

April 3, 1989

Docket Nos. 50-327/328

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

Distribution

Docket File
NRC PDR
Local PDR
Projects Reading
ADSP Reading
DCrutchfield
BDLiaw
SBlack
RPierson
MSimms
JDonohew(2)
JRutberg
FMcCoy
JBrady
SVarga
BGrimes
EJordan
DHagan
TMeek(8)
WJones
EButcher
GPA/PA

GPA/CA
SQN Rdg.
ARM/LFMB
LWatson(2)
RWescott
GHubbard
OGC
LFMB

Dear Mr. Kingsley:

SUBJECT: MINOR CORRECTIONS TO THE SEQUOYAH PLANT TECHNICAL SPECIFICATIONS
(R00207/R00208) (TS 87-39) - SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

The Commission has issued the enclosed Amendment No. 109 to Facility Operating License No. DPR-77 and Amendment No. 99 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Units 1 and 2, respectively. These amendments are in response to your application dated September 14, 1987.

The amendments correct minor discrepancies in the Sequoyah Nuclear Plant, Units 1 and 2 Technical Specification (TS). The changes correct (1) an action statement of Table 3.3-1, Reactor Trip System Instrumentation, for Unit 2 only; (2) the instrumentation listed in Table 3.3-11, Fire Detection Instruments, for Unit 1 only; (3) the table notation of Table 4.11-2, Radioactive Gaseous Waste Monitoring, Sampling and Analysis Program, for both units; and (4) the surveillance requirements 4.8.1.1.2.a.4 (both units) and 4.8.1.1.2.d.7 (Unit 1 only) for diesel generators. These changes are for both units or for only Unit 1 or Unit 2 as described above. These TS changes are to correct inconsistencies between TS requirements and to provide clarification for the intent of various TS specifications.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Original signed by

Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 109 to License No. DPR-77
2. Amendment No. 99 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

~~NRR:TVA/BC~~
EMarinos
3/2/89

DFOL
1/1

CPA

8904170310 890403
PDR ADDCK 05000327
PDC

| | | | | | | | |
|------|-------------|--------------|-------------|------------|------------|----------|-----------|
| OFC | :NRR:TVA/LA | :NRR:TVA/PM | :NRR:TVA/PM | NRR:TVA/BC | :TVA:AD/TP | :OGC | :TVA:AD/P |
| NAME | :MSimms | :JDonohew:as | :RWescott | :GHubbard | :RPierson | :SBlack | |
| DATE | :3/2/89 | :3/2/89 | :3/8/89 | :3/8/89 | :3/19/89 | :3/19/89 | :3/19/89 |

Mr. Oliver D. Kingsley, Jr.

-2-

cc:

General Counsel
Tennessee Valley Authority
400 West Summit Hill Drive
E11 B33
Knoxville, Tennessee 37902

Mr. R. L. Gridley
Tennessee Valley Authority
5N 157B Lookout Place
Chattanooga, Tennessee 37402-2801

Mr. John T. LaPoint
Tennessee Valley Authority
Sequoyah Nuclear Plant
P.O. Box 2000
Soddy Daisy, Tennessee 37379

Mr. M. Ray
Tennessee Valley Authority
Sequoyah Nuclear Plant
P.O. Box 2000
Soddy Daisy, Tennessee 37379

Mr. D. L. Williams
Tennessee Valley Authority
400 West Summit Hill Drive
W10 B85
Knoxville, Tennessee 37902

County Judge
Hamilton County Courthouse
Chattanooga, Tennessee 37402

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Resident Inspector/Sequoyah NP
c/o U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

Mr. Michael H. Mobley, Director
Division of Radiological Health
T.E.R.R.A. Building, 6th Floor
150 9th Avenue North
Nashville, Tennessee 37219-5404

Dr. Henry Myers, Science Advisor
Committee on Interior
and Insular Affairs
U.S. House of Representatives
Washington, D.C. 20515

Tennessee Valley Authority
Rockville Office
11921 Rockville Pike
Suite 402
Rockville, Maryland 20852



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

TENNESSEE VALLEY AUTHORITY
DOCKET NO. 50-327
SEQUOYAH NUCLEAR PLANT, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated September 14, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 109, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 3, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

| <u>REMOVE</u> | <u>INSERT</u> |
|---------------|---------------|
| 3/4 3-59 | 3/4 3-59 |
| 3/4 3-60 | 3/4 3-60 |
| 3/4 3-63 | 3/4 3-63 |
| 3/4 3-68 | 3/4 3-68 |
| 3/4 3-68a | 3/4 3-68a |
| 3/4 8-3 | 3/4 8-3 |
| 3/4 8-5 | 3/4 8-5 |
| 3/4 8-6 | 3/4 8-6* |
| 3/4 11-13 | 3/4 11-13 |
| 3/4 11-14 | 3/4 11-14* |

TABLE 3.3-11

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|-----------|---|------------------------------|----------------------|----------------|-----------------|
| | | <u>Ionization</u> | <u>Photoelectric</u> | <u>Thermal</u> | <u>Infrared</u> |
| 1 | Diesel Gen. Rm. 2B-B, El. 722 | | | 5 | |
| 2 | Diesel Gen. Rm. 2B-B, El. 722 | | | 5 | |
| 3 | Diesel Gen. Rm. 1B-B, El. 722 | | | 5 | |
| 4 | Diesel Gen. Rm. 1B-B, El. 722 | | | 5 | |
| 5 | Diesel Gen. Rm. 2A-A, El. 722 | | | 5 | |
| 6 | Diesel Gen. Rm. 2A-A, El. 722 | | | 5 | |
| 7 | Diesel Gen. Rm. 1A-A, El. 722 | | | 5 | |
| 8 | Diesel Gen. Rm. 1A-A, El. 722 | | | 5 | |
| 9 | Lube Oil Storage Rm. El. 722 | | | 1 | |
| 10 | Lube Oil Storage Rm. El. 722 | | | 1 | |
| 11 | Fuel Oil Transfer Rm. El. 722 | | | 1 | |
| 12 | Fuel Oil Transfer Rm. El. 722 | | | 1 | |
| 13 | Diesel Gen. Corridor, El. 722 | | | 6 | |
| 14 | Air Intake & Exhaust Rm. 2B, El. 740.5 | | | 9 | |
| 15 | Air Intake & Exhaust Rm. 1B, El. 740.5 | | | 9 | |
| 16 | Air Intake & Exhaust Rm. 2A, El. 740.5 | | | 9 | |
| 17 | Air Intake & Exhaust Rm. 1A, El. 740.5 | | | 9 | |
| 18 | Diesel Gen. 2B-B Relay Bd., El. 722 | 3 | | | |
| 19 | Diesel Gen. 1B-B Relay Bd., El. 722 | 3 | | | |
| 20 | Diesel Gen. 2A-A Relay Bd., El. 722 | 3 | | | |
| 21 | Diesel Gen. 1A-A Relay Bd., El. 722 | 3 | | | |
| 22 | Diesel Gen. Board Rm. 2B-B, El. 740.5 | 2 | | | |
| 23 | Diesel Gen. Board Rm. 2B-B, El. 740.5 | | | 2 | |
| 24 | Diesel Gen. Board Rm. 1B-B, El. 740.5 | 2 | | | |
| 25 | Diesel Gen. Board Rm. 1B-B, El. 740.5 | | | 2 | |

SEQUOYAH - UNIT 1

3/4 3-59

Amendment No. 37, 97, 109

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|-----------|--|------------------------------|---------------|---------|----------|
| | | Ionization | Photoelectric | Thermal | Infrared |
| 26 | Diesel Gen. Board Rm. 2A-A, El. 740.5 | 2 | | | |
| 27 | Diesel Gen. Board Rm. 2A-A, El. 740.5 | | | 2 | |
| 28 | Diesel Gen. Board Rm. 1A-A, El. 740.5 | 2 | | | |
| 29 | Diesel Gen. Board Rm. 1A-A, El. 740.5 | | | 2 | |
| 30 | Cable Spreading Rm. C7-C11, El. 706 | 14 | | | |
| 31 | Cable Spreading Rm. C7-C11, El. 706 | 14 | | | |
| 32 | Cable Spreading Rm. C7-C11, El. 706 | 14 | | | |
| 33 | Cable Spreading Rm. C7-C11, El. 706 | 14 | | | |
| 34 | Cable Spreading Rm. C3-C7, El. 706 | 14 | | | |
| 35 | Cable Spreading Rm. C3-C7, El. 706 | 14 | | | |
| 39 | Cont. Spray Pump 1A-A, El. 653 | 2 | | | |
| 40 | Cont. Spray Pump 1B-B, El. 653 | 2 | | | |
| 43 | RHR Pump 1A-A, El. 653 | 2 | | | |
| 44 | RHR Pump 1B-B, El. 653 | 2 | | | |
| 47 | Aux. Bldg. Corridor, El. 653 | 10 | | | |
| 48 | Corridor, Control Bldg. El. 669 | 4 | | | |
| 49 | Corridor, Control Bldg. El. 669 | 4 | | | |
| 50 | Mech. Equipm Rm. Col. C1, El. 669 | 2 | | | |
| 51 | Mech. Equip. Rm. Col. C1, El. 669 | | | 2 | |

SEQUOYAH - UNIT 1

3/4 3-60

Amendment No. 12, 97, 109

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|--------------|---|------------------------------|----------------------|----------------|-----------------|
| | | <u>Ionization</u> | <u>Photoelectric</u> | <u>Thermal</u> | <u>Infrared</u> |
| 115 | Waste Packaging Area El. 706 | 3 | | | |
| 116 | Cask Loading Area El. 706 | 2 | | | |
| 117 | Cask Loading Area El. 706 | 2 | | | |
| 118 | New Fuel Storage Area El. 706 | 2 | | | |
| 119 | New Fuel Storage Area El. 706 | 2 | | | |
| 120 | Aux. Bldg. Gas Trtmt. Fltr. El. 714 | | 1 | 1 | |
| 121 | Aux. Bldg. Gas Trtmt. Fltr. El. 714 | | 1 | 1 | |
| 122 | Add. Eqpt. Bldg. El. 706 & 717.5 | 6 | | | |
| 123 | Volume Cont. Tank Rm. 1A, El. 690 | 1 | | | |
| 124 | Additional Equip. Bldg. El. 706 | 6 | | | |
| 125 | Volume Cont. Tank Rm. 1A, El. 690 | 1 | | | |
| 126 | ABGTS Rm. El. 714 | 2 | | | |
| 127 | ABGTS Rm. El. 714 | 2 | | | |
| 128 | ABGTS Rm. El. 714 | 2 | | | |
| 129 | ABGTS Rm. El. 714 | 2 | | | |
| 130 | Ventilation & Purge Air Rm. El. 714 | 3 | | | |
| 131 | Ventilation & Purge Air Rm. El. 714 | 3 | | | |
| 132 | Ventilation & Purge Air Rm. El. 714 | 3 | | | |
| 133 | Ventilation & Purge Air Rm. El. 714 | 3 | | | |
| 134 | Aux. Bldg. A5-A11, Col. U-W, El. 714 | 7 | | | |
| 135 | Aux. Bldg. A5-A11, Col. U-W, El. 714 | 7 | | | |
| 136 | Heating & Vent. Rm. El. 714 | 4 | | | |
| 137 | Heating & Vent. Rm. El. 714 | 4 | | | |
| 138 | Heating & Vent. Rm. El. 714 | 4 | | | |

SEQUOYAH - UNIT 1

3/4 3-63

Amendment No. 97, 109

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

SEQUOYAH - UNIT 1

3/4 3-68

Amendment No. 97, 109

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|-----------|--|------------------------------|---------------|---------|----------|
| | | Ionization | Photoelectric | Thermal | Infrared |
| 255 | 125-V Batt. Rm. IV El. 749 | 1 | | | |
| 256 | 125-V Batt. Rm. IV El. 749 | 1 | | | |
| 257 | 480-V Bd. Rm. 1B El. 749 | 4 | | | |
| 258 | 480-V Bd. Rm. 1B El. 749 | 4 | | | |
| 259 | 480-V Bd. Rm. 1A El. 749 | 4 | | | |
| 260 | 480-V Bd. Rm. 1A El. 749 | 4 | | | |
| 261 | 480-V Bd. Rm. 2A El. 749 | 4 | | | |
| 262 | 480-V Bd. Rm. 2A El. 749 | 4 | | | |
| 263 | 480-V Bd. Rm. 2B El. 749 | 4 | | | |
| 264 | 480-V Bd. Rm. 2B El. 749 | 4 | | | |
| 267 | Aux. Instr. Rm. El. 685 | 8 | | | |
| 268 | Aux. Instr. Rm. El. 685 | | | 9 | |
| 269 | Computer Rm. El. 685 | 4 | | | |
| 270 | Computer Rm. El. 685 | | | 4 | |
| 271 | Aux. Instr. Rm. El. 685 | 8 | | | |
| 272 | Aux. Instr. Rm. El. 685 | | | 9 | |
| 273 | Computer Rm. Corridor | 3 | | | |
| 276 | Intk. Pumping Sta. El 690 & 670.5 | 15 | | | |
| 277 | ERCW Pump Sta. El. 704 | 21 | | 8 | |
| 296 | Aux. CR Bds. L-4B, 4D, & 11B, El. 734 | 6 | | | |
| 297 | Main Cont. Bds. | 9 | | | |
| 298 | Common Main CR Bds. El 732 | 9 | | | |
| 330 | Reactor Building Annulus | | 3 | | |
| 331 | Reactor Building Annulus | | 4 | | |
| 352 | Lwr. Compt. Coolers, El. 693 | | 4 | | |
| 354 | Upr. Compt. Coolers, El. 778 | | 4 | | |
| 356 | RCP 2, El. 693 | | | 2 | |
| 357 | RCP 2, El. 693 | | | 2 | |
| 360 | RCP 1, El. 693 | | | 2 | |
| 361 | RCP 1, El. 693 | | | 2 | |
| 364 | RCP 3, El. 693 | | | 2 | |
| 365 | RCP 3, El. 693 | | | 2 | |
| 368 | RCP 4, El. 693 | | | 2 | |

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|-----------|--------------------------------------|------------------------------|----------------------|----------------|-----------------|
| | | <u>Ionization</u> | <u>Photoelectric</u> | <u>Thermal</u> | <u>Infrared</u> |
| 369 | RCP 4, El. 693 | | | 2 | |
| 372 | Reactor Bldg. Annulus | | 22 | | |
| 373 | Reactor Bldg. Annulus | | 21 | | |
| 387 | Turbine Cont. Bldg. Wail, El. 706 | | | 18 | |
| 427 | 125V Batt. Rm. V El. 749 | 2 | | | |
| 428 | 125V Batt. Rm. V El. 749 | 2 | | | |
| 458 | Counting Room Ceiling El. 690 | 2 | | | |
| 462 | 480V Sd Bd Rm. 1B2 El. 734 | | | 1 | |
| 463 | 480V Sd Bd Rm. 2A2 El. 734 | | | 1 | |
| 465 | Counting Room Ceiling El. 690 | 2 | | | |
| 466 | 480V Sd Bd Rm. 1B2 El. 734 | | | 1 | |
| 467 | 480V Sd Bd Rm. 1B2 El. 734 | | | 1 | |
| 468 | 480V Sd Bd Rm. 1B2 El. 734 | | | 1 | |
| 469 | 480V Sd Bd Rm. 2A2 El. 734 | | | 1 | |
| 470 | 480V Sd Bd Rm. 2A2 El. 734 | | | 1 | |
| 471 | 480V Sd Bd Rm. 2A2 El. 734 | | | 1 | |

SEQUOYAH - UNIT 1

3/4 3-68a

Amendment No. 97, 109

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. *Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 6900 ± 690 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals with startup on each signal verified at least once per 124 days:
 - a) Manual.
 - b) Simulated loss of offsite power by itself.
 - c) An ESF actuation test signal by itself.
5. *Verifying the generator is synchronized, loaded to greater than or equal to 4400 kw in less than or equal to 60 seconds, and operates for greater than or equal to 60 minutes, and
6. Verifying the diesel generator is aligned to provide standby power to the associated shutdown boards.
 - b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the engine-mounted fuel tanks.
 - c. At least once per 92 days and from new fuel oil prior to addition to the 7-day tanks by verifying that a sample obtained in accordance with ASTM-D270-1975 has a water and sediment content of less than or equal to .05 volume percent and a kinematic viscosity @ 100°F of greater than or equal to 1.8 but less than or equal to 5.8 centistokes when tested in accordance with ASTM-D975-77, and an impurity level of less than 2 mg. of insolubles per 100 ml. when tested in accordance with ASTM-D2274-70.
 - d. At least once per 18 months during shutdown by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,
 2. Verifying the generator capability to reject a load of greater than or equal to 600 kw while maintaining voltage within ± 10 percent of the initial pretest voltage and frequency at 60 ± 1.2 Hz. At no time shall the transient voltage exceed 8276V.
 3. Verifying the generator capability to reject a load of 4400 kw without tripping. The generator voltage shall not exceed 114 percent of the initial pretest voltage or 8276V, whichever is less during and following the load rejection.

*The diesel generator start (10 sec) and load (60 sec) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other diesel generator engine starts and loading for the purpose of this surveillance testing may be preceded by an engine idle start, followed by gradual acceleration to synchronous speed (900 rpm), synchronization, and gradual loading.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

The generator voltage and frequency shall be 6900 ± 690 volts and 60 ± 1.2 Hz within 10 seconds after the start signal; the steady state generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24 hour test, perform Specification 4.8.1.1.2.d.4.

8. Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 4400 kW.
9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its shutdown status.
10. Verifying that the automatic load sequence timers are OPERABLE with the setpoint for each sequence timer within ± 5 percent of its design setpoint.
11. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
 - a) Engine overspeed
 - b) 86 GA lockout relay
- e. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting the diesel generators simultaneously, during shutdown, and verifying that the diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds.
- f. At least once per 10 years* by:
 1. Draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution, and
 2. Performing a pressure test of those portions of the diesel fuel oil system design to Section III, subsection ND of the ASME Code at a test pressure equal to 110 percent of the system design pressure.

*These requirements are waived for the initial surveillance.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.3 The 125-volt D.C. distribution panel, 125-volt D.C. battery bank and associated charger for each diesel generator shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying:
 1. That the parameters in Table 4.8-1a meet the Category A limits.
 2. That the total battery terminal voltage is greater than or equal to 124-volts on float charge.
- b. At least once per 92 days by:
 1. Verifying that the parameters in Table 4.8-1a meet the Category B limits,
 2. Verifying there is no visible corrosion at either terminals or connectors, or the cell to terminal connection resistance of these items is less than 150×10^{-6} ohms, and
 3. Verifying that the average electrolyte temperature of 6 connected cells is above 60 F.
- c. At least once per 18 months by verifying that:
 1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The battery to battery and terminal connections are clean, tight and coated with anti-corrosion material.
 3. The resistance of each cell to terminal connection is less than or equal to 150×10^{-6} ohms.

4.8.1.1.4 Reports - All diesel generator failures, valid or non-valid, shall be reported to the Commission pursuant to Specification 6.9.2.2.

TABLE 4.11-2 (Continued)

TABLE NOTATION

- b. Sampling and analysis shall also be performed following shutdown, startup, or a thermal power change exceeding 15% of rated thermal power within 1 hour unless (1) analysis shows that the dose equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3 and (2) the containment noble gas activity monitor (RE-90-106 or RE-90-112) shows that the radioactivity has not increased by more than a factor of 3.
- c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 2 days following each shutdown from $\geq 15\%$ RATED THERMAL POWER, startup of $\geq 15\%$ RATED THERMAL POWER or THERMAL POWER change exceeding 15% of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.
- e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for noble gases and Mn-54, Fe-59, I-131, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate principal gamma emitters. This list does not mean that only these nuclides are to be detected and reported. Other gamma peaks which are measureable and identifiable, together with the above nuclides, shall also be analyzed and reported in the Semi-annual Radioactive Effluent Release Report pursuant to Specification 6.9.1.9.
- h. During releases via this exhaust system.
- i. Purging - Applicable in MODES 1, 2, 3 and 4, the upper and lower compartments of the containment shall be sampled prior to PURGING. Prior to breaking containment integrity in MODE 5 or 6, the upper and lower compartments of the containment shall be sampled. The incore instrument room purge sample shall be obtained at the shield building exhaust between 20 and 25 minutes following initiation of the incore instrument room purge.

TABLE 4.11-2 (Continued)

TABLE NOTATION

- j. Venting - Applicable in MODES 1, 2, 3, and 4; the containment will be vented to the containment annulus and then to the auxiliary building via containment annulus fans. The lower containment compartment shall be sampled daily when venting is to occur to account for the radioactivity being discharged from the venting process.



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated September 14, 1987, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

(2) Technical Specifications .

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 99, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 3, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 99

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

REMOVE

3/4 3-7

3/4 8-3

3/4 11-11

3/4 11-12

INSERT

3/4 3-7

3/4 8-3

3/4 11-11*

3/4 11-12

TABLE 3.3-1 (Continued)

ACTION 8 - With less than the Minimum Number of Channels OPERABLE, declare the interlock inoperable and verify that all affected channels of the functions listed below are OPERABLE or apply the appropriate ACTION statement(s) for those functions. Functions to be evaluated are:

a. Source Range Reactor Trip.

b. Reactor Trip

Low Reactor Coolant Loop Flow (2 loops)
Undervoltage
Underfrequency
Pressurizer Low Pressure
Pressurizer High Level

c. Reactor Trip

Low Reactor Coolant Loop Flow (1 loop)

d. Reactor Trip

Intermediate Range
Low Power Range
Source Range

ACTION 9 - Deleted

ACTION 10 - Deleted

ACTION 11 - Deleted

ACTION 12 - With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1.1 provided the other channel is OPERABLE.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

4. *Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 6900 ± 690 volts and 60 ± 1.2 Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals with startup on each signal verified at least once per 124 days:
 - a) Manual.
 - b) Simulated loss of offsite power by itself.
 - c) An ESF actuation test signal by itself.
5. *Verifying the generator is synchronized, loaded to greater than or equal to 4400 kw in less than or equal to 60 seconds, and operates for greater than or equal to 60 minutes, and
6. Verifying the diesel generator is aligned to provide standby power to the associated shutdown boards.
 - b. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the engine-mounted fuel tanks.
 - c. At least once per 92 days and from new fuel oil prior to addition to the 7-day tanks by verifying that a sample obtained in accordance with ASTM-D270-1975 has a water and sediment content of less than or equal to .05 volume percent and a kinematic viscosity @ 100°F of greater than or equal to 1.8 but less than or equal to 5.8 centistokes when tested in accordance with ASTM-D975-77, and an impurity level of less than 2 mg. of insolubles per 100 ml. when tested in accordance with ASTM-D2274-70.
 - d. At least once per 18 months during shutdown by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,
 2. Verifying the generator capability to reject a load of greater than or equal to 600 kw while maintaining voltage at within ± 10 percent of the initial pretest voltage and frequency at 60 ± 1.2 Hz. At no time shall the transient voltage exceed 8276V.
 3. Verifying the generator capability to reject a load of 4400 kw without tripping. The generator voltage shall not exceed 114 percent of the initial pretest voltage or 8276V, whichever is less during and following the load rejection.

*The diesel generator start (10 sec) and load (60 sec) from standby conditions shall be performed at least once per 184 days in these surveillance tests. All other diesel generator engine starts and loading for the purpose of this surveillance testing may be preceded by an engine idle start, followed by gradual acceleration to synchronous speed (900 rpm), synchronization, and gradual loading.

TABLE 4.11-2 (Continued)

TABLE NOTATION

- a. The LLD is defined, for the purposes of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count above system background that will be detected with 95% probability with only a 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \cdot \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above in microcurie per unit mass or volume,

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency as counts per disintegration,

V is the sample size in units of mass or volume,

2.22×10^6 is the number of disintegrations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt for plant effluents is the elapsed time between midpoint of sample collection and time of counting (midpoint).

It should be noted that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

- b. Sampling and analysis shall also be performed following shutdown, startup, or a thermal power change exceeding 15% of rated thermal power within 1 hour unless (1) analysis shows that the dose equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3 and (2) the containment noble gas activity monitor (RE-90-106 or RE-90-112) shows that the radioactivity has not increased by more than a factor of 3.

TABLE 4.11-2 (Continued)

TABLE NOTATION

- c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.
- d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 2 days following each shutdown from >15% RATED THERMAL POWER, startup to >15% RATED THERMAL POWER or THERMAL POWER change exceeding 15% of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.
- e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.
- f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.
- g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for noble gases and Mn-54, Fe-59, I-131, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate principal gamma emitters. This list does not mean that only these nuclides are to be detected and reported. Other gamma peaks which are measureable and identifiable, together with the above nuclides, shall also be analyzed and reported in the Semiannual Radioactive Effluent Release Report pursuant to Specification 6.9.1.9.
- h. During releases via this exhaust system.
- i. Purging - Applicable in MODES 1, 2, 3, and 4, the upper and lower compartments of the containment shall be sampled prior to PURGING. Prior to breaking containment integrity in MODE 5 or 6, the upper and lower compartments of the containment shall be sampled. The incore instrument room purge sample shall be obtained at the shield building exhaust between 20 and 25 minutes following initiation of the incore instrument room purge.
- j. Venting - Applicable in MODES 1, 2, 3, and 4, the containment shall be vented to the containment annulus and then to the auxiliary building via containment annulus fans. The lower containment compartment shall be sampled daily when venting is to occur to account for the radioactivity being discharged from the venting process.



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

ENCLOSURE 3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-77
AND AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. DPR-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter of September 14, 1987, the Tennessee Valley Authority (the licensee) proposed changes to the Sequoyah Nuclear Plant, Units 1 and 2 Technical Specifications (TS). The proposed changes would correct minor discrepancies in the TS. The changes correct (1) an action statement of Table 3.3-1, Reactor Trip System Instrumentation, for Unit 2 only; (2) the instrumentation listed in Table 3.3-11, Fire Detection Instruments, for Unit 1 only; (3) the table notation of Table 4.11-2, Radioactive Gaseous Waste Monitoring, Sampling and Analysis Program, for both units; and (4) the surveillance requirements 4.8.1.1.2.a.4 (both units) and 4.8.1.1.2.d.7 (Unit 1 only) for diesel generators. These changes are both units or for only Unit 1 or Unit 2 as described above. These TS changes are to correct inconsistencies between TS requirements and to provide clarification of the intent of various TS specifications.

2.0 EVALUATION

The proposed changes were presented by the licensee as five different items. These items are evaluated below:

Item 1 affects TS Page 3/4 8-3 for Units 1 and 2. It is proposed that asterisks be moved to clarify the intent and scope of a page note. The staff finds that the proposed change achieves its objective without diminishing safety or increasing the probability of an accident anywhere in the plant.

Item 2, which affects TS Page 3/4 11-13 of Unit 1 and 3/4 11-12 of Unit 2, corrects the reference listed in Item g to identify the proper specification for the "Semi-Annual Radioactive Effluent Release Report." The staff has confirmed that the correction is required and appropriate.

Item 3 concerns fire detection instrumentation and affects TS Pages 3/4 3-59, 3-60, 3-63, 3-68 and 3-68a for Unit 1 only. These pages are part of Table 3.3-11, "Fire Detection Instruments." The elevations for fire zone numbers 22 to 29, 120 and 121 were corrected to have the correct elevation in

8904170321 890403
PDR ADOCK 05000327
F FDC

the TS. Two fire zones, numbers 277 and 287, were added to the TS. These zones had been inadvertently omitted from Table 3.3-11. The proper notation for fire zone number 17 was added to Table 3.3-11. The staff finds that the changes improve Table 3.3-11 of the TS because they properly reflect the current plant conditions.

Item 4 changes TS Page 3/4 8-5 for Unit 1 by rearranging the sequence of sentences in a paragraph in SR 4.8.1.1.2.d.7 to agree with the corresponding TS in Unit 2. The staff finds that this change is beneficial because it clarifies the TS and provides consistent usage between the units in the TS. The change does not affect the requirements in SR 4.8.1.1.2.d.7.

Item 5 affects TS Page 3/4 3-7 for Unit 2. It corrects an inconsistency between Action 8b of Table 3.3-1 and the corresponding action in the Unit 1 TS. The turbine trip function is deleted from Action 8b because the P-7 and P-13 interlocks do not affect the turbine trip function.

The incorporation of the editorial changes and corrections proposed do not diminish safety or increase the probability of an accident in any area of the plant. Therefore, the staff concludes that the proposed TS changes are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (52 FR 47794) on December 16, 1987 and consulted with the State of Tennessee. No public comments were received and the State of Tennessee did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: J. Watt, R. Wescott

Dated: April 3, 1989