

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

November 23, 1981

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555



Dear Ms. Adensam:

In the Matter of
Tennessee Valley Authority

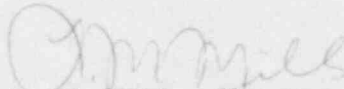
) Docket No. 50-327
)

Enclosed are 40 copies of proposed revisions to the Sequoyah Nuclear Plant Unit 1 Operating License DPR-77. The proposed changes request new implementation dates to make the unit 1 operating license consistent with the unit 2 operating license. The basis for a majority of the revisions was discussed and agreed to in the September 8, 1981 Commission Meeting on the issuance of the unit 2 operating license. Each proposed change includes a statement of justification for the change.

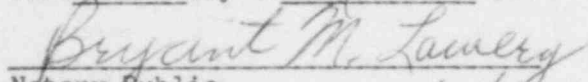
In accordance with the requirements of 10 CFR Part 170, we have determined the changes to be Class II since the changes are administrative in nature. However, based on discussions and agreements made with the NRC staff during the licensing process for the unit 2 full power license and in accordance with 10 CFR 170.22, footnote 2, no fees are submitted at this time because this proposed change is to simplify the license.

Very truly yours,

TENNESSEE VALLEY AUTHORITY


L. M. Mills, Manager
Nuclear Regulation and Safety

Sworn to and subscribed before me
this 23rd day of Nov., 1981


Notary Public
My Commission Expires 4/4/82

Enclosure

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ENCLOSURE

PROPOSED CHANGES TO SEQUOYAH NUCLEAR PLANT
UNIT 1 OPERATING LICENSE DPR-77

Item (1) - Unit 1 License Condition 2.C(18)

Existing Condition

Requirements for Modification to or Addition of
Instrumentation and Controls

- (a) Within 18 months after issuance of this license, instrument downscale failure alarms shall be installed for the effluent monitoring instrumentation channels for radioactive gaseous and radioactive liquid effluents. Also, appropriate modifications to procedures and technical specifications 3.3.3.9 and 3.3.3.10 will have been completed.
- (b) Within six months from issuance of this license, TVA shall submit for NRC review the basis for the values for each Reactor Protection System and Engineered Safety Feature instrumentation channel including:
 - (1) Technical specification trip setpoint value;
 - (2) Technical specification allowable value (the technical specification trip setpoint plus the instrument drift assumed in the accident analysis);
 - (3) The instrument drift assumed to occur during the interval between technical specification surveillance tests;
 - (4) The components of the cumulative instrument bias; and
 - (5) The minimum margin between the technical specification trip setpoint, the allowable value, and the trip value assumed in the accident analysis.

- (c) Prior to startup after the first refueling, TVA shall have installed, demonstrated operable, proposed appropriate technical specifications, and received NRC approval for an additional level of over/undervoltage protection acceptable to the NRC staff. The level of protection from the effects of power transients on safety-related equipment provided by Part 1 of the staff's 'Degraded Grid Voltage Position,' or equivalent, is required.

Proposed Condition

Requirements for Modification to or Addition of Instrumentation and Controls (Section 7.3.2)

- a. Prior to startup after first refueling, TVA shall have installed instrument downscale failure alarms for the effluent monitoring instrumentation channels for radioactive gaseous and radioactive liquid effluents. Modifications to procedures and Technical Specifications 3.3.3.9 and 3.3.3.10 shall have been completed.
- b. Prior to startup after the first refueling, TVA shall have received NRC approval of an additional operable level of over/undervoltage protection including associated technical specifications. The level of protection from the effects of power transients on safety-related equipment provided by Part 1 of the staff's 'Degraded Grid Voltage Position,' or equivalent, is required.

Justification

TVA has complied with the requirements of articles (a) and (b) of the existing condition by submitting the required information. Changing the time requirement specified in article (a) of the existing condition would allow TVA to perform the work during a scheduled outage. Changing this condition would reflect the current NRC philosophy and make the unit 1 OL consistent with the unit 2 OL.

Item (2)- Unit 1 License Condition 2.C(22)(D)

Existing Condition

Hydrogen Control Measures (Section 22.2, II.B.7)

- (1) By January 31, 1981, TVA shall by testing and analysis show to the satisfaction of the NRC staff that an interim hydrogen control system will provide with reasonable assurance protection against breach of containment in the event that a substantial quantity of hydrogen is generated.
- (2) For operation of the facility beyond January 31, 1982, the Commission must confirm that an adequate hydrogen control system for the plant is installed and will perform its intended function in a manner that provides adequate safety margins.
- (3) During the interim period of operation, TVA shall continue a research program on hydrogen control measures and the effects of hydrogen burns on safety functions and shall submit to the NRC quarterly reports on that research program.
 - (a) TVA shall amend its research program on hydrogen control measures to include, but not limited to, the following items:
 - (i) Improved calculational methods for containment temperature and ice condenser response to hydrogen combustion and local detonation.
 - (ii) Confirmatory tests on selected equipment exposed to hydrogen burns.
 - (iii) New calculations to predict differences between expected equipment temperature environments and containment temperatures.
 - (iv) Evaluate and resolve any anomalous results from the ongoing test program.

- (b) The results of these investigations will be provided to the staff for review in May 1981. A schedule for confirmatory tests beyond this date will be provided consistent with the requirement to meet the January 31, 1982 deadline, Section (22)D(2) of the license.

Proposed Condition

Hydrogen Control Measures (Section 22.2, II.B.7)

- (1) Prior to startup following the first refueling outage the Commission must confirm that an adequate hydrogen control system for the plant is installed and will perform its intended function in a manner that provides adequate safety margins.
- (2) During the interim period of operation, TVA shall continue a research program on hydrogen control measures and the effects of hydrogen burns on safety functions and shall submit to the NRC quarterly reports on that research program.
 - (a) TVA shall amend its research program on hydrogen control measures to include but not be limited to the following items:
 - (1) Improved calculational methods for containment temperature and ice condenser response to hydrogen combustion.
 - (2) Research to address the potential for local detonation.
 - (3) Confirmatory tests on selected equipment exposed to hydrogen burns.
 - (4) New calculations to predict differences between expected equipment temperature environments and containment temperatures.
 - (5) Evaluate and resolve any anomalous results occurring during the course of its ongoing test program.

- (b) A schedule for confirmatory tests shall be provided by TVA consistent with the requirement to meet Section _____ of the license.

Justification

In past meetings with the NRC Commissioners and a recent meeting with the ACRS subcommittee, TVA has provided progress reports of TVA's efforts to resolve this issue. We have installed an interim distributed ignition system (IDIS) that has the same capability as the permanent system. However, the system will be upgraded to improve qualification, redundancy, and control. However, delivery of all components is not expected to be completed until June 1982. A 110-day outage will be required for installation and extension until the first refueling outage will allow the work to be performed during a scheduled outage. We also believe that the interim system provides an adequate safety margin until the first refueling outage.

Revision of this condition will make the unit 1 OL consistent with the unit 2 OL.

Item (3) - Unit 1 License Conditions 2.C(23).D/G

Existing Condition

2.C(23).D - Additional Accident Monitoring Instrumentation (Section 22.3.II.F.1)

TVA shall install continuous indication in the control room of the following parameter:

- (1) Containment pressure from minus 0.5 psig to three times the design pressure of concrete containments and four times the design pressure of steel containments.

2.C(23).G - Additional Accident Monitoring Instrumentation (Section 22.3, II.F.1)

TVA shall install continuous indication in the control room of the following parameters:

1. Containment radiation monitors.

2. Noble gas effluent from each potential release point.

Proposed Condition

- (1) TVA shall install interim noble gas monitors at the first outage of sufficient duration.
- (2) At the first outage of sufficient duration, but no later than startup following the first refueling outage, TVA shall install the following monitoring instrumentation:
 - (a) Provisions for integrated monitor for noble gas, iodine and particulate monitoring.
 - (b) Containment high range radiation monitor.
 - (c) Containment pressure monitor.
 - (d) Containment water level monitor.
 - (e) Containment hydrogen monitor.

Justification

TVA has previously requested an exception to the implementation schedule on this item in letters dated February 20, 1981 and April 3, 1981 from L. M. Mills to A. Schwencer. Installation of additional accident monitoring instrumentation would require four weeks of forced outage in cold shutdown. Procurement of these items is also a problem. The noble gas monitors for inside containment are currently scheduled for delivery in July 1982; however, TVA will not know until October 1982 if the qualification testing has successfully met the requirements of IEEE 323-1974 (aging). Furthermore, noble gas stack monitors to meet TVA big specifications for instrument range and qualification requirements are not presently available. Potential vendors for the stack monitors have indicated a minimum 2-year delivery time from contract award for designs which may have exceptions to the TVA specifications for these noble gas stack monitors. Therefore, TVA believes that a planning date for installation should be at least the first refueling outage. If the planning date for installation were slipped, TVA believes the installed instrumentation for accident monitoring would more likely meet the NRC requirements for qualified equipment.

Additional justifications were provided in our September 4, 1981 letter from L. M. Mills to E. Adensam.

Item (4) - Unit 1 License Condition 2.C(23).E

Existing Condition

Reactor Coolant System Vents (Section 22.3, II.B.1)

TVA shall install reactor coolant system and reactor vessel head highpoint vents that are remotely operable from the control room.

Proposed Condition

Reactor Coolant System Vents (Section 22.2, II.B.1)

At the first outage of sufficient duration, but no later than startup following first refueling outage, TVA shall install reactor coolant system and reactor vessel head highpoint vents that are remotely operable from the control room.

Justification

The completion of this modification is scheduled before startup following the first refueling outage for Sequoyah unit 1. The reasons for scheduling this modification for the first refueling outage were transmitted to NRC in TVA's response to NUREG-0694 for Sequoyah (L. M. Mills' letter to A. Schwencer dated 7/25/80). These reasons were found acceptable by NRC as noted in Supplement 2 to the Safety Evaluation Report for Sequoyah Nuclear Plant. The license condition should reflect the scheduled completion date. Revision of this condition will make the unit 1 OL consistent with the unit 2 OL.

Item (5) - Unit 1 License Condition 2.C(22).F

Existing Condition

Post Accidental Sampling (Section 22.3, II.B.3)

TVA shall take corrective actions needed to provide the capability to promptly obtain and perform

radioisotopic and chemical analyses of reactor coolant and containment atmosphere samples under degraded core conditions without excessive exposure.

Proposed Condition

Post Accident Sampling (Section 22.3, II.B.3)

At the first outage of sufficient duration, but no later than startup following first refueling outage, TVA shall complete corrective actions needed to provide the capability to promptly obtain and perform radioisotopic and chemical analyses of reactor coolant and containment atmosphere samples under degraded core conditions without excessive exposure.

Justification

The completion for this modification is scheduled before startup following the first refueling outage for Sequoyah unit 1. The reasons for scheduling this modification for the first refueling outage were transmitted to NRC in TVA's response to NUREG-0694 for Sequoyah (L. M. Mills' letter to A. Schwencer dated 7/25/80). These reasons were found acceptable by NRC as noted in Supplement 2 to the Safety Evaluation Report for Sequoyah Nuclear Plant. The license condition should reflect the scheduled completion date.

Until the PAS system becomes fully operational, TVA has written interim procedures for obtaining samples. These procedures are described in the plant technical instructions (TI-66).

Additional justifications were provided in the September 4, 1981 letter from L. M. Mills to E. Adensam. Revision of this condition will make the unit 1 OL consistent with the unit 2 OL.

Item (6) - Unit 1 License Condition 2.C(23).H

Existing Condition

Instruments for Inadequate Core Cooling (Section 22.3, II.F.2)

TVA shall install additional instruments or controls needed to supplement installed equipment in order to

provide unambiguous, easy-to-interpret indication of inadequate core cooling.

Proposed Condition

Instruments for Inadequate Core Cooling (Section 22.2, II.F.2)

At the first outage of sufficient duration, but no later than startup following first refueling outage, TVA shall install reactor vessel water level instrumentation and the system will meet seismic and environmental requirements.

Justification

The completion for this modification is scheduled before startup following the first refueling outage for Sequoyah unit 1. The reasons for scheduling this modification for the first refueling outage were transmitted to NRC in TVA's response to NUREG-0694 for Sequoyah (L. M. Mills' letter to A. Schwencer dated 7/25/80). These reasons were found acceptable by NRC as noted in Supplement 2 to the Safety Evaluation Report for Sequoyah Nuclear Plant. The license condition should reflect the scheduled completion date. Revision of this condition will make the unit 1 OL consistent with the unit 2 OL.

Item (7) - Unit 1 License Condition 2.C(23).I

Existing Condition

Upgrade Emergency Support Facilities (Section 22.3, II.A.1.2)

In accordance with the implementation schedule which the NRC will establish, TVA shall comply with the requirements of NUREG-0696, 'Functional Criteria for Emergency Response Facilities.'

Proposed Condition

Upgrade Emergency Support Facilities (Section 22.2, III.A.1.2)

- (1) The installation of the TSC shall be completed prior to startup after the first refueling. However, if an outage scheduled to last more

than five weeks occurs after May 1, 1982, installation of the necessary modifications to the control room and plant instrumentation will be completed at that time and the TSC hardware installation will be completed within eleven weeks of the start of this scheduled outage.

- (2) TVA shall maintain interim emergency support facilities (Technical Support Center, Operations Support Center and the Emergency Operations Facility) until the final facilities are complete.

Justification

TVA provided a response to NRUEG-0696 on June 2, 1981. The TSC was identified as the only emergency response facility not to be completed by October 1, 1982. Completion of design and delivery of components is scheduled for April 1982. Four weeks of outage time is required. TVA commits to implement the permanent TSC before startup following the first refueling outage. TVA has implemented an interim TSC approved by NRC in Supplement 2 to NUREG-0011 (SQNP SER).

Item (8) - Unit 1 License Condition 2.C(23).J

Existing Condition

Relief and Safety Valve Test Requirements (Section 22.3.II.D.1)

Prior to July 1, 1981, TVA shall complete tests to qualify the reactor coolant system relief and safety valves under expected operating conditions for design basis transients and accidents.

Proposed Condition

Relief and Safety Valve Test Requirements (Section 22.2, II.D.1)

TVA shall conform to the results of the EPRI test program. TVA shall provide documentation for qualifying (a) reactor coolant system relief and safety valves, (b) piping and supports, and (c) block valves in accordance with the review schedule given in SECY 81-491 as approved by the Commission.

Justification

TVA is participating in the EPRI and the Westinghouse owners groups programs concerning this item. Schedules are not completely under TVA's control. Current schedules for testing have been coordinated with NRC (see EPRI letter from R. Youngdahl to D. Eisenhut dated December 15, 1980). TVA will provide a report with justification that the EPRI program demonstrates the functionability of the as-installed valves. TVA does not expect to submit detailed piping analyses and proposed pipe and pipe support modifications for review (if any are needed) before July 1, 1982 (see Mr. Youngdahl's letter).