

40-3392



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20565

JUN 06 1994

MEMORANDUM FOR: Robert C. Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

THRU: Michael Tokar, Section Leader
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Michael Tokar

FROM: Michael Lamastra
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

SUBJECT: TRIP REPORT, ALLIED-SIGNAL, INC., MAY 16-17, 1994

- Participants
 Mary Adams, NRC
 Mike Lamastra, NRC
 Patti Swain, SAIC
 Joe Price, SAIC

Staff from the Fuel Cycle Licensing Branch visited the Allied-Signal (Allied) facility on May 16 and 17, 1994. Allied is a uranium hexafluoride production plant licensed under 10 CFR Part 40. The license has been in timely renewal since June 1, 1990. The purpose of this visit was to familiarize the environmental reviewers and technical assistant contractor with the facility and to discuss with Allied representatives the environmental issues related to the license renewal.

The site visit began on the afternoon of May 16, 1994, with Allied providing a plant overview and a site tour of the production facility.

On May 17, 1994, we toured the area surrounding the production facility, including the Environmental Protection Facility, waste water discharge points, the nearest resident/business, and several air/TLD monitoring stations. In addition, we discussed with the licensee's technical staff the enclosed preliminary questions. The trip was very successful.

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Robert C. Pierson

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The contractor is to prepare proposed environmental questions by June 10, 1994, and we should forward questions to the licensee by July 1, 1994.

Original signed by

Michael Lamastra
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

Enclosure: As stated

cc: Mr. M. D. Kosmider
Plant Manager
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PRELIMINARY LIST OF QUESTIONS
APPLICATION FOR RENEWAL OF SOURCE MATERIALS LICENSE
ALLIED-SIGNAL INC. METROPOLIS PLANT

GENERAL

- 1. ✓ Have there been any changes in the physical plant since the last renewal application?
- 2. ✓ Are there any anticipated changes in the process over the next 10 years that would affect the liquid and gaseous effluents, or the volume of waste generated?
3. ✓ Please provide a copy of the current NPDES and air permits issued to the facility (federal and state).
4. Was the record 1937 maximum discharge on the Ohio River exceeded by the 1993 flooding?
5. What is the seepage rate from ponds 1 - 4 and A - E? How much fluid is pumped from the drains and how often?
6. Provide data on the background concentrations in the Ohio River of those constituents monitored in the NPDES permit (i.e., TDS, TSS, arsenic, silver).
7. Describe the nature of the groundwater investigation being conducted at the site. Provide a map that shows the location of the groundwater monitoring wells and the direction of groundwater flow.
8. What depths are the groundwater wells and what zone do they monitor? A cross section showing the geology with the wells and water depths would be useful. Perhaps these figures were generated for the RCRA permit application.
9. What is the location of the nearest offsite drinking water well and what aquifer is it drawing water from?
10. Are there any new industries in the area or has any of the land use changed since the last license was issued?
11. The population data for the 50-mile radius should be revised with data from the 1990 census.

PROCESS DESCRIPTION

1. Provide estimates of the annual average number of railcars, trains, and trucks delivering feed ore and major process chemicals to the plant. How many trucks carrying product leave the plant in a typical year?
2. Provide an estimate of the average amount of uranium ore concentrate material stored at the plant.
3. Provide an estimate of the average amount of product UF_6 stored at the plant.
4. Provide a description of the feed material sampling process. Does the sampling process require emptying and re-filling of drums?
5. How are uranium solids transferred from the pretreatment facility to the ore calciners?
6. What by-product and waste streams are produced in operation of the ore calciner? Specify the average composition and flow rates for these streams, if any, and describe how the streams are managed?
7. What by-product and waste streams are produced during ore preparation? Specify the average composition and flow rates for these streams, if any, and describe how the streams are managed.
8. Drawing MTW-3393 shows a vacuum cleaner, filter units numbered 1 through 6, and 2 dust collectors serving the hydrofluorination process. What is the fate of the solids from each of these filtration systems?
9. Provide a copy of drawing MTW-3396.
10. How is ash produced in the fluorination reactor managed?
11. Provide a P & I diagram for the cylinder wash facility.
12. How are the solids from the KOH muds unit managed?
13. P & I diagram MTW-3438 lists an inflow stream from carbonate leach. What is the purpose of the carbonate leach and where in the process is it utilized?

SITE LAYOUT

1. Do oil or gas transmission lines other than those serving the plant cross the site? If so, provide a site diagram showing the location of these lines.

EFFLUENT MONITORING/WASTE MANAGEMENT

1. Provide copies of the facility effluent reports for the periods: 1) August through December 1993, 2) January through July 1993, 3) August through December 1992, 4) August through December 1990, and 5) August through December 1989.
2. For each of the years 1989 through 1993 provide estimates of the annual average release rate of uranium for each of the 52 atmospheric release points identified in chapter 4 of the license application. For each of the above release points, identify the process area served by the release vent, and the nature and efficiency of the particulate control system processing the effluent. For each of the above release points, provide estimates of the effluent volumetric flow rate, the effective diameter of the vent, the height above ground level of the top of the building on which the vent is located, and the height above ground level of the release point.
3. Provide estimates of the annual average release rate to the atmosphere for significant release points for fluoride, H_2S , hydrocarbons, SO_2 , and NH_3 .
4. Provide an update on the operating status of Ponds 1 and 2, 3 and 4, and A through E. Identify the process units whose effluent is routed to each of these ponds.
5. Provide annual average flow, pH, and non-radiological species data for the plant main liquid effluent for each of the years 1989 through 1993.
6. The license application indicates that solid streams which leave the site include fluorination reactor ash, miscellaneous radioactive residues suitable for uranium recovery, synthetic CaF_2 , decontaminated process equipment, and miscellaneous radioactive solid waste. Verify that this list is inclusive of all potentially contaminated products other than UF_6 , by-product, and waste solids leaving the site. Provide estimates of the annual average volumetric rate and uranium content for each category in the complete list.
7. What facilities are used for the disposal of radioactive waste? How much mixed waste is stored at the site and what is the annual average production rate? What is the radiological content of the waste?
8. Provide an estimate of the annual average volume of non-contaminated solid waste produced at the site.

RADIATION PROTECTION

1. Has the plant occupational Radiation Protection program has been revised to address all requirements of the presently applicable 10 CFR Part 20? If so, provide a description of the revised program elements. Examples of potential areas for revision include:
 - o Chapter 3 of the license application refers to maximum permissible concentrations (MPC) rather than derived air concentrations (DAC)
 - o the DAC of 10 CFR 20, Appendix B, Table 1 does not provide protection against the chemical toxicity of soluble uranium addressed in 10 CFR 20.1201(e)
 - o the description of the bioassay program described in license application Section 3.2.5 may not be consistent with present requirements (10 CFR 20.1201(e) and 10 CFR 20, Appendix Table 1) and evaluation procedures (ICRP 54 and NUREG/CR-4884) for continuous or short-term exposure patterns. The license application section does not specify how it is determined that an unacceptable exposure to soluble uranium may have occurred.
 - o reference in license application Section 3.2.5 on a maximum permissible lung burden of 63 ug
 - o Section 11.2 of the license application refers to a section of 10 CFR Part 20 no longer in use.
2. Provide versions of license application Tables 11.10 (A through C) which present equivalent data for the years 1990 through 1993.
3. Provide versions of license application Table A-1 which presents equivalent data for the years 1990 through 1993.
3. Provide versions of license application Figures A-3 through A-6 which present equivalent data for the years 1990 through 1993.
4. The action level defined in license application Section 4.1 A for protection of the nearest neighbor is not consistent with the present 10 CFR Part 20 and yields a dose in excess of the 10 CFR Part 61 limit. Provide a revised description of the environmental protection program which is consistent with all applicable regulations.

RADIATION PROTECTION (Continued)

5. The uranium content of the main plant liquid effluent exceeds the 10 CFR Part 20 limits for release to water. Describe the additional process steps or process changes which will be implemented to achieve compliance with 10 CFR Part 20 and consistency with the ALARA principle.
6. Provide versions of Tables 12.0 (A through M) which present equivalent data for the years 1990 through 1993.