



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-259/83-46, 50-260/83-46, and 50-296/83-46

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Docket Nos.: 50-259, 50-260 and 50-296

License Nos.: DPR-33, DPR-52, and DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection Dates: October 13 - November 11, 1983

Inspection at Browns Ferry site near Decatur, Alabama

Inspector: *Ross Butcher for* 7/19/84
G. L. Paulk Date Signed

Approved by: *F. S. Cantrell* 7/20/84
F. S. Cantrell, Section Chief Date Signed
Division of Reactor Projects

SUMMARY

Areas Inspected

This special inspection involved 70 resident inspector-hours on site in the areas of scram discharge instrument volume modifications.

Results

Of the one area inspected, there were five violations identified: violation of TS 4.1.C; violation of TS 6.7.2.A.9; violation of TS 6.2.B.4.C; violation of 10 CFR 50, Appendix B, Criterion III; violation of 10 CFR 50, Appendix B, Criterion XVI.

REPORT DETAILS

1. Person Contacted

Licensee Employees

G. T. Jones, Power Plant Superintendent
J. E. Swindell, Assistant Power Plant Superintendent
J. R. Pittman, Assistant Power Plant Superintendent
L. W. Jones, Quality Assurance Supervisor
A. L. Burnette, Operations Supervisor
D. C. Mims, Engineering and Test Unit Supervisor
A. L. Burnette, Operations Supervisor
Ray Hunkapillar, Operations Section Supervisor
T. L. Chinn, Plant Compliance Supervisor
C. G. Wages, Mechanical Maintenance Section Supervisor
T. D. Cosby, Electrical Maintenance Section Supervisor
R. E. Burns, Instrument Maintenance Section Supervisor
J. H. Miller, Field Services Supervisor
A. W. Sorrell, Supervisor, Radiation Control Unit BFN
R. E. Jackson, Chief Public Safety
R. Cole, QA Site Representative Office of Power

Other licensee employees contacted included licensed reactor operators and senior reactor operators, auxiliary operators, craftsmen, technicians, public safety officers, quality assurance, quality control, engineering personnel, and design engineers. Additionally, Rosemount field service engineers were interviewed.

2. Management Interview

Management interviews were conducted on November 8 and 9, 1983, with the Power Plant Superintendent and/or Assistant Power Plant Superintendents and other members of his staff. The licensee was informed of five violations identified during this inspection.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

No new unresolved items.

5. Scram Discharge Instrument Volume Modifications

During an operational safety tour of the Unit 2 auxiliary instrument room on October 13, 1983, the inspector noted that a brush recorder monitoring device was set up to monitor the output signal from the scram discharge volume level indication device LT-85-45A. The inspector reviewed the circumstances related to the temporary instrument monitor installation and associated areas of concern to assure that regulatory requirements were satisfied.

The following synopsis includes the results of the inspector's findings. During the Unit 2 cycle 4 outage completed on March 18, 1983, Scram Discharge Instrument volume (SDIV) modifications were made such that diverse level instrumentation was installed. The installation included two float level mechanical switch devices and two differential pressure transmitter devices on each of the associated east and west SDIV systems. The systems are arranged such that one float level device and one differential pressure device serves each reactor protection trip system, thus assuring that the required one-out-of-two-taken-twice logic is adequately maintained for the 50-gallon scram function. Additionally, the differential pressure devices also serve the function of assuring the 25-gallon rod block is satisfied as required by TS 3.2.C. During preoperational testing, the instrument technicians at the plant observed that long response times were being experienced by the differential pressure transmitters (Model 1153DB oil-filled capillary tube type) due to the 25-foot capillary sensing tube used to monitor the process variable (SDIV water level). Laboratory testing indicated that the response times were much greater than the expected 1-second time response as indicated by revision 8 to Engineering Change Notice (ECN) 0392 safety evaluation. This problem was addressed in a meeting with engineering design and office of power representatives on December 8, 1982, and telecon on the same subject with plant staff and nuclear power representatives on December 15, 1982. The results of these meetings and discussions indicated concern in this area and a special safety evaluation was issued to allow a maximum instrument response of the SDIV level instrumentation of up to 14 minutes (Revision 8 of Unreviewed Safety Question Determination (USQD) for ECN 0392). This safety evaluation was made by the TVA design organization specifying maximum time response limitations. The inspector, through record reviews and personnel interviews, could find no one at the plant who was aware of these special requirements.

The Plant Operating Review Committee (PORC) is required to review changes to safety-related workplans as required by Browns Ferry Standard Practice 17.18 and 8.3. Routinely, changes to safety evaluations generated off-site which include special conditions or requirements are not reviewed by PORC. The workplans associated with the SDIV installation on Unit 2 were only reviewed prior to work commencement. There have been fifteen revisions to ECN 0392 since work commencement. Failure of PORC to review USQD revisions was identified as a violation of TS 6.2.B.4.c and will be summarized at the end of this report (259/260/296/83-46-04). During the calibration phase of the level instrument preoperability checks, the instrument technicians noted that the level instrument LT-85-45A on the west SDIV had an unusually slow time response, on the order of 15-29 minutes (No actual measurements were recorded). The cognizant engineer and instrument supervisor were aware of this excessive time and attempted to take action to replace the 'A' instrument. But, since no replacement was in stock and not being aware of the 14-minute maximum delay time safety criteria, and anxious to meet startup commitments, no immediate further action was taken. The similar installed differential pressure instruments on initial checkout had response times of 1-3 minutes. The Post Modification Testing (PMT 110) did not require complete time response testing from the process variable to the trip signal. The surveillance requirements additionally did not address any

specific time response requirements. The TVA design organization, realizing the inadequate design, immediately redesigned the level sensing methods for future installations on the other two units. No additional efforts were taken to address known deficiencies on the Unit 2 system. Failure to complete an adequate post modification testing program was identified as a violation of 10 CFR 50, Appendix B, Criterion III and will be summarized at the conclusion of this report (260/83-46-03). Unit 2 was returned to service on March 18, 1983, with the 50-gallon scram function for the SDIV system considered fully operable by the licensee. During the period of March 18, 1983 through October 13, 1983, Unit 2 scrambled five times. A review of the scram reports by the inspector indicated that all the scram level instruments responded to a SDIV fill at the time of the scrams except LT-85-45A. The 'A' instrument did not respond to the high level in the SDIV following any scram. One week after the last scram of October 7, 1983, the shift technical advisor was conducting a final review of scram #144. He observed that the 'A' instrument did not respond on that particular scram and brought it to the attention of the Assistant Plant Superintendent. Coincidentally and independently, on the same day, October 13, 1983, the inspector was attempting to verify system operability status because of the inspector's concerns of excessive instrument time response. The unit had been previously returned to service prior to the final scram package review. An initial trip review for cause and corrective action was made before unit restart.¹ The routine trip reviews did not check for typical expected

¹In a letter dated November 7, 1983, L. M. Mills, Manager, Nuclear Licensing to Harold R. Denton, Director, ONRP, TVA replied to Generic Letter 83-28, "Required Action Based on Generic Implication of Salem ATWS Events" for the Browns Ferry Nuclear Plant. The attached Enclosure, Section 1.1 Post-Trip Review, described the criteria for determining the acceptability of restart on "The STA conducts a preliminary evaluation of the scram. The transient performance is evaluated against expected plant performance following each reactor shutdown. He notes any conditions which appear unusual and/or indicates system or components that did not function as expected. (Underlining added by the inspector.) The plant nuclear engineer serves as the scram committee chairman during the performance of the formal investigation of shutdown or transient. He assists the STA as needed in performing the preliminary investigation and review and approves event data. The scram committee... review the final scram report for technical adequacy, completion and content and sign the cover sheet... The following procedures are in place...

1. Browns Ferry Standard Practice 12.8, Unit Trip and Reactor Transient Analysis, approved March 30, 1983.
2. Browns Ferry Operations Section Instruction Letter No. 60, Cut Chart Control of Browns Ferry.
3. Browns Ferry General Operating Instructions (GOI) 100-11, Reactor Scram.

In implementing the above procedures, the failure of LT-85-45A to respond should have been identified prior to restarting the unit following each scram, and in the subsequent review by the scram committee.

responses after a scram but only for abnormal conditions. The inspector discovered that the monitoring device installed to monitor the output of LT-85-45A had been installed on September 29, 1983, (under maintenance request A-142979) due to the operations staff's concern that the unit operator was receiving Reactor Protection System (RPS) analog trip failure alarms at random intervals. The brush recorder was set up by the instrument technicians to monitor any cause and effect relationships. Another spurious signal was received by the analog trip unit on October 9, 1983, but no action was taken to determine the cause or to investigate system operability. The instrument supervisor, when asked by the inspector on October 13, 1983, was unaware of any special monitoring test in process on the Unit 2 analog trip system. The inspector brought to the attention of the Plant Superintendent on October 13, 1983, that the inspector had significant concern related to the operability of the SDIV trip system. This concern, coupled with the STA review of the most recent trip report which indicated lack of instrument response, led the Plant Superintendent to decide to declare trip system 'A' inoperable and replace the level instrument in accordance with maintenance request A-204370. Scram channel 'A' was manually tripped at 2:05 p.m. on October 13, 1983. The Rosemount 1153DB4N005 transmitter (LT-85-45A) was replaced. TS 4.1.C requires that when it is determined that a channel is failed in the unsafe condition, the other RPS channel that monitors that same variable shall be functionally tested immediately before the trip system containing the failure is tripped. The licensee did not verify the redundant channel operable before the 'A' scram channel was tripped on October 13, 1983. The licensee was informed that this was a violation of TS 4.1.C and will be summarized at the report conclusion (260/83-46-02).

The defective level instrument was inspected by plant personnel and factory representatives and found to have a manufacturing defect which was defined as pin holes in the two isolating diaphragms. This prevented proper pressure differential transmission from the sensing medium to the transmitter capacitor plates. Time response tests conducted in the lab and witnessed by the inspector indicated a trip signal initiating response of 17.5 minutes exceeding all safety evaluation criterion.

TS 3.1 requires that when there is fuel in the vessel, the minimum number of instrument channels that must be operable for each position of the reactor mode switch shall be given in Table 3.1.A. Table 3.1.A requires a minimum of two operable instrument channels per trip system for high water level in the west scram discharge volume tank. From March 18, 1983 through October 13, 1983, the west scram discharge volume scram level switch (2-LT-85-45A) was inoperable making the number of operable instrument channels less than two. Information was available to have determined the level switch inoperability in the form of safety evaluation revisions, plant staff knowledge of instrument operation, scram trip review logs, and redesign efforts in progress to change design direction. This is a violation of 10 CFR 50, Appendix B, Criterion XVI which requires the licensee establish

methods to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances are promptly identified and corrected. The Plant Superintendent was informed of this violation at the exit on November 8, 1983 (260/83-46-01). Additionally, the Plant Superintendent was informed that when during plant life conditions arise that are not specifically considered in the Safety Analysis Report or TS that require remedial or corrective measures to prevent the existence of an unsafe condition, this must be reported to the Commission. The circumstances involving this event were not reported to the Commission until October 14, 1983. T.S.6.7.2.A.9 requires that prompt notification be made upon discovery during plant life of conditions not specifically considered in the Safety Analysis Report or TS that require remedial action or corrective measures to prevent the existence or development of an unsafe condition (260/83-46-05).

The following summarizes the five violations listed in this report.

- a. 10 CFR 50, Appendix B, Criterion XVI, as implemented by TVA Topical Report, Section 17.2.16, requires the licensee to establish measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected.

Contrary to the above, from March 18, 1983, through October 13, 1983, one of the Unit 2 west scram discharge instrument volume scram level switches (2-LT-85-45A) was inoperable making the number of operable instrument channels less than two. The licensee had information available from scrams occurring on May 30, September 16, September 18 and October 7, 1983 which indicated that level transmitter 2-LT-85-45A was inoperable (260/83-46-01).

- b. TS 4.1.C requires that when it is determined that a channel is failed in the unsafe condition, the other RPS channel that monitors the same variable shall be functionally tested immediately before the trip system containing the failure is tripped. Contrary to the above, the requirement was not met in that on October 13, 1983, the scram discharge volume scram level switch (2-LT-85-45A) was discovered inoperable. The licensee failed to perform the required functional test to ensure operability of the redundant Reactor Protection System (RPS) channel prior to tripping the failed RPS channel (260/83-45-02).
- c. 10 CFR 50, Appendix B, Criterion III requires that design control measures shall provide for verifying or checking the adequacy of design by the performance of a suitable testing program. Design control measures shall be applied to the delineation of acceptance criteria for tests. Post modification testing (PMT 110) conducted to assure design adequacy on the newly installed differential pressure high level detectors (Rosemount 1153DB), 2-LT-85-45A on the Unit 2 scram discharge instrument volumes, did not include instrument response timing requirements. Subsequent response timing tests on 2-LT-85-45A, conducted on October 14, 1983, has revealed instrument response time of

17.5 minutes. This response time exceeds all safety evaluation criteria (260/83-46-03).

- d. TS 6.2.B.4.c, as implemented by Browns Ferry Standard Practices 8.3 and 17.18, requires the Plant Operations Review Committee (PORC) to review proposed changes to systems having safety significance and which may constitute an unreviewed safety question. Revisions to unreviewed safety question determinations are not generically reviewed by the Plant Operating Review Committee as required by Browns Ferry Standard Practice 17.18 and 8.3. Specifically, revisions to safety evaluations generated from the TVA design organization are not reviewed to determine special conditions or requirements delineated in the revisions. A review of ECN 0392 (Installation of the Scram Discharge, Volume and Associated Instrumentation) for all units indicated that plant supervisors and managers were unaware of special timing requirements for instrument responses, special administrative procedures required to be implemented for certain configuration designs, and qualification criteria (259/260/296/83-46-04).
- e. TS 6.7.2.A.9 requires that a prompt notification be made upon discovery during plant life of conditions not specifically considered in the Safety Analysis Report or TS that require remedial action or corrective measures to prevent the existence or development of an unsafe condition. Known deficiencies existed with the scram discharge instrument volume pressure transmitters (Rosemount 1153DB) on Unit 2 from original installation, due to excessive time response required to initiate the Reactor Protection System trip. The response time of pressure transmitter 2-LT-85-45A exceeded all safety evaluation criteria. Time response was known by plant personnel to be variable from 15-29 minutes from the unit's original installation. TVA's design organization redesigned the level detector system after evaluating the response times for a representative sample of the Unit 2 level instruments as being "excessive." This redesign effort was not reported and the exact timing of the level transmitter 2-LT-85-45A was never precisely determined until October 14, 1983 (260/83-46-05).



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

JUL 20 1984

Tennessee Valley Authority
ATTN: Mr. H. G. Parris
Manager of Power and Engineering
500A Chestnut Street Tower II
Chattanooga, TN 37401

Gentlemen:

SUBJECT: PROPOSED IMPOSITION OF CIVIL PENALTIES: EA-84-25
FAILURE TO IDENTIFY AND CORRECT CONDITIONS ADVERSE TO QUALITY,
TO SUBMIT REQUIRED REPORTS, AND ADHERE TO THE REQUIREMENTS OF THE
TECHNICAL SPECIFICATIONS
(REFERENCE INSPECTION REPORTS NOS. 50-259, 50-260, 50-296/83-46;
50-259, 50-260, 50-296/83-55; AND, 50-259, 50-260 50-296/84-01)

A routine safety inspection and two special safety inspections were conducted by this office between October 13, 1983 and January 6, 1984, of activities authorized by NRC Operating License Nos. DPR-33, 52, and 68 for the Browns Ferry facility. The inspections included a review of circumstances surrounding modification of the Scram Discharge Instrument Volume level instrumentation that resulted in a Limiting Condition for Operation being exceeded. Also during the course of the inspection it was discovered that certain safety-related heat exchangers had been operated at greater than the design-rated pressure for a significant period of time. An Enforcement Conference held in the Region II office on December 16, 1983 to discuss these matters was attended by Mr. R. C. Lewis, Director, Division of Reactor Projects, Region II, and Mr. H. L. Abercrombie, Assistant to the Manager, Nuclear Power, TVA and members of their staffs.

The inspections disclosed three violations. The first violation encompasses several failures to promptly identify and correct conditions adverse to quality. The second violation involves failure to make required reports of these conditions to the NRC. The third violation involves the failure to perform a functional surveillance test as required by the plant technical specifications. We view these violations as being indicative of a programmatic weakness in the identification and correction of conditions adverse to quality.

To emphasize the seriousness of these violations, and after consultation with the Director, Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of One Hundred Twenty Thousand Dollars (\$120,000), which includes civil penalties of Forty Thousand Dollars (\$40,000) for each of three violations described in the enclosed Notice. Each violation has been categorized as Severity Level III in accordance with the NRC General Statement of Policy and Procedure for Enforcement Action, 10 CFR Part 2, Appendix C.

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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These events are attributed to insufficient management oversight and have been the subject of several senior level management meetings. As a result, the licensee has devoted a significant amount of attention to the development of the Browns Ferry "Regulatory Performance Improvement Plan." The licensee's commitments with regard to this program are being confirmed by Order. The implementation of this program will be examined during future inspections.

You are required to respond to the enclosed Notice and you should follow the instructions specified therein when preparing your response. Your response should specifically address the corrective actions taken or planned with regard to the violations as described in the Notice of Violation.

In accordance with 10 CFR 2.790 of the NRC's "Rule of Practice," Part 2 Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,


James P. O'Reilly
Regional Administrator

Enclosure:
Notice of Violation and Proposed
Imposition of Civil Penalties

cc w/encl:
J. A. Coffey, Director of Nuclear Power
G. T. Jones, Plant Superintendent
J. W. Anderson, Manager
Office of Quality Assurance
H. N. Culver, Chief, Nuclear Safety
Review Staff
D. L. Williams, Jr., Supervisor
Licensing Section
R. E. Rogers, Project Engineer

NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTIES

Tennessee Valley Authority
Browns Ferry 1, 2, and 3

Docket Nos. 50-259, 50-260, and 50-296
License Nos. DPR-33, DPR-52, and DPR-68
EA 84-25

As a result of inspections conducted between October 13, 1983 and January 6, 1984, in accordance with the General Policy and Procedure for NRC Enforcement Actions, 10 CFR 2, Appendix C, three violations were identified.

The first violation involves four examples of licensee failure to ensure that conditions adverse to quality were promptly identified and corrected. The inadequacies presented in these examples represent a variety of instances where TVA management failed to take effective action, although adequate information was available to permit this action. A summary of these examples is given below:

1. The inoperability of a scram discharge instrument volume (SDIV) level transmitter (2-LT-85-45A) in Unit 2 could have been identified using the post-trip computer printouts on four occasions, if the appropriate post-trip reviews had been conducted in accordance with plant operating instructions.
2. Control measures were inadequate to ensure that the level transmitter 2-LT-85-45A response time was adequate for operability of the instrument. As a consequence of this, the post-modification testing and monthly surveillance failed to detect that the instrument response time exceeded the limit specified in the safety evaluation.
3. The Plant Operations Review Committee did not properly review evaluations addressing previously unreviewed safety questions affecting the operability of equipment at Browns Ferry Station. Specifically, the appropriate station personnel were not notified of a change to the required response time for the SDIV instrumentation, or several other revisions to the original SDIV modification.
4. Corrective actions were not promptly taken upon identification of component design incompatibilities. Specifically, neither prompt corrective actions nor compensatory actions were taken to correct the known design deficiencies of the diesel generator heat exchangers or the residual heat removal (RHR) pump seal cooler heat exchangers.

Although the uncertainty of operability of the emergency diesel generators and the RHR pumps could each be categorized as separate Severity Level III violations, we have decided not to address these as separate violations. The examples have been combined into a single violation demonstrating a programmatic weakness requiring comprehensive evaluation and corrective action. This violation has been categorized as a Severity Level III violation with a \$40,000 proposed civil penalty.

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The second violation involves two occasions where required reports were not made to the NRC. To emphasize the importance of reporting as a fundamental concern, NRC enforcement policy provides that a reporting violation may be categorized at a severity level commensurate with the severity level of the event. Accordingly, the reporting violation has likewise been categorized as a Severity Level III violation with a proposed civil penalty of \$40,000.

The third violation involves the failure of the licensee to immediately functionally test the RPS channels monitoring the level in the SDIV once it was determined that level transmitter 2-LT-85-45A had failed in an unsafe condition.

In accordance with the NRC General Policy and Procedure for Enforcement Actions, 10 CFR 2, Appendix C, and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

- I. A. 10 CFR 50, Appendix B, Criterion XVI, as implemented by TVA Typical Report, Section 17.2.16, requires the licensee to establish measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances, are promptly identified and corrected.

Contrary to the above, from March 18, 1983 through October 13, 1983, one of the Unit 2 west scram discharge instrument volume scram level switches (2-LT-85-45A) was inoperable making the number of operable instrument channels less than two. The licensee had information available from scrams occurring on May 30, September 16, September 18 and October 7, 1983 which indicated that level transmitter 2-LT-8545A was inoperable yet did not correct the problem.

- B. 10 CFR 50, Appendix B, Criterion III, requires that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. Design control measures shall be applied to the delineation of acceptance criteria for test.

Contrary to the above, the requirement was not met in that the post-modification testing (PTM-100) conducted to assure design adequacy on the newly installed differential pressure high level switches (Rosemount 1153DP) (2-LT-85-45A) on the Unit 2 scram discharge instrument volumes, did not include instrument response timing requirements. A subsequent response timing test on 2-LT-85-45A, conducted on October 14, 1983, revealed an instrument response time of 17.5 minutes. This response time exceeded the currently accepted safety evaluation criteria. Additionally, the monthly surveillance (SI4.1.A-8) for the scram discharge instrument volume high level instruments did not include specific time response requirements.

- C. Technical Specification 6.2.B.4.c, as implemented by Browns Ferry Standard Practices 8.3 and 17.8, requires the Plant Operations Review Committee (PORC) to review proposed changes to systems having safety significance which may constitute an unreviewed safety question.

Contrary to the above, the PORC failed to identify the special time response requirement in Revision 8 of Unreviewed Safety Question Determination for Engineering Change Notice (ECN) 0392, dated December 17, 1982, concerning the installation of the scram discharge volume and associated instrumentation. As a result, neither the plant personnel nor the plant manager were aware that the trip signal initiation response for the scram discharge volume high level exceeded the special timing requirement imposed by the engineering design group in ECN 0392, and the original time response for the level instrumentation.

- D. 10 CFR 50, Appendix B, Criterion III requires that measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations; that design control measures shall provide for verifying or checking the adequacy of design; and that design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design."

- (1) Contrary to the above, this requirement was not met in that the Emergency Equipment Cooling Water (EECW) diesel generator heat exchangers were operated, since the original installation, at pressures ranging from 100 to 135 psig with the design pressure of the heat exchangers being 75 psig.
- (2) Contrary to the above, engineering procedure EN DES-EP 1.48 issued December 16, 1983 allowed decisions to be made for a significant nonconforming condition without design control measures commensurate with those applied to the original design. In consequence, sixteen emergency diesel generator cooling water heat exchangers and twelve RHR pump seal cooling heat exchangers were not targeted for prompt corrective action applying the guidance from EN DES-EP 1.48.

This is a Severity Level III problem (Supplement I).
(Civil Penalty - \$40,000)

- II. A. Technical Specification 6.7.2.A.9 required that a prompt (within 24 hours) notification be made upon discovery during plant life of conditions not specifically considered in the Safety Analysis Report or Technical Specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition.

- (1) Contrary to the above, this requirement was not met in that known deficiencies existed with the scram discharge instrument volume pressure transmitters (Rosemount 1153DP) on Unit 2 and these deficiencies were not promptly reported. The response time of level switch 2-LT-85-45A exceeded current safety evaluation criteria. The response time was known by plant personnel to be variable from 15-29 minutes while the accepted maximum response time was approximately 71 seconds. TVA's design organization redesigned the level detector system after determining that the level transmitter response times were "excessive" (Memorandum dated 12/23/82 concerning ECN P03920). This redesign effort was not reported and an evaluation establishing new response time criteria was not conducted until October 14, 1983. During this period the instrument failed to trip in response to high level in the scram discharge instrument volume following four scrams.
- (2) Contrary to the above, this requirement was not met in that in March 1983, it was discovered that the diesel generator cooling water heat exchangers were being operated at pressures in excess of the rated pressure and a report acknowledging the Design Deficiency was not submitted to NRC until November 25, 1983 in Licensee Event Report 50-296/83-26, Revision 4.

This is a Severity Level III problem (Supplement I).
(Civil Penalty - \$40,000)

- III. A. Technical Specification 4.1.C requires upon determining that a reactor protection system (RPS) channel is failed in an unsafe condition, that the other RPS channel monitoring the same variable be functionally tested immediately before the trip system containing the failure is tripped.

Contrary to the above, on October 13, 1983, when it was determined that 2-LT-85-45A, an "A" RPS level transmitter for the SDIV, failed in the unsafe condition, the required channel functional test for RPS channel "B" was not performed. The functional test was not performed until the NRC resident inspector notified the licensee of the requirement in the plant technical specifications.

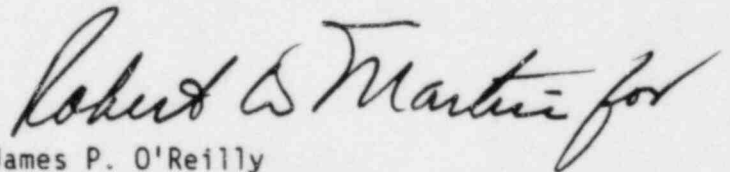
This is a Severity Level III violation (Supplement I)
(Civil Penalty \$40,000)

Pursuant to 10 CFR 2.201, Tennessee Valley Authority is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555, with a copy to this office, within 30 days of the date of this Notice a written statement or explanation, including for each alleged violation: (1) admission or denial of the alleged violations; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, the response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Tennessee Valley Authority may pay the civil penalties in the amount of \$120,000 for the violations, or may protest imposition of the civil penalty in whole or in part by a written answer. Should Tennessee Valley Authority fail to answer within the time specified, the Director, Office of Inspection and Enforcement will issue an order imposing the civil penalty in the amount proposed above. Should Tennessee Valley Authority elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalty, the five factors addressed in Section V(B) of 10 CFR Part 2, Appendix C, as revised, should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of Tennessee Valley Authority is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay the penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION



James P. O'Reilly
Regional Administrator

Dated in Atlanta, Georgia
this 20th day of July 1984