



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931**

August 16, 2000

Westinghouse Electric Corporation
ATTN: Mr. R. E. Monley, Manager
Columbia Plant
Commercial Nuclear Fuel Division
P. O. Box R
Columbia, SC 29250

SUBJECT: NRC INSPECTION REPORT NO. 70-1151/2000-04 AND NOTICE OF VIOLATION

Dear Mr. Monley:

This letter refers to the inspection conducted on June 26 through 30 and July 17 through 21, 2000, at the Westinghouse facility. The enclosed report presents the results of this inspection.

Based on the results of this inspection, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed in this Inspection Report (70-1151/2000-04). Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Edward J. McAlpine, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

Docket No. 70-1151
License No. SNM-1107

Enclosures: (See Page 2)

Enclosures: 1. NRC Inspection Report
2. Notice of Violation

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NOTICE OF VIOLATION

Westinghouse Electric Corporation
Columbia, South Carolina

Docket No. 70-1151
License No. SNM -1107

During an NRC inspection conducted between June 26 and July 21, 2000, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

License Condition 10 of Special Nuclear Materials (SNM) License No. 1107 requires the licensee to comply with all listed conditions in the sections Safety and Safeguards Conditions.

Safety Condition S-3 states that the licensee shall maintain and execute the response measures in the Site Emergency Plan, dated April 30, 1992; or as further revised by the licensee consistent with 10 CFR 70.32(i).

Section 7.2 of the Site Emergency Plan (SEP) requires Emergency Response Organization personnel to receive annual training appropriate to their respective emergency response assignments. Section 6.3 of Emergency Procedure A-02 stated that during normal operations on all shifts, a minimum of six, fully qualified Brigade members is required on-site to respond to any emergency situation.

Contrary to the above, three individuals assigned to the emergency staff as alternates to the Emergency Director failed to attend annual refresher training. In addition, two of the three operating shifts did not have six fully qualified Brigade members on shift to respond to any emergency situation.

This is a severity Level IV violation (Supplement VIII).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence and the date when full compliance will be achieved is already adequately addressed on the docket in this Inspection Report. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made publically available. To the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made publically available without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed

Enclosure 1

copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld, and provide in detail the bases for your claim of withholding (e.g. explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential, commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated at Atlanta, Georgia
this 16th day of August, 2000

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-1151

License No.: SNM-1107

Report No.: 70-1151/2000-04

Licensee: Westinghouse Electric Corporation

Facility: Commercial Nuclear Fuel Division

Location: Columbia, South Carolina

Dates: June 26-30 and July 17-21, 2000

Inspector: A. Gooden, Health Physicist

Approved By: E. McAlpine, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Commercial Nuclear Fuel Division NRC Inspection Report 70-1151/2000-04

During the report period, routine unannounced inspections were conducted in the areas of emergency preparedness and radiation protection. Inspections included an observation of work activities, a review of selected records, and interviews with plant personnel. The inspection disclosed the following:

Emergency Preparedness

- Under the Incident Command System (ICS), although various position titles were changed to reflect the organizational concept, areas of responsibility previously assigned during an emergency were clearly assigned within the ICS organization (Paragraph 2.a).
- Changes since the last inspection did not appear to have any negative impact on program effectiveness (Paragraph 2.a).
- The Site Emergency Plan (SEP) and the Emergency Procedure governing evacuation and accountability were inconsistent regarding the location for evacuees to assemble (Paragraph 2.b).
- The number of brigade members with expired first aid and cardiopulmonary resuscitation (CPR) certification resulted in the inability to meet requirements for a minimum of six fully qualified brigade members on all shifts as discussed in Section 6.3 of Emergency Procedure A-02 (Paragraph 2.c).
- Personnel assigned as alternates to the Emergency Director, and personnel assigned to the Emergency Brigade failed to maintain qualifications current in accordance with the SEP and Emergency Procedure (Paragraph 2.c).
- Results from accountability/evacuation drills conducted during August 1999, and April 2000, disclosed problems with equipment, concept of operations, procedures, and human errors (Paragraph 2.e).
- The dedicated emergency facility for housing Emergency Brigade equipment, training, and functioning as an alternate Emergency Operations Center (EOC) was a program enhancement (Paragraph 2.f).

Radiation Protection

- With the exception of the reduction in the maximally assigned extremity exposure, exposures increased from 1998 to 1999 (Paragraph 3.b).
- As of June 2000, the maximum estimated committed effective dose equivalent (CEDE) assigned (2.85 rem) exceeds the maximum assigned annual CEDE dose for 1999 (Paragraph 3.c).

- The anticipated increase in material throughput to meet production demands poses significant challenges to controlling the airborne exposure as evidenced by the increases noted in CY 99 and the trend thus far in CY 2000 (Paragraph 3.c).
- No engineered controls were in place to prevent unauthorized users from donning respirators. The licensee's program for respiratory use was dependent on an honor system rather than strict administrative or physical controls (Paragraph 3.d).
- Contamination survey results disclosed where efforts were inadequate to ensure timely and effective decontamination to acceptable levels (Paragraph 3.f).

Attachment:

Persons Contacted

Inspection Procedures

List of Items Opened, Closed, and Discussed

List of Acronyms

REPORT DETAILS

1. **Summary of Plant Status**

During the week of June 26-30, 2000, the licensee experienced a temporary loss of plant air inside the chemical conversion area resulting in an area evacuation order. There were no other unusual plant operational occurrences during the inspection period.

2. **Emergency Preparedness (88050) (F3)**

a. Review of Program Changes (F3.01)

(1) Inspection Scope

Changes to the licensee's Site Emergency Plan (SEP), procedures, organization, facilities, and equipment were reviewed to assess the impact on the effectiveness of the program. The adequacy of the emergency preparedness audit required by Section 7.8 of the SEP was also evaluated.

(2) Observations and Findings

Key management changes were made to the emergency organization resulting in the assignment of newly appointed individuals to the Emergency Staff as alternate Emergency Directors. The organizational changes had no impact on the effectiveness of the emergency preparedness program. The most significant change since the last inspection involved the implementation of the "Incident Command" concept of operation in response to an emergency. Based on interview, drill results, and training documentation associated with the new concept of operation, it does not appear that the change resulted in a reduction in the effectiveness of the program. Under the Incident Command System (ICS), although various position titles were changed to reflect the organizational concept, areas of responsibility previously assigned during an emergency were clearly assigned within the ICS organization. Changes to the SEP and Emergency Procedures reflecting the ICS implementation were under site review at the time of the inspection.

The independent audit met the SEP commitment for such audit.

(3) Conclusions

Changes since the last inspection did not appear to have any impact on program effectiveness.

b. Implementing Procedures (F3.02)

(1) Inspection Scope

Select Emergency Procedures (EP) were reviewed to determine if EP were revised since the last inspection, and the adequacy of procedures in the implementation of the SEP.

(2) Observations and Findings

Section 7.0 and Figure I of Emergency Procedure A-03 entitled "Evacuation and Accountability" was determined to be inconsistent with Section 5.4.1.2 and Figure 5.1 of the SEP. The inconsistency was associated with the assembly location following a plant evacuation. The referenced sections of the SEP reflected two locations (south gate near the guard shack, and the flagpole near administration building) whereas the procedure included only the flag pole. The licensee contact indicated that the procedure was correct and the SEP required a revision for consistency with the procedure and general employee training material. The inspector conducted interviews regarding evacuation and assembly locations with randomly selected employees and discovered that procedures and training discussed a single location (flag pole) and the SEP required updating as indicated by the licensee contact. The inspector informed the licensee of bulletin board locations where the evacuation diagram posted was identical to the diagram in the SEP (showing two assembly points). In response the licensee expressed plans to conduct a site wide inspection to replace evacuation diagrams with the correct information and update the SEP information. Additional procedural reviews identified incorrect references that were discussed during a previous inspection but had not been resolved. Consequently, the inspector informed plant management during the exit interview that lack of attention may have resulted in repeat errors and management attention may be necessary to resolve the errors.

(3) Conclusions

The SEP and Emergency Procedure A-03 governing evacuation and accountability were inconsistent regarding the location for evacuees to assemble. However, interviews with randomly selected employees disclosed that the employees were aware of the appropriate assembly location.

c. Training and Staffing of Emergency Organization (F3.03)

(1) Inspection Scope

Determine if emergency response training was provided to key emergency response organization (ERO) personnel in accordance with Section 7.2 of the SEP. Examine the licensee's notification system for adequacy in activation and staffing of the Emergency Operations Center (EOC) during off-hours.

(2) Observations and Findings

The inspector reviewed training documentation for several individuals assigned to key positions in the current Emergency Telephone Directory, and the Emergency Brigade training summary. Based on the training attendance sheets, training status printout, and an interview with personnel responsible for tracking training, examples were noted where individuals assigned as alternates to the Emergency Director had failed to attend training in accordance with the SEP and EP. Additionally, the inspector determined from the Emergency Brigade training summary matrix that several members failed to maintain current qualifications in first aid and cardiopulmonary resuscitation (CPR). The number of brigade members with expired first aid and CPR certification resulted in the inability to meet requirements for a minimum of six fully qualified brigade members on all shifts as discussed in Section 6.3 of Emergency Procedure A-02. The inspector was informed that the assignment of the Emergency Director alternates was an administrative oversight. In response to the findings, immediate notification was sent to the Emergency Director and others informing that personnel were not qualified to perform as Emergency Director or Alternate until training was completed. An updated listing of alternates were provided and training was scheduled. Regarding the Emergency Brigade, the licensee stated that Brigade members will be trained in CPR and first aid during the third quarter of 2000. As corrective actions to prevent a recurrence, the licensee indicated that the Emergency Brigade Training Coordinator will on a monthly basis verify brigade member's qualifications and schedule training as needed to meet SEP and procedural requirements. Based on the licensee's corrective actions, the inspector concluded that the corrective actions were prompt and appeared to be adequate for preventing a recurrence. The failure to provide training to alternate Emergency Directors and the Emergency Brigade in accordance with Section 7.2 of the SEP and Section 6.3 of Emergency Procedure A-02 was a violation of license condition S-3 (VIO 70-1151/2000-04-01).

Since the last inspection, positive changes were made to the training program as evidenced by the combination of position specific training along with performance demonstration, and exams to test comprehension of training material. A program strength was the utilization of numerous mockups which added realism to simulated accidents.

Documentation from a communications drill testing the performance of security staff in the notification of ERO personnel to staff the Emergency Operations Center (EOC) during back shifts and off-hours disclosed that the required EOC staffing could be achieved in less than an hour.

(3) Conclusions

Personnel assigned as alternates to the Emergency Director, and personnel assigned to the Emergency Brigade failed to maintain qualifications current in accordance with the SEP and EP. The training program incorporated position specific training along with performance demonstration, and in some cases a written exam to show the level of comprehension. A program strength was the utilization of numerous mockups which

added realism to simulated accidents. Based on interviews with security personnel and documentation, the inspector determined that the physical and administrative system for activating the ERO during off-hours was adequate.

d. Offsite Support (F3.04)

(1) Inspection Scope

Licensee activities in the areas of training, agreements, and exercises were reviewed to determine if the licensee was periodically involving offsite support groups.

(2) Observations and Findings

The inspector reviewed documentation to show that periodic training and/or drill participation was offered to offsite groups. A site familiarization tour was provided to the offsite fire department during April 2000, and during March 2000, a drill involving a simulated contaminated patient was conducted with the offsite medical facility. The training date for law enforcement and emergency services personnel for 2000 had not been confirmed at the time of the inspection.

(3) Conclusions

The offsite interface appeared to be properly coordinated as evidenced by periodic training and the distribution of changes to the SEP to offsite copy holders.

e. Drills and Exercises (F3.05)

(1) Inspection Scope

Section 7.4 of the SEP required a biennial exercise to be performed involving the onsite emergency response organization and many of the offsite support agencies. This area was reviewed for adequacy in testing both onsite and offsite emergency response capability.

(2) Observations and Findings

The last biennial exercise was conducted on September 21, 1999, and involved participation by Richland County Emergency Medical Services and the local hospital. Participation by other offsite agencies was limited to notifications only. The next scheduled exercise to fulfill the biennial requirements in Section 7.4 of the Plan would be held in calendar year (CY) 2001. During the review of training details, the inspector noted that tabletop scenarios were presented to ERO personnel to assess the effectiveness of training for participants. The inspector discussed and reviewed documentation associated with the fire/criticality alarm system familiarization sounding and periodic evacuation drills. The results disclosed a frequency for conducting periodic evacuation drills had not been established procedurally nor was required by the license. According to the licensee, prior to August 1999, the last such drill was conducted in 1994. As a program improvement item, the licensee expressed a

commitment to conduct evacuation drills at least annually if not semiannually. Results from the recent drills conducted during August 1999, and April 2000, disclosed problems with equipment, concept of operations, procedures, and human errors. In response to drill results, the licensee indicated that the following actions were being considered: 1) replacement of the criticality warning system; 2) determine if additional card readers are needed; 3) revise procedures to include Evacuation Coordinators and assign assembly areas based on work unit or department; and 4) training. The licensee indicated that a remedial evacuation drill will be held following the implementation of corrective actions. The inspector determined that the licensee's procedures for conducting accountability of personnel following an evacuation were minimally acceptable, but improvements were necessary to ensure accountability was both timely and complete. The inspector informed the licensee that the corrective actions to ensure timely and complete accountability of personnel was considered an inspector follow up item (IFI 70-1151/2000-04-02).

Communication drills were adequate for demonstrating the mechanism for activation and notification of ERO personnel during off-hours, holidays, and weekends. Communication drills also served as the mechanism for updating the onsite and offsite emergency call list.

(3) Conclusions

The current drill and exercise program provided adequate training benefit to onsite and offsite response personnel. Accident scenarios were adequate for assessing the ERO state of readiness in responding to various site postulated accidents. The licensee's procedures for conducting accountability of personnel following an evacuation was minimally acceptable and improvements were necessary to ensure accountability was both timely and complete.

f. Emergency Equipment and Facilities (F3.06)

(1) Inspection Scope

The Emergency Operations Center (EOC) and equipment were inspected to determine whether the licensee's facilities, emergency response equipment, instrumentation, and supplies were maintained in a state of operational readiness.

(2) Observations and Findings

The inspector observed an inventory and operability check of emergency equipment and found all equipment operated in accordance with the intended function. No problems were noted. A review of the periodic surveillance and maintenance documentation disclosed that selected equipment was being maintained in a state of readiness. The inspector noted as a program enhancement, the construction of a facility dedicated to the Emergency Brigade for storage of equipment, brigade training, and function as an alternate EOC in the event the primary EOC was uninhabitable. The licensee's anticipated date for completion was late July or early August 2000.

(3) Conclusions

Testing and surveillance was performed at the required intervals for randomly selected equipment. The construction of a dedicated emergency facility for housing Emergency Brigade equipment and functioning as an alternate EOC was a program enhancement.

g. Follow up On Previously Identified Issues (F3.07)

(1) Inspection Scope

The inspector reviewed the actions taken by the licensee to correct previous issues to verify that the corrective actions were adequate and had been completed.

(2) Observations and Findings

- (Open) IFI 70-1151/98-05-01: Verify corrective action to resolve procedural non-compliances associated with thermoluminescent dosimeter (TLD) issuance, collection, and storage.

Corrective actions had been initiated but additional management attention was warranted. See discussion in Paragraph 3.b.

- (Closed) IFI 70-1151/98-07-01: Review corrective actions to improve timely activation and staffing of the ECC.

The inspector reviewed documentation from the most recent communications drill testing the ability to staff the EOC during back shifts. Results indicated that the required EOC staffing could be achieved in less than an hour.

- (Closed) IFI 70-1151/99-05-01: Verify the corrective actions to the items identified during the biennial exercise.

The inspector reviewed the corrective actions (which included procedural changes and training) and the results from drills conducted since the biennial exercise. The corrective actions appeared to resolve the deficiencies from the exercise.

(3) Conclusion

The corrective actions were adequate for closure of two items, and one item remained open.

h. Information Notice (IN)

(1) Inspection Scope

The inspector reviewed the following IN to determine if the information had been received by the licensee:

IN 2000-07: National Institute For Occupational Safety And Health Respirator User Notice: Special Precautions For Using Certain Self-Contained Breathing Apparatus Air Cylinders

(2) Observations and Findings

The inspector determined that IN 2000-07 had been received by the licensee, distributed to appropriate personnel, and reviewed for applicability. The licensee determined that existing site equipment was not affected and hence no further actions were required.

(3) Conclusion

The licensee's actions were appropriate.

3. **Radiation Protection (83822) (R1)**

a. Radiation Protection Program Equipment (R1.03)

(1) Inspection Scope

The inspector reviewed the operability, calibration, and maintenance of select equipment to determine if the equipment was adequately maintained and reliable to perform the intended safety function.

(2) Observations and Findings

Several instruments utilized for personnel contamination surveys were examined and three of the instruments required maintenance due to erratic operations. The licensee took immediate actions to replace the instruments. Calibration records disclosed that all examined equipment had been calibrated and maintained in accordance with procedure and manufacturer's recommendation. The inspector requested documentation to show daily checks were performed during select periods in CY 1999 and 2000. The inspector was informed that the daily checks could not be confirmed for CY 99 in that no permanent documentation was maintained. The licensee indicated that the daily checks were documented on a form attached to the instrument case which was removed and discarded when the form blanks were filled. During January 2000, a permanent record form was implemented for documenting the daily checks, and no problems were noted with documentation for the period January 10 through June 30, 2000.

(3) Conclusions

Documentation was lacking to confirm daily checks were performed on instruments used to perform personal contamination surveys; however, based on interviews the inspector concluded that checks were adequately performed.

b. External Exposure Control (R1.04)

(1) Inspection Scope

The inspector reviewed radiation protection procedures, and discussed with licensee representatives the personnel monitoring requirements to determine if the licensee's monitoring program was consistent with requirements in 10 CFR 20, and if controls were in place to maintain occupational dose As Low As Reasonably Achievable (ALARA). Personnel exposure data was examined to determine if exposures were in compliance with 10 CFR Part 20 limits.

(2) Observations and Findings

Based on procedural reviews, and interviews with plant personnel observed inside radiation control areas, the licensee's monitoring program was consistent with requirements in 10 CFR Part 20. Procedures contained administrative action limits, and ALARA dose goals were established to maintain exposures less than limits in 10 CFR 20. Exposure results for CY 99 were reviewed and compared with CY 98, and results thus far in CY 2000. With the exception of the reduction in the maximally assigned extremity exposure (approximately 52 percent), the results (see Table 1) disclosed an increase of approximately 48 percent in the site collective exposure from CY 98 to CY 99; eleven (11) percent increase in the maximally assigned total effective dose equivalent (TEDE); and the Deep Dose Equivalent (DDE) for CY 99 increased approximately one percent over CY 98. Based on air sampling data, first quarter thermoluminescent dosimeter (TLD) results, and estimated TLD results for second quarter, exposure results as of June 2000 were trending higher than CY 99 as evidenced by the maximally assigned TEDE for CY 2000 exceeding the maximally assigned for CY 99 after only six months (see Table 1). The licensee attributed the exposure increases to material throughput increases (approximately 15 percent increase from CY 98 to 99); major maintenance and upgrade projects inside the chemical area; unusual incidents involving airborne releases; and overtime work on weekends to meet production demands.

Table 1. Annual Exposures

Year	Deep Dose Equivalent (DDE)	Maximum Dose Extremity (MDE)	Total Effective Dose Equivalent (TEDE)	Collective TEDE	Committed Effective Dose Equivalent (CEDE)
1998	1.01 rem	27.1 rem	2.73 rem	206 person-rem	2.50 rem
1999	1.02 rem	12.9 rem	3.04 rem	305 person-rem	2.69 rem

*2000	*0.68 rem	*2.64 rem	*3.13 rem	----	*2.85 rem
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***Note:** CY 2000 maximum assigned exposures as of June are based on estimated TLD results for second quarter and actual air sampling data through June. During CY 99, because of delays in TLD processing due to both site and vendor deficiencies, the licensee's external exposure monitoring program was not being implemented in an effective manner to ensure accurate and timely exposure information. A review of licensee documentation disclosed that the TLD technician occasionally failed to distribute TLDs, collect TLDs, account for TLDs, or return the dosimeters to the vendor for analysis in a timely manner. During the same time period in CY 99, the licensee experienced delays in obtaining results from the vendor. In response to offsite deficiencies, the licensee changed vendors (October 1999). Regarding onsite deficiencies, an additional technician was assigned to assist with the TLD program implementation; changes were made to the health physics technicians reporting chain; and procedures were revised. The inspector noted some improvements to the issuance, collection, accountability, and timeliness of the badges being shipped during the second quarter of CY 2000. The inspector discussed during the exit meeting that the delays could potentially result in inaccurate and untimely exposure information. Based on further review of the inspection details and previous exposure data, the licensee was contacted on August 1, 2000 to discuss corrective actions and an anticipated time for completion. The inspector was informed by the Environment, Health and Safety Department Manager that the current actions (discussed above) will continue to be closely monitored and should be effective in the resolution of past problems as evidenced by improvements noted thus far. The inspector indicated that based on the low exposure results during the period, and the increased attention by management, the previous IFI associated with TLD issuance, collection, and storage (see NRC Report No. 70-1151/98-05) remains open but no violation is identified.

(3) Conclusions

No regulatory or license exposure limits were exceeded. However, with the exception of the reduction in the maximally assigned extremity exposure, exposures increased from 1998 to 1999. During the second half of CY 99, the external exposure monitoring program was not effectively implemented to ensure accurate and timely exposure information.

c. Internal Exposure Control (R1.05)

(1) Inspection Scope

The inspector reviewed licensee procedures for assessing internal exposure to determine if controls were in place to monitor occupational doses, and verify that the administrative limits were established to control occupational dose ALARA. Exposure data based on air sampling results were reviewed to determine if exposures were in compliance with 10 CFR Part 20 limits.

(2) Observations and Findings

Exposures were frequently reviewed to determine if administrative limits were met so that appropriate actions were taken to preclude exceeding limits in 10 CFR Part 20. During CY 99, no worker exceeded the licensee's administrative limit (4 rem). Although, based on estimates for CY 2000, four workers were projected to exceed the administrative limits prior to the end of CY. The licensee was effectively tracking and trending occupational exposures as evidenced by the recent transfer of a worker from conversion and pellets to a low potential exposure area. Table 1 above presents the maximum assigned exposure data for CY 98, 99 and 2000 as of June. The maximum assigned CEDE for CY 99 was 2.69 rem, an approximately eight percent increase from CY 98, and was assigned to an uranium pellet worker. Thus far in CY 2000 (as of June) the maximum estimated CEDE was 2.85 rem which exceeded the maximum annual exposure for CY 99.

(3) Conclusions

Based on interviews and records review, the licensee's internal exposure control program was adequate for evaluating and monitoring personnel exposures. The licensee was effectively tracking and trending occupational exposures. The anticipated increase in material throughput to meet production demands pose significant challenges to controlling the airborne exposure as evidenced by the increases noted in CY 99 and the trend thus far in CY 2000.

d. Respiratory Protection (R1.06)

(1) Inspection Scope

Respiratory protection equipment certification, issuance, storage, and training verification was examined for adequacy in assuring that equipment was tested and being obtained by certified users only.

(2) Observations and Findings

The inspector interviewed personnel performing maintenance and/or cartridge certification, in addition to respirator users observed in the conversion area, regarding the use of equipment. Interviewees were cognizant of respiratory protection training, medical requirements, and the frequency for completing the training. No problems were noted with respiratory protection certification reviewed for randomly selected individuals assigned to the chemical conversion area. The inspector was informed by the licensee that respirator use increased approximately 16 percent in CY 99 when compared to CY 98. The licensee attributed a large percentage of the use to various projects associated with the air handling system and containment.

(3) Conclusions

Based on interviews and observations of maintenance activities in progress, the inspector determined that respirators were being properly maintained and was

available for normal and emergency use. Regarding respiratory issuance, no engineered controls were in place to prevent unauthorized users from donning respirators. The licensee's program for respiratory use was dependent on an honor system rather than strict administrative or physical controls. Respirator use increased approximately 16 percent from CY 98 to 99.

e. Postings, Labeling, Control (R1.07)

(1) Inspection Scope

The inspector reviewed the licensee's program for posting as required by 10 CFR 19.11 to determine if documents were posted in sufficient places to permit individuals engaged in licensed activity to observe them. Several work locations were examined to determine if radioactive containers were properly labeled.

(2) Observations and Findings

Bulletin boards were posted such that workers may observe documents or obtain details as to where documents may be examined. Regarding container markings and labeling, prompt actions were taken by the licensee in response to an unmarked drum noted by the inspector. The missing label was attributed to the unprotected, outdoor storage location. The licensee indicated that a detailed audit of the remaining drums did not reveal other drums that were unlabeled. In response to weathering and environmental influences, the licensee discussed plans to enclose drums inside plastic to provide protection from the environmental influences. The unlabeled container did not create a hazardous environment or result in reduced controls to prevent exposure to radiation in that the area contained numerous containers which were labeled and the individuals working in the area were aware of the contents being stored inside the drums.

(3) Conclusions

Required notices and other regulatory information to employees were properly posted. The licensee took prompt action to replace a container label to ensure sufficient information was available on the drum contents.

f. Surveys (R1.08)

(1) Inspection Scope

The contamination control survey program was reviewed to determine if surveys were effective in the identification of contamination and performed in accordance with procedures.

(2) Observations and Findings

Based on observations of survey personnel and a review of recent survey data, it appeared that the surveys were adequate in the identification of potentially

contaminated areas. However, actions to decontaminate areas appeared to be inadequate in that examples were noted where decontamination to acceptable levels required three to seven days. In response to this finding, the licensee indicated that corrective actions would be taken to improve the decontamination efforts. The inspector informed the licensee that the corrective actions to ensure effective and timely decontamination would be tracked as an IFI (IFI 70-1151/2000-04-03).

Recent results from leak testing of radioactive sources were reviewed and no contamination was detected with any of the sources requiring leak test. Actions were taken by the licensee to enhance administrative controls for assuring that active and stored sources were leak tested at the required frequency.

(3) Conclusions

The contamination survey program was appropriately implemented to protect workers, and identify potential work areas posing an internal or external radiation hazard to workers. Survey results disclosed two examples where the decontamination efforts were inadequate and required improvements to ensure timely and effective decontamination to acceptable levels.

g. Notifications and Reports (R1.09)

(1) Inspection Scope

The licensee's Redbook file was reviewed for determining the reportability of events to NRC and workers.

(2) Observations and Findings

Randomly selected incidents from the period January 2000 to March 2000 were reviewed and no problems noted. Appropriate follow up actions were taken to each event selected.

(3) Conclusions

No issues were identified. The licensee's performance in reporting of the selected incidents was both appropriate and timely.

h. Management Oversight of Program

(1) Inspection Scope

The inspector reviewed the adequacy of management controls for ensuring program compliance with the regulations and license requirements.

(2) Observations and Findings

The inspector reviewed the following details: the results from an internal audit conducted during CY 99; the 1999 ALARA Report; and selected incidents from the licensee's internal incident reporting system (Redbook). The reports provided management with summary details for ensuring the radiation protection program was properly implemented.

(3) Conclusions

Adequate controls were in place to provide management with a mechanism for review and taking actions as appropriate to ensure compliance with license commitment and regulations.

4. Exit Interview

The inspection scope and results were summarized on June 30, and July 21, 2000, with those persons indicated in the Attachment. On August 1, 2000, the Managers, Environment, Health and Safety, and Integrated Safety Engineering were contacted via telephone to summarize the inspection findings based on the additional review by the regional office. Although proprietary documents and processes were occasionally reviewed during this inspection, the proprietary nature of these documents or processes has been deleted from this report. No dissenting comments were received from the licensee.

ATTACHMENT

1. LIST OF PERSONS CONTACTED

Licensee

#J. Allen, Vice President, U.S. Manufacturing
*#C. Aguilar, Engineer, Integrated Safety Engineering
L. Byrd, Team Manager, Maintenance
#W. Dougherty, Team Manager, Environment, Health and Safety/SPEC
T. Gamble, Planner, Maintenance
*#✓D. Goldbach, Manager, Environment, Health and Safety
*#D. Graham, Technician, Environment, Health and Safety
*#✓J. Heath, Manager, Integrated Safety Engineering
J. Hooper, Engineer, Integrated Safety Engineering
*#R. Likes, Engineer, Integrated Safety Engineering
#S. McDonald, Manager, Technical Services
*#R. Monley, Plant Manager
*J. Rankar, Associate Engineer, Integrated Safety Engineering
T. Shannon, Team Manager, Health Physics Operations
*R. Williams, Advisory Engineer

Other licensee employees contacted included engineers, technicians, production staff, security, and office personnel.

*Attended exit meeting on June 30, 2000
#Attended exit meeting on July 21, 2000
✓Contacted telephonically on August 1, 2000

2. INSPECTION PROCEDURES USED

IP 88050 Emergency Preparedness
IP 83822 Radiation Protection

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
70-1151/98-05-01	Open	IFI - Verify corrective action to resolve procedural noncompliance associated with thermoluminescent dosimeter (TLD) issuance, collection, and storage (Paragraph 2.g).
70-1151/98-07-01	Closed	IFI - Review corrective actions to improve timely activation and staffing of the ECC (Paragraph 2.g).

70-1151/99-05-01	Closed	IFI - Verify the corrective actions to the items identified during the biennial exercise (Paragraph 2.g).
70-1151/2000-04-01	Closed	VIO - Failure to provide training to emergency response personnel in accordance with Section 7.2 of the SEP (Paragraph 2.c).
70-1151/2000-04-02	Open	IFI - Review the adequacy of corrective actions to ensure accountability was both timely and complete (Paragraph 2.e).
70-1151/2000-04-03	Open	IFI - Verify corrective actions to ensure effective and timely decontamination (Paragraph 3.f).

4. LIST OF ACRONYM USED

ALARA	As Low As Reasonable Achievable
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulation
CPR	Cardiopulmonary Resuscitation
CY	Calendar Year
DDE	Deep Dose Equivalent
ECC	Emergency Control Center
EOC	Emergency Operations Center
EP	Emergency Procedure
ERO	Emergency Response Organization
ICS	Incident Command System
IFI	Inspector Follow up Item
IN	Information Notice
MDE	Maximum Dose Extremity
SEP	Site Emergency Plan
TEDE	Total Effective Dose Equivalent
TLD	Thermoluminescent Dosimeter
VIO	Violation