



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET SW SUITE 23T85  
ATLANTA, GEORGIA 30303-8931**

March 6, 2003

Tennessee Valley Authority  
ATTN: Mr. J. A. Scalice  
Chief Nuclear Officer and  
Executive Vice President  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

**SUBJECT: NOTICE OF ENFORCEMENT DISCRETION (NOED) FOR TENNESSEE  
VALLEY AUTHORITY REGARDING SEQUOYAH UNIT 2 -  
(NOED NO. 2003-2-004)**

Dear Mr. Scalice:

By letter dated March 4, 2003, your staff formally documented a verbal request made on February 28, 2003, for the NRC to exercise discretion not to enforce compliance with the actions required in Sequoyah Nuclear Plant Unit 2 Technical Specification (TS) Limiting Condition for Operation (LCO) 3.6.1.9, "Containment Ventilation System." The letter addressed the information previously discussed with the NRC in a telephone conference on February 28, 2003, at 3:00 p.m., EST. The principal NRC staff members who participated in that telephone conference included: B. S. Mallett, Deputy Regional Administrator, Region II (RII); A. G. Howe, Section Chief, Project Directorate II (LPD2), Office of Nuclear Reactor Regulation (NRR); V. M. McCree, Deputy Director, Division of Reactor Projects (DRP), RII; H. O. Christensen, Deputy Director, Division of Reactor Safety (DRS), RII; S. J. Cahill, Branch Chief, DRP, RII; W. G. Rogers, Senior Reactor Analyst, DRS, RII; R. D. Telson, Sequoyah Resident Inspector, DRP, RII; M. S. Freeman, Sequoyah Senior Resident Inspector, DRP, RII; J. C. Pulsipher, Reactor Systems Engineer, Plants Systems Branch, Division of Regulatory Improvement Programs (DRIP), NRR; R. K. Anand, Project Manager, LPD2, NRR; R. J. Giardina, Reactor Systems Engineer, Technical Specification Branch, DRIP, NRR; and Mark Caruso, Probabilistic Safety Assessment Branch, Division of Systems Safety and Analysis, NRR.

Your staff stated that on February 28, 2003, at 6:51 p.m., Sequoyah Unit 2 would not be in compliance with TS LCO 3.6.1.9.b due to excessive containment purge valve penetration leakage discovered during performance of a quarterly leakage test on February 27, 2003. The Action Time for TS LCO 3.6.1.9.b requires the inoperable valve to be restored "to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

Your staff requested that a Notice of Enforcement Discretion (NOED) be issued pursuant to the NRC's policy regarding exercise of discretion for an operating facility, set out in Section VII.c, of the "General Statement of Policy and Procedures for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. You requested that the NOED be effective for an additional 144 hours in order to identify the source of leakage, to repair or replace the suspect valve or valves, and to perform verification leak testing in lieu of a plant shutdown. This letter documents our verbal issuance of the NOED for an additional 144 hours during the telephone conference on February 28, 2003. We understand that the condition causing the need for this NOED was corrected by you, causing you to exit from TS 3.6.1.9 and from this NOED at 4:42 p.m., on March 4, 2003.

Your staff stated that during performance of the required quarterly TS Surveillance Requirement (SR) 4.6.1.9.3, on Unit 2 on February 27, 2003, leakage above TS acceptance criteria was discovered from Containment Penetration X-6. Penetration X-6 contains two 24-inch air-operated purge exhaust valves (2-FCV-30-50 and -51). The purge valves are located on either side of the penetration in lower containment (inboard valve 2-FCV-30-50 is located inside containment and outboard valve 2-FCV-30-51 is located outside containment in the annulus area). The valves have a dual function to purge containment as part of the containment ventilation system (purge exhaust) and to isolate Containment Penetration X-6 following a design basis accident (DBA) as part of the containment isolation system. The purge valves associated with containment penetration X-6 exhibited a leakage rate of 29.63 standard cubic feet per hour (scfh) during the testing on February 27, 2003. This leakage rate exceeded the TS 3.6.1.9, allowable leakage rate (11.25 scfh [0.05  $L_a$ ]) for purge valves. Your staff suspected wear or damage to the resilient seals in one or both of the purge valves, but subsequently identified a broken key on the valve stem of the inboard purge valve. Your staff stated that they had not experienced any historical problems with the performance of these valves.

The safety basis in your NOED request letter included an evaluation of the potential impact on the public health and safety and the environment and a discussion of compensatory measures. Your evaluation concluded that the request for an additional 144 hours to restore the purge valves in Containment Penetration X-6 to an operable status did not represent a net increase in risk. In addition your staff concluded that no significant hazard consideration was involved and noted that the request had been approved by the Sequoyah Plant Operations Review Committee. Your staff noted that the observed leakage from the penetration did not affect the ability of the valves to perform their safety function to close and remain closed. Your staff also noted that when the observed purge valve leakage of approximately 30 scfh was coupled with the 4 scfh from other containment Type B and C penetrations, the resultant overall leakage of approximately 34 scfh was much less than the TS limit for Type B and C penetrations of 0.6  $L_a$  (135 scfh) and the overall containment leakage limit of 1.0  $L_a$  (225 scfh). Therefore, plant accident analyses assumptions were not affected by the fail-to-seal condition of the purge valves and the analyses remained bounding. The compensatory measures that were in place until the purge valves in Containment Penetration X-6 were returned to operable status were integral to your no net increase in risk determination. These compensatory measures included:

- (1) To ensure the leak rate from this penetration remains low enough to continue to be considered a small leak path, at least one purge isolation valve in the penetration X-6 will be closed and deactivated at all times, and the penetration will be leak rate monitored during the maintenance activity. If overall containment leakage increased to 0.6  $L_a$ , the shutdown actions of LCO 3.6.1.9.b would be implemented.
- (2) To offset the increase in probability of a small early release during the additional 144-hour repair activity, the probability of a core damage event will be reduced by moving the scheduled testing of emergency diesel generator (EDG) 2A-A outside the NOED repair activity. In addition no system, structure, or component (SSC) would be removed from service that was needed to achieve safe shutdown or mitigate an accident to the extent that the risk significance would increase above a "green" condition as determined by your ORAM Sentinel on-line risk assessment tool.
- (3) To reduce the probability of a large early release, containment purge operations would not be allowed for the duration of the valve maintenance.
- (4) To reduce activity released from a non-core-damage event, the activity of the reactor coolant will be monitored to provide early detection of an adverse trend.

We have reviewed your request and found it consistent with your verbal request of February 28, 2003 with one minor interpretation exception. Under the compensatory measures listed in Section 7, the request stated that penetration leakage would be monitored during repair efforts and the shutdown provisions of LCO 3.6.1.9.b would be implemented if  $0.6 L_a$  was reached or exceeded. Our understanding of our verbal discussion on February 28, 2003 was that the shutdown provisions would be implemented if overall containment penetration leakage reached  $0.6 L_a$ , which would include both penetration X-6 leakage and existing Type B and C penetration leakage. Our decision was therefore based, in part, on the understanding as stated in (1) above.

We agreed that maintaining the plant stable at power for an additional 144 hours was preferable to the potential for a plant transient that could occur during a plant shutdown to cold shutdown in this case. Also, we agreed that your compensatory measures, risk analysis, and safety basis considerations were adequate to demonstrate that the additional 144 hours would not involve a net increase in risk and would not adversely affect public health and safety or the environment. Our decision was based primarily on your actions to ensure leakage from Containment Penetration X-6 remained bounded and by your actions to offset the slight increase in early release frequency by lowering core damage event frequency and eliminating containment purging activity.

Based on the above considerations, the staff concluded that Criterion B.2.1.1.a and the applicable criteria in Section C.4 to NRC Manual Chapter 9900, "Technical Guidance, Operation - Notices of Enforcement Discretion" were met. Criterion B.2.1.1.a states that for an operating plant, the NOED is intended to avoid unnecessary transients as a result of compliance with the license condition and, thus, minimize potential safety consequences and operational risks.

On the basis of the staff's evaluation of your request and the information provided in your letter dated March 4, 2003, we concluded that issuance of this one-time NOED is consistent with the Enforcement Policy and staff guidance, and has no adverse impact on public health and safety. Therefore, it is our intention to exercise discretion not to enforce compliance with TS 3.6.1.9.b for inoperable containment purge valves 2-FCV-30-50 and -51, associated with containment penetration X-6, for the period from February 28, 2003, at 6:51 p.m., (EST) until March 5, 2003, at 6:51 p.m., (EST).

However, as stated the Enforcement Policy, action will be taken, to the extent that violations were involved, for the root cause or causes that led to the request for this NOED.

Sincerely,

**/RA/**

Bruce S. Mallett  
Deputy Regional Administrator

Docket No. 50-328  
Licensee No. DPR-79

cc w/encl: (See page 4)

TVA

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cc w/encl:  
Karl W. Singer  
Senior Vice President  
Nuclear Operations  
Tennessee Valley Authority  
Electronic Mail Distribution

James E. Maddox, Acting Vice President  
Engineering and Technical Services  
Tennessee Valley Authority  
Electronic Mail Distribution

Richard T. Purcell  
Site Vice President  
Sequoyah Nuclear Plant  
Electronic Mail Distribution

General Counsel  
Tennessee Valley Authority  
Electronic Mail Distribution  
Robert J. Adney, General Manager  
Nuclear Assurance  
Tennessee Valley Authority  
Electronic Mail Distribution

Mark J. Burzynski, Manager  
Nuclear Licensing  
Tennessee Valley Authority  
Electronic Mail Distribution

Pedro Salas, Manager  
Licensing and Industry Affairs  
Sequoyah Nuclear Plant  
Tennessee Valley Authority  
Electronic Mail Distribution

D. L. Koehl, Plant Manager  
Sequoyah Nuclear Plant  
Tennessee Valley Authority  
Electronic Mail Distribution

Lawrence E. Nanney, Director  
TN Dept. of Environment & Conservation  
Division of Radiological Health  
Electronic Mail Distribution

County Executive  
Hamilton County Courthouse  
Chattanooga, TN 37402-2801

Ann Harris  
341 Swing Loop  
Rockwood, TN 37854

John D. White, Jr., Director  
Tennessee Emergency Management  
Agency  
Electronic Mail Distribution

Distribution w/encl: (See page 5)

E-Mail Distribution:

- B. Smith, EDO
- L. Reyes, RII
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- PUBLIC
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- S. Moore, NRR
- A. Howe, NRR
- S. Freeman, RII
- C. Evans, RII
- O. DeMiranda, RII

PUBLIC DOCUMENT (circle one):    YES    NO

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NAME	SCahill	VMcCree	AHowe				
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