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FPLEnergy.

Duane Arnold Energy Center

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NG-06-0384
10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Duane Arnold Energy Center
Docket No: 50-331
Op. License No: DPR-49

Additional Information Regarding Inservice Testing Program Relief Request VR-01

References: 1. Letter dated March 2, 2006, Request for Additional Information related to Three Relief Requests associated with the Inservice Testing Program Fourth 10-Year Interval (TAC NOS. MC8713, MC8784 and MC8785)

2. NG-06-0355, dated May 8, 2006, Fourth Ten-Year Interval Inservice Testing Program Relief Requests

By letter dated March 2, 2006 (Reference 1), the NRC issued a request for additional information (RAI) related to three proposed Duane Arnold Energy Center inservice testing relief requests, PR-01, PR-02 and VR-01. By letter dated May 8, 2006 (Reference 2), FPL Energy Duane Arnold provided additional information, and committed to provide further information concerning one of the questions about VR-01.

Request VR-01 proposes an alternative for testing of excess flow check valves (EFCVs). One of the questions in the RAI concerned the potential consequences if multiple instrument lines containing EFCVs were damaged by postulated high-energy line breaks (HELBs) outside containment. The response to that question identified one HELB area (the steam tunnel) that contains six instrument lines with EFCVs, and stated that additional information regarding those six instrument lines would be provided.

The additional information is contained in the enclosure to this letter.

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Should you have any questions regarding this matter, please contact Steve Catron, Duane Arnold Energy Center Licensing Manager, at (319) 851-7234.

This letter contains no new commitments or revisions to existing commitments.

Gary Van Middlesworth
Vice President, Duane Arnold Energy Center
FPL Energy Duane Arnold, LLC

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, DAEC, USNRC
Senior Resident Inspector, DAEC, USNRC

Additional Information Regarding Inservice Testing Relief Request VR-01

NRC Question 2 Regarding Relief Request VR-01

Attachment B to NEDO-32977-A includes the radiological analysis of the consequences of an unisolable instrument line break. The consequences of several EFCVs sticking open following potential damage to multiple instrument lines caused by postulated high-energy line breaks outside containment have not been evaluated in the relief request. Please discuss the consequences of such postulated failures on multiple instrument lines that depend upon closure of excess flow check valves for isolation.

Please discuss the consequences of a common mode failure of several valves to close caused by sticking, in the event of a postulated high-energy line break outside containment. Please clarify if postulated high-energy line breaks outside containment do not impact these instrument lines.

FPL Energy Duane Arnold Response to Question 2 Regarding Relief Request VR-01

The analysis for high energy line breaks (HELBs) outside of containment considered the main steam, feedwater, high pressure coolant injection (HPCI) steam, reactor core isolation cooling (RCIC) steam, reactor water cleanup (RWCU) and high-energy sampling and instrument sensing lines. HELB areas outside containment are the steam tunnel, turbine building, HPCI room, RCIC room, and RWCU heat exchanger room. A review of these areas identified only six instrument lines containing excess flow check valves. These six lines are in the steam tunnel.

The six excess flow check valves (EFCVs) located in the steam tunnel are XFV4456A, XFV4456B, XFV4457A, XFV4453A, XFV4453B and XFV4458B. The instrument lines enter the steam tunnel from the drywell through penetration X-30, run through the steam tunnel for a distance of about 6 feet, and exit the steam tunnel through the North wall, ultimately terminating at Main Steam Instrument Rack 1C126A in the reactor building.

As discussed in the Duane Arnold Energy Center (DAEC) Updated Final Safety Analysis Report (UFSAR), Section 3.6.1.3.1, the steam tunnel area contains the main steam and feedwater lines between the turbine building and the primary containment. The outboard main steam isolation valves are located in this area as well as the initial portion of the HPCI and RCIC steam supply lines and a portion of the RWCU return line. A review of these lines identified that one postulated break – in the RCIC steam line - could potentially impact the instrument lines and required further investigation. (Pipe whip restraints are placed in the steam tunnel around the main steam piping; other lines are not near enough the six instrument lines to warrant further review).

Based on Generic Letter (GL) 87-11, "Relaxation in Arbitrary Intermediate Pipe Rupture Requirements," arbitrary intermediate pipe breaks are not postulated for the RCIC line; breaks are postulated only at the terminal ends. Thus, the break is assumed at valve MO2401, the RCIC steam supply outboard isolation valve. (See UFSAR Figure 3.6-9). The outboard end of MO2401 is less than 3 feet from the anchor point of the triple-flued head drywell penetration, and at least 7 feet above the instrument lines. Thus there is no potential for physical interaction with the instrument lines. In addition, the break is oriented such that the steam jet would flow from the break away from the instrument lines.

Conclusion

Instrument lines containing EFCVs would not be impacted by postulated high-energy line breaks outside containment.