

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Inspection Report No. 70-1257/94-04

Docket No. 70-1257  
License No. SNM-1227

Licensee: Siemens Power Corporation (SPC)  
2101 Horn Rapids Road  
Richland, Washington 99352-0130

Facility Name: Siemens Power Corporation

Inspection at: Richland, Washington

Inspection Conducted: April 25-29, 1994

Inspectors: C. A. Hooker, Senior Fuel Facility Inspector  
H. D. Chaney, Fuel Facility Inspector

Approved by:

Frank A. Wenslawski  
Frank A. Wenslawski, Chief  
Materials Branch

5/19/94  
Date

Inspection Summary:

Areas Inspected: This was a routine unannounced inspection of management/organization and controls, radiation protection, radioactive waste generator requirements, low-level waste storage, transportation of radioactive materials, and operator training/retraining. Inspection procedures 88005, 88382, 84850, 84900, 86740, and 88010 were addressed.

Results:

- Within the scope of this inspection, no violations or deviations were identified.
- The inspection verified that the licensee was implementing its new Waste Management Engineering Plan (Section 3).
- The licensee's implementation of an enhanced operator training qualification program was noted as a program strength (Section 5).
- The inspection verified that the licensee had effectively implemented the revised Part 20 (Section 2).

Although proprietary information was reviewed during the inspection, such information is not described in this report.

In this report, the singular use of the word "inspector" indicates that only one inspector was involved in the specific area, and the plural use "inspectors" indicates that each inspector shared involvement in the specific area.

Attachment:

Attachment - Persons Contacted and Exit Briefing

DETAILS1.0 MANAGEMENT ORGANIZATION AND CONTROLS (38005)

The licensee's organization and controls were examined to determine compliance with operating license conditions (Part 1 of SNM License No. 1227) regarding organization functional staffing, employee qualifications, periodic internal audits and reviews, development and control of procedures, and activities associated with the safety committee.

The inspector determined that the licensee had established an organization and defined functional responsibilities as required by the License Conditions (LCs) contained in Part 1, Chapter 2 of the license. Staff qualification satisfied the LCs contained in Part 1, Chapter 2 of the license. Furthermore the Site Health Physicist (equivalent to the NRC Regulatory Guide (RG) 1.8, "Personnel Selection and Training," position of Radiation Protection Manager) and the Supervisor, Radiological Safety meet the qualifications and training criteria of the RG for their respective positions.

The inspector determined that the licensee had developed a procedure for site document identification and control. The inspector examined all the procedures prepared and controlled by the Safety group, especially those developed and implemented by the radiation protection section. Procedures, for the most part, were found to be user-friendly and technically well written. Some typographical errors, and a minor problem with controlling revisions of data entry forms were noted (see discussion Section 2.2 below). Licensee personnel quickly took actions to correct any deficiencies noted by the inspector, when brought to their attention. Some typographical errors were already known by the licensee and were being corrected. The Site Health Physicist stated that actions would be taken to better control revised forms.

The inspector examined the licensee's 1994/1995 schedule for audits and reviews and found it to be comprehensive with respect to activities/programs to be examined. The inspector also examined the licensee's draft procedure for the conduct of audits. The licensee's audits adequately covered the subject areas referenced in Part 1 of the License.

The inspector examined the licensee's 1994 Health and Safety Council meetings and found them to be conducted in accordance with the requirements referenced in Section 2.3, Chapter 2, Part 1, of the license. Monthly area inspections were carried out adequately and covered the areas referenced in Section 2.3.1 of the License.

Even though not mandated by current regulations (except for 10 CFR Part 71 transportation activities) the licensee had integrated basic quality assurance and quality control attributes into the conduct of radiation protection activities associated with facility operation. The licensee routinely evaluates overall group performance in selected focus areas. These key areas include criticality control, product quality, product rework, individual radiological work practices, and radiological and industrial incidents.

The licensee's performance in this area appeared adequate and its program appeared capable of accomplishing their safety objectives. No violations or deviations were identified.

## 2.0 Radiation Protection (83822)

NRC Inspection Report No. 70-1257/94-01, dated February 3, 1994, describes the a previous review of the licensee's radiation protection program. The inspection also identified that the licensee was not timely in developing procedures to ensure adequate implementation of the newly revised 10 CFR Part 20, as set forth in Federal Register 56 FR 23377, dated May 21, 1991. This inspection (70-1257/94-04) was primarily focused on the licensee's development of procedures and programs for implementing the requirements of the newly revised 10 CFR Part 20.

The following programmatic areas relative to the new Part 20 (renumbered Sections 20.1001-20.2402) requirements were examined:

- Annual radiation exposure limits (occupational and nonoccupational) and the total dose concept.
- New radiation dose terminology.
- Internal radiation exposure control and monitoring.
- Planned Special Exposures.
- Very High Radiation Area Controls.
- Airborne radioactivity assessment and tracking.
- Respiratory protection equipment use assessment.
- Routine reports and event notifications.
- Periodic RP Program reviews and assessments.
- RP instrument calibration.
- ALARA program and prospective job dose assessments
- Radiological posting and monitoring.
- Revised radioisotope effluent concentration limits.

The licensee's programs for employee and radiation protection technician training, and exposure controls for declared pregnant women and embryo/fetus(s) were reviewed during the previously noted inspection.

## 2.1 Radiation Protection Program

The licensee's radiation protection program is set forth in Chapter 3, Part 1 of the license and was adequately described in Chapter 2 of the licensee's Safety Manual (EMF-30) and the Site Radiological Operating Procedures. The annual RP program audit requirements defined in the revised Part 20 were adequately described in paragraph 2.8.4 to Chapter 2 of EMF-30.

## 2.2 Radiation Protection Procedures

The licensee is upgrading their Site Radiological Operating Procedures (approximately 12 procedures), and the lower tier Health Physics and Radiological Safety Procedures Manual (approximately 43 procedures). Both

sets of procedures contain instructions for the development of written procedures and control of revisions to them. During the inspector's examination of field operations it was noted that one data entry form used for documenting radiological survey results (SPC-ND:3322.929A, R-2/09/92) and associated with procedure (EMF-1507, 8.1-1, Rev. 1) had been revised but the current revision was not included in the procedures found in several field locations. The inspector discussed with the Safety Supervisor and the Site Health Physicist their methods used to control revised forms. The licensee indicated they needed to reemphasize to their staff the proper way to issue a revised form and take actions to ensure all procedures associated with the subject form are properly updated. Survey data was unaffected by the revised form.

The licensee had issued several procedures detailing the major program area requirements, such as radiation protection, respiratory protection, internal dosimetry, incident response, and ALARA. Program implementing procedures were found to be well written and user-friendly. However, some procedures were noted to contain significant typographical errors (wrong title on continuation pages and reference of erroneous exposure goals). This matter was discussed with the licensee.

### 2.3 External Exposure Controls

The licensee has elected to monitor occupationally exposed workers for both internal and external exposure, even though prospective analysis had shown that the external exposures would be below the required monitoring/summation threshold. The estimated highest total effective dose equivalent (TEDE) (for a limited number of workers) is approximately 2200 millirem per year (mrem/yr) with approximately 200 mrem of the total dose being attributed to deep dose equivalents. The licensee maintains an environmental TLD (quarterly processing) and gaseous effluent monitoring programs, and periodic fence line surveys to ensure doses to the public do not exceed 100 mrem/yr or 2 mrem in any hour, respectively.

The licensee will be using the NRC computerized exposure record program REMIT for documenting personnel doses and generating the required notification forms (NRC Forms 4 & 5). Personnel deep and shallow doses are monitored by thermoluminescent dosimeters from a processor accredited in accordance with the requirements of 10 CFR 20.1501(c).

The licensee has made no provisions for Planned Special Exposures or very high radiation area posting due to the lack of a significant source term during routine operations at the facility.

The licensee has implemented administrative occupational dose limits based on quarter year periods that will control personnel doses to approximately 80 percent of the 10 CFR Part 20 allowed annual limits:

- 1 rem per quarter year deep dose equivalent-DDE
- 3 rem/qtr lens of the eye DE
- 10 rem/qtr shallow dose equivalent to skin or extremities

- 0.2 ALI/qtr (400 DAC-hrs) of internal exposure

#### 2.4 Internal Exposure Controls

The licensee utilizes an effective DAC of  $2.0E-11$  microCuries per milliliter of air (based on insoluble uranium exposures) which ensures personnel do not exceed the soluble toxicity exposure limit of 10 milligrams per week (10 CFR 20.1201(e)) or the soluble DAC for uranium U-235 of  $6.0E-10$  uCi/ml of any enrichment of the uranium process below 6 percent. The licensee maintains an aggressive program for airborne radioactivity sampling, airborne radioactivity area posting, airborne exposure tracking, and performance of in-vitro (excretion sampling), in-vivo (whole body counting). The licensee's bioassay program was well documented and exceeded the guidance contained in RG 8.11.

#### 2.5 Respiratory Protection Program

The licensee's respiratory protection program, a combination of industrial and radiological uses, was clearly defined in EMF-30 and the licensee's implementing procedures. The licensee's program appeared to meet the requirements of 10 CFR Part 20.1703, and the guidance contained in NUREG-0041 and RG 8.15. Since internal exposure is the major source of personnel radiation exposure the licensee had established a program/committee for evaluating airborne radioactivity data and taking aggressive actions to eliminate areas showing chronic airborne contamination and the routine need for respiratory protection equipment.

#### 2.6 Posting and Labeling

Labeling of radioactive materials (RAM) and containers of RAM was adequate and in conformance with the exemptions allowed by paragraph 1.6.4 of Part 1 of the license.

Radioactive material, radiation, and airborne radioactivity areas were adequately posted; however, the inspectors noted that there were a multitude of warning signs throughout the site. The number of warning signs at some locations could result in worker confusion as to the hazards present. At some radioactive material storage areas 3-5 warning signs were abutting each other (radiation area, a radioactive material area, an exemption from labeling, criticality warning, and industrial hazards).

The inspectors brought to the attention of the Supervisor Radiological Safety (SRS) that an area surrounding one of the outside RAM waste drum storage areas was posted as a radiation area on only one of the four sides while the other sides were only posted as radioactive material area. Several avenues of ingress to the area did not display conspicuous radiation area warning signs. The SRS determined (the inspectors agreed with the findings) that the area was not an actual radiation area and the posting was left over from a previous posting of the area. Deterioration of the signs and the sign hangers indicated the posting had been in place for some time.

The licensee acknowledged both of the above observations.

The inspectors discussed with the licensee their combining of an ANSI N12.1-1971, "Fissile Material Symbol" and the 10 CFR Part 20.1901(a) radiological warning sign. It was not readily apparent if these signs met the intention of what could be displayed on 10 CFR Part 20.1901(a) required warning signs. Following regional discussion and the inspectors' research it was concluded that additional information on radiological warning signs is allowed under 20.1901(c). The inspectors had no further questions concerning this issue.

## 2.7 Posting of Notices

The inspector observed the licensee's posting of 10 CFR Part 19.12 and 70.7(e) required materials, including a recent Notice of Violation (from report 70-1257/94-01) involving radiation protection activities. Posting of regulatory information is established in site procedure EMF 1507, 10.1.

## 2.8 Radiological Surveys

The inspector examined a selection of radiation, contamination, and airborne radioactivity surveys conducted by the licensee since the last inspection of this area. The inspector had the following observations concerning the licensee's radiological survey/monitoring program.

- A very conservative radiological survey program is established in site procedures.
- Radiological surveys (routine facility and environmental) are obtained at a reasonable frequency and in a suitable manner to determine the radiological conditions present.
- Radiological survey results are clearly documented, and radiological conditions inside and outside of the facility are well defined.
- A small number (less than 50 - estimated to be less than 0.5 percent of the surveys taken since the beginning of the year) of instances involving the use of the out-of-date dose units of "roentgen" in lieu of "rem" [10 CFR Part 20.1004(a)] on radiation survey documents was noted. The licensee had already identified this problem and was reviewing previous surveys and correcting the problem.
- No formal review process is provided for the completed radiological surveys. This was discussed with the licensee for its consideration.

The number and quality of radiological instruments possessed by the licensee exceed the specifications contained Table I-3.1 of the License. The licensee is developing calibration and use procedures for all instruments. The radiological instrument calibration program satisfies the requirements of 10 CFR Part 20.1501(b).

## 2.9 Contamination Control Program

The inspector examined the licensee's program for controlling radioactive

contamination (surface and airborne). The licensee effectively utilizes exhaust ventilation, contamination control zones, and protective clothing to prevent the spread of contamination and contamination of personnel. In an effort to reduce the need for respirators during the boxing of fuel pellets (for shipment), the licensee has installed laminar flow ventilation at one work site. This has reduced the need for respiratory protection during work and effectively controlled the spread of contamination at the work station. Additional laminar flow ventilation units are planned for other work stations.

The inspector noted that the licensee has a formal program of documenting radiological infractions and is aggressively monitoring personnel performance in this area. The inspectors noted a couple of minor infractions involving protective clothing use during facility tours and conveyed this to the licensee.

#### 2.10 Radioactive Effluent Limits

The licensee had implemented an effluent monitoring program (Chapter 4 to EMF-30) to limit radioactive effluent releases to below the dose limits of 10 CFR 20.1301 and 1302, and radioactivity limit in 10 CFR 20.2003. The licensee had taken into account the reduction in effluent concentrations imposed by Table 2 of Appendix B to 10 CFR Part 20. According to the licensee's 1992 ALARA report they were able to maintain their gaseous and liquid effluent releases to significantly below the revised Part 20 limits. The licensee's annual average effluent releases are audited/reviewed at least twice annually and the results reported to the ALARA committee. The licensee must also comply with the more restrictive radioactive effluent release limits of 40 CFR Parts 41 and 190, and other restrictions as imposed by the State of Washington. The licensee's procedures provide liquid and gaseous sampling matrixes, and corrective action requirements for limiting releases based on fractional values of the 10 CFR Part 20 and 40 CFR Part 190 limits.

#### 2.11 As Low As Is Reasonably Achievable (ALARA)

Based on the review of the licensee's procedure EMF-1508, 2.11, "ALARA Program," and the licensee's 1992 performance report EMF-93-091(P), dated July 16, 1993, it appeared that the licensee was conducting its operations to assure occupational exposures were maintained ALARA. Even though the licensee had not completed the evaluation and documentation of its 1993 ALARA performance, they expect similar or better performance as in 1992.

The licensee compares previous years' data and develops trending graphs to identify areas that should be evaluated for development of improvement actions. Since most of the licensee's radiological work operations are static the licensee's radiological worker control program involves very little revision from year to year. The licensee has developed work permits similar in nature to those referenced in NRC RG 8.8 and 8.10, and posts them at each specific work station in the facility.

#### 2.12 Notifications and Reports

The licensee did not have any reportable events since the last inspection of



their facility. The licensee provides notifications as required by their license (LC Chapter 2, Section 8.0).

### 2.13 Conclusions

The licensee's performance in this area appeared adequate and its program appeared capable of accomplishing its safety objectives. The licensee's program appeared adequate for implementing the requirements of the revised Part 20. No violations or deviations were identified in this area of the inspection.

### 3 Radioactive Waste Generator Requirements and Low-Level Waste Storage (84850 and 84900)

The inspector reviewed the licensee's radioactive waste program for compliance with the requirements of 10 CFR Parts 20 and 61, License Conditions and licensee procedures. The inspection also included a tour of the licensee's waste processing facilities and selected site areas where waste was generated.

#### 3.1 Background

In mid 1993, the licensee established a new Waste Management Engineering group that was tasked to develop and implement a comprehensive Waste Management Engineering Plan (WMEP) for managing and controlling NRC and State regulated wastes. During an NRC/licensee management meeting in December 1993 (NRC Report No. 70-1257/93-13), the large accumulation of waste and the receipt of waste from the Lingen fabrication facility was discussed with the licensee. During this meeting, the licensee agreed to provide its WMEP to the NRC. Siemens submitted its WMEP to the NRC Office of Nuclear Materials and Safeguards (NMSS) and an affidavit affirming that the Plan contained proprietary information that should be withheld from public disclosure under the provisions of 10 CFR 2.790(b)(1). Siemens also provided a summary of their waste inventory reduction plan to the NRC NMSS office by letter dated March 1, 1994. This letter provided similar elements described in the WMEP and proposed waste reduction milestones. Starting with a January 1994 inventory of about 134,000 ft<sup>3</sup> of containerized solid waste, the licensee made the following onsite waste inventory reduction projections: (1) 79,000 ft<sup>3</sup> by September 1994, (2) 62,000 ft<sup>3</sup> by September 1995, and (3) 26,000 ft<sup>3</sup> by September 1997.

#### 3.2 Implementation of WMEP

The inspector noted that the licensee had effectively revised old procedures and developed several new procedures to establish and implement an improved program for managing LLRW. Subsection 4.3.1, "Responsibilities," of Section 4.0, "Low-Level Waste Disposal," Chapter 5.0, "Radioactive Materials Shipping Standards," of the Licensee's Safety Manual (EMF-30), adequately defined responsibilities for Waste Management Engineering, Plant Operations, Quality Control (QC), Traffic & Warehousing, and program audits related to the licensee's LLRW disposal program. Section 4.0 of EMF-30 also provided the guidance for LLRW classification and characterization, packaging, and shipping of LLRW for off-site disposal as delineated in 10 CFR Part 61. The Plant

Operations, QC, and Traffic & Warehousing departments also developed procedures and/or revised old procedures to implement the guidance delineated in EMF-30. The licensee's new program was fully implemented in March 1994. The inspector verified that all personnel had received training related to their assigned duties associated with the new program. Additional training on waste minimization had been provided for all personnel who worked in the radiologically controlled areas.

The inspector noted that the Plant Support section of Chemical Operations had assigned nine workers to handling, sorting, and packaging of waste. The Plant Support section had recently been authorized an additional three workers to augment this program. Currently, six workers were assigned to work the licensee's backlog of stored waste and three workers were assigned to handle newly generated waste. These activities were being performed on two standard eight-hour shifts, five days per week. A third shift was planned when the additional personnel are hired.

The inspector noted that the Waste Management Engineering group had established a waste container matrix for characterization and classification of old stored and newly generated waste. This included container type (drums/boxes), waste type, number of containers for each waste type, current per month generation rate, designation (non-dangerous waste/dangerous waste/to be determined). As of April 6, 1994, the major portion of the licensee's total inventory of waste included about 5,327 drums of combustible waste (includes combustible waste from the Lingen facility), 3,300 drums and 21 boxes of non-combustible waste, 1,500 drums of wet waste, 1,787 drums of non-processable pre-filters, 80 drums of mixed waste (mostly solvent rags contaminated with uranium), 247 drums of potentially mixed waste, and 268 drums of HEPA filter media. The licensee is reviewing the best method for sampling and analyzing the dangerous materials constituent of LLRW from potentially mixed waste streams. Regarding waste from the Lingen facility, non-combustible materials (about 40 drums) sorted from combustible waste received from Lingen and about 140 HEPA filters will be returned to Lingen. The licensee had no immediate plans to discontinue receiving combustible waste for uranium recovery from the Lingen facility.

On April 17, 1994, the licensee began shipping about 96 drums per week to the nearby U. S. Ecology (USE) near surface ground burial site. Additionally, the licensee was shipping 50 drums per week to a local State licensed super-compaction facility. The licensee was planning to double its shipments to USE in the near future. By letter dated April 14, 1994, the licensee requested a license amendment for authorization to perform super-compaction onsite (vendor supplied mobile super-compactor) to expedite preparation of waste for off-site disposal. The inspector noted that the licensee's program prohibited the use of drums previously used for stored waste. Either new or vendor supplied certified reusable strong tight containers were being used for repackaging waste designated for off-site burial. The licensee plans to use the old drums for containing waste they intend to super-compact into other containers.

The inspector noted that the licensee maintained an excellent accountability system for each container of waste located in the storage yard. The containers had been rearranged relative to the contents. Each storage row of

containers were numbered and each container was identified by an easily identifiable serial number. Any container from the licensee's inventory records could be located in less than five minutes which was verified by the inspector during the inspection. Although the licensee's waste is stored outside, the inspector did not see any container deterioration that represented a safety concern. The containers are stored off the ground on pallets and visually inspected by the Traffic group during their course of work and routinely by the Radiation Safety group. Although the licensee has identified some minor loss of container integrity (small holes in a few old containers), there was no leakage that created a plant safety or an environmental safety problem.

Based on a review of the licensee's records and observations made during facility tours, the inspector determined that the waste sent for disposal was classified pursuant to 10 CFR 61.55; met the characteristics of 10 CFR 61.56; and that the prepared waste manifest contained the information required by 10 CFR 20.2006.

The licensee's performance in this area had significantly improved since the last inspection of this area. The reviews in this area indicated that there was adequate management oversight and attention to the reduction of the backlog of waste that has accumulated onsite. The licensee appeared to be on schedule with the milestones delineated in its WMEP. No violations or deviations of NRC requirements were identified.

#### 4 Transportation of Radioactive Materials (86740)

The inspector reviewed the licensee's radioactive materials transportation program for compliance with the requirements of 10 CFR Parts 20, 70, 71, and 49 CFR Parts 171 through 189.

Quality Assurance (QA) Audit, 93:108, "Shipping Containers," conducted during December 1993 and January 1994 was reviewed. The audit was conducted to verify the requirements defined in the licensee's NRC approved QA program (EMF-439) which is based on the requirements of Subpart H to 10 CFR 71. The audit identified five findings and five concerns that required corrective actions. The inspector noted that findings/concerns were primarily administrative in nature and did represent a significant impact on safety. The corrective actions taken or those planned for the finding/concerns appeared timely and appropriate.

Records of several selected domestic and overseas shipments, and the receipt of low enriched uranium for the past four months were reviewed. Although no shipments of uranium fuel pellets or fuel bundles were in progress during this inspection, the inspector observed preparations and loading of LLRW shipments for off-site disposal. Based on the examination of shipping records and observations during the onsite inspection, the inspector determined that the licensee performed receipt surveys pursuant to 10 CFR 20.1906, transfers of special nuclear material were conducted in accordance with the requirements delineated in 10 CFR 70.42 and the regulatory requirements for transporting radioactive materials contained in 49 CFR Parts 171 through 189 were being met. The inspector verified that the licensee maintained current copies of

foreign and domestic shipping package certifications and associated package use procedures. The licensee maintained current copies of export and import licenses issued under the general provisions of 10 CFR Part 110. The inspector noted that some of the forms used in the shipping packages were not consistent with those delineated in the licensee's procedures. Although the new forms and associated procedures were in routing for final approval, the use of the new form prior to final approval was considered a poor practice and was discussed at the exit interview on April 29, 1994, and acknowledged by the licensee.

The inspector reviewed records of 5-year recertification tests of the licensee's Model 30B uranium hexafluoride (UF<sub>6</sub>) shipping cylinders. The tests were performed by the licensee and observed by a State-certified boiler and pressure vessel inspector. The inspector noted that the tests were conducted in accordance with the requirements of the NRC certification for the package. The tracking of the recertification tests were maintained on the licensee's computerized preventative maintenance program and hard copies of the tests were maintained by personnel in the traffic department.

The inspector noted that the licensee had moved its shipping container maintenance and repair facilities to a newly constructed building with improved accommodations for these activities. The inspector verified that the licensee maintained procedures for inspection, maintenance, and repairs for each certified container used. The procedures were user friendly and provided a detailed container maintenance/repair matrix consistent with the requirements of the applicable container certification and industry standards. Maintenance items requiring QC inspections were also included in the matrix. Individuals performing these activities had been adequately trained on the procedures and qualified for their assigned tasks.

The licensee's performance in this area appeared adequate and their program appeared capable of accomplishing its safety objectives. No violations or deviations of NRC or Department of Transportation requirements were identified.

#### 5 Operator Training/Retraining (88010)

The inspector noted that new employees received training that included the basics of radiation protection, criticality safety, hazardous chemical safety, fire protection, emergency requirements, and security. Personnel assigned to work with radioactive materials received additional general employee training (GET) in each of these topic areas prior to working without an escort. Upon completion of the formal classroom training, each individual is tested as to their knowledge of the material presented. Contractor and/or temporary workers working in non-radiologically controlled areas were provided training relative to site hazards and emergency alarms. Personnel were provided annual refresher training consistent with their work assignment.

Inspection Report No. 70-1257/93-03 described the licensee's development of a formal operator training and qualification program. Previously, operator qualification was primarily based on GET and on-the-job training (OJT) as specified in Section 2.4.1, "Initial Training," Part I of the license

application. Following the initial onsite GET and depending on their work assignment, operators spent one to two days becoming familiar with the plant staff and the licensee's administrative procedures before being assigned to a qualified operator. Although operators were provided instructions on procedure changes and formal reviews of criticality safety specifications related to their work area, there was very limited formalized training on standard operating procedures. The review of operating procedures was primarily performed by reading assignments. No tests were given to operators to evaluate their knowledge of operating procedures. Qualification of a new person was primarily based on his/her ability to perform tasks without errors, judgement of the qualified operator and his/her supervisor's observations.

Under the licensee's new training and qualification program, each of the Plant Operations groups (Chemical Operation, Ceramic Operations and Rod/Bundle Operations) developed a work station and operator qualification guide for their respective departments. Each of the qualification guides defines the work stations and procedures that an individual must be knowledgeable of prior to being qualified. Prior to being considered qualified on procedures associated with each work station, all operating personnel must be knowledgeable of general plant procedures such as the licensee's safety standards, plant operations rules, safety equipment, material accountability, material enrichment control, physical inventory, identification and handling of deviating material, the general facility radiation work procedure, and transfers of material between work stations. Training on criticality safety specifications is performed in conjunction with each respective station operating procedure. Prior to being qualified, each individual is tested on their knowledge of the procedures and they must demonstrate their ability to perform operations at the respective work station.

Based on discussions with cognizant personnel and a review of each of the operating departments training records, the inspector noted that the Chemical Operations department had allocated more resources to its training program than the other two departments (Ceramics Operations and Rod/Bundle Operations). The Chemical Operations had dedicated one person (previously a senior operator) solely to implementing the training program and associated record keeping. The training for the other two departments was assigned to the respective supervisors. When the licensee initiated the new program, each of the operators qualified under the old system were tested on each of the procedures associated with the work assignment, and their skills grandfathered by their respective supervisor. The Chemical Operations department's maintenance of training records was also superior to those maintained by the other two operating groups. Although the other departments maintained records of tests provided to each operator, the skills demonstration waiver was lacking for some of the operators deemed qualified. Additionally, it appeared that more training had been provided to operators in these two departments than the records indicated. The training program in the Chemical Operations department was better structured and provided more formalized training than the other two departments. Much of the training in the other departments for new personnel was primarily left up to the operator to become familiar with the operating procedures through self-study. The lack of consistency in the training programs was discussed with the licensee at the exit meeting on April 29, 1994.

Based on discussions held with operators and observing them performing their duties, the inspector did not identify any cause to suspect their qualification for the task they were performing.

The licensee's initiation of a formalized operating training program was noted as a program strength. Consistency in the training programs for each of the operating groups would further strengthen the licensee's program. No violations or deviations of NRC requirements were identified.

## ATTACHMENT

### 1 Persons Contacted

#### 1.1 Licensee Personnel

B. N. Femreite, Plant Manager,  
\*R. E. Vaughan, Manager, Safety, Security and Licensing  
\*M. K. Valentine, Manager, Manufacturing Engineering  
\*L. J. Maas, Manager, Regulatory Compliance  
\*B. F. Bentley, Manager, Plant Operations  
\*S. S. Koegler, Manager, Waste Management Engineering  
\*R. L. Feuerbacher, Manager, Materials and Scheduling  
\*M. S. Striker, Engineer, Waste Management Engineering  
T. C. Probasco, Supervisor, Safety  
\*L. D. Weaver, Supervisor, Traffic  
\*C. D. Manning, Criticality Safety Specialist  
\*R. K. Burklin, Health Physicist  
\*E. L. Foster, Supervisor, Radiological Safety

In addition to the personnel listed above, the inspectors contacted other personnel during this inspection.

\* Denotes personnel present at the exit briefing conducted on April 29, 1994.

### 2 Exit Meeting (30703)

On April 29, 1994, the inspectors met with the licensee representatives to discuss the scope and findings of the inspection. The observations described in the report were discussed with the licensee representatives. The licensee was informed that no violations or deviations of NRC requirements were identified.

The licensee was also informed that although proprietary information was reviewed during this inspection, such information would not be described in the report.