

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

November 21, 1979

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - NRC-OIE REGION II LETTER
RII:WHM 50-327/79-34 AND 50-328/79-19 - INSPECTION REPORT -
RESPONSE TO DEFICIENCIES

The subject letter dated October 31, 1979, cited TVA with three
deficiencies in accordance with 10 CFR 2.201. Enclosed is our
response to those deficiencies.

If you have any questions concerning this matter, please get in touch
with D. L. Lambert at PTS 854-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Jr., Director (Enclosure)✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
RESPONSE TO DEVIATIONS 327/79-34-02, 328/79-19-02,
327/79-34-03, 328/79-19-03, 327/79-34-04, and 328/79-19-04

Deviation 327/79-34-3 and 328/79-19-3

- A. Sections C.4, C.5, and C.7 of the Fire Protection Program Review (FPPR) dated January 20, 1977, and March 9, 1979, Revision state that the installation of the fire protection systems will be accomplished by construction documents with installation verified by independent inspections and tests conducted in accordance with written procedures and that adequate records will be maintained to document that the systems conform to the prescribed criteria. Sections E.1 and E.3 of the FPPR state that the fire alarm and fire suppression systems will meet the applicable national Fire Protection Association (NFPA) codes and standards.

Contrary to the above, documentation is not provided on all of the inspections and tests conducted on the fire protection systems, including hydrostatic pressure and flushing tests conducted on fire protection piping systems and functional tests conducted on fire detection systems. These inspections and tests are required by the applicable NFPA Standards and Codes and are also specified in the construction documents.

TVA Response

Documentation for hydrostatic testing and flushing of fire protection system piping, and functional testing of the fire detection systems is now available.

Sequoyah Nuclear Plant (SNP) Construction Procedure No. P-43, "Installation Inspection-Fire Protection Systems" has been revised to include documentation of hydrostatic testing and flushing of fire suppression systems, and functional testing of the fire detection systems.

We are now in full compliance with these requirements.

Deviation 327/79-34-4 and 328/79-19-4

- B. Sections F.1.B and F.1.F of the FPPR state that a noncombustible housing will be provided for each reactor coolant pump. The housing was to enclose the pump to contain a three (3) dimensional combustible liquid discharge and to act as a heat collector to reduce the response time of the automatic fire suppression system.

Contrary to the above, in lieu of a noncombustible housing for each pump, a metal catch basin has been provided beneath each reactor coolant pump and a metal canopy has been provided over each pump. Also, portions of the automatic fire suppression system are not located beneath the canopy as stipulated to reduce the response time of the system.

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TVA Response

Revision 4 of TVA's responses to the fire protection program review questions (transmitted by letter dated September 1, 1978, from S. A. Varga to N. B. Hughes) was submitted by letter from L. M. Mills to L. S. Rubenstein dated October 23, 1979. Additional Discussion Item 3 of the revision defines the fire detection and suppression installation as constructed. This item modified TVA's description provided in Item F1 of the Sequoyah Nuclear Plant Fire Protection Program Reevaluation. The design of the fire detection and suppression installation has been reviewed by NRC-NRR and has been found to be adequate. However, in light of NRC-OIE Inspector W. H. Miller's concern with the location of the fusible type fire suppression nozzles, modifications are being implemented to provide individual heat collection devices for each fusible nozzle to further improve the response time of the thermal actuated spray nozzles. These modifications will be complete by initial criticality of unit 1 and before initial fuel loading for unit 2. The response to Additional Discussion Item 3 discussed above will be revised to reflect this change.

Deviation 327/79-34-2 and 328/79-19-2

- C. Sections E.3(c), F.1.F, F.1.G, and F.2.F of the FPPR state that the water fire suppression systems will be designed and installed to meet the provisions of NFPA-13, Sprinkler Systems, and NFPA-15, Water Spray Fixed Systems.

Contrary to the above, the sprinkler systems which were inspected do not meet the following provisions of NFPA-13 or NFPA-15:

1. The preaction sprinkler system piping is not supervised as required by Section 5-3.5.2 of NFPA-13.
2. The systems are not provided with adequately sized "test pipes" (main drains) arranged to permit full flow tests to ensure that the water supply piping and connections are in order as required by Section 2-9 of NFPA-13.
3. The activation circuits from the fire detection systems to the deluge/preaction valves are not electrically supervised as required by Section 5-3.5.2 of NFPA-13 and Section 8-5 of NFPA-15.
4. The control valves to the alarm and water flow devices are not of the type which can be sealed or locked in the correct position as required by Section 3-17.4.5 of NFPA-13.

TVA Response

1. The revised response to question 9, Item E.3, submitted by letter from L. M. Mills to L. S. Rubenstein dated October 23, 1979, of the fire protection review questions states that "low pressure air supervision of the sprinkler systems is provided in areas containing sensitive electrical equipment." Sequoyah FSAR figures 9.5-1 through 9.5-36 as submitted in Amendment 61, dated May 25, 1979, identify those preaction sprinkler systems which are and those which are not air supervised.

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TVA believes that the provision of cross-zoned detector logic and pressure switches downstream of each preaction valve is adequate protection against inadvertent application of water from preaction sprinkler systems in areas which do not contain delicate, water-sensitive electrical equipment. This position has been reviewed by NRC-NRR and has been found to be acceptable.

2. The test connections observed during the subject inspection were not intended as permanent test connections. These connections were provided for construction test purposes and are to be removed before preoperational testing. The permanent installation requires 2-inch main drain connections to allow full flow testing in accordance with NFPA-13, Section 2-9. These connections will incorporate 2-1/2 inch hose temporarily connected to the main drain valves and routed to the nearest existing adequately sized drain. They will be used during initial acceptance testing (preoperational testing) and during periodic surveillance testing.
3. The Sequoyah Nuclear Plant Technical Specifications will reflect the requirement for six-month surveillance testing of detection circuits from the local detection panel to the actuated devices, i.e., fire dampers, fire door holders, ventilation equipment or preaction valves. This was agreed upon in the resolution of open item 7.a during a meeting on February 12, 1979, with NRC-NRR and TVA. This commitment is included in Revision 4 of TVA responses to the fire protection review questions submitted by letter from L. M. Mills to L. S. Rubenstein dated October 23, 1979. These responses have been reviewed by NRC-NRR, and have been found to be acceptable.
4. NFPA-13, 3-17.3.3 states that the alarm apparatus for preaction and deluge systems shall consist of listed alarm attachments, actuated by a detection system independent of the flow of water in the system. The detection systems described in section E.1 of the Fire Protection Program Reevaluation and further described in TVA's response to NRC-NRR fire protection review question 7, satisfy this requirement. Pressure switches installed downstream of the preaction valves are intended to provide an indication that the normally dry portions of the system have been charged with water. The intent of the requirement in NFPA-13, 3-17.4.5 is to ensure that an alarm of a fire condition is received assuming no automatic fixed detection systems are employed and total alarm reliance is placed on waterflow devices associated with wet pipe or dry pipe sprinkler systems.

Since neither receipt of a fire alarm nor operation of the preaction sprinkler system is compromised by failure of the pressure switch function, TVA does not believe locking or sealing root valves to the water flow devices is required.

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