



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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March 22, 2001

David Lochbaum
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Union of Concerned Scientists
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SUBJECT: SPENT FUEL INSTRUMENTATION AT PALO VERDE NUCLEAR
GENERATING STATION, UNIT 3

Dear Mr. Lochbaum:

We received your February 16, 2001, letter regarding spent fuel pool instrumentation in use at Palo Verde Nuclear Generating Station (PVNGS), Unit 3. As you mentioned, NRC Inspection Report 50-528/00-11; 50-529/00-11; 50-530/00-11 discussed a December 8, 2000, spill from the Unit 3 spent fuel pool into the fuel building. The report documented that the spent fuel pool high-level alarm did not function during this event and your letter had followup questions regarding this alarm. Your questions and our answers are listed below.

1. Why did the spent fuel pool high-level alarm not function?

This could not be determined. The licensee's internal review was unable to determine the cause of why the spent fuel pool high-level alarm did not function. During troubleshooting efforts the level switch functioned as designed and was found in proper calibration. The licensee also found that the spent fuel pool high-level alarm functioned properly when the switch was manually actuated. The NRC did not identify any shortcomings with the licensee's review; therefore, we accept that the cause could not be determined.

2. Had the spent fuel pool high-level alarm functioned, would the overflow event have been terminated prior to water spilling into the fuel building?

Probably not. Based on operator interviews, the control room supervisor detected a decreasing refueling water tank level and initiated measures to stop the event at approximately the same time frame as the spent fuel pool high-level alarm should have functioned. After recognition of the problem, the actions necessary to secure the valve took approximately 9 minutes. Therefore, the impacts may have been less, depending on the exact time of the alarm, but it appears that the overflow would not have been precluded by a properly functioning high level alarm.

3. What was the total radiation dose to workers involved in cleaning up the spilled water?

The licensee estimated that the total radiation dose to the workers involved in cleaning up the spilled water was less than 1 mREM. The dose for this task was not tracked separately, but was inferred from the following information.

The cumulative exposure attributed to Unit 3 REP 9-1008A, "RP Decon Team Routine Tasks," from December 8-12, 2000, was 0 (zero) mREM Deep Dose Equivalent (DDE) and 0 (zero) mREM Total Effective Dose Equivalent (TEDE). The workers involved in cleaning up the spilled water used REP 9-1008A.

The cumulative exposure attributed to Unit 3 REP 9-1001A, "Radiation Protection Tours, Inspections and Surveys," from December 8-12, 2000, was 31 mREM. The workers that performed the surveys associated with cleaning up the spilled water used REP 9-1001A. However, based on a review of the dose rate profile of the Fuel Building, the licensee concluded that it is unlikely that any of the 31 mREM should be attributed to the Fuel Building decontamination effort.

4. Is the spent fuel pool high-level alarm classified as safety related?

No.

5. How often is the spent fuel pool high-level alarm functionally tested by procedure?

The licensee does not functionally test the level switch by raising spent fuel pool level until the alarm activates. However, every 2 years the licensee disassembles and inspects the level switch and verifies proper operation and calibration of the spent fuel pool high-level alarm via procedure. Prior to the event, this procedure was last performed on January 13, 1999.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Record (PARS) component of the 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).

Thank you for your interest in this issue. If you have any additional questions, please contact me at 817-860-8137 or my supervisor, Ken Brockman, at 817-860-8248.

Sincerely,

/RA/

Linda Joy Smith, Chief
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