



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

DCS

February 23, 1989

Docket Nos. 50-327 and 50-328
License Nos. DPR-77 and DPR-79
EA 88-307

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTY
(NRC INSPECTION REPORT NOS. 50-327/88-35, 50-328/88-35,
50-327/88-55 AND 50-328/88-55)

This refers to the special Nuclear Regulatory Commission (NRC) inspections conducted by M. Branch on July 11-15 and August 22-23, and by K. Jenison on November 16 - December 1, 1988 at the Sequoyah Nuclear Plant. The inspections included a review of conditions surrounding the shutdown margin problem associated with excessive cooldowns following reactor trips. The reports documenting these inspections were sent to you by letters dated September 12, 1988 and December 28, 1988 respectively. As a result of these inspections, a significant failure to comply with NRC regulatory requirements was identified, and accordingly, NRC concerns relative to the findings were discussed in a management meeting held on September 13, 1988 and in an Enforcement Conference held on December 19, 1988. A letter summarizing the Enforcement Conference was sent to you on December 30, 1988.

The violations described in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty involve (1) an operating condition involving excessive plant cooldowns following a reactor trip that was at variance with FSAR assumptions and had not been evaluated pursuant to 10 CFR 50.59(b); (2) a failure to identify this variance by the licensee during numerous post-trip reviews; and (3) once identified by the NRC, a failure to take adequate corrective action to prevent recurrence. These occurrences raise a significant safety concern regarding the ability of your staff to identify and correct safety deficiencies in that the plant could have been operated in an unanalyzed condition at the end of the core cycle.

This problem was initially identified by you during the May 1982 Unit 2 startup test as test deficiency 2-9.4A-1 associated with the ability to meet FSAR assumptions regarding control of RCS temperature. At that time the problem was not adequately evaluated and was not corrected. Specifically, the initial startup test required that Tave steady out at or above no load Tave without manual intervention on feedwater flow. However, when this parameter was not met during the test, the test deficiency was erroneously accepted by the Plant Operations Review Committee (PORC) with the annotation that the deficiency was

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acceptable since there was no mandatory acceptance criteria on this parameter. A subsequent evaluation of the test deficiency, after modifications to the main feedwater system which incorporated a feed pump trip whenever a feedwater isolation occurred, also was inadequate in that no action was taken to review subsequent trips for excessive cooldowns. The failure to adequately evaluate and correct a deficiency in the feedwater system performance resulted in the reduction of the safety margin associated with reactor shutdown margin and increased the probability of occurrence and consequences of an accident or malfunction previously evaluated in the FSAR.

This inadequate condition continued during the October 1984 implementation of symptom based emergency operating procedure ES-0.1, Reactor Trip Response, when TVA did not incorporate the standard Westinghouse Owners Group Emergency Response Guideline to compensate for post reactor trip cooldown and did not correct the condition. Analysis of the affects of this deviation from those guidelines did not adequately consider the impact on shutdown margin and did not provide for mitigation of excessive post-trip cooldown. Again in the September 7, 1984 and November 1, 1985 10 CFR 50.59 safety evaluations for Units 1 and 2, for the Unit 2 cycle 3 and Unit 1 cycle 4 core reload analysis, you failed to recognize that erroneous post-trip RCS temperature data was used in the analyses. Specifically, your analyses incorrectly assumed the post-trip temperature parameter which was specified in the FSAR. This incorrect assumption would result in an end of life condition for the subject cores which would have violated the Technical Specification limit for shutdown margin after a reactor trip.

During your numerous post-trip reviews performed prior to the August 1985 shutdown and the recent post-trip reviews performed subsequent to the May 19, 23 and June 6, 1988 reactor trips, you did not adequately analyze the disparity between assumed and actual system safety parameters associated with post-trip cooldown.

Although most of the major opportunities to correct this problem occurred prior to the extended shutdown of Sequoyah, we have also seen in recent times tendencies by your staff to accept this condition, a failure of your recent post-trip review process to adequately assess the excessive post trip cooldowns, and recent failures to adequately control post-trip cooldown when specific measures to do so were prescribed to resolve this problem.

The NRC acknowledges your assessment that the Sequoyah plants had not reached the period in core life where the affect of the post-trip cooldown on shutdown margin actually resulted in operation in an unanalyzed condition. This does not, however, minimize the significance of the problem nor the potential for operation in an unanalyzed condition under other circumstances.

To emphasize the need to identify and correct operational deficiencies that could lead to plant operation in an unanalyzed manner, I have been authorized, after consultation with the Director, Office of Enforcement, and the Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the amount of Fifty Thousand Dollars (\$50,000) for the violation described in the enclosed Notice. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Action," 10 CFR Part 2, Appendix C

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(1988) (Enforcement Policy), the Violation described in the enclosed Notice has been categorized as a Severity Level III problem. The base value of a civil penalty for a Severity Level III violation or problem is \$50,000. The escalation and mitigation factors in the Enforcement Policy were considered and the civil penalty was neither escalated nor mitigated.

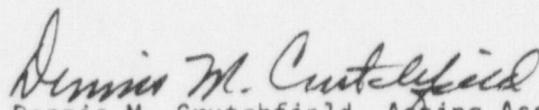
You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

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

The responses directed by this letter and its enclosure are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Pub. L. No. 96-511.

Should you have any questions concerning this letter, please contact us.

Sincerely,



Dennis M. Crutchfield, Acting Associate Director
for Special Projects
Office of Nuclear Reactor Regulation

Enclosure: Notice of Violation and Proposed
Imposition of Civil Penalty

cc w/encl:

J. L. LaPoint, Site Director
Sequoyah Nuclear Plant
F. L. Moreadith, Vice President,
Nuclear Engineering
R. L. Gridley, Director
Nuclear Safety and Licensing
M. Burzynski, Acting Site Licensing Manager
TVA Representative, Rockville Office
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 per discussion
 w/R. Peterson

~~D. OE~~
~~JLieberman~~
 2/15/89

~~DECS~~
~~H. Thompson~~
 2/16/89