

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

June 16, 1983

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

Dear Ms. Adensam:

In the Matter of) Docket No. 50-328
Tennessee Valley Authority)

In accordance with 10 CFR Part 50.90, enclosed are 40 copies of proposed revisions to the Sequoyah Nuclear Plant Unit 2 Operating License, DPR-79 (Enclosure 1). The proposed license amendment requests changes in the operating license conditions as a result of our review of the Sequoyah Nuclear Plant unit 2 work activities scheduled for the forthcoming unit 2/cycle 1 refueling outage. Notification of our intent to submit a request for a license amendment was made by my April 14, 1983 letter to you. Enclosure 2 provides the justification for the proposed amendment. Enclosure 3 provides a significant hazards determination for each of the proposed operating license conditions.

In accordance with the provisions of 10 CFR Part 170, we have determined the changes to be Class III for operating license DPR-79. This classification is based on the fact that the amendment involves a single issue for one unit. The remittance fee of \$4,000 is being wired to the Nuclear Regulatory Commission, Attention: Licensing Fee Management Branch.

This requested amendment has been evaluated pursuant to 10 CFR Part 50.92 and no significant hazards considerations are involved. This license amendment request is being submitted concurrent with the review by our Nuclear Safety Review Board.

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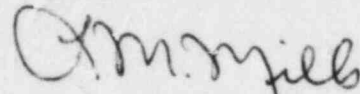
U.S. Nuclear Regulatory Commission

June 16, 1983

If you have any questions concerning this matter, please get in touch with J. E. Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 16th day of June 1983

Paulette L. White
Notary Public
My Commission Expires 9-5-84

Enclosures

cc: U.S. Nuclear Regulatory Commission (Enclosures)
Region II
Attn: Mr. James P. O'Reilly Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Michael H. Mobley, Director (Enclosures)
Division of Radiological Health
T.E.R.R.A. Building
150 9th Avenue North
Nashville, Tennessee 37203

ENCLOSURE 1

PROPOSED LICENSE CONDITIONS
SEQUOYAH NUCLEAR PLANT UNIT 2
OPERATING LICENSE DPR-79

License Condition 2.C(16).g - Post Accident Sampling

Existing Condition

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

Proposed Condition

At the first outage of sufficient duration, but no later than startup following second refueling outage, TVA shall complete corrective actions needed to provide the capability to promptly obtain and perform radio-isotopic and chemical analyses of reactor coolant and containment atmosphere samples under degraded core conditions with excessive exposure.

License Condition 2.C(16).1.(2)(a) - Additional Accident Monitoring Instrumentation

Existing 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 first refueling outage, TVA shall install the following qualified monitoring instrumentation:
 - (a) Integrated monitoring assembly which will accomplish particulate, iodine and noble gas monitoring.
 - (b) Containment high range radiation monitor.
 - (c) Containment pressure monitor.
 - (d) Containment water level monitor.
 - (e) Containment hydrogen monitor.

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 second refueling outage, TVA shall install the following qualified monitoring instrumentation:
 - (a) Integrated monitoring assembly which will accomplish particulate, iodine and noble gas monitoring.
 - (b) Containment high range radiation monitor.
 - (c) Containment pressure monitor.
 - (d) Containment water level monitor.
 - (e) Containment hydrogen monitor.

License Condition 2.C(16).m.(2) - Instruments for Inadequate Core Cooling

Existing Condition

- (1) By January 1, 1982, TVA shall install a backup indication for incore thermocouples. This display shall be in the control room and cover the temperature range of 200 F - 2000 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.

Proposed Condition

- (1) By January 1, 1982, TVA shall install a backup indication for incore thermocouples. This display shall be in the control room and cover the temperature range of 200 F - 2000 F.
- (2) At the first outage of sufficient duration, but no later than startup following second refueling outage, TVA shall install reactor vessel water level instrumentation which meets NRC requirements.

License Condition 2.C(16).q.(1) - Upgrade Emergency Support Facilities

Existing Condition

- (1) The installation of the TSC shall be completed before 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.

Proposed Condition

- (1) At the first outage of sufficient duration, but no later than startup following the second refueling outage, TVA shall update the Technical Support Facilities to meet NRC requirements.
- (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.

ENCLOSURE 2
JUSTIFICATION FOR PROPOSED LICENSE AMENDMENT
SEQUOYAH NUCLEAR PLANT UNIT 2
OPERATING LICENSE DPR-79

Late in 1981 TVA met with representatives of NRC to discuss the integrated schedule concept for Browns Ferry Nuclear Plant. The reason for the development of this schedule was that the number of modifications and magnitude of the required modification work to comply with NRC requirements and NRC commitments was beyond the capabilities of the plant to reasonably manage. A meeting was held with the NRC in September 1982 to discuss the Sequoyah Nuclear Plant Unit 1 integrated schedule concept that was submitted to the NRC on August 6, 1982. A revised integrated schedule was subsequently submitted to the NRC by my November 22, 1982, letter to you, to include the projected schedule and manpower levels for unit 2. We are still encountering problems with scheduling for unit 2 similar to those encountered with unit 1. Again, the effects of proceeding with the present Sequoyah unit 2 schedule include the following:

1. Extended periods of overtime worked by employees resulting in a deterioration in employee alertness and subsequently more personnel errors.
2. Plant staff's participation in modification-related activities places an additional burden on personnel to the detriment of the operation of the plant.
3. The high level of work activity imparts a near impossible procedural, testing, and maintenance change preparation load as well as additional training.
4. Large numbers of employees result in increased security, health physics, and QA deviations as well as LERs.

The proposed integrated schedule of work activities and deferral of outstanding license conditions was submitted to NRC by my April 14, 1983 letter to you. Additional information regarding the integrated schedule was provided by my June 2, 1983 letter to you. This schedule was the result of a multistep review of all required unit 2 work activities for this outage. This review included: (1) prioritization of the work activity according to safety significance (NRC commitments were considered high priority), (2) review of each activity to determine the status of required design information, availability of materials, required manpower, etc., (3) establishment of management limitations on the extent of work activities and manpower levels, and (4) development of a final integrated schedule based on steps 1 through 3. Attachment 1 provides additional justification for proposed license condition changes for which factors exist over and above those described above.

Many NRC modification requirements for Sequoyah, due to license requirements and compliance with NUREG-0737, are very extensive and require extremely high manpower levels. Many of these commitments were made by TVA at a time when the requirements were poorly defined and therefore final design and procurement time estimates were extremely rough at best. The result of these uncertainties and procurement problems is that many major modifications will need to be delayed and will now have to be worked concurrently with those requiring a plant outage to satisfy existing licensing conditions and commitments. The outage has been extended from 45 days required for refueling to 96 days to accommodate NRC commitment modification work. As demonstrated by the schedule, several license condition modifications will require deferral beyond the existing requirement date. Enclosure 1 to my June 2, 1983 letter provides the impact to the schedule, for the forthcoming refueling outage, as a result of having to complete the existing NRC commitments by the end of the unit 2, cycle 1 refueling outage.

The information provided by this letter, the April 14 letter, and the June 2, 1983 letter, constitute the basis for deferral of the operating license conditions. The integrated modification schedule concept is consistent with the NRC's guidelines which endorse "the concept of establishing implementation schedules for new and existing requirements which reflect the importance of the safety requirement" and "the licensee's ability to complete the necessary engineering, evaluation, design, and installation."

ATTACHMENT 1

ADDITIONAL JUSTIFICATIONS FOR PROPOSED LICENSE CONDITIONS
SEQUOYAH NUCLEAR PLANT UNIT 2
OPERATING LICENSE DPR-79

License Condition 2.C.(16).g - Post Accident Sampling

The current probable material delivery date for all required material for this modification is fall 1983. Any vendor delivery problems could delay this date by several months. Implementation of this modification for unit 2 will require an additional 62,565 man-hours. Because of the current schedule for the unit 2 cycle 1 refueling outage, this will not allow TVA to complete this modification, without significantly affecting the unit 2 outage, until each unit's respective cycle 2 outages.

In the interim, as indicated in our response to NUREG-0578 and NUREG-0737, procedures have been established to evaluate the primary coolant system activity depending on the accessibility of the sampling stations for particular degraded conditions. TVA's response to NUREG-0578 contained a copy of Technical Instruction 66, Postaccident Sampling and Analysis Methods.

License Condition 2.C.(16).1.2(a) - Additional Accident Monitoring Instrumentation

NUREG 0737 gave little guidance on the instrumentation specifications required to meet NUREG 0737, II.F.1. Because of the lack of guidance, TVA created their own specifications for the required radiation monitors. After several months of trying to procure radiation monitors, TVA discovered that they were not available using TVA's current procurement specifications. The time necessary for TVA to find an approved vendor utilizing the specifications delayed the purchase of the radiation monitors until September 1982. This resulted in delaying completion of the design until August 1983.

TVA has not completed the final drawing revisions. These revisions were scheduled for completion May 31, 1983. Estimates indicate 22,000 man-hours, not including the civil building work, will be required to finish this modification with present manpower limits; therefore, this modification cannot be completed as presently required without significantly affecting the unit 2 outage.

The present schedule for completion of this modification is before startup after the unit 2 cycle 2 refueling outage.

In the interim, Sequoyah will have installed high-range noble gas effluent monitors as follows:

- A. Monitors will be placed on the shield building vent and the condenser vacuum pump exhaust.

B. Each monitor will consist of two General Atomic Company monitors as follows:

1. Model RD-1 with a range of $10[-1]$ to $10[+4]$ MR/hr,
2. Model RD-23 with a range of $10[3]$ to $10[7]$ MR/hr,

The model RD-1 and RD-23 monitors each utilize an ionization chamber for the detector.

- C. The instrument readouts with continuous display and recording will be located in the main control room.
- D. The source of power for monitors will be preferred power (vital instrument bus).

License Condition 2.C.(16).m(2) - Instruments for Inadequate Core Cooling

The reactor vessel level system has been scheduled for installation during the second refueling outage due to its severe impact on work activities and because it is our understanding that the system cannot be turned on until emergency procedures utilizing the level system are developed, approved by NRC, and subsequent operator training completed. The Sequoyah Nuclear Plant procedure guidelines are being developed as a generic effort through the Westinghouse Electric Corporation Owners' Group. Based on the present owners' group schedule, we estimate the procedures cannot be in place and operator training completed before the fall of 1985. The level system therefore, if installed during this outage, could not be used until very late into cycle 2 assuming an optimistic schedule. Delays in procedure development or NRC approval could easily prevent use of the level system until cycle 3. Westinghouse has indicated that additional analyses will be necessary for plants utilizing ice condensers and/or upper head injection. The magnitude of this work and the schedule for completion has yet to be determined.

In addition, with present manpower limits, this modification cannot be completed as presently required without significantly affecting the unit 2 outage. The large amount of inside containment work on this modification requires a deferral for completion because of the large amount of inside containment work required by other NRC commitment items. The outside containment work consisting of approximately 29,800 man-hours of the overall 49,500 man-hours will continue between the unit outages.

License Condition 2.C.(16).q(1) - Upgrade Emergency Support Facilities

In response to NUREG 0694, TVA committed to installing the permanent Technical Support Center (TSC) by June 30, 1983. Subsequent license conditions were included in the unit 2 operating license to require installation by the first refueling outage or the first scheduled five-week outage after May 1, 1982. Since these license conditions were established, equipment deliveries and design work have not kept pace with the expected schedule and will not be available to allow completion during the first refueling.

The software program for the TSC computer system was supplied by Westinghouse. Westinghouse's original delivery date for the TSC computer software was January 1, 1981. Westinghouse's delivery did not meet the originally scheduled date. Portions of the software were delivered over two years late to TVA. Modifications to this software package by TVA are expected to be complete by the summer of 1984. The nonoutage portion of this modification will take 29 weeks to install. As currently scheduled, this nonoutage portion will not be completed before the unit 2, cycle 1 outage work begins. The magnitude of this cycle 2 outage unless the unit 2, cycle 1 length is significantly increased.

The TSC, which is located adjacent to the main control room, is being used at Sequoyah. The TSC meets the same habitability requirements as the main control room. The TSC communications include PAX telephones and Bell telephones. Reference materials, including the Radiological Emergency Plan (REP), implementing procedures, plant drawings, Final Safety Analysis Report (FSAR), and selected plant procedures are present. Therefore, the TSC is presently operational with the exception of the appropriate data systems.

ENCLOSURE 3

SIGNIFICANT HAZARDS DETERMINATION
FOR
PROPOSED OPERATING LICENSE CONDITIONS

SEQUOYAH NUCLEAR PLANT
UNIT 2

SIGNIFICANT HAZARDS CONSIDERATION
FOR
PROPOSED TECHNICAL SPECIFICATION CHANGES

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Delaying the installation of the postaccident sampling system (PASS) for Sequoyah unit 2 until the second refueling outage does not significantly increase the probability or consequences of an accident previously evaluated. The safety analyses and emergency operating procedures do not require the use of the PASS. An interim procedure has been developed until the PASS is installed to obtain a pressurized RCS sample via hot sample room, nonpressurized RCS sample via RHR pump discharge, and upper/lower containment sample via the containment radiation monitors.

2. Does the proposed amendment create the probability of a new or different kind of accident from any accident previously evaluated?

Delaying installation of PASS does not create the probability of a new or different kind of accident from any accident previously evaluated since it is not now presently in any analysis or emergency operating procedures.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Delaying installation of PASS does not involve a significant reduction in a margin of safety since it is not presently used in any analysis or emergency operating procedures.

SIGNIFICANT HAZARDS CONSIDERATION
FOR
PROPOSED TECHNICAL SPECIFICATION CHANGES

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Delaying the installation of the permanent high-range noble gas effluent monitors and iodine and particulate sampling of plant effluents at Sequoyah unit 2 until the second refueling outage does not significantly increase the probability or consequences of an accident previously evaluated. The safety analysis and plant emergency operating procedures both do not require the use of the high-range noble gas effluent monitors nor iodine and particulate sampling of plant effluents. TVA will, however, provide the following interim effluent sampling system at Sequoyah unit 2 during the first refueling outage.

(See attached page)

2. Does the proposed amendment create the probability of a new or different kind of accident from any accident previously evaluated?

Delaying installation of permanent effluent monitors does not create the probability of a new or different kind of accident from any accident previously evaluated since it is not now presently in any analysis or emergency operating procedures.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Delaying installation of permanent effluent monitors does not involve a significant reduction in a margin of safety since it is not presently used in any analysis or emergency operating procedures.

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Interim High-Range Noble Gas Effluent Monitors

The following notes apply to the interim noble gas monitors.

1. Each monitor consists of two General Atomic Company monitors as follows.
 - a. Model RD-1 with a range of 10^{-1} to 10^4 mR/hr,
 - b. Model RD-23 with a range of 10^3 to 10^7 mR/hr.

The model RD-1 and RD-23 monitors each utilize an ionization chamber for the detector. The RD-1 and RD-23 detectors are located at a position outside a sample pipe at which the exposure rate is approximately 10^1 mR/hr when the sample pipe contains 10^5 microcuries per cubic centimeter (mCi/cc) of Xe-133.

2. The monitored discharge paths are each shield building vent and the condenser vacuum pump exhaust for each unit.
3. The instrument readouts with continuous display and recording will be located in the main control room (MCR).
4. Since the instrument readout will be continually available in the MCR, the required capability to obtain readings at least every 15 minutes during and following an accident will be ensured.
5. The source of power for the monitors will be preferred power (vital instrument bus).

Iodine and Particulate Sampling of Plant Effluents

Interim procedures have been implemented at Sequoyah for obtaining a local sample from plant effluents and analyzing for iodine.

SIGNIFICANT HAZARDS CONSIDERATION
FOR
PROPOSED TECHNICAL SPECIFICATION CHANGES

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Delaying the installation of the reactor vessel level instrument system at Sequoyah Nuclear Plant unit 2 until the second refueling outage does not significantly increase the probability or consequences of an accident previously evaluated. The safety analyses do not take credit for any input from RVLIS. In addition, the present emergency procedures do not require the use of RVLIS. Function oriented emergency procedures will be developed using the Westinghouse Owners' Group (WOG) generic guidelines. TVA's schedule for completion of the effort including operator training, validation/verification and control room review is addressed in our response to NRC generic letter 82-33. We do not expect to complete this work until at least the spring of 1986. In accordance with generic letter 82-28, Inadequate Core Cooling (ICC) Instrumentation System, the ICC instrumentation system (see attached)

2. Does the proposed amendment create the probability of a new or different kind of accident from any accident previously evaluated?

Delaying installation of RVLIS does not create the probability of a new or different kind of accident from any accident previously evaluated since it is not presently in any analysis or emergency operating procedures.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Delaying installation of RVLIS does not involve a significant reduction in a margin of safety since it is not presently used in any analysis or emergency operating procedures.

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(this includes RVLIS) should not be turned on until the licensee has completed the task analysis portion of the control room review and should be used with prudence in relation to any operator actions or decisions until the specific design and installation have been approved by the staff and instructions on their use and operation have been incorporated in accordance with the emergency operating procedure guidelines into approved emergency operating procedures. Both generic letters 82-28 and 82-33 are requiring an integration of procedures, training, ICC instrumentation, and control room design review. Since the procedures, training and control room design review will not be completed until at least spring of 1986, we believe delaying the installation of RVLIS until the second refueling outage is acceptable. In addition, the WOG generic emergency operating procedure guidelines have not been approved for use by NRC.

SIGNIFICANT HAZARDS CONSIDERATION
FOR
PROPOSED TECHNICAL SPECIFICATION CHANGES

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Delaying the installation of the technical support center (TSC) safety parameter display system (SPDS) computer system at Sequoyah unit 2 until the second refueling outage does not significantly increase the probability or consequences of an accident previously evaluated. Neither the safety analyses nor the emergency operating procedures require the use of the TSC/SPDS computer system. Further, the system is not qualified to meet class 1E standards; therefore, the emergency operating procedures cannot require its use. This is consistent with TVA's response to NRC on generic letter 82-33 for SPDS.

A description of the TSC has been provided to NRC in our response to generic letter 81-10. The TSC is operational with the exception of the appropriate data systems.

2. Does the proposed amendment create the probability of a new or different kind of accident from any accident previously evaluated?

Delaying installation of TSC/SPDS computer system does not create the probability of a new or different kind of accident from any accident previously evaluated since it is not presently in any analysis or emergency operating procedures.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Delaying installation of TSC/SPDS computer system does not involve a significant reduction in a margin of safety since it is not presently used in any analysis or emergency operating procedures.