



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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April 27, 2000

EA 00-023

Charles M. Dugger, Vice President
Operations - Waterford 3
Entergy Operations, Inc.
17265 River Road
Killona, Louisiana 70066-0751

SUBJECT: NRC SPECIAL INSPECTION REPORT 50-382/99-25 & PREDECISIONAL
ENFORCEMENT CONFERENCE

Dear Mr. Dugger:

This refers to the NRC inspection report issued February 14, 2000, and the predecisional enforcement conference conducted in the NRC's Region IV office in Arlington, Texas, on March 20, 2000. The conference was conducted to discuss two apparent violations of NRC requirements related to the reactor coolant system draindown event which occurred on November 27, 2000, at the Waterford Steam Electric Station, Unit 3. This event was described in detail in the inspection report and in Entergy Operations Inc.'s (Entergy) licensee event report 99-018 submitted to the NRC on December 22, 1999.

The specific violations involved a failure to return a valve in the low pressure safety injection system to its correct position (due to a failed reach-rod assembly) after using it to recirculate water in the refueling water storage pool; this in turn resulted in a single train of the low pressure safety injection system being inoperable for a period of approximately 8 days with the plant at power. The mispositioned valve also resulted in the reactor coolant system draindown event when operators were attempting to initiate shutdown cooling during a plant shutdown for maintenance on a steam line. Unaware of the position of valve SI-417B, operators opened valve SI-407B, creating a direct path from the reactor coolant system to the refueling water storage pool and causing a rapid reduction in pressurizer inventory (approximately 5,000 gallons) before valve SI-407B was closed.

At the conference, your initial position was that only one of the two violations had occurred. After some discussion, you agreed that both violations occurred, but that the safety significance of the violations was low. Your assessment of the risk significance of operating at power for approximately 8 days with one train of the low pressure safety injection system inoperable (due to some LPSI flow diverted through the mispositioned valve) noted that the probability of a large-break loss of coolant accident coincident with the loss of the operable low pressure safety injection train was low (5.5 E-8). With regard to the significance of the draindown event, you noted that prompt operator action halted the draindown in about 1 minute, and that core cooling was maintained throughout the event. You also noted that there were a number of success paths available to operators such that the probability of failing to stop the draindown coincident with an inability to inject water into the reactor core was low (approximately 4.4 E-7). The NRC

made it clear at the conference that the more significant of the two violations -- from a safety and risk perspective -- was the procedural violation that resulted in the mispositioned valve and the draindown event, not the fact that Train B of the low pressure safety injection was inoperable for 8 days at power.

The NRC has thoroughly reviewed the information that you provided during the conference and has independently performed risk analyses associated with the violations. The NRC is in general agreement with your safety and risk assessment and, consistent with Section IV of the General Statement of Policy and Procedure for NRC Enforcement Actions (Enforcement Policy), NUREG-1600, has determined that the violations should be classified at Severity Level IV. This is based on our evaluation of the actual and potential safety consequences associated with these violations.

The NRC remains concerned about the event itself and the circumstances that led to the mispositioning of SI-417B. While we acknowledge that the event resulted in no actual safety consequences and that the potential consequences were of low probability, prompt operator action was necessary to preclude this event from degrading into one that may have resulted in more serious consequences. Even with prompt operator action, approximately 5,000 gallons of reactor coolant were diverted from the primary coolant system to the refueling water storage pool, in effect circumventing two of the three primary fission-product boundaries (i.e., the containment and reactor coolant system boundaries) and reducing the margin to reaching saturation pressure in the reactor coolant system, which would have complicated recovery actions had it occurred. We also note that this event could have been precluded had more appropriate procedures been in place regarding verifying the proper functioning of, and position of, reach-rod operated valves, and had you taken more effective corrective action in response to a previous broken reach-rod assembly (CR-94-983).

At the conference, you described a number of corrective actions taken in response to the mispositioned valve and draindown event. In addition to immediate actions by your operators to terminate the event and bring the plant to a stable condition, your actions included: evaluating the integrity of plant systems and reactor fuel; revising procedures for verifying the position of reach-rod operated valves; inspecting and repairing reach-rod assemblies on accessible safety-related valves; revising preventive maintenance on reach-rod operated valves; and issuing an operational experience notice to the industry.

Because the violations are related, and are being tracked in your corrective action program under CR-WF3-1999-1210 and CR-WF3-1999-1211, these Severity Level IV violations are being treated as a single Non-Cited Violation (NCV), consistent with Section VII.B.1.a of the Enforcement Policy. The specific violations resulting in this NCV are described in the subject inspection report. If you contest either the violations or the severity level assigned to them, you should provide a response within 30 days of the date of this letter to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to me; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Waterford-3.

Entergy Operations, Inc.

-3-

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and any response you choose to submit will be placed in the NRC Public Document Room.

Sincerely,

/RA/

Ellis W. Merschoff
Regional Administrator

Docket No. 50-382
License No. NPF-38

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