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NUCLEAR REGULATORY COMMISSION
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ATLANTA, GEORGIA 30303-8931

May 29, 2003

NMED No. 030303

Westinghouse Electric Company
ATTN: Mr. M. Fecteau, Manager
Columbia Plant
Commercial Nuclear Fuel Division
Drawer R
Columbia, SC 29250

SUBJECT: NRC INSPECTION REPORT NO. 70-1151/2003-003

Dear Mr. Fecteau:

This refers to the inspections conducted on April 28 - May 2, 2003, at the Columbia Nuclear Fuel Plant. The purpose of these inspections was to determine whether activities authorized by the licensee were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress.

Based on the results of the inspection, no violations or deviations were identified.

In accordance with 10 CFR 2.790 of NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in NRC's 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/reading-rm/adams.html> (the Public Electronic Reading Room).

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

Sincerely,

/RA/ W. Gloersen for

David Ayres, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

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

Enclosure: (See Page 2)

Enclosure: NRC Inspection Report

cc w/encl:

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 Environment, Health and Safety
 Commercial Nuclear Fuel Division
 Westinghouse Electric Corporation
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-1151

License No.: SNM-1107

Report No.: 70-1151/2003-03

Licensee: Westinghouse Electric Corporation

Facility: Commercial Nuclear Fuel Plant

Location: Columbia, South Carolina

Dates: April 28 - May 2, 2003

Inspector: M. Crespo, Fuel Facility Inspector

Approved By: D. Ayres, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Commercial Nuclear Fuel Division
NRC Inspection Report 70-1151/2003-03

This routine unannounced inspection was conducted in the area of plant operations. The inspection identified the following aspects of the licensee's programs as outlined below:

Plant Operations

- The upgraded red book program provided an efficient means for supervisors and employees to communicate safety concerns to management and have them addressed (Paragraph 2.a).
- Operations at the facility were performed adequately to ensure safety and in accordance with the licensee's safety analyses (Paragraph 2.b).
- The licensee obtained the appropriate safety approvals and properly tested all altered safety significant controls for the line 5 modifications to the pellet press loader (Paragraph 2.c).
- Operating procedures were properly revised to account for equipment modifications. Licensee operators were current on the revised operating procedures, however team managers were not required to be current with procedures prior to supervising the area (Paragraph 2.d).
- The solvent extraction back flow event and the inadvertent processing of withheld cylinders were adequately addressed by the licensee (Paragraph 2.e).

REPORT DETAILS

1. Summary of Plant Status

This report covered the period of April 28 - May 2, 2003. The facility had just restarted following an inventory period. Powder, pellet, and fuel assembly production were started and ramped up to normal rates. No unusual plant operational events occurred during the onsite inspection.

2. Plant Operations (Inspection Procedure (IP) 88020)

a. Safety Function (O3.02)

(1) Inspection Scope

The inspector reviewed the facility's red book system, which is the facility's primary tool for communicating safety concerns, to verify that employees could forward their concerns to management and have them addressed.

(2) Observations and Findings

The inspector noted that an electronic red book system was piloted by the conversion area control room. The inspector observed a supervisor use the system to input some concerns that were noted during the evening. The following morning, the environmental, health and safety (EH&S) department was following up on each of the issues that were input into the system, which indicated to the inspector the efficient communication the new system provided. The old paper red book system was functioning parallel to the electronic system in order to complete the items still open in the older system. All new items would be input into the new system. The inspector also noted that the new system benefitted from being able to easily track and trend causes of events.

(3) Conclusions

The upgraded red book program provided an efficient means for supervisors and employees to communicate safety concerns to management and have them addressed.

b. Plant Activities (O3.03)

(1) Inspection Scope

Operations in the fuel production and uranium recovery areas were reviewed to verify adherence to safety requirements and conduct of safe practices.

(2) Observations and Findings

The inspector observed operations in the fuel processing areas and the uranium recovery areas. The inspector also observed the outdoor activities supporting the fuel manufacturing process, including the Uranyl Nitrate (UN) bulk tank system. The

inspector observed that specific operations were performed safely and in accordance with approved plant procedures and postings.

The inspector observed conditions and determined that equipment used to confine and contain radioactive contamination in fuel processing and other material access areas were adequate for the operations that were taking place or planned and were in proper working condition. The inspector noted that the licensee was giving the appropriate attention to the recently modified pelleting line 5 to ensure that the new bulk powder loading functioned according to safety analyses.

During a tour of the conversion area control room, the inspector noted that the contact listing for several EH&S members was two years out of date. When the inspector brought this to the licensee's attention, the listing was updated with current contacts and phone numbers.

The inspector also toured the fuel bundle assembly testing facility. The inspector noted the area to be secure and situated a significant distance away from the bundle assembly area. The area was restricted to only a single rod loaded with enriched uranium. The inspector verified that the control of material in the area was adequate to maintain safety.

(3) Conclusions

Operations at the facility were performed adequately to ensure safety and in accordance with the licensee's safety analyses.

c. Configuration Control (O3.04), Change Control (O3.05), Maintenance for Nuclear Criticality Safety (NCS) (O3.07)

(1) Inspection Scope

The inspector reviewed the records concerning the configuration changes to the line 5 pellet press loader and tank changes for the solvent extraction system to verify that approvals and safety evaluations were performed prior to starting the equipment and that the appropriate configuration control procedures were followed.

(2) Observations and Findings

The configuration control records for the modifications to the line 5 pellet press loader possessed the appropriate approvals indicating a safety evaluation was performed on the project. The inspector verified that the approvals were obtained prior to implementing the modifications. Since the modifications to the line affected safety significant controls (SSCs), the SSCs were all functionally tested prior to starting the line. No issues were identified with the licensee's performance regarding the modification of the line 5 pellet press loader.

The inspector noted that all the appropriate approvals were also obtained for the modifications in the solvent extraction system in which the non-favorable geometry (NFG) tanks were replaced with favorable geometry tanks. No issues were identified.

(3) Conclusions

The licensee obtained the appropriate safety approvals and properly tested all altered SSCs for the line 5 modifications to the pellet press loader.

d. Operating Procedures (O3.06), NCS Training (O3.08)

(1) Inspection Scope

The inspector reviewed several operating procedures for the conversion and pelleting areas to verify that safety controls were identified and that modifications to procedures were timely and consistent with the changes to operation and equipment.

(2) Observations and Findings

The inspector reviewed the procedures for the line 5 powder loading system to verify that the procedures have been modified to account for the recent equipment modifications, which configured line 5 to mirror the setup of the other four lines. The inspector noted that the revised procedures accounted for the new SSCs in the line and incorporated the necessary changes to operate the modified equipment. The procedures had the appropriate approvals indicating that their use was authorized.

The inspector reviewed the records of the operators working in the line 5 area and noted that their training on operations procedures was current and incorporated the modifications to the line. However, the inspector noted that the back-up team manager (who was acting as the team manager at the time) was supervising the operators in the area but was not current on all the new procedure revisions for line 5. This observation was brought to the attention of the licensee as a program weakness since no formal requirements existed at the time. The formalization of procedure requirements for team managers and their back-ups to rectify this issue will be tracked as an Inspector Follow-up Item ((IFI): 70-1151/2003-003-01: Review formalization of procedure requirements for team managers).

(3) Conclusions

Operating procedures were properly revised to account for equipment modifications. Licensee operators were current on the revised operating procedures, however team managers were not required to be current with procedures prior to supervising the area.

e. Review of Previous Events (O3.12)

(1) Inspection Scope

The inspector reviewed a minor event that occurred over the period since the last inspection as well as corrective actions for the following event to determine the adequacy of response actions:

- NRC Event No. 39751 (Nuclear Materials Event Database (NMED) Number 030303), Processing of Withheld Cylinders.

(2) Observations and Findings

The inspectors reviewed the licensee's corrective actions for an event that occurred earlier in the year in which very low concentrations of uranium solution backflowed into NFG tanks in the solvent extraction system. The licensee's corrective actions consisted of removing all NFG tanks connected to the solvent extraction system except for the nitric acid feed tank, which was safeguarded from backflow by a check valve. All the removed tanks were replaced with favorable geometry tanks. The inspector noted that this adequately addressed the issue of backflow in the system.

The inspectors reviewed the licensee's corrective actions for a reportable event (NRC Event No. 39751) involving the inadvertent processing of two cylinders which were designated in the item control program to not be processed. The cylinders were withheld to evaluate whether the "R" stamp (instead of "U" stamp) entailed an inadequacy in the cylinder. Following a review by a certified technician, the licensee determined that the "R" stamp was adequate for processing, however, this determination came after the inadvertent processing. The licensee's corrective actions consisted of modifying the procedure for withholding cylinders to require applying a physical indicator on them in addition to locking them out in the item control program. The inspector verified that these actions were adequate to prevent recurrence.

(3) Conclusions

The solvent extraction back flow event and the inadvertent processing of withheld cylinders were adequately addressed by the licensee.

f. Follow up on Previously Identified Issues (O3.13)

(Closed) IFI 70-1151/2002-203-01: Copies of the current mechanical integrity inspection reports are not available.

The inspector reviewed the new annual preventive maintenance procedure used to verify that copies of inspection results were maintained on-site. The inspector also reviewed the Compressed Gas Association, Inc. statement justifying the decision not to perform a wall thickness test on the liquid hydrogen tank. The inspector performed a walkdown of the tank with the safety engineer and noted no issues. Based on the condition of the tank and corrective actions addressing the records, this item is closed.

(Closed) IFI 70-1151/2002-006-03: Corrective actions for the use of process information forms (PIFs) instead of procedures.

The licensee modified the procedure for the creation of PIFs to clearly state that simple process instructions were not to be incorporated into PIFs. In addition, the licensee had performed several audits since the discovery of the issue in which no issues were noted in the reviewed PIFs. Therefore, this item is closed.

3. Exit Meetings

The inspection scope and results were summarized on May 2, 2003, with the licensee. The inspectors described the areas inspected and discussed in detail the inspection results. Although proprietary documents and processes were reviewed during this inspection, the proprietary nature of these documents or processes is not included in this report. No dissenting comments were received from the licensee.

ATTACHMENT

1. **LIST OF PERSONS CONTACTED**

Licensee

C. Aguilar, Environment, Health and Safety
D. Allison, Quality Assurance, Environment, Health and Safety
D. Colwell, Safeguards Coordinator
D. Graham, Technician, Environment, Health and Safety
D. Harris, Manger, Rod Manufacturing and Integral Fuel Burnable Absorber
J. Heath, Manager, Integrated Safety Engineering
S. McDonald, Manager, Environment, Health and Safety
G. Page, Manager, Maintenance
C. Perkins, Manager, Human Performance Improvement
C. Snyder, Nuclear Criticality Safety Engineer
E. Steck, Nuclear Criticality Safety Engineer
D. Williams, Nuclear Criticality Safety Engineer

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

2. **INSPECTION PROCEDURES USED**

IP 88020 Regional Nuclear Criticality Safety Inspection Program

3. **LIST OF ITEMS OPENED AND CLOSED**

Closed

70-1151/2002-203-01	IFI	Copies of the current mechanical integrity inspection reports are not available (Paragraph 2.f)
70-1151/2002-006-03	IFI	Corrective actions for the use of PIFs instead of procedures (Paragraph 2.f)

Opened

70-1151/2003-003-01	IFI	Review formalization of procedure requirements for team managers (Paragraph 2.d)
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4. LIST OF ACRONYMS USED

CFR	Code of Federal Regulation
EH&S	Environmental Health and Safety
IFI	Inspection Follow up Item
IP	Inspection Procedure
NCS	Nuclear Criticality Safety
NFG	Non-Favorable Geometry
NMED	Nuclear Materials Event Database
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
PIF	Process Information Form
SSC	Safety Significant Controls
UN	Uranyl Nitrate