



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
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JAN 13 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

FROM: Mary Thoma Adams
 Licensing Section 2
 Licensing Branch
 Division of Fuel Cycle Safety
 and Safeguards, NMSS

SUBJECT: TRIP REPORT SIEMENS POWER CORPORATION RICHLAND MANUFACTURING
 PLANT, DECEMBER 14-16, 1993

Michael Tokar

Staff from the Fuel Cycle Licensing Branch visited the Richland Manufacturing Facility of Siemens Power Corporation (SPC) on December 14-16, 1993. This plant is a fuel fabrication facility licensed under 10 CFR Part 70 for the possession and use of special nuclear material. The license has been in timely renewal since September 1992. The purpose of the visit was to familiarize the license renewal review staff and technical assistance contractors with the facility and to discuss issues related to the renewal. Discussions focused on the areas of environmental protection, nuclear criticality safety, chemical safety, fire protection, and radiation protection. The current schedule for renewal of the license is the second quarter of FY95. However, as discussed in the closing meeting paragraph, SPC does not expect to be able to meet NRC's current schedule for renewal.

NRC Participants:

Mary Adams
 Michael Tokar
 Richard Milstein
 Michael Lamastra
 Marc Klasky
 William Troskoski

SAIC Participants:

Tom Storey
 Phuoc Le
 Patti Swain
 Peter McKnight
 Mickey Beary

The site visit began with a meeting at which Nuclear Regulatory Commission staff described the purpose of the visit, emphasizing that this was not an inspection but an effort to familiarize the renewal review staff with the facility, and to resolve issues that were identified during the initial renewal review.

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The meeting was followed by a comprehensive site tour, including the following buildings and areas that are used for special nuclear material:

- Specialty fuels building
- UO₂ building and powder storage
- EL0 building
- Product Development Test Facility
- Packaged rad material warehouse
- Temporary storage facilities
- Materials warehouse
- UNH drum storage warehouse
- Laundry facility
- UF₆ cylinder storage areas (old and new)
- Packaged fuel storage areas
- Packaged waste storage areas
- Process chemical waste storage lagoon system
- Retention tanks
- High uranium solids pond
- Solids trench
- Lagoon uranium recovery
- Ammonia recovery facility
- Lagoon 5A ion exchange process (ARF building)

After the tour, the reviewers divided into groups for individual emphasis site discussions with the SPC staff responsible for the individual areas.

- Radiation protection (Lamastra, Burklin)
- Environmental protection (Adams, Swain, Tanaka)
- Fire protection (Storey, Probasco)
- Chemical safety (Milstein, Troskoski, McKnight, Le, Probasco)
- Nuclear criticality safety (Klasky, Beary, Manning)

The individual discussions are summarized below:

Radiation Protection

M. Lamastra discussed with R. Burklin the radiation safety portion of the application. In general, Mr. Lamastra found the application weak and recommended that Siemens perform a complete radiation safety analysis of the facility and resubmit this portion of the application. They also discussed the follow specific areas of the application: Sections 1.6.4, 1.6.5, 1.6.8, 1.6.10, 2.1.7, 2.1.17, 2.2.5, 2.2.8, 2.2.9, 2.2.10, 2.7, 3.1.2, 3.12, and 3.2.5. Mr. Lamastra informed Mr. Burklin that a formal request for information in these areas would follow in the near future.

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Environmental protection

M. Adams and P. Swain discussed with J. Edgar and K. Tanaka the Supplement to the Environmental Report and the environmental protection program. Several answers to specific questions can be found in other environmental reports prepared for the Siemens facility or for the Hanford Reservation. Siemens can provide these documents when requested in the RAI.

The reviewers were concerned about the sources of some of the information in the Supplement, and how up-to-date the information is, such as the meteorological data, population distributions, land use plans over the next 10 years, cultural resources and ecology, and background radiation levels in the area.

Siemens has permits from several other government agencies, including the Benton-Franklin-Walla Walla Counties Air Pollution Control Authority (BFWWC/APCA), which requires monitoring of emissions of nitrous oxides, fluorides, HCl, and particulates, but not radionuclides; the Richland wastewater treatment plant for discharges to the sanitary sewer; and the State of Washington Department of Health for possession and use of sealed sources and other nuclear materials.

Siemens has performed a pathways analysis that is documented in the ALARA report. The COMPLY code was run to demonstrate that exposures to the public are below limits in 10 CFR Part 20 and in 40 CFR Part 190.

Siemens has prepared a Draft Remedial Investigation (RI) that contains more detailed site descriptions than the Supplement to the Environmental Report; the RI contains information Siemens has determined to be proprietary, and they will send it to NRC with a proprietary affidavit.

Chemical Safety

An information-gathering review was conducted of the chemical safety program to evaluate the licensee's recognition and management of chemical hazards as they may impact:

1. Onsite and offsite populations directly affected by chemical releases due to incidents associated with licensed nuclear material;
2. Operators of the plant or the operators' capacity to safely operate the plant due to chemical release; and/or
3. Potential explosions or fires from chemicals that could affect nuclear material containment or handling operations.

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In order to evaluate and collect information on the Chemical Safety Program (CSP) SAIC compiled a list of 11 topics based on a number of existing Process Safety Management programs, including those developed by OSHA and EPA. These topics included:

1. Hazard Identification and Assessment
2. Process Safety Information
3. Operating Procedures
4. Site Wide Safety Procedures
5. Training
6. Maintenance
7. Management of Change
8. Incident Investigation
9. Emergency Response
10. Detection and Monitoring
11. Audits and Inspections

Based on a preliminary evaluation of the information gathered, it appears that Siemens has established programs that will address many elements of an effective Chemical Safety Program. The major deficiency in the licensee's program is the lack of a formal approach for chemical hazard identification and assessment.

Fire Safety

The fire protection reviewer conducted a review of the fire protection program, including suppression and detection systems, administrative procedures, and emergency response procedures. The main concern is that the licensee has not performed a comprehensive fire hazards analysis, as described in the Branch Technical Position on Fire Protection. The reviewer also visited the Richland Assistant Fire Chief to obtain information about the agreement between the Fire Department and the licensee.

Nuclear Criticality Safety

Criticality safety issues were discussed with cognizant Siemens' representatives. To facilitate discussions, an updated criticality safety analysis on the dry conversion process was reviewed, as an example of the type of analysis that Siemens is performing. In general, it appeared that the updated criticality analysis contained the essential ingredients to provide NRC with a reasonable assurance of safety. That is, the analysis contained:

1. A list of the major analysis assumptions.

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2. A detailed description of the system including all equipment utilized,
3. An evaluation of possible accident conditions, and
4. A list of all necessary controls to implement the double contingency principle

However, the updated criticality safety analysis indicated, in multiple locations, that proper process operation was used as a criticality control, without identifying specific operating limits. In order for the safety of any system to be robust, operating limits must be clearly delineated and established in operating procedures, if reliance is placed on proper process operation.

Subsequent conversations with Siemens' officials indicated that the criticality safety update program would continue through 1995.

Gadolinia Scrap Uranium Recovery (GSUR) Amendment

M. Adams and M. Klasky discussed the GSUR modifications amendment with L. Maas and J. Edgar. Siemens has not completed a criticality safety assessment of the modifications, and NRC cannot approve the amendment until the system is demonstrated to be critically safe. This issue was not resolved at this meeting; it will be further discussed with NRC and Siemens management in the future.

Closing Meeting

At the closing meeting, the review staff discussed the findings of the individual discussions. In general, it appears that many of the analyses necessary for NRC to make safety determinations have not been completed by Siemens, particularly criticality and chemical safety analyses.

NRC discussed plans and schedules for license renewal. In early February, NRC will transmit a request for additional information (RAI) to obtain the information discussed during the site visit. NRC's goal is to complete two rounds of RAIs and responses and to issue the renewal in February 1995. However, SPC's current schedule for the Criticality Safety Analysis (CSA) update program indicates that the CSAs will not be completed in time for NRC to review the results of the analyses and make a safety determination for license renewal. In addition, the Manager, Safety, Security, and Licensing, stated that SPC does not have the resources available to commit to the license renewal this year. Specifically, SPC does not expect to be able to respond to an RAI within a limited time if the RAI response will require an extensive effort. This issue should be discussed further between NRC and SPC management.

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Meeting with Washington State Department of Ecology (WDOE) and Department of Health (WDOH)

On Thursday morning, M. Tokar and M. Adams met with WDOE and WDOH staff in the Kennewick field office to discuss license coordination issues. Siemens has a WDOH permit to possess and use sealed sources. They are also operating a Washington Dangerous Waste management facility, specifically, the lagoons and the container storage areas, under the interim status provisions of the Washington Dangerous Waste rules. Siemens will need to obtain a permit to operate these units. This permitting action has not started but is expected to take 3 years from receipt of the Part B permit application. WDOE has not called in the permit application.

Original Signed By:

Mary Thoma Adams
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

cc: Siemens Power Corporation

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