U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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Licensee:	AlliedSignal, Inc.
Facility:	Metropolis Works
Location:	P.O. Box 430 Metropolis, IL 62960
Dates:	July 15-19, 1996
Inspectors:	T. Reidinger, Senior Fuel Facility Inspector J. Jacobson, Fuel Facility Inspector
Reviewed by:	G. Shear, Chief, Fuel Cycle Branch Division of Nuclear Materials Safety
Approved by:	C. D. Pederson, Director Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

AlliedSignal, Inc. Metropolis Works NRC Inspection Report 040-03392/96003(DNMS)

This inspection involved review and observation of selected aspects of licensee operations, transportation, radioactive waste management and radiation protection programs.

Operations Review (IP 88020)

 A section of the Distillation Manual which was out-of-date and did not conform to current control room operating practice indicated that licensee procedure reviews were not completely thorough. (IFI No. 040-03392/96003-01)

Transportation Activities (IP 86740)

- Uranium hexafluoride cylinder quality assurance activities were conducted in accordance with Standard N14.1 of the American National Standards Institute.
- A discrepancy between the actual setting of a relief valve for hydrostatically testing cylinders and the governing procedure, although conservative in nature, provided another example that licensee procedure reviews were not completely thorough.

Radioactive Waste Management (IP 88035)

- The licensee had completed clean-up and disposal of the corroded bed materials/filter fines drums. Potassium hydroxide drums were being relocated from an outside storage pad to more protected storage inside for repackaging and possible uranium recovery.
- The licensee's recently implemented radioactive waste management program improved the segregation, storage, and reduction of wastes onsite.

PARTIAL LIST OF PERSONS CONTACTED

- R. Allshouse, Technical Supervisor Quality Assurance *P. Gasperini, Production Manager
- H. Roberts, Supervisor, Safety and Health Physics
- T. Robison, Distillation Engineer
- S. Stewart-Powers, Supervisor of Health Physics Technicians K. Wilkins, Health Physics Specialist

*Senior licensee official at the exit meeting on July 19, 1996.

Other licensee personnel were contacted as part of the routine inspection.

REPORT DETAILS

1. Operations Review (88020)

a. <u>Conduct of Operations</u>

Scope

The inspectors observed operations in the Feed Materials Building, the Sampling Plant, the Bed Materials/Filter Fines Facility, and the Environmental Protection Facility. In particular, the inspectors observed the following activities:

- control room operations for distillation and fluorination
- low-boiler condenser flush
- cylinder disconnect, weighing, and storage
- potassium-hydroxide-muds drum relocation
- sampling 55-gallon drums of ore concentrates

The inspectors compared observations of activities in progress during facility tours with selected written procedures from the Distillation Manual and UF, Cylinder Wash Manual. The inspectors also observed the current status of distillation and fluorination equipment and instrumentation.

Observations and Findings

In general, the inspectors noted that activities observed were conducted in accordance with applicable procedures, permits, and postings, and that operators used appropriate protective clothing and equipment. However, the inspectors noted that the current licensee practice for tracking the status of instrumentation which was out of service did not conform to the procedure in the Distillation Manual for out-of-service or disabled instrumentation.

Section 2.4.1 of the Distillation Manual required that an Inoperative Instrumentation Log Book be maintained in the control room for inoperative or disabled instrumentation. Entries in the log book were to include name and number of instrument, date and time disabled or found to be inoperative, operator name, problem description, and a maintenance work order number, if applicable. The inspectors noted that over the past two years only a half dozen entries had been made in the log book, and each entry did not contain all the information above. In addition, the date and time for return to service and corrective actions taken were not recorded for each entry. A discussion with the Distillation Foreman indicated that approximately 3-4 years ago, the licensee had transitioned to using an instrumentation maintenance checksheet and daily operating instructions to track out-of-service and disabled instrumentation. The inspectors reviewed selected checksheets kept by the operators as well as Distillation instructions and noted that the licensee was tracking out-of-service instrumentation in this manner. The inspectors noted that the Distillation Manual had been reviewed and approved on February 5, 1996, but that the review had not identified the change in tracking out-of-service instrumentation. This raised the concern that the review had not been thorough enough to ensure that all written procedures were current.

Conclusion

Although the licensee had developed a new method to document and track out-of-service instrumentation, the Distillation Manual had not been revised to incorporate standard practices which had been in place for 3-4 years. This finding, in addition to a finding in Section 2.a., raised concern that periodic licensee procedure reviews were not thorough or rigorous. The rigor of the licensee's program for accomplishing procedure reviews will be tracked as Inspector Follow-Up Item No. 040-03392/96003-01.

b. Housekeeping

During facility tours, the inspectors observed housekeeping practices. Floors of the process areas were generally clear of combustibles and tools. However, current and past inspection observations have continued to note that used lockout tags which were not properly discarded were generally left on the floor.

Transportation Activities (86740)

a. ANSI N14.1 Review

Scope

The inspectors reviewed selected elements of the licensee's program for shipment of uranium hexafluoride (UF_6) cylinders. This program implemented the requirements of American National Standards Institute (ANSI) N14.1, "American National Standard for Nuclear Materials - Uranium Hexafluoride - Packaging for Transport." The elements of the program reviewed included:

- UF, Cylinder Quality Assurance Manual
- UF₆ cylinder Wash Manual
- Cylinder Status Log

- Cylinder fill approvals, shipping requests and approvals
- Routine receipt and Five-Year cylinder inspections
- Hydrostatic tests

Observations and Findings

The licensee maintained its cylinder quality assurance program in accordance with applicable Department of Transportation regulations and the requirements in ANSI N14.1, which are incorporated into the license. Cylinders observed being filled and shipped had current five-year inspection dates, and inspections and tests were conducted in accordance with the standard.

The inspectors noted one discrepancy in Section 3.0.D of the Cylinder Wash Manual, entitled "UF₆ Cylinder Hydrostatic Strength Test," which contained the required tests and inspections for hydrostatic test equipment and instrumentation. The procedure required that the high pressure relief valve setpoint be set at 470 pounds per square inch gauge (psig). However, the current field practice was to set the high pressure relief valve setpoint at 425 psig, a more conservative setting from the ASME pressure limit of 440 psig. According to licensee surveillance records and maintenance work orders, the high pressure relief valve setpoint was modified in 1992 to 425 psig. None of the procedure reviews conducted since that date had identified the discrepancy. This was another example of the concern raised in Section 1.a.

Conclusion

Cylinder quality assurance activities were conducted in accordance with the governing national standard. A discrepancy between the setpoint of a high-pressure relief valve for testing thick-walled cylinders and the applicable procedure raised concern about the level or rigor applied during periodic licensee reviews of procedures for accuracy and adequacy. No safety issues were raised regarding this lower setpoint. This was another example of the concern identified in Section 1.a. for inspector follow-up.

b. Health Physics Surveys

Scope

The inspectors reviewed the licensee's surveys for dose rate and removable surface contamination for cylinders shipped during the months of April to July 1996.

Observations and Findings

The licensee's survey results were all significantly below the applicable Department of Transportation and 10 CFR 71 limits. The licensee used and maintained appropriate instruments for measuring dose rates and removable beta-gamma and alpha contamination. The instruments used for the transportation surveys were calibrated as required.

Conclusion

The licensee conducted appropriate transportation surveys in accordance with DOT and NRC requirements.

3. Radioactive Waste Management (IP 88035, 84850)

a. Radioactive Solid Waste

Scope

The inspectors reviewed the licensee's radioactive waste management program for solid waste including:

- Storage of solid wastes
- Waste segregation and characterization
- Waste disposal and manifests

Observations and Findings

The inspectors followed up on an issue identified in the chemical safety inspection conducted on December 11-15, 1995 (NRC Inspection Report No. 40-3392/95-201). The issue involved corroded and leaking drums stored in the licensee's bed materials/filter fines building and on the storage pad in the back. In addition to these materials, the areas also have drums containing uranium-contaminated potassium hydroxide (KOH) muds which have been stored for years. These materials were products of the licensee's conversion process and waste treatment process. Following the December 15, 1995 exit, to resolve this issue, the licensee developed and implemented a program to repackage the bed material/filter fine drums for eventual shipment to an offsite uranium mill. In addition, the KOH muds were planned to be relocated from an outside storage pad to more protected storage for repackaging and possible uranium recovery.

At the time of this inspection, the licensee had completed the process of repackaging the materials from the rusted, leaking drums into newer drums, and shipping the drums to a mill for uranium recovery. After removing the material from the drums, the old drums were crushed and prepared for shipment to a mill licensed to receive them as fill for a mill tailings pond. The licensee was in the process of moving the most corroded drums of KOH muds into the building for storage and repackaging. The licensee has not been able to ship this material to the mill because of a limit on the uranium content in the mill's license. The licensee was exploring options with the mill in order to be able to process this material. The inspectors will continue to monitor the licensee's progress in this area under Inspector Follow-Up Item No. 040-03392/96001-01.

The inspectors noted that the licensee's recent implementation of a new waste management program had led to improvements in the control of radioactive wastes onsite. Specifically, wastes were being segregated near the point of generation in the plant. The amount of potentially contaminated waste materials placed haphazardly in various areas around the plant had decreased. The licensee had begun shipments of dry active wastes to a disposal site, and more shipments were planned. In general, the licensee had developed and implemented a program for managing the large inventory of contaminated materials which have accumulated onsite.

Waste manifests reviewed by the inspectors were prepared in accordance with the requirements in 10 CFR 20 and 10 CFR 61.

Conclusion

The licensee made progress in reducing the amount of solid radioactive materials stored in corroded or leaking drums in and around the Bed Materials/Filter Fines Building. Future progress will continue to be tracked under an open follow-up item (IFI No. 040-03392/96001-01). Improvements in the licensee's program for managing radioactive solid wastes were also noted.

4. Radiation Protection (83822)

a. Miscellaneous Radiation Protection Issues

(Closed) Violation No. 040-03392/95005-01: failure to ensure a determination by a physician of medical fitness for respirator use was made for certain individuals in 1995. The licensee provided a medical certification letter for all plant employees signed by the plant physician to use respiratory protective equipment, and the plant physician reviewed the medical files of all active employees and signed the appropriate medical certification statement. The inspectors concluded that the licensee's corrective actions had been appropriate.

<u>(Closed) Violation No. 040-03392/95005-02:</u> failure to provide an annual respirator fit test for certain potentially exposed employees during 1994. The licensee has scheduled employee respiratory fit testing with medical pre-physicals to ensure that the future annual respirator fit testing requirements are met. An annual audit was satisfactorily conducted that reviewed the medical documentation associated with respirator fit testing regulatory compliance. The licensee also conducted a specific 1995 medical file audit on a selected number of employees to ensure that the physician's certification was included. The inspectors concluded that the licensee's corrective actions had been appropriate.

(Closed) Violation No. 040-03392/96001-03: failure to take lapel samples for representative employees at least once per year since 1992. The licensee conducted a test for representativeness of the fixed air sample heads for three employees working in the Feeds Material Building during the week of June 11, 1996. The results indicated general agreement between employee lapel samples and fixed area samples for two employees. Results for a third employee did not agree, but the employee was involved in a dusting incident which probably increased the air concentrations seen by his lapel sampler. Since the licensee did not rely on general air samples for calculating internal exposure, a representativeness study was not a significant concern based on the guidance in Regulatory Guide 8.25, "Air Sampling in the Workplace," but nevertheless gave an indication that the licensee's fixed air samplers in the Feeds Material Building were generally measuring the uranium concentrations to which workers were exposed. The inspectors concluded that the licensee's corrective actions had been appropriate.

(Closed) Unresolved Item No. 040-03392/96001-02: large number of employees failing to provide scheduled urine samples. The licensee began circulating a list of employees who failed to provide samples to the department managers on a quarterly basis. In addition, HP technicians started holding the time cards for hourly employees who missed samples, until a sample was provided. A review of missed samples for May 1996, indicated that the number of individuals who missed samples and were not on leave had significantly declined (and may have been zero because of the difficulty in correlating missed samples to leave of absence dates). The inspectors concluded that the licensee's corrective actions were effective in reducing the number of missed urine samples.

5. Exit Meeting Summary

The inspector presented the inspection results to members of licensee management and others at the conclusion of the inspection on July 19, 1996. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the findings presented. The licensee did not identify any of the information discussed at the exit meeting as proprietary.