



September 28, 2009
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U.S. Nuclear Regulatory Commission
Director, Office of Nuclear Material
Safety and Safeguards
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Thirty-day Follow-up Report to August 29, 2009 Incident Reported Under 10 CFR 70.50 (b)(2) (NRC Event No. 45310); AREVA NP Inc. Richland Facility; License No. SNM-1227; Docket No. 70-1257

On August 29, 2009, the AREVA NP Inc. Richland facility reported that during a biannual test of the Criticality Accident Alarm System (CAAS), a portion of the system did not automatically activate the site evacuation alarm as designed.

The initial report (NRC Event No.45310) was made because the plant condition met the reporting criterion in 10 CFR 70.50 (b)(2).

This 30-day follow-up report is being submitted in accordance with 10 CFR 70.50(c)(2).

Caller Identification

This condition was reported to the NRC Operations Center by Konrad P. Kulesza, AREVA Criticality Safety Analyst, on August 29, 2009 at 1339 EDST (509 375-8140).

Date, Time, and Exact Location of Incident

The reportable condition was determined to exist on August 29, 2009 at approximately 0615 hours local time. This condition involved two of three detectors of the CAAS located in Room 189 of the UO2 Building.

Incident Description

On August 29, 2009 at about 0615 local time during a scheduled testing of the CAAS, AREVA maintenance personnel discovered that in one of the nine detector locations, two of three nuclear criticality detectors (NCDs) in the CAAS would not send an alarm signal to the associated comparator panel. The CAAS system is designed such that when the comparator panel detects that any two of the NCDs wired to the panel are in an alarm state, a site evacuation alarm is automatically activated. A wiring error on two separate communication cables (one on each of two NCDs) that had been replaced in May 2009 resulted in no alarm signal being sent to the comparator panel.

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AREVA NP INC.

An AREVA and Siemens company

Safety Significance of the Incident

The safety impact of this condition is minor. The facility criticality safety controls ensure that accidental nuclear criticality is highly unlikely.

The impact of the incorrect wiring is that two of the three NCDs located in room 189 would not have sent alarm signals to the comparator panel and the central guard station. To activate the automatic site-wide evacuation alarm, at least two of the detectors in a comparator panel must go into the alarm state. However, if only one NCD goes into the alarm state, an alarm still activates in the continuously manned central guard station. Per existing procedures the central guard station contacts Health and Safety Technicians (HSTs) and other appropriate response personnel to investigate the cause of the alarm. If elevated radiation levels are observed, a manual activation of the CAAS can be made.

The impact to the CAAS coverage is also relatively small. After careful review, only a small portion of the site south of the UO2 building and north of the acid oxidizer building may not have been covered during this interval in time.

Incident Response Actions

A number of actions were taken in direct response to this incident, as follows:

- Replaced the incorrectly wired communication cables.
- Verified that all the NCDs in the CAAS system were operating correctly and communicating properly with the associated comparator panels and central guard station such that a site wide evacuation would automatically sound as designed.
- Made appropriate internal and regulatory notifications.
- Initiated an apparent cause analysis (ACA).

Interim and Near-Term Corrective Actions

Interim and/or near-term corrective actions that have been taken or are in progress include:

- Update the procedures for functional testing the CAAS system after replacing an NCD or communication cable to require a stimulus to response test.
- Review the preventative maintenance and calibration procedures associated with the CAAS system to ensure appropriate importance flagging is applied and that flow down of regulatory requirements are correctly done.

Incident Cause

The ACA identified a single Root Cause. The Nuclear Criticality Detector (NCD) signal cables that had been replaced in May 2009 were wired incorrectly. The reason they were wired incorrectly is that both Amphenol-type connectors had been wired in the same direction where as they should have been wired clockwise on one end and counter clockwise on the other. The electrician was aware that the pin letter call out should be maintained from one end to the other but the letter orientation was difficult to see based on the small size of the connectors themselves. The reason that the error was not detected prior to placing the detector units into service is that the retest procedure did not include steps to verify that the detectors were

communicating with the other portions of the CAAS e.g. comparator panels. The verification step only included a check that the local NCDs were functioning.

Corrective Actions to Prevent Recurrence

The corrective actions recommended by the ACA are:

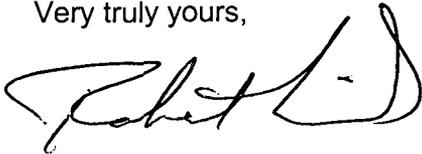
- Test NCD replacement cables using the maintenance NCD calibration/test unit prior to installing them in the field.
- Conduct refresher training with engineers and craftsmen on human performance tools (e.g. questioning the completeness of PM's).

The interim corrective actions and the corrective actions recommended by the ACA team listed above to prevent recurrence are expected to be completed by November 30, 2009.

AREVA management continues to evaluate additional actions to address potential generic implications of this plant condition.

If you have questions about this incident or AREVA NP's associated response, please contact me on 509-375-8409.

Very truly yours,



R. E. Link, Manager
Environmental, Health, Safety, & Licensing

/mah

cc: U.S. NRC, Region II
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