UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

FEB 16 1994

Dockets: 50-313
50-368
Licenses: DPR-51
NPF-6
EA 93-278

Entergy Operations, Inc.
ATTN: J. W. Yelverton, Vice President
Operations, Arkansas Nuclear One
Route 3, Box 137G
Russellville, Arkansas 72801

SUBJECT: NRC INSPECTION REPORT 50-313/93-31; 50-368/93-31

Thank you for your letter of January 11, 1994, in response to our letter and Notice of Violation dated December 14, 1993. We have reviewed your reply and find it responsive to the concerns raised in our Notice of Violation. We will review the implementation of your corrective actions during a future inspection to determine that full compliance has been achieved and will be maintained.

Sincerely,

A. Bill Beach, Director
Division of Reactor Projects

cc:
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E-Mail report to D. Sullivan (DJS)

bcc to DMB (IE01)

bcc distrib. by RIV:
L. J. Callan
Branch Chief (DRP/D)
MIS System
RIV File
Project Engineer (DRP/D)
W. L. Brown, RC
Resident Inspector
Lisa Shea, RM/ALF, MS: MNBB 4503
DRSS-FIPB
Branch Chief (DRP\TSS)
G. G. Sanborn, EO
J. Lieberman, OE, MS: 7-H-5

RIV:C:DRP/D	D:DRP			
TFStetka:aw	ABBeach			
2/15/94	2/16/94			

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RIV:C:DRP/D	D:DRP			
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ENTERGY

12 JAN 1994

Entergy Operations, Inc.
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Jerry W. Yelverton
Vice President
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January 11, 1994

0CAN019401

U. S. Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, DC 20555

Subject: Arkansas Nuclear One - Units 1 and 2
Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
Response to Inspection Report
50/313/93-31 and 50/368/93-31

Gentlemen:

Pursuant to the provisions of 10CFR2.201, attached is the response to the violation identified during the inspection of activities associated with the design, installation and maintenance of reactor building sump screens. Additional information concerning the violation is contained in Licensee Event Reports 50-313/93-005-01 and 50-368/93-002-00 transmitted via letters 1CAN129302 and 2CAN119305.

Should you have any questions or comments, please call Mr. Rick King at 501-964-8612.

Very truly yours,

JWY/TFS/jmt

Attachments

To the best of my knowledge and belief, the statements contained in this submittal are true.

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for Pope **County and the State of Arkansas, this** 11th **day of January, 1994.**

Kathy C. Rogers

Notary Public
My Commission Expires 7/15/95

9401210082

cc: Mr. Leonard J. Callan
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NOTICE OF VIOLATION

During an NRC inspection conducted October 21-25, 1993, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions, "10CFR Part 2, Appendix C, the violations are listed below:

10 CFR Part 50, Appendix B, Criterion III, states, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Unit 1 Safety Analysis Report Section 9.5.2.2 and the Unit's design basis Upper Level Document ULD-1-SYS-04, which specify the design basis for the reactor building sump, state in part that the sump is covered with a screen of 0.132 inch by 0.132 inch mesh. These documents also state that all of the components in the decay heat removal system, which are used when the system is in the recirculation mode, are capable of operating in the presence of any debris which may pass through this screen without plugging.

Unit 2 Safety Analysis Report Section 6.2.2.2 and the Unit's design basis Upper Level Document ULD-2-SYS-04, which specify the design basis for the reactor building sump, state in part that a series of screens and supports completely covers the sump to prevent floating debris and high density particles from entering, and that the inner screen has a maximum diagonal opening of 0.09 inch.

Contrary to the above, as of October 1, 1993, the licensee did not assure that the design basis was correctly translated into specifications, drawings, procedures and instructions. Specifically:

On October 1, 1993, 22 openings (6 inches in diameter by 3 inches high) in the curb around the Unit 1 reactor building sump were identified which were not screened and which would have allowed the passage of debris larger than 0.132 inches by 0.132 inches into the reactor building sump.

On October 1, 1993, several openings around conduit penetrations through the Unit 1 reactor building sump screens, two tears in the screening material, and floor drains that were not screened were identified which [illegible] have allowed the passage of debris larger than 0.132 inches by 0.13[illegible] reactor building sump.

On October 22, 1993, several penetrations were identified along the lower structural support of the Unit 2 reactor building sump which bypassed the screens and provided a pathway for debris larger than 0.09 inch by 0.09 inch to be swept into the sump.

These violations represent a Severity Level III problem (Supplement I) (313/9331-01; 368/9331-01).

Response to violation 313/9331-01; 368/9331-01

(1) Reason for the violation:

As stated in the Notice of Violation, plant personnel found multiple unscreened openings into the reactor building sumps of both units and openings in existing screens of Unit 1 that could have permitted debris to bypass the screens and enter the sumps. The curb drain openings on both units and openings around conduit penetrations on Unit 1 existed since initial plant construction due to a failure to assure that design basis requirements were implemented at that time.

Damage to the Unit 1 screen in the form of tears is believed to have occurred due to maintenance or modification activities in the area of the sump. The specific activities causing the damage or the time duration of the deficiencies could not be determined.

There have been several NRC communications issued to the industry addressing sump screen blockage and debris intrusion into pump suctions. Most of this correspondence, with the exception of Information Notice (IN) 89-77, addressed types of debris and their effect on sump suction blockage. IN 89-77 addressed both debris and inadequate sump screens. The Arkansas Nuclear One (ANO) review of NRC correspondence focused primarily on cleanliness and removal of debris present in Reactor Building containments and did not consider sump screen integrity. For Unit 1, the review resulted in procedure changes to perform reactor building walkdowns and sump inspections at the end of outages to ensure cleanliness but did not provide guidance addressing sump integrity. For Unit 2, the review concluded that existing procedures were adequate. Failure to identify sump integrity deficiencies during the review of IN 89-77 was attributed to a narrow focus of the IN evaluation.

Contributing factors for failure to identify torn screens on Unit 1 are:

- The low light levels in the area of the sump would make it more difficult to observe tears in the screen, which is located behind the grating of the screen/grate assembly.

- Plant and contract personnel who had the greatest opportunity to observe the tears in the screen (decon and maintenance workers) were unaware of the design requirements for sump integrity. In addition, the curb drain holes appear to be design features of the sump and considering their location, it was not obvious to an observer that they were not screened internally.

Contributing factors for failure to identify screen discrepancies on Unit 2 are:

- The curb drain holes under the sump screen assembly are in an obscure location. These openings in the grout pad are somewhat recessed beneath the steel angle such that to see into the holes they must be viewed from near floor level or from a significant distance away from the sump.

- The curb drain holes appear as if they are part of the design and were intended to be there due to their uniform spacing and tapered interior concrete finish.

(2) Corrective steps taken and results achieved:

A. The following immediate corrective actions were completed to restore containment sump integrity:

For Unit 1

- The curb drain holes were covered with a screen assembly fabricated from steel plate and 0.132 inch mesh screen.

- The tears in the screen and openings around the conduit penetrations were repaired using steel plate and 0.132 inch mesh screen.

For Unit 2

- Steel plates having 3/32 inch holes in the plates were installed over curb drain holes. Holes in the plates were provided to allow water flow into the sump for early leak detection. Also, as a conservative measure, the discharge of floor drain pipes into the Unit 2 sump were covered with perforated plate assemblies using screen material since inspection of all floor drains was not possible during power operation.

B. An evaluation of the process for implementing design requirements into current plant modifications was performed. The Design Engineering organization was relocated to the site in 1990. This allows for increased involvement during construction, testing, and closeout of design change packages. Additionally, the design change procedures in place at the present time require detailed documented reviews of design basis documents for each modification. This evaluation concluded that the current design change process is adequate to prevent the occurrence of similar conditions.

C. An independent assessment of the IN evaluation process was performed. A random sampling of previous IN evaluations back to 1988 was completed. No significant discrepancies were identified during this review. The current IN program review controls were determined to be effective. A further review of IN evaluations performed prior to 1991 is being conducted to ensure that initial applicability and potential impact to safety were correctly determined and documented.

D. Inspection criteria for closeout inspections of containment sumps on Units 1 and 2 were enhanced.

E. Components were identified in Engineered Safety Features (ESF) systems whose failure could cause both trains of a system to be inoperable. The Probabilistic Risk Assessment (PRA) model was also used to determine similar components with potential high vulnerability. An evaluation of these components was performed to ensure that design requirements are adequately implemented. This evaluation included as-built inspections as well as a review of maintenance, surveillance, and operating practices. Some conditions that require further evaluation were identified by none are considered to be operability concerns.

F. Discrepancies from the design basis reconstitution program that were classified as high or intermediate priority were reviewed to ensure that there was no significant impact of these discrepancies on plant safety.

G. A detailed evaluation of the safety significance of this condition was performed. It was concluded that, while the condition introduced an undesirable increase in the risk of core damage, it did not represent a significant or undue increase in the risk to public health and safety.

(3) Corrective steps that will be taken to prevent further violations:

No significant additional corrective steps are necessary to prevent future similar violations.

(4) Date when full compliance will be achieved:

Full compliance was achieved by restoration of containment sump integrity to meet design requirements on October 13, 1993, for Unit 1 and on October 23, 1993, for Unit 2.