

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 40-4492/80-01
Licensee: Federal American Partners
Gas Hills Star Route
Riverton, Wyoming 82501

License No. SUA-667
Docket No. 40-4492

Inspection conducted: August 18-20, 1980

Inspectors: Lorenzo Wilborn
Lorenzo Wilborn, Radiation Specialist

9/9/80
Date

D. Blair Spitzberg
D. Blair Spitzberg, Radiation Specialist Intern

9/9/80
Date

Approved by: Glen D. Brown
Glen D. Brown, Chief, Fuel Facility and
Material Safety Branch

9/9/80
Date

Inspection Summary

Inspection on August 18-20, 1980 (Report No. 40-4492/80-01)

Areas Inspected: Routine, unannounced inspection of uranium mill operation 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; independent measurements; and licensee action on previously identified noncompliance items. The inspection involved forty-six (46) inspector-hours on site by two NRC inspectors and twenty-three (23) hours on site by one NRC Occupational Health Standards Branch accompanying person.

Results: Of the thirteen areas inspected, no items of noncompliance or deviations were identified in ten (10) areas; six (6) items of noncompliance were identified in three areas (infraction - failure to conduct radiation safety surveys of maintenance activity, see paragraph 7; infraction - failure to collect annual soil and vegetation samples during 1979, see paragraph 10; infraction - failure to report concentrations of radioactive material in an unrestricted area in excess of ten times the applicable 10 CFR 20 limit, see paragraph 12; deficiency - failure to submit personnel monitoring reports, see paragraph 12; deficiency - failure to submit a statement of the source material inventory, see paragraph 12; deficiency - failure to report environmental TLD results in the semi-annual reports, see paragraph 12).

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DETAILS1. Persons Contacted

*Niles J. Andrus, Vice President Operation American Nuclear Corporation
*Joseph T. Heatherly, Acting General Manager (Terminated 8/19/80)
*Brad Thurman, Mill Superintendent
*Kenneth S. Watts, Senior Environmental Engineer
*Joseph R. Lane, Radiation Technician (Acting RSO)
Robert Powers, Health Physicist, Tennessee Valley Authority
William T. Utton, Developmental Metallurgist
John Raymond, Safety Supervisor
Lawrence Silvey, Director, Safety and Personnel

*Individuals present at exit interview.

In addition, the inspectors interviewed four members of the plant work force.

Accompanying the inspectors was Nancy Ann Dennis, OSB:SHSS:OHSB, Washington, D.C.

2. Licensee Action on Previous Inspection Findings

- a. (Closed) Noncompliance (40-4492/79-03): This item involved failure to post a restricted area where radiation levels of six milliroentgens per hour existed with a sign or signs bearing the radiation caution symbol and the words, "Caution - Radiation Area." The inspectors verified that proper signs had been posted in the area and on the entrances to the area.
- b. (Closed) Noncompliance (40-4492/79-03): This item involved failure to make a formal documented evaluation for two workers whose urinary samples exceeded 130 micrograms per liter. The inspectors verified that the guidelines set forth in the NRC Staff Technical Position dated June 1978 have been followed.
- c. (Closed) Noncompliance (40-4492/79-03): This item involved failure to submit semi-annually, the quarterly reports on the effluent and environmental monitoring program. The inspectors verified that such a report was submitted for the period July 1, 1979 thru December 31, 1979. The licensee stated that the report for the period January 1, 1980 thru June 30, 1980 will be submitted in a timely manner.

3. Organization and Administration

The inspectors discussed the organization and administration of the licensed activity with Federal - American Partners representatives

and noted that a big changeover of personnel had occurred. Mr. Ken Wright had been replaced by Mr. Joseph T. Heatherly, however, Mr. Heatherly turned in his resignation about August 19, 1980 and was replaced by Mr. Niles J. Andrus as the General Manager. Mr. Floyd Jackson, the Radiation Safety Officer (RSO) during the most recent comprehensive inspection, had been terminated and Mr. Joseph R. Lane, a Radiation Technician, is performing the function as the Acting RSO.

The inspectors also noted that all ore being processed by Federal - American Partners is under contract with TVA.

The licensee stated that the mill employees are represented by the U. S. Steelworkers of America Local of the AF of L, CIO and the mill work force is comprised as follows:

15	salaried employees
7	lab/rad technicians
25	mill operations technicians
20	mill maintenance technicians
4	warehouse personnel
<u>71</u>	total

4. Internal Review and Audit

The inspectors noted that the Acting RSO reviews the monthly Radiation Reports as an audit of control of radiation hazards associated with the mill operations. The inspectors also noted that the Acting RSO would send the results of his reviews to the General Manager when warranted.

5. Training

The inspectors found the radiation safety training program unchanged from the previous inspection. The inspectors interviewed four workers (three male and one female) and determined that their knowledge of radiological hazards at the mill was sufficient to comply with 10 CFR 19.12. The female stated that she had read Regulatory Guide 8.13 and had signed the last page of same indicating that this instruction had been received and was understood.

The licensee explained that the primary element of the refresher training program continues to be eight hours of training annually by the Safety Department.

The licensee further explained that to enhance the training program, monthly, regularly scheduled, safety meetings are conducted by safety personnel covering comprehensive health and safety topics.

6. Facilities and Equipment

The inspectors toured the mill to observe operations in progress and to verify that equipment and facilities were in accordance with applicable license requirements. Discussions with licensee representatives and review of licensee records revealed that the mill throughput was approximately 970 tons of ore per day with the mill operating twenty-four (24) hours per day, seven (7) days per week with 340 operating days per year. The mill was in operation at the time of this inspection and housekeeping was noted to be satisfactory. No major changes to the mill circuit were identified. There was purportedly no incidents, accidents, thefts or losses of licensed material.

Support instrumentation related to the radiation protection program including air samplers and portable survey instruments were observed to be operable and in calibration.

No eating was allowed in the mill except in a designated mill eating area which had been established with washing of hands and face mandatory prior to entering.

The inspectors toured the change room and observed that it was unchanged from its description in the last inspection. The inspectors also reviewed time cards of several yellowcake workers which certified that showering had been performed each shift.

7. Maintenance

The inspectors reviewed work control procedures to verify that control of routine and nonroutine maintenance activities were conducted as required. Control of maintenance activities was the responsibility of the mill superintendent pursuant to License Condition 13. The inspectors observed a maintenance activity in progress in which a centrifuge had been removed and the restoring of the foundation was being conducted. The restoration involved removal of a layer of old concrete and replacing it. It was evident that processing solutions had spilled onto the concrete in this area. The inspectors inquired about the radiation safety surveys for this activity and none had been conducted. The inspectors stated that failure to conduct radiation safety surveys of such maintenance activity constituted noncompliance with License Condition 13.

8. Radiation Protection Program - Internal

The inspectors reviewed the licensee's program for control of intakes of radioactive materials in the restricted area. The inspectors discussed 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 of the quarterly limits for

ore dust with the licensee and examined records dating back to the last inspection. Licensee records showed that general air samples are taken in thirty-four locations on a weekly basis. Routine breathing zone samples are collected for one hour each per week in five areas. Nonroutine breathing zone samples are collected as stipulated for the maintenance activity. Radon samples are collected in forty-four areas on a monthly basis and analyzed by the licensee using the Kusnetz method. Licensee records further showed that neither the 40-hour control measure, the quarterly limits for ore dust nor the annual limit for radon were exceeded during the period of this inspection.

The licensee utilizes forced air respirators in the yellowcake enclosure and half-mask air purifying respirators in other areas but does not take credit for the protection factors, thus, the inspectors did not review the respiratory protection program for compliance with 10 CFR 20.103 and Regulatory Guide 8.15.

The licensee operates a bioassay program pursuant to NRC Staff Technical Position "Bioassay at Uranium Mills" dated June 1978. Urinalysis is performed on all mill workers on a two week basis. Samples are analyzed by Environmental Pollution, Inc. The licensee had taken action in accordance with Table 1 of the referenced staff technical position for results in the range 15 to 30 micrograms per liter and greater. There was not a case where the urinalysis result was greater than 30 micrograms per liter for four consecutive specimens. There was no urinalysis result greater than 130 micrograms per liter.

A review of the in-vivo data revealed that approximately fifty percent of mill workers are evaluated one year and the remaining fifty percent of mill workers the next year, however, yellowcake and precip operators are evaluated each year. The in-vivo measurements were performed and analyzed by Helgeson Nuclear Services, Inc. on July 16, 1979 and July 25, 1980. All measurements for July 16, 1979 (report dated September 7, 1979) were less than 9 nanocuries of uranium. The results of the measurements for July 25, 1980 had not been reported to the licensee on August 20, 1980.

9. Radiation Protection Program - External

The radiation protection program for the control of external radiation was reviewed to determine compliance with the licensee's procedures and pertinent regulations. Licensee records, vendor reports, indicated that TLD badges supplied by Radiation Detection Company are provided to workers on a monthly exchange schedule. External exposure data were reviewed for the period July 1979 thru May 1980 and no exposures were noted in excess of 10 CFR 20.101 limits. Restricted area direct radiation survey records indicated performance of monthly surveys at sixty-nine locations throughout the mill.

10. Environmental Monitoring

Sampling and analysis requirements are contained in License Conditions 14 & 24. The inspectors discussed the programs for stack, air, water, soil and vegetation with the licensee representative and reviewed sampling results subsequent to the last inspection. The inspectors noted that the mill exhaust systems, from which airborne radioactivity is released, is being sampled on a monthly basis and data analyzed by a contractor, Kump and Associates. The inspectors noted that concentrations of natural uranium, thorium -230 and radium -226 in ambient air, ground water and surface water were less than the applicable MPC's for unrestricted areas. A review of representative records revealed that the licensee has conducted the program in compliance with License Conditions 14 and 24 with the following exceptions which constituted noncompliance: annual soil and vegetation samples were not collected during 1979 as specified in Table SUP 1-15.

11. Fire Protection and Prevention

The inspectors discussed the fire protection and prevention program with the Safety Supervisor and noted that the licensee has its own volunteer fire team consisting of thirteen (13) volunteers and a Chief. There is one training exercise every two months and a drill exercise twice each month. A licensee representative reported that the mill is insured by four underwriters: Harbor, Columbia Casualty, Puritan and Guild Hall. An inspection was purportedly conducted in June 1980.

12. Posting Labeling and Reports

The inspectors noted that posting was in accordance with applicable requirements. The mill entrances were posted with the information that all areas within the mill may contain radioactive material. The inspectors also noted that drums of yellowcake were labeled as LSA and radioactive.

The inspectors noted that the licensee had detected Radon -222 concentrations, in the unrestricted area, of $36.75E-9$ microcuries per milliliter in September 1979 and 56 and $57.7E-9$ microcuries per milliliter in November 1979. The inspectors stated to the licensee representative that 10 CFR 20.405(a)(5) requires in part that the licensee shall make a report in writing within 30 days to the appropriate NRC Regional Office of concentrations of radioactive material in an unrestricted area in excess of ten times any applicable limit set in this part. The inspectors further stated that these concentrations are in excess of ten times the 10 CFR 20 limit of $3E-9$ microcuries per milliliter and constituted noncompliance in that these concentrations had not been reported to the NRC on August 20, 1980.

The inspectors noted on August 20, 1980, that personnel monitoring reports covering calendar year 1979 had not been submitted to the NRC. The inspectors stated that failure to submit personnel monitoring reports constituted

noncompliance with 10 CFR 20.407.

The inspectors noted on August 20, 1980, that a statement of the licensee's source material inventory due within thirty days after September 30, 1979 had not been submitted. The inspectors stated that failure to submit a statement of the source material inventory constituted noncompliance with 10 CFR 40.64(b).

The inspectors noted on August 20, 1980, that the area environmental monitoring TLD results were not reported in the semi-annual reports dated August 30, 1979, and February 29, 1980. The inspectors stated that failure to report these results in the semi-annual reports constituted noncompliance with 10 CFR 40.65.

13. Waste Management

The inspectors visited the number 1 and number 2 tailings disposal areas noting that the embankments appeared to be well maintained. The licensee was maintaining at least ten feet of freeboard between the embankment crest and the operating level of the ponded liquid in pond number 1 as required by license condition 22. The licensee was maintaining the solution depth in pond number 1 at no greater than 24 inches as required by License Condition 22. A review of records showed that the licensee conducts and documents at least one inspection of the tailings embankments per day as required by License Condition 11.

14. Independent Measurements

Two air samples were taken within the mill and will be analyzed for total uranium. A water sample was taken from Willow Springs Draw and will be analyzed for uranium, Th-230, and Ra-226. Analytical results will be compared to the licensee's samples taken at the same locations at the same times. Direct radiation dose rates were measured at various locations throughout the mill and were observed to be consistent with those obtained by the licensee.

15. Exit Interview

The inspectors met with licensee management (see paragraph 1) at the conclusion of the inspection on August 20, 1980. Following a discussion of the purpose and scope of the inspection, the inspection findings were reviewed.