July 7, 2010

Mr. Dominique Grandemange, Manager
AREVA NP, Inc.
Mt. Athos Road Facility
1724 Mount Athos Road
P.O. Box 11646
Lynchburg, VA 24506-1646

SUBJECT: INSPECTION REPORT NO. 70-1201/2010-202

Dear Mr. Grandemange:

The U.S. Nuclear Regulatory Commission (NRC) conducted a routine announced criticality safety inspection at the facility in Lynchburg, VA, on June 7-11, 2010. The purpose of the inspection was to determine whether activities involving licensed materials were conducted safely and in accordance with NRC requirements. An exit meeting was held on June 11, 2010. The inspection observations and findings were discussed with members of your staff.

The inspection, which is described in the enclosure, focused on the most hazardous activities and plant conditions; the most important controls relied on for safety and their analytical basis; and the principal management measures for ensuring controls are available and reliable to perform their functions relied on for safety. The inspection consisted of analytical basis review, selective review of related procedures and records, examinations of relevant nuclear criticality safety (NCS)-related equipment, interviews with NCS engineers and plant personnel, and facility walkdowns to observe plant conditions and activities related to safety basis assumptions and related NCS controls. Throughout this inspection, observations were discussed with your managers and staff.

In accordance with 10 CFR 2.390 of NRC's "Rules of Practice," a copy of this letter and the enclosure will be made publicly available in the public electronic reading room of the NRC's Agency-Wide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/ADAMS.html.

If you have any questions concerning this report, please contact Thomas Marenchin, of my staff, at (301) 492-3209.

Sincerely,

/RA/

Patricia A. Silva, Chief
Technical Support Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 70-1201
License No.: SNM-1168

Enclosure: Inspection Report 70-1201/2010-202

cc: Robert Sharkey, Manager
Environmental Health, Safety and Licensing

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cc: Robert Sharkey, Manager
Environmental Health, Safety and Licensing

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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

Docket No.:	70-1201
License No.:	SNM-1168
Report No.:	70-1201/2010-202
Licensee:	AREVA NP, Inc.
Location:	Lynchburg, VA
Inspection Date:	June 7-11, 2010
Inspector:	Thomas Marenchin, Criticality Safety Inspector
Approved by:	Patricia A. Silva, Chief Technical Support Branch Division of Fuel Cycle Safety and Safeguards Office of Nuclear Material Safety and Safeguards

Enclosure

EXECUTIVE SUMMARY

AREVA NP, Inc.
NRC Inspection Report No. 70-1201/2010-202

Introduction

Staff of the U.S. Nuclear Regulatory Commission (NRC) performed a routine and announced nuclear criticality safety (NCS) inspection of the AREVA NP, Inc. (AREVA), Lynchburg, Virginia, facility on June 7-11, 2010. The inspection focused on risk-significant fissile material processing activities involved in the manufacture of low-enriched light-water reactor fuel. The inspection included an on-site review of licensee programs dealing with new or revised NCS analyses; NCS inspections, audits, and investigations; the criticality accident alarm system; and plant operations. No violations of NRC requirements were identified during the inspection.

Results

- No safety concerns were identified regarding the licensee's criticality safety program.
- No safety concerns were identified regarding the licensee's NCS-related inspections, audits and investigations.
- No safety concerns were identified during plant walkdowns.
- No safety concerns were identified regarding the licensee's criticality accident alarm system (CAAS).

REPORT DETAILS

1.0 Summary of Plant Status

AREVA NP, Inc. (AREVA) manufactures light water reactor fuel bundles and control assemblies at its facility near Lynchburg, VA. The licensee also operates shops involved in the manufacture and refurbishing of in-core instruments. During the inspection, the licensee conducted routine fuel and in-core equipment manufacturing operations.

2.0 Nuclear Criticality Safety Program (IP 88015, 88016)

a. Inspection Scope

The inspector reviewed new and revised NCS analyses to determine whether criticality safety of risk-significant operations was adequately assured. The inspector reviewed the adequacy of NCS-related items relied on for safety (IROFS). The inspector reviewed selected aspects of the following documents:

- 32-5037974, "Fuel Rod Storage and Handling," Revision 2, dated February 26, 2010
- 32-5037975, "Pellet Loading Room/Vault Criticality Safety Analysis [CSA]," Revision 5, dated February 26, 2010
- 32-5055102, "Shipping/Receiving Bay Criticality Safety Analysis," Revision 4, dated February 26, 2010
- 32-917253, "Increase of Shipping Container Stacking Heights," Revision 0, dated August 4, 2009
- EIR 51-9119162, "Justification for Nylon Spacer Blocks for 51032-2 for SONGS LTA," Revision 0, dated September 10, 2009
- EIR [Engineering Information Record] 51-9121802, "Eyewash Station Placement Review," Revision 0, dated October 30, 2009
- EIR 51-9124826, "Shelf for Pellet Weighing Scale," Revision 0, dated October 30, 2009
- EIR 51-9134541, "Justification for Delrin Support Stand," Revision 0, dated October 30, 2009
- EIR 51-9191137, "Zirc Removal From Guide Tube with Rubber Tubing," Revision 0, dated September 1, 2009
- Procedure SL-1100, "Items Relied On For Safety Administrative Procedure for Integrated Safety Analysis [ISA]," Revision 10, dated May 22, 2010

b. Observations and Findings

The inspector reviewed NCS Approvals, NCS Evaluations, and supporting calculations for new, changed, and other selected operations. Within the selected aspects reviewed, the inspector determined that the analyses were performed by qualified NCS engineers, that independent reviews of the evaluations were completed by qualified NCS engineers, and that the analyses provided for subcriticality of the systems and operations. The inspector observed that the analyses contained appropriate limits on controlled

parameters for each credible accident sequence leading to inadvertent criticality. Nuclear criticality safety analyses and supporting calculations demonstrated adequate identification and control of NCS hazards to assure operations within subcritical limits. The inspector did not identify any safety concerns related to NCS controls in approved NCS analysis, approvals, or calculations.

c. Conclusions

No safety concerns were identified regarding the licensee's criticality safety program.

3.0 Nuclear Criticality Safety Inspections, Audits, and Investigations (IP 88015)

a. Inspection Scope

The inspector reviewed the most recent licensee internal NCS audit and the corrective actions associated with the findings in the audit. The inspector reviewed selected aspects of the following documents:

- CE09-14, "2009 Mount Athos Road Annual Nuclear Criticality Safety Audit," Revision 0, dated September 16, 2009
- "Internal Criticality Audit Resolutions," Revision 0, dated April 6, 2010

b. Observations and Findings

The inspector observed that the NCS audit conducted in the previous year covered: (1) review for open NCS issues related to inspections and audits, training, Safety Review Board requests, or operational change requests; (2) inspection of plant operations for compliance with the license, procedures, and postings; (3) a NCS program review; and (4) review of the quality of standard work instructions. The audit had several administrative recommendations but no findings related to safety of operations.

c. Conclusions

No safety concerns were identified regarding the licensee's NCS-related inspections, audits and investigations.

4.0 Criticality Accident Alarm System (IP 88017)

a. Inspection Scope

Inspector reviewed the licensee analytical basis for adequate implementation of the CAAS. The inspector reviewed selected aspects of the following documents:

- Drawing PE-1532, "Criticality Detector Locations," Revision 0, dated September 13, 1995
- Procedure SL-1520, "Calibration and Maintenance of the Criticality Alarm System," Revision 9, dated April 10, 2009

b. Observations and Findings

The inspector reviewed the licensee's criticality alarm detector placement to determine that the system remained in accordance with license requirements. The inspector observed the locations of all criticality alarm detectors during plant walkdowns.

c. Conclusions

No safety concerns were identified regarding the licensee's CAAS.

5.0 Plant Activities (IP 88015)

a. Inspection Scope

The inspector performed plant walkdowns to review activities in progress and to determine whether risk-significant fissile material operations were being conducted safely and in accordance with regulatory requirements. The inspector discussed the activities with NCS staff during the walkdowns.

b. Observations and Findings

The inspector walked down the shipping and receiving areas, the pellet storage vault, the pellet loading room, the rod loading and bundle assembly areas, and fuel bundle storage areas. The inspector determined that plant activities were conducted safely and in accordance with printed NCS postings and administrative requirements in applicable CSAs.

c. Conclusions

No safety concerns were identified during plant walkdowns.

6.0 Open Items

IFI 70-1201/2009-202-01

This item tracks the licensee's corrective actions associated with the discrepancy between IROFS in the CSAs and SL-1100. During a previous inspection, the inspector reviewed the CSAs and IROFS Administrative Procedure for ISA and the inspector identified IROFS in the CSA. The inspector reviewed the implementation of selected IROFS (PL-5 and RL-1) in the CSA that had requirements for when materials (pellets or rods) accumulate on the ground that the operators will promptly return the material to its normal condition and then notify Environmental Health, Safety and Licensing (EHS&L) of the condition. Procedure SL-1100 states for each of the IROFS that if the condition is encountered of material on the floor, that the operator will promptly notify EHS&L of the condition and EHS&L will instruct the operator of the corrective actions. The inspector questioned the operators of how they would respond to a situation in which material accumulated on the ground; the operators indicated they would respond in accordance

with the instructions setup in SL-1100. The licensee staff stated that this is how the operators have been trained to respond to the accumulation of material on the ground. The licensee's staff agreed that there was a discrepancy between the CSAs and SL-1100 on the actions of the operators for the IROFS.

During this inspection the inspector reviewed the CSAs and SL-1100 to determine if the discrepancy between them were fixed. After reviewing the CSAs and the procedure SL-1100, the inspector determined that the licensee had taken the appropriate corrective actions to fix the discrepancy between the CSAs and SL-1100. This item is closed.

7.0 Exit Meeting

The inspector presented the inspection scope and results to members of the licensee's management and staff during an exit meeting on June 11, 2010. The licensee acknowledged and understood the findings as presented.

SUPPLEMENTAL INFORMATION

1.0 List of Items Opened, Closed, and Discussed

Items Opened

None

Items Closed

IFI 70-1201/2009-202-01 Tracks the licensee's corrective actions associated with the discrepancy between IROFS in the CSAs and SL-1100.

Items Discussed

None

2.0 Inspection Procedures Used

IP 88015	Headquarters Nuclear Criticality Safety Program
IP 88016	Nuclear Criticality Safety Evaluations and Analyses
IP 88017	Criticality Accident Alarms

3.0 Key Points of Contact

AREVA NP, Inc.

T. Blanks	Manager, Transportation, Security & Environmental Management
D. Grandemange	AREVA, MAR Site Manager
R. Sharkey	AREVA, Manager, Environmental Health and Safety

NRC

T. Marenchin	Criticality Safety Inspector

All attended the exit meeting on June 11, 2010.

Attachment

4.0 List of Acronyms and Abbreviations

ADAMS	Agency-Wide Document Access and Management System
AREVA	AREVA NP, Inc. (Licensee)
CAAS	criticality accident alarm system
CSA	Criticality Safety Analysis
EIR	Engineering Information Record
IFI	inspector follow-up item
IP	inspection procedure
IROFS	item relied on for safety
ISA	Integrated Safety Analysis
MAR	Mount Athos Road
NCS	nuclear criticality safety