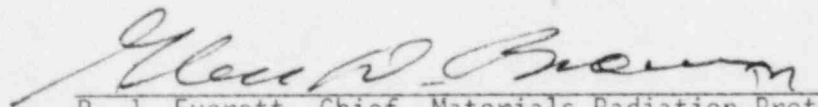
7/15/82
Date



D. B. Spitzberg, Radiation Specialist

7/15/82
Date

Approved:



R. J. Everett, Chief, Materials Radiation Protection
Section

7/22/82
Date

Inspection Summary

Inspection on June 28 - July 2, 1982 (Report 40-8102/82-01)

Areas Inspected: Routine, unannounced inspection of uranium milling operations and radiation safety program including organization and administration; internal review and audit; training; facilities and equipment; maintenance; internal exposure control; external exposure control; environmental monitoring; fire protection; posting, labeling, and reports; waste management; and independent measurements. The inspection involved 24 hours onsite by 2 NRC inspectors.

Results: Of the 12 areas inspected, no violations or deviations were identified.

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DETAILS1. Persons Contacted

- *J. B. Shannon, Mine Manager
- *S. P. Morzenti, Technical/Environmental Superintendent
- J. Karman, Mill Superintendent
- K. Lempke, Laboratory Supervisor
- T. P. Yarnick, Environmental Coordinator/Radiation Safety Officer
- *D. Clarke, Environmental Specialist
- D. Morgan, Emergency Technician

*Denotes those present at exit interview.

2. Licensee Action on Mill Appraisal Findings

(Closec) Significant Appraisal Finding (40-8102/81-01): Failure to have in the radiation protection program an established document control system for reviewing and approving standardized operating and emergency procedures. The inspectors noted that the licensee had implemented a formal document control program which contained the following elements; formal draft review procedure, revision accountability, and approval authorization. This document control system closes out this Significant Appraisal Finding.

(Closed) Significant Finding (40-8102/81-01): Failure to provide adequate internal exposure control measures for urinalysis sampling, in-vivo counting, and respiratory protection. The inspectors noted that the licensee has been using a routine 21-day sampling frequency for urinalysis and has a vendor scheduled to do in-vivo counting in July 1982, and 1983. All actions listed above are commensurate with recommendations contained in Regulatory Guide 8.22. Baseline data for future reference is currently being collected and maintained on all new personnel. Respiratory protection forms contained information pertinent to the issuance, inspection, cleaning, sanitizing, and radiological surveying of respirators. Exxon's Corporate Medical Committee is to meet in July 1982, at which time they will discuss the implementation of a respiratory medical evaluation specific for respirator wearers. This evaluation will become an integral part of employee's annual physical examination.

Increasing the sampling frequency bioassays, collecting bioassay baseline data, providing training specific to respirator utilization, implementing of documentation specific to the respiratory program closes out this Significant Appraisal Finding.

(Closed) Significant Appraisal Finding (40-8102/81-01): Failure to provide the effluent and environmental monitoring program with adequate sampling frequencies to characterize source material releases, and to provide baseline data for the environmental sampling parameters. The inspectors noted that the individual type, number, and sampling frequency of environmental samples have been increased to meet the current license requirements. In an attempt to provide environmental baseline information, data is being collected from a set of biota samples located remote to the mill site. Increasing the number and frequency of environmental samples and collecting the data from a remote sampling location, closes out this Significant Appraisal Finding.

3. Organization and Administration

The inspectors discussed the organization and administration with a representative of Exxon Minerals Company, hereafter referred to as Exxon, and noted that changes of personnel had occurred in the Safety and Environmental program. The Environmental Coordinator/Radiation Safety Officer (EC/RSO) position had been vacated since the June 1981, mill appraisal, but the position had been filled immediately from personnel resources within the Highland operations. Due to the reduced work force and milling operations, individuals filling positions outlined in the chain of command applicable to radiation safety have dual responsibilities in some areas pertaining to both radiation safety and environmental monitoring.

The licensee's representative stated that under operating conditions a total work force of 138 mill personnel was being used. Twenty-eight of these individuals were salaried, with the remaining individuals being hourly. Hourly mill employees were not represented by a union.

4. Internal Review and Audit

The inspectors noted that daily "walk-through" inspections were being conducted by a member of the radiation safety staff, namely the Senior Environmental Technician (SET), with his documented findings submitted to the EC/RSO. Weekly radiation safety inspections were being conducted by the SET and/or EC/RSO with reports of radiation hazards having gone to the supervisor of the areas having radiation safety violations. Monthly radiation safety inspections were conducted by the EC/RSO with resulting radiation safety violations having been reported to the Mill Superintendent and the Mine Manager.

Exxon's commitment to ALARA program was exhibited in the daily, weekly, and monthly radiation safety inspections of the mill complex, and the quarterly audit conducted by Exxon's corporate staff. All of the above facets of the ALARA program identified possible trends and provided recommendations to reduce personnel exposure to all forms of uranium and radon.

5. Training

The inspectors discussed radiation training procedures, reviewed selected training records, examined personnel files for verification of training, conducted personnel interviews, and noted that the training program is adequate to meet NRC requirements. Discussion and review revealed that the training program had been conducted as required by the license application and 10 CFR 19.12. It was noted by the inspectors that the refresher training for all employees had been conducted annually in conjunction with Mine Safety and Health Administration training. In addition to annual refresher training, monthly safety meetings had been devoted, in part, to radiation safety topics.

All female employees occupationally exposed to radiation had been trained in accordance with 10 CFR 19.12, specifically NRC Regulatory Guide 8.13.

6. Facilities and Equipment

The inspectors toured the entire mill complex and verified that all the equipment and facilities were as required by the license and that the mill circuit had not been changed or altered from its original NRC-approved design. The licensee stated that mill through-put was averaging approximately 3,500 tons of ore per day with the mill operating 24 hours per day for 10 days; then the mill is then shut down for 4 days. The mill was in operation at the time of the "walk-thru" inspection and housekeeping was noted to be good.

Support instrumentation relating to the radiation protection program, including air samplers and portable survey instruments were found to be operational, adequate in number, readily available, and in calibration. Portable survey instruments had been calibrated on a semiannual frequency and the portable air samplers had been calibrated monthly.

7. Maintenance

The inspectors reviewed work control procedures to verify that control of nonroutine maintenance activities was as required. Procedures had been established and implemented in the form of special repair work permits (SRWP) to ensure that the required contamination monitoring and personnel intake evaluations had been conducted in a timely fashion. The licensee's trained Safety and Environmental staff evaluated work situations as they had occurred and had listed on the SRWP the required protective clothing, respiratory protection, and personnel air sampling equipment for the particular job. Work in the yellowcake packaging area required that a respirator be used at all times.

8. Radiation Protection Program - Internal

The inspectors reviewed the licensee's program for control of intakes of radioactive materials in designated restricted areas. The licensee described the program for routine and nonroutine evaluation of air samples, time-weighted personnel exposures, special maintenance monitoring, evaluation of the 40-hour control measure, and evaluation on the quarterly limits for ore dust. Records were examined dating back to the uranium mill appraisal of June 1981. Licensee records showed that general air samples had been taken in 40 locations on a monthly basis. Routine breathing zone samples had been collected as stipulated for the specific maintenance activity. Radon-222 had been analyzed by the licensee using the modified Kusnetz method.

Licensee records further showed that neither the quarterly limits for ore dust nor the annual limit for radon had been exceeded during the period of this inspection. Records indicated that no worker had exceeded the regulatory weekly limit for soluble uranium.

The licensee utilized a half-mask respirator in the yellowcake packaging area. All personnel sampled while conducting special maintenance have the air sampled directly from their respirators. No credit for the respirator is taken for calculating personnel exposure to airborne yellowcake.

Urinalyses had been performed on all mill workers both on a routine 21-day frequency and on a specific need basis. Urine specimens had been analyzed by Exxon. Exxon's action levels and QA procedures for their bioassay program were in accordance with Regulatory Guide 8.22. There were no cases in which urinalysis results were greater than 30 micrograms per liter for 4 consecutive specimens. There also were no urinalysis results greater than 130 micrograms per liter.

9. Radiation Protection - External

The radiation protection program for the control of external radiation was reviewed to determine compliance with the licensee's procedures and pertinent NRC rules and regulations. Licensee records and personnel dosimetry reports indicated that TLD badges had been provided to workers on a monthly exchange schedule. External exposure data were reviewed for the period June 1981 to July 1982, and no exposures were discovered in excess of 10 CFR 20.101 limits. Direct radiation survey records indicated performance of monthly surveys at 40 locations throughout the mill complex.

Externally contaminated materials and scrap have not been released to unrestricted areas. It has been the licensee's policy that materials leaving the mill restricted area must be surveyed for fixed and removable contamination. A release form must accompany such materials.

10. Environmental Monitoring

Sampling and analysis requirements are outlined in Exxon's license application. The inspectors reviewed results subsequent to the uranium mill appraisal of the sampling for stack, air, soil, water, and vegetation and discussed these results with the licensee's representative. The inspectors noted also that the mill exhaust systems had been sampled in accordance with license requirements for airborne radioactive effluents. All effluents had been analyzed by Exxon. The inspectors noted that concentrations of natural uranium, thorium-230 and radium-226 in ambient air, ground water, and surface water were less than 10 CFR 20.106 limits for unrestricted areas. A review of representative records revealed that the licensee had conducted the environmental monitoring program in accordance with NRC requirements.

11. Fire Protection and Prevention

The licensee described the fire protection and prevention provisions which included a description of available equipment and training exercises that had been performed during this inspection period. The licensee stated that no fires had occurred since the last inspection.

The licensee's insurance had been underwritten by the parent company. No annual inspection specifically for fire protection and prevention had been conducted by corporate staff. Monthly fire protection and prevention checks are made routinely by Highland staff, which include checks of the fire detection system.

Review of fire protection, fire prevention program, and applicable fire fighting equipment revealed that the licensee had conducted the program in compliance with NRC rules and regulations.

12. Waste Management

The inspectors visited the tailings disposal area and noted that the licensee was maintaining the required 10 feet of freeboard between the top of the tailings retention dike and the operating level of the pond liquid and the 150 foot minimum beach width. Instrumentation to detect ruptures of the tailings discharge line as required by License Condition 28 was installed and working.

A review of records showed that the licensee had conducted and documented at least one inspection of the tailings embankment per day as required by License Condition 27. The annual inspection of the tailing dam was conducted by a vendor on November 12, 1981. No problems were noted.

13. Posting, Labeling, and Reports

The inspectors noted continuous fencing of the restricted area and access control at the main gate. The mill entrance was posted with the information that all areas and tanks within the mill might contain radioactive material.

The inspectors noted that drums of yellowcake were stenciled "LSA" and "Radioactive." The inspectors reviewed representative material transfer inventory reports, transportation documentation, and verified compliance with 10 CFR 71.51. Annual inventory reports to the NRC, as required by 10 CFR 40.65(b), had been submitted.

Posting was observed to have been in accordance with applicable requirements. The inspectors noted that documents were posted as required by 10 CFR 19.11(b)(c).

14. Independent Measurements

Two air samples were taken in the mill complex at locations outside the yellowcake area and will be analyzed for total uranium. No water samples were taken. Analytical results will be compared to the licensee's samples taken at the same locations. The inspectors performed surveys for alpha contamination at designated eating locations, change rooms, and work areas within the mill complex. All areas surveyed were found to be below 1000 dpm/100 cm².

15. Exit Interview

The inspectors met with licensee's management (see paragraph 1) at the conclusion of the inspection on July 1, 1982. The purpose and scope of the inspection were discussed with management on entry into the site. Inspection findings were reviewed upon exit.