



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

EA 96-269

March 17, 1997

Tennessee Valley Authority
ATTN: Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
6A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: ORDER IMPOSING CIVIL MONETARY PENALTY - \$50,000

Dear Mr. Kingsley:

This refers to your letter dated December 19, 1996, in response to the Notice of Violation and Proposed Imposition of Civil Penalty (Notice) sent to you by our letter dated November 19, 1996. Our letter and Notice described four violations of NRC requirements identified during an inspection conducted during the period July 8 through August 22, 1996, at your Sequoyah Nuclear Plant. The results of the inspection were originally documented in Inspection Report Nos. 50-327 and 50-328/96-10 issued on September 27, 1996.

To emphasize the importance of management attention to, and oversight of, fire protection activities, as well as the need for prompt corrective actions, a Severity Level III problem and a civil penalty of \$50,000 was proposed in the November 19, 1996 letter.

In your response, you agreed that the violations occurred; however, you maintained that the NRC's categorization of the violations at Severity Level III with a proposed civil penalty of \$50,000 was inconsistent with the Enforcement Policy. You requested that the NRC reconsider the severity level of the violations and mitigate the associated civil penalty in its entirety.

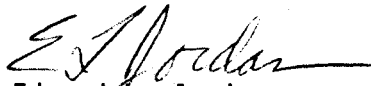
After consideration of your response, we have concluded, for the reasons given in the Appendix attached to the enclosed Order Imposing Civil Monetary Penalty, that the violations, the severity level, and civil penalty associated with the Severity Level III problem should stand as proposed. Your response focused on the safety and regulatory significance of each of the violations taken individually, as well as the actions you have implemented in recent years in the area of fire protection. However, the bases for citing the violations collectively as a Severity Level III problem was the significant lack of attention and priority given to your fire protection program. In addition, the action was based on the significance of the violations taken collectively, not individually. While the NRC acknowledges some progress in improving the fire protection program at Sequoyah, the continuing lack of timely resolution of long-standing issues in the fire protection area indicates your actions have not been fully effective. Accordingly, we hereby serve the enclosed Order on Tennessee Valley Authority imposing a civil



monetary penalty in the amount of \$50,000. As provided in Section IV of the enclosed Order, payment should be made within 30 days of the date of this Order, by check, draft, money order, or electronic transfer, payable to the Treasurer of the United States and mailed to James Lieberman, Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738. We will review the effectiveness of your corrective actions during subsequent inspections.

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

Sincerely,



Edward L. Jordan
Deputy Executive Director for
for Regulatory Effectiveness, Program
Oversight, Investigations and Enforcement

Docket Nos. 50-327, 50-328
License Nos. DPR-77, DPR-79

Enclosure: Order Imposing Monetary
Civil Penalty

cc w/encl:
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Nashville, TN 37243-1532

County Executive
Hamilton County Courthouse
Chattanooga, TN 37402

UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the Matter of

TENNESSEE VALLEY AUTHORITY
Sequoyah Nuclear Plant
Units 1 and 2

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Docket Nos. 50-327 and 50-32
License Nos. DPR-77 and DPR-79
EA 96-269

ORDER IMPOSING CIVIL MONETARY PENALTY

I

Tennessee Valley Authority (Licensee) is the holder of Operating License Nos. DPR-77 and DPR-79 issued by the Nuclear Regulatory Commission (NRC or Commission) on September 17, 1980, and September 15, 1981, respectively. The licenses authorize the Licensee to operate the Sequoyah Nuclear Plant, Units 1 and 2 in accordance with the conditions specified therein.

II

An inspection of the Licensee's activities at the Sequoyah Nuclear Plant was conducted during the period of July 8 through August 22, 1996. The results of this inspection indicated that the Licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was served upon the Licensee by letter dated November 19, 1996. The Notice stated the nature of the violations, the provisions of the NRC's requirements that the Licensee had violated, and the amount of the civil penalty proposed for the violations.

The Licensee responded to the Notice in a letter dated December 19, 1996. In its response, the Licensee agreed that the violations occurred but contested NRC's application of the Enforcement Policy and requested the NRC to

reconsider its decision to categorize the violations as a Severity Level III problem and mitigate the proposed civil penalty in its entirety. The Licensee based its requests on the history of extensive activities it has undertaken to upgrade the Sequoyah fire protection program, the minimal safety and regulatory significance of the individual violations, and the corrective actions taken following identification.

III

After consideration of the Licensee's response and the statements of fact, explanation, and argument for mitigation contained therein, the NRC staff has determined, as set forth in the Appendix to this Order, that the violations occurred as stated and that the penalty proposed for the violations designated in the Notice should be imposed.

IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The Licensee pay a civil penalty in the amount of \$50,000 within 30 days of the date of this Order, by check, draft, money order, or electronic transfer, payable to the Treasurer of the United States and mailed to

James Lieberman, Director, Office of Enforcement, U.S. Nuclear
Regulatory Commission, One White Flint North, 11555 Rockville Pike,
Rockville, MD 20852-2738.

V

The Licensee may request a hearing within 30 days of the date of this Order. Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of time must be made in writing to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and include a statement of good cause for the extension. A request for a hearing should be clearly marked as a "Request for an Enforcement Hearing" and shall be addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Commission's Document Control Desk, Washington, D.C. 20555. Copies also shall be sent to the Assistant General Counsel for Hearings and Enforcement at the same address and to the Regional Administrator, NRC Region II, 101 Marietta Street N. W., Suite 2900, Atlanta, Georgia 30323.

If a hearing is requested, the Commission will issue an Order designating the time and place of the hearing. If the Licensee fails to request a hearing within 30 days of the date of this Order (or if written approval of an extension of time in which to request a hearing has not been granted), the provisions of this Order shall be effective without further proceedings. If payment has not been made by that time, the matter may be referred to the Attorney General for collection.

In the event the Licensee requests a hearing as provided above, the issue to be considered at such hearing shall be:

Whether on the basis of the violations admitted by the Licensee, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Edward L. Jordan
Deputy Executive Director
for Regulatory Effectiveness, Program
Oversight, Investigations and Enforcement

Dated at Rockville, Maryland
this 17th day of March 1997

APPENDIX

EVALUATIONS AND CONCLUSION

On November 19, 1996, the NRC issued to Tennessee Valley Authority (Licensee or TVA) a Notice of Violation and Proposed Imposition of Civil Penalty (Notice) for four violations identified during an NRC inspection conducted during the period July 8 through August 22, 1996, at the Sequoyah Nuclear Plant. In its response dated December 19, 1996, the Licensee agreed that the violations occurred but stated that the NRC's categorization of the four individual violations as a Severity Level III problem, and proposed imposition of a \$50,000 civil penalty, was inconsistent with the NRC Enforcement Policy as it was applied. The Licensee requested the NRC to reconsider its decision regarding the severity level of the violations and mitigate the proposed civil penalty in its entirety. The NRC's evaluation and conclusion regarding the Licensee's requests are as follows:

Summary of Licensee's Request for Reduction in Severity Level

In its request for reconsideration of the severity level of the four violations comprising the Severity Level III problem, the Licensee maintained that (1) extensive activities have been taken to upgrade the Sequoyah fire protection program, (2) the actual and potential safety significance of the violations are minimal, (3) the regulatory significance of the violations should be assessed in the context of TVA's actions to improve its performance in this area, and (4) the use of fire watches at Sequoyah is consistent with NRC policy and regulatory requirements.

Regarding TVA's history of activities to upgrade the Sequoyah fire protection program, the Licensee maintained that beginning in 1991, it implemented a four-phase Fire Protection Improvement Plan (FPIP) to address important engineering items such as evaluating the hydraulic performance of the fire protection water system, updating the fire hazards analysis, and completing the fire protection report. Of the 63 items in the initial plan, 61 items had been completed. The two remaining items involved (1) replacing the fire pumps and upgrading the existing raw water fire protection system to a potable water system and (2) completing the evaluation of approximately 1,500 fire barrier penetration seals. These two items were scheduled to be completed in 1997. The Licensee stated that the NRC's Notice did not acknowledge the considerable resources expended on the upgrades to the fire protection program since 1991 which demonstrated both management's attention and that the overall fire protection program was being treated as a high priority item.

Second, the Licensee contended that the four violations had only minimal potential safety significance, and when considered either individually or in the aggregate, were not significant enough to constitute a Severity Level III problem. The Licensee's position on each of the violations is as follows:

Violation A:

This violation involved quality assurance (QA) findings for which the Licensee had delayed implementing corrective action. The Licensee addressed the actions taken on the QA findings related to 1,500 degraded fire barrier penetration seals (of the 24,500 penetrations inspected),

326 degraded fire dampers, and deviations from procedures for controlling transient fire loads. The Licensee considered that these violations were of minimal safety significance and of low regulatory significance due to the management attention that had been applied to the site's fire protection program since 1991. In particular, the Licensee stated that an evaluation of the 326 fire dampers found that only eight of the dampers required additional work. The Licensee concluded that the actions taken do not indicate a lack of management attention.

Violation B:

This violation involved an inoperable carbon dioxide system in the computer room which was scheduled to be repaired as part of the upgrade of the computer room. The Licensee stated that the minimal safety significance associated with this situation did not warrant rearranging priorities to perform part of the computer room upgrades out of sequence.

Violation C:

This violation involved the failure to perform a surveillance of fire barrier penetrations in high radiation areas. The Licensee stated that a subsequent review found these penetrations acceptable.

Violation D:

This violation involved the failure to hydrostatically test nine of 119 fire hoses. The Licensee stated that subsequent testing found these hoses to be capable of performing their intended function. The Licensee concluded that this violation involved limited procedural non-adherence which has traditionally not been the subject of escalated enforcement.

The Licensee concluded that the regulatory significance of the violations should be determined by considering the safety significance of the violations in context with the actions initiated by the Licensee to assure regulatory compliance and enhance performance in the fire protection area. The Licensee stated that the NRC has traditionally taken a much broader view in exercising discretion to tailor an enforcement action to the particular situation, and such an approach would be appropriate in this case given the minimal actual safety significance of the violations.

Lastly, the Licensee took exception to the NRC's letter of November 19, 1996, which stated that the use of fire watch patrols was intended for interim, short-term compensatory measures until degraded fire protection features can be repaired or replaced. The Licensee argued that the use of fire watch patrols for degraded fire protection features: (1) provides an acceptable level of safety; (2) is permitted by Technical Specifications without time limitations; (3) does not challenge the fire protection defense-in-depth concept; (4) restores the margin of safety that is lost with degraded conditions; (5) provides an acceptable substitute as opposed to an additional

level of protection; (6) does not increase the vulnerability of equipment to potential fire exposure or fire damage, and (7) does not violate NRC requirements. In summary, the Licensee stated that enforcement action should not be taken unless the reliance on fire watch patrols for degraded conditions could be shown to result in a violation of regulatory requirements.

NRC Evaluation of Licensee's Request for Reduction in Severity Level

In reviewing the Licensee's response, no additional information was provided that was not previously considered by the NRC in its deliberations regarding this matter.

Contrary to the Licensee's response, the NRC did consider the Licensee's past efforts to improve the Sequoyah fire protection program through the four-phase FPIP. Specifically, Section F1.3 of NRC Inspection Report No. 50-327, 328/96-10 acknowledged that the actions associated with the FPIP had enhanced the fire protection program. However, prior to issuance of the Notice that is the subject of this action, the NRC had also expressed various concerns with the adequacy of the fire protection program and corrective action on fire protection issues. These instances include: (1) the Systematic Assessment of Licensee Performance report dated February 21, 1995, which stated that "Correction of long-standing deficiencies in the material condition of the fire protection system was slow and management exhibited a tolerance for poor conditions;" (2) the July/August 1996 inspection documented in Inspection Report No. 50-327, 328/96-10, describing new problems and discrepancies identified as not receiving appropriate management attention for resolution; and (3) a February 1996 inspection, documented in Inspection Report No. 50-327, 328/96-02, which identified problems with the untimely implementation of portions of the FPIP, such as deferment of the construction of the upgrades to the fire protection water supply system until 1997, and also identified a violation involving the lack of adequate protective or preventive measures for the construction portions of the system.

As evidenced by the violations cited in the Notice and the specific circumstances surrounding them, as described in the inspection report, the NRC concluded that the Licensee's corrective actions associated with the fire protection program have not been fully effective in assuring timely resolution of long-standing issues as described below:

Violation A:

The violations included nine examples of inadequate or untimely corrective action for previously identified deficiencies. These included quality assurance (QA) findings, issues from the FPIP, and concerns identified following establishment of the FPIP. QA findings were identified as early as 1992, yet corrective action had not been completed at the time of the inspection. At the time of the July/August 1996 inspection, completion dates had not been established for several of the items and some items had completion dates extending into 1997. Other issues, such as the control of combustibles, evidenced the Licensee's inability to achieve compliance. The control of transient

combustibles was identified as an area of concern in QA audits, but ineffective corrective action resulted in repeated violations in 1996. In some instances, corrective actions for items identified since the 1991 FPIP had been developed, but were not being completed in a timely manner. For example, in September 1993, the Licensee initially identified 326 fire dampers which were not installed in accordance with the vendor's installation requirements. Further engineering evaluation and review reduced this number to eight, which the Licensee considered needing replacement. Although the evaluation which found 318 of these dampers to be satisfactory was completed in December 1994, the eight dampers identified for replacement were not scheduled to be replaced until 1997, even though the dampers are readily accessible for replacement during any mode of plant operation. The scheduled replacement of these dampers, in excess of two years after identification of the need for replacement, was considered a failure of the Licensee's management to place adequate emphasis on correcting deficiencies.

Violation B:

The inoperability of the carbon dioxide system in the computer room was identified by the Licensee in December 1995. This system had been inoperable since completion of a heating ventilation and air conditioning system modification in May 1990. Although surveillance tests were performed on this system in April 1991, August 1992, June 1994, and December 1995, they failed to identify this deficiency. Although the violation in itself has low safety significance, the combination of design oversight and an inadequate surveillance inspection and test program for this system, which should have identified this deficiency, is of concern and is another example of weak management oversight of the fire protection program.

Violation C:

The violation involving the failure to inspect the fire barrier penetrations in the high radiation areas was identified by the Licensee. The fact that subsequent inspections did not identify any problems with these penetrations is fortuitous. The root cause of this problem was considered to be an error on the part of personnel performing the procedure in conjunction with inadequate management oversight. Additionally, resolution of this issue had not been timely.

Violation D:

This violation, involving the failure to inspect the fire hose installed on the fire hose stations within the reactor buildings, was identified by the Licensee. The fact that subsequent inspections found the hydrostatic tests on only nine of the 119 fire hose sections to be out of date and that testing found the hoses to be capable of performing

their intended function is fortuitous. The cause of this problem was improper procedure revision, inadequate procedure review, and inadequate management oversight.

The NRC acknowledges the Licensee's position that individually these violations are of low safety significance. However, as stated in the Section IV.A of the Enforcement Policy (NUREG-1600), a group of Severity Level IV violations may be evaluated in the aggregate and assigned a single, increased severity level, thereby resulting in a Severity Level III problem, if the violations have the same underlying cause or programmatic deficiencies. The purpose of aggregating violations is to focus the Licensee's attention on the fundamental underlying causes for which enforcement action appears warranted and to reflect the fact that several violations with a common cause may be more significant collectively than individually, and may therefore warrant a more substantial enforcement action. In this case, the NRC determined that the violations have the same underlying cause, namely the lack of attention and priority given to the fire protection program.

The Licensee's characterization of the root cause as "insufficient management involvement in the oversight of the fire protection program," is consistent with the NRC's conclusion, except in one important respect: it fails to recognize management acceptance of unresolved issues and the failure to assign the necessary priority to the fire protection program issues to assure their timely resolution. In addition, although the Licensee appeared to focus resources on the resolution of many of the 1991 FPIP issues, not all items have yet been resolved and newly identified items were not resolved in a timely manner. The NRC considers this failure to be significant because program ownership and ineffective management performance were identified as underlying causes of performance weaknesses in the Sequoyah Nuclear Plant Restart Plan of May 20, 1993. Ineffective oversight is also indicated by the fact that there has not been consistent management of the fire protection program. Specifically, since 1990, there have been a number of personnel changes in the position of Fire Protection Manager. In that inadequate oversight of the fire protection program continues to persist, escalation of the violations is consistent with Supplement I.C.7 of the NRC Enforcement Policy.

The Licensee's position that the NRC should exercise discretion due to the improvements and enhancements being made in the fire protection program cannot be supported due to multiple problems identified by both the Licensee and the NRC which were outside the scope of the 1991 Fire Protection Improvement Plan. These problems indicate a continued lack of management oversight and control of the fire protection program.

The Licensee's position that fire watch patrols for degraded fire protection features were equivalent to fully functioning features is not correct. It is the NRC's opinion that fire watch patrols, in combination with the fire protection defense in depth features, provide an adequate level of fire protection safety on an interim basis until permanent corrective actions are implemented. Therefore, a fire watch patrol can only supplement a degraded fire protection feature and is an approved compensatory measure for the

identification of fire and notification of a fire to the appropriate response personnel. However, a fire watch is not equivalent to the fire protection feature in question.

The Licensee indicated that there was no time limitation on how long a fire watch patrol can be used in lieu of restoring a degraded system to service. To the contrary, there is, in fact, a recognized regulatory impact that can result from the use of long-term fire watches. If the protection features are described in the Final Safety Analysis Report, long-term or permanent fire watches could be considered a modification which would require a 10 CFR 50.59 safety analysis, which could result in limiting the fire watches use. Second, although not specifically limiting the use of fire watches, the Sequoyah Technical Specifications clearly indicate the need to restore degraded features as soon as possible. The Sequoyah Technical Specifications require that a Special Report be issued to the NRC if a degraded fire protection feature cannot be repaired within a designated time. In general, the Sequoyah Technical Specifications require degraded fire protection suppression systems to be restored to operability within 14 days and fire barrier penetration seals restored to operability within 7 days, or alternatively, within the next 30 days a Special Report is required to be submitted to the NRC outlining the cause of the system inoperability and the plans or schedule for restoring the system to operable status. The Technical Specifications requirements clearly indicate that the NRC does not sanction the long term use of fire watch patrols for degraded fire protection features and that restoration to full fire protection capability is required. Regardless of the NRC's stated position regarding Sequoyah's use of fire watch patrols, none of the violations were based on their utilization.

Summary of Licensee's Request for Mitigation of Civil Penalty

The Licensee believes the civil penalty should be mitigated in its entirety because the problems were identified by the Licensee and corrective actions were taken prior to NRC enforcement action. These actions included:

- Implementation of the 1991 Fire Protection Improvement Plan.
- Improved management responsiveness to identified problems by centralization of fire protection program ownership and responsibility into one department, establishment of fire protection program priorities and performance expectations, and appointment of a new fire protection manager.
- Establishment in June 1996 of an integrated schedule designed to track fire protection issues to closure.
- Performance of a self-assessment of the fire protection program which evaluated and found the correction actions and improvements implemented to have been effective.

- Direction provided for the QA organization to escalate its concerns to management in order to assist management in collectively analyzing individual problems to facilitate corrective action.

The Licensee stated that the lack of timeliness associated with the individual fire protection issues was identified and corrective action was initiated prior to NRC enforcement action. Therefore, these factors should be taken into consideration prior to the NRC pursuing escalated enforcement and imposition of a civil penalty. The Licensee believes that to issue a civil penalty after action was taken to reorganize the fire protection program and provide enhanced management oversight would be contrary to the NRC Enforcement Policy. Furthermore, the imposition of a civil penalty under these circumstances would serve no purpose other than to punish the Licensee and would be contrary to the NRC Enforcement Policy to focus on current performance.

NRC Evaluation of Licensee's Request for Mitigation of Civil Penalty

The NRC does not agree with the Licensee's position that the fire protection program problems were identified by the Licensee and corrective action was taken prior to NRC involvement. Program oversight weaknesses were highlighted by the NRC in the February 1995 SALP Report, as discussed previously. In addition, concerns with the timeliness and adequacy of fire protection program corrective actions were also identified by the NRC in February 1996. Although a QA audit completed in May 1996 elevated the significance of the programmatic issues to upper TVA management, a follow-up NRC inspection in July 1996 found that these issues had not been resolved. Once the NRC focused on the multiple fire protection deficiencies in an inspection conducted in July and August 1996, the Licensee placed additional emphasis on this area, made organizational and personnel changes, and implemented plans to correct the deficiencies. The actions were initiated by the Licensee after the February 1996 identification by the NRC of: 1) a related violation and 2) inadequate responses to QA findings; but these actions were limited and did not ensure lasting corrective actions.

Section VI.B.2.c of the Enforcement Policy discusses the application of the factor of *Corrective Action* in the civil penalty assessment process. The purpose of this factor is to encourage licensees to (1) take the immediate actions necessary upon discovery of a violation that will restore safety and compliance with the license, regulations, or other requirements; and (2) develop and implement (in a timely manner) the lasting corrective actions that will not only prevent recurrence of the violation at issue, but will be appropriately comprehensive, given the significance and complexity of the violations, to prevent recurrence of violations with similar root causes. In assessing *Corrective Action*, consideration is given to the timeliness of the action (including the promptness in developing the schedule for long term corrective action), the adequacy of the licensee's root cause analysis, and the comprehensiveness of the corrective action. Clearly, in this case, the program deficiencies at issue in the Notice were discovered by TVA as early as 1991, but corrective actions were not promptly taken, and since the issues

were primarily licensee-identified, the time of reference used in assessing this factor is discovery, not when the issues were identified as apparent violations by the NRC. Further, although in most cases, schedules for long-term corrective actions were developed, management had not placed the appropriate priority on meeting schedules, which resulted in substantial deferments. Continued unjustifiable deferral of known deficiencies is unacceptable to the NRC.

NRC Conclusion

The NRC concludes that the violations occurred as stated and that collectively they represent a Severity Level III problem. Since the July/August 1996 NRC inspection, it appears that the licensee has implemented appropriate corrective actions to address these problems and is now appropriately focused on this program area. However, no adequate basis for either a reduction of the severity level or for mitigation of the civil penalty was provided by the licensee. Consequently, the proposed civil penalty in the amount of \$50,000 should be imposed.