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Waterford 3

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June 3, 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
NRC Inspection Report 94-03
Reply to Notice of Violations

Gentlemen:

In accordance with 10CFR2.201, Entergy Operations, Inc. hereby submits in Attachment 1 the response to the violations identified in Appendix A of the subject Inspection Report.

If you have any questions concerning this response, please contact R.W. Prados at (504) 739-6632.

Very truly yours,

R.F. Burski
Director
Nuclear Safety

RFB/RWP/ssf
Attachment

cc: L.J. Callan (NRC Region IV), D.L. Wigginton (NRC-NRR),
R.B. McGehee, N.S. Reynolds, NRC Resident Inspectors Office

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ATTACHMENT 1

ENERGY OPERATIONS, INC. RESPONSE TO THE VIOLATIONS IDENTIFIED IN
APPENDIX A OF INSPECTION REPORT 94-03

VIOLATION NO. 9403-01

Technical Specification 6.8.1 requires, in part, that written procedures be established, implemented, and maintained covering refueling operations.

Administrative Procedure UNT-008-030, "Control and Accountability of Special Nuclear Material," Revision 9, required licensee inspectors who were to perform fuel receipt inspections to be certified only after satisfactory completion of the Reactor Engineering and Performance (RE&P) training program. Licensee assurance of fuel receipt inspector certification was required prior to assignment and scheduling of those inspectors to perform fuel receipt inspections.

Administrative Procedure UNT-007-006, "Housekeeping," Revision 6, was established to implement the housekeeping program.

Contrary to the above:

1. On January 28, 1994, a licensee inspector who had not received the required RE&P training, who was not certified, and who had not been placed on the fuel receipt inspection schedule, performed inspections of Fuel Bundle Serial Nos. LAJ-206, LAJ-207, LAJ-219, LAJ-220, and LAJ-223.
2. Licensee assurance of fuel receipt inspectors training and certification prior to the assignment and scheduling of a licensee inspector to perform inspections was not obtained. This was evidenced on February 5, 1994, by the assignment and scheduling of a licensee inspector, who had not received the required RE&P training and certification, to a revised fuel receipt inspection schedule. (It was determined that even though the licensee inspector had been inappropriately placed on the revised schedule, the licensee inspector had not performed any fuel receipt inspections.)

3. Procedure UNT-007-006 was inadequate to preclude the introduction of foreign material into the spent fuel pool area. The procedure did not provide sufficient specificity with respect to responsibilities, performance and frequency of housekeeping inspections, foreign material examples, and program implementation. This was evidenced by March 16, March 17, and April 6, 1994, inspector observations of unattended foreign material in the area that had the potential to cause detrimental effects if allowed to enter the spent fuel pool.

This is a Severity Level IV violation (Supplement 1)(382/9403-01)

RESPONSE

(1) Reason For The Violation

Entergy Operations, Inc., admits to this violation. It is believed that the root cause for Examples 1, 2 and 3 of the violation is failure to follow procedures and inattention to detail. A contributing cause was a lack of specificity regarding responsibilities and requirements in the procedures governing fuel receipt inspection and housekeeping.

Examples 1 and 2

On January 28, 1994, a fuel receipt inspector, who was an ANSI N45.2.6 Level II Inspector certified in Receipt Inspections, performed a fuel receipt inspection. The individual had not been provided the "specific" seminar conducted for inspectors involved in the fuel receiving process and was not placed on the fuel receipt inspection schedule. However, he did attend a training session given by Operations pertaining to nuclear fuels receipt. The Operations training session, while not the required seminar per procedures, did contain many of the same elements covered in the required seminar. At the time the individual performed the inspections, it was the belief that the training conducted by Operations was the required course. Allowing this individual to perform the inspection without meeting the qualification requirements or without being listed on the fuel receipt inspection schedule was not in accordance with procedures for assigning inspectors receipt inspection. In addition, the group responsible to ensure that fuel receipt is carried out in accordance with established procedures, failed to recognize that procedural noncompliance had occurred. A repeat of the same scenario occurred on February 5, 1994, except in this case an individual was placed on the schedule but did not perform any inspections.

Regarding the procedural problems associated with Examples 1 and 2 of the violation, it is believed that the procedures governing fuel receipt inspection, QAP-016 (Inspector Qualification/Certification), RF-002-001 (Fuel Receipt), and UNT-008-030 (Control and Accountability of Special Nuclear Material), do not effectively compliment each other to ensure that training and scheduling requirements are met. It was determined that the subject inspectors were adequately trained to perform the fuel receipt inspection functions but due to confusion over procedural requirements, the training, certification and scheduling were not administered in accordance with procedures.

Example 3

After the observations on March 16 and 17, 1994, of foreign material in the Spent Fuel Pool (SFP) area, increased emphasis was placed on control of these materials. Management expectations were communicated to plant personnel, inspections of the area by management personnel were initiated, and the responsibility for foreign material control in the SFP area was assigned to the Reactor Engineering and Performance Group. In spite of the increased emphasis, foreign materials were again observed on April 6, 1994. This last incident is attributed to inattention to detail by personnel performing work in the SFP area.

Regarding the procedural problems associated with Example 3 of the violation, it is believed procedure UNT-007-006, Housekeeping, does not provide adequate details with regard to foreign material exclusion in and around the SFP. Posted boundaries defining the controlled area are potentially confusing and are not identified in the procedure. Insufficient information is provided to define what constitutes foreign material and the why it is important to control it in the SFP area. Responsibilities for establishing and maintaining control of material and personnel entering and exiting the controlled area are not identified. Requirements for monitoring program effectiveness (responsible group and frequency of inspections) are not established to minimize the potential for problems which could be caused by foreign material.

(2) Corrective Steps That Have Been Taken And The Results Achieved

Examples 1 and 2

It was determined that the fuel receipt inspectors had adequate training to perform the inspections but had not been qualified in accordance with the procedures. As a result of meetings among the responsible parties to discuss this event and increase sensitivity to

prevent recurrence, program deficiencies were identified and are being corrected as discussed in item 3 below.

Example 3

After evidence of foreign material exclusion problems in the SFP area were identified during Refueling Outage 6 (RF06), increased emphasis was placed on control of these materials and management expectations were communicated through supervisors to plant personnel. Inspections of the area were conducted by several management personnel on a regular basis during the remaining SFP activities in RF06.

The foreign material exclusion boundary was moved to coincide with the handrails around the SFP and a plexiglas barrier was installed at the boundary to better identify it and to prevent easy ingress of foreign material into the area. A single point of entry into the area was established with a gate which could be locked if desired. The Health Physics dress/undress area with clothes baskets and step-off pad is now outside of the controlled area near the gate. Existing signs (designating the area as a Level II Housekeeping area and delineating entry/exit requirements) were positioned strategically along the boundary. The item control log was stationed near the entry gate to help ensure that personnel would remember to log items being brought into or out of the controlled area.

The Reactor Engineering and Performance Group has been assigned responsibility for foreign material control in the SFP area. Periodic walkdowns of the area have been established since RF06. As expected, activities in the SFP area have been significantly reduced since the end of RF06. Current walkdown frequency is at least once each week. Results have been satisfactory.

(3) Corrective Steps Which Will Be Taken To Avoid Further Violations

Examples 1 and 2

Those individuals responsible for the procedural noncompliances identified above will be counseled on the importance of verbatim procedural compliance.

UNT-008-030 will be revised to ensure that the Reactor Engineering & Performance (RE&P) group is identified as the group with overall responsibility for the fuel receipt process.

QAP-016, RF-002-001, and UNT-008-030 are being revised to transfer the related fuel receipt inspection training and scheduling responsibilities to the Materials Management Department. The associated requirements will be addressed in Material Management procedure SSP-713 (Material Receipt Inspection) as follows:

Nuclear fuel receipt inspections will only be conducted by Level II Receipt Inspectors that have been trained in nuclear fuel receipt inspections. This training will be conducted by an experienced Level II Receipt Inspector, and will be completed prior to the first fuel shipment of each cycle.

At the completion of the training, personnel present will make appropriate entries on an attendance roster. The original attendance roster will be forwarded to the Training Department and one copy forwarded to the Quality Assurance Department. Inspectors will not conduct nuclear fuel receipt inspections until they have successfully completed the training.

Prior to the scheduled receipt of nuclear fuel, and after completion of the required training, the supervisor in charge of receipt inspection will publish a list of individuals that will be scheduled to participate in fuel receipts during that cycle. No inspector will be scheduled unless the individual has completed the fuel receipt inspection training.

A copy of this list will be forwarded to the Quality Assurance Department and other personnel as needed. If required, the lists will be published and forwarded as outlined above.

The Quality Assurance Department will remain responsible for certifying Level II Receipt Inspectors and will provide training and inspection support upon request.

Example 3

The Reactor Engineering and Performance Group is now responsible for the control of foreign material in the SFP area. This group will develop a new plant procedure to specifically address foreign material exclusion in and around the SFP. Deficiencies in UNT-007-006 as enumerated in Item (1) above will be corrected and station policy regarding control of the area will be clearly established. Interfaces with related plant procedures, including UNT-007-006, will be adjusted appropriately. Additional adjustments to the physical plant, as required, will be made. Upon procedure approval, appropriate plant personnel will receive training on the requirements established in the new procedure.

(4) Date When Full Compliance Will Be Achieved

Full compliance with the corrective steps associated with this violation will be achieved by August 31, 1994.

VIOLATION NO. 9403-02

Criterion III of Appendix B to 10 CFR Part 50 requires, in part, that measures shall be established to assure that applicable regulatory requirements and design basis for certain structures, systems, and components are correctly translated into specifications, drawings, procedures, and instructions. Criterion 10 of Appendix A to 10 CFR Part 50, Reactor Design, requires that the reactor core shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. For Cycles 4 and 5 core design and operation, the NRC-approved specified acceptable fuel design limits for the Waterford Steam Electric Station, Unit 3, were given (by reload safety analysis report reference) in the Combustion Engineering Generic Topical Report CENPD-269-P-A, Rev. 1-P-A, "Extended Burnup Operation of Combustion Engineering PWR Fuel,". As given in CENPD-269-P-A, the specified acceptable fuel design limits were evaluated and approved by the NRC staff to a maximum rod average burnup of 52 GWD/T.

Contrary to the above, the measures established for assuring the design basis were inadequate, in that the NRC-approved burnup for the specified acceptable fuel design limits was exceeded in both cycles 4 and 5 reactor core designs, as well as in their operational cycles. Specifically, the Cycle 4 reload safety analysis report (dated September 18, 1989), projected a maximum rod average burnup of 55.0 GWD/T, and the actual accrued end-of-cycle maximum rod average burnup was between 52 and 53 GWD/T. In addition, the Cycle 5 reload safety analysis report (dated December 31, 1990), projected a maximum rod average burnup of 56.3 GWD/T, and the actual accrued end-of-cycle maximum rod average burnup was 55.7 GWD/T.

This is a Severity Level IV violation (Supplement 1) (382/9403-02).

RESPONSE

(1) Reason For The Violation

The root cause of this violation is a mis-communication between Waterford 3 and NRC. As stated, Waterford 3 recognized that a small number of pins might exceed 52 GWD/T burnup for both Cycles 4 and 5. These higher burnups are explicitly accounted for in the mechanical design and safety analyses so that no specified acceptable fuel design limits are exceeded. However, discussions were initiated with NRC to determine the need for NRC approval to exceed this burnup limit. Misunderstanding of the issues led to the conclusion that NRC approval had already been given and did not need to be repeated.

(2) Corrective Steps That Have Been Taken And The Results Achieved

On June 22, 1992, the NRC approved Combustion Engineering Generic Topical Report CEN-386-P, which justifies fuel burnup up to 60 GWD/T. This encompasses Waterford 3 fuel and provides NRC approval for this higher burnup at Waterford 3.

(3) Corrective Steps Which Will Be Taken To Avoid Further Violations

If future burnups are projected to exceed 60 GWD/T and generically approved topicals encompassing the projected higher burnups do not exist, then Waterford 3 specific license amendments will be submitted to the NRC regarding approval of the new higher burnups.

(4) Date When Full Compliance Will Be Achieved

Full compliance has been achieved as discussed in the above Item 2.

VIOLATION NO. 9403-03

Criterion V of Appendix B to 10 CFR 50 requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

Contrary to the above, during the period February 28, through March 4, 1994, NRC inspectors identified that:

1. Controls over the spent fuel handling machine activities were not prescribed by documented instructions or procedures. This lack of control was exemplified by the licensee's inability to ascertain who had manipulated the spent fuel handling machine when an unauthorized movement of stored fuel was identified to have occurred.
2. Peer review, supervisory review, or independent verification activities to ensure that spent or stored fuel was secured and stored safely following fuel handling activities were not prescribed by documented instructions or procedures.

This is a Severity Level IV violation (Supplement 1) (382/9403-03).

RESPONSE

(1) Reason For The Violation

Entergy Operations, Inc. admits to both Examples 1 and 2 of this violation and believes that the root cause was inadequate barriers and administrative controls for the Spent Fuel Handling Machine (SFHM), which did not prevent the unauthorized operation of the SFHM hoist. A contributing cause is the capability of the SFHM fuel handling tool to snare the encapsulation tube end cap, which did occur resulting in the lifting of the encapsulation tube from its storage slot when the SFHM hoist was raised.

(2) Corrective Steps That Have Been Taken And The Results Achieved

After the event, which was identified by the designated night shift Refueling Director, interim measures were successfully taken to enhance the administrative barriers and controls associated with the SFHM. Upon completion of authorized operation of the SFHM, Operations personnel deenergized the power supply to the computer that controls operation of the SFHM. The cabinet where the power supply is located is then locked. Without the availability of the

computer, the operation of the SFHM requires the use of the computer override, which is also key-controlled. Both keys, the computer power supply cabinet key and the computer override key, are now controlled by the SS/CRS to limit access to the SFHM.

(3) Corrective Steps Which Will Be Taken To Avoid Further Violations

The following formal corrective steps will be taken to enhance the barriers, the administrative controls and supervisory review effort associated with spent fuel storage and fuel handling equipment:

Procedure RF-005-002, Refueling Equipment Operation, will be revised to ensure that the SFHM is parked in a specified location, to ensure that power to the SFHM computer is turned off, to ensure that the power supply cabinet for the SFHM computer is locked, and to ensure that the computer power supply cabinet key and the computer override key are both removed and controlled by the SS/CRS. Each of these steps will be signed off by the operator and a sign off review block will be added for the SS/CRS. This will avoid unauthorized use of the SFHM and provide enhanced supervisory review associated with spent fuel storage and the fuel handling equipment.

Procedure OP-100-008, Key Control, will be changed to add the SFHM computer power supply cabinet key and the computer override key to the list of controlled keys. This will give an additional level of administrative control of the SFHM to the SS/CRS.

Procedure RF-005-002, Refueling Equipment Operation, will also be revised to instruct the operator to remove the fuel handling tool from the SFHM when refueling operations are complete. This will avoid the inadvertent snaring of an encapsulation tube in the unlikely event that the SFHM should be moved manually.

(4) Date When Full Compliance Will Be Achieved

Full compliance with this violation will be achieved by August 31, 1994.