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

January 24, 1985

Docket Nos: 50-327
and 50-328

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

Subject: Issuance of Amendment No. 37 to Facility Operating License No. DPR-77 and Amendment No. 29 to Facility Operating License No. DPR-79 - Sequoyah Nuclear Plant, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 37 to Facility Operating License No. DPR-77 and Amendment No. 29 to Facility Operating License No. DPR-79. These amendments are in response to your requests dated July 21 and July 26, 1983, August 20, August 27, and August 28, 1984.

The amendments change the Technical Specifications related to containment isolation valves, vital batteries, fire detectors, and steam generator low-low level instrumentation.

A copy of the related safety evaluation supporting Amendment No. 37 to Facility Operating License DPR-77 and Amendment No. 29 to Facility Operating License DPR-79 is enclosed.

Sincerely,

Paul S. Hood
for Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosures:
1. Amendment No. 37 to DPR-77
2. Amendment No. 29 to DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

DESIGNATED ORIGINAL

Certified By

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SEQUOYAH

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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. 37
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment to the Sequoyah Nuclear Plant, Unit 1 (the facility) Facility Operating License No. DPR-77 filed by the Tennessee Valley Authority (licensee), dated July 21, 1983, and August 20, August 27, and August 28, 1984, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the license, as amended, 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 hereby amended by page changes to the Appendix A 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 Appendix A, as revised through Amendment No. 37 , are hereby incorporated into the license.

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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

Paul S Hood

for Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Appendix A Technical
Specification Changes

Date of Issuance: January 24, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 37

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

| Amended Page |
|---|
| 3/4 3-20 |
| 3/4 3-59 |
| 3/4 3-66 |
| 3/4 6-19 |
| 3/4 6-20 |
| 3/4 6-21 |
| 3/4 6-22 |
| 3/4 6-23 |
| 3/4 8-9 |
| 3/4 8-10 |
| 3/4 8-11 |
| 3/4 8-12 |
| 3/4 8-14 |

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

| FUNCTIONAL UNIT | TOTAL NO. OF CHANNELS | CHANNELS TO TRIP | MINIMUM CHANNELS OPERABLE | APPLICABLE MODES | ACTION |
|---|---|---|---|---|---|
| 6. AUXILIARY FEEDWATER | | | | | |
| a. Manual Initiation | 2 | 1 | 2 | 1, 2, 3 | 24 |
| b. Automatic Actuation Logic | 2 | 1 | 2 | 1, 2, 3 | 23 |
| c. Main Stm. Gen. Water Level-Low-Low | | | | | |
| i. Start Motor Driven Pumps | 3/stm. gen. | 2/stm. gen. any stm gen. | 2/stm. gen. | 1, 2, 3 | 16* |
| ii. Start Turbine-Driven Pump | 3/stm. gen. | 2/stm. gen. any 2 stm. gen. | 2/stm. gen | 1, 2, 3 | 16* |
| d. S.I. Start Motor-Driven Pumps and Turbine Driven Pump | See 1 above (all S.I. initiating functions and requirements) | | | | |
| e. Station Blackout Start Motor-Driven Pump associated with the shutdown board and Turbine Driven Pump | 2/shutdown board | 1/shutdown board | 2/shutdown board | 1, 2, 3 | 20 |
| f. Trip of Main Feedwater Pumps Start Motor-Driven Pumps and Turbine Driven Pump | 1/pump | 1/pump | 1/pump | 1, 2 | 20* |
| g. Auxiliary Feedwater Suction Pressure-Low | 3/pump | 2/pump | 2/pump | 1, 2, 3 | 20* |

TABLE 3.3-11

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|---|---|---|---|---|---|
| | | Ionization | Photoelectric | Thermal | Infrared |
| 235 | Ctrl. Rod Dr. Eqpt. Rm. El. 759 | 4 | | | |
| 236 | Ctrl. Rod Dr. Eqpt. Rm. El. 759 | 4 | | | |
| 237 | Mech. Eqpt. Rm. El. 749 | 1 | | | |
| 238 | Mech. Eqpt. Rm. El. 749 | 1 | | | |
| 241 | 480-V XFMR Rm. 1A El. 749 | 3 | | | |
| 242 | 480-V XFMR Rm. 1A El. 749 | 3 | | | |
| 243 | 480-V XFMR Rm. 1B El. 749 | 3 | | | |
| 244 | 480-V XFMR Rm. 1B El. 749 | 3 | | | |
| 249 | 125-V Batt. Rm. I El. 749 | 1 | | | |
| 250 | 125-V Batt. Rm. I El. 749 | 1 | | | |
| 251 | 125-V Batt. Rm. II El. 749 | 1 | | | |
| 252 | 125-V Batt. Rm. II El. 749 | 1 | | | |
| 253 | 125-V Batt. Rm. III El. 749 | 1 | | | |
| 254 | 125-V Batt. Rm. III El. 749 | 1 | | | |
| 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 | | | |
| 153 | Add. Eqpt. Bldg. El. 740.5 | 4 | | | |
| 155 | Refuel Rm. El. 734 | 19 | | | |
| 156 | RB Access Rm. El. 734 | 2 | | | |
| 157 | RB Access Rm. El. 734 | 2 | | | |
| 160 | SG Blwdn. Rm. El. 734 | 4 | | | |
| 427 | 125-V Batt. Rm. V El. 749 | 2 | | | |
| 428 | 125-V Batt. Rm. V El. 749 | 2 | | | |

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| Fire Zone | Instrument Location | Minimum Instruments Operable | | | |
|---|---|---|---|---|---|
| | | Ionization | Photoelectric | Thermal | Infrared |
| 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 | |
| 276 | Intk. Pumping Sta. El. 690 & 670.5 | 15 | | | |
| 354 | Upr. Compt. Coolers, El. 778 | | 4 | | |
| 352 | Lwr. Compt. Coolers, El. 693 | | 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* | |
| 369 | RCP 4, El. 693 | | | 2 | |
| 372 | Reactor Bldg. Annulus | | 18 | | |
| 373 | Reactor Bldg. Annulus | | 18 | | |
| 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 | |

*This change is effective upon completion of the associated modification.

## TABLE 3.6-2

## CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. PHASE "A" ISOLATION | | | |
| 1. | FCV-1-7 | SG Blow Dn | 10* |
| 2. | FCV-1-14 | SG Blow Dn | 10* |
| 3. | FCV-1-25 | SG Blow Dn | 10* |
| 4. | FCV-1-32 | SG Blow Dn | 10* |
| 5. | FCV-1-181 | SG Blow Dn | 15* |
| 6. | FCV-1-182 | SG Blow Dn | 15* |
| 7. | FCV-1-183 | SG Blow Dn | 15* |
| 8. | FCV-1-184 | SG Blow Dn | 15* |
| 9. | FCV-31C-222 | CW-Inst Room Clrs | 10* |
| 10. | FCV-31C-223 | CW-Inst Room Clrs | 10* |
| 11. | FCV-31C-224 | CW-Inst Room Clrs | 10* |
| 12. | FCV-31C-225 | CW-Inst Room Clrs | 10* |
| 13. | FCV-31C-229 | CW-Inst Room Clrs | 10* |
| 14. | FCV-31C-230 | CW-Inst Room Clrs | 10* |
| 15. | FCV-31C-231 | CW-Inst Room Clrs | 10* |
| 16. | FCV-31C-232 | CW-Inst Room Clrs | 10* |
| 17. | FCV-43-22 | Sample RC Outlet Hdrs | 10* |
| 18. | FCV-43-23 | Sample RC Outlet Hdrs | 10* |
| 19. | FCV-43-55 | SG Blow Dn Sample Line | 10* |
| 20. | FCV-43-58 | SG Blow Dn Sample Line | 10* |
| 21. | FCV-43-61 | SG Blow Dn Sample Line | 10* |
| 22. | FCV-43-64 | SG Blow Dn Sample Line | 10* |
| 23. | FCV-61-96 | Gylcol Inlet to Floor Cooler | 30* |
| 24. | FCV-61-97 | Gylcol Inlet to Floor Cooler | 30* |
| 25. | FCV-61-110 | Gylcol Outlet to Floor Cooler | 30* |
| 26. | FCV-61-122 | Gylcol Outlet to Floor Cooler | 30* |
| 27. | FCV-61-191 | Ice Condenser - Gylcol In | 30* |
| 28. | FCV-61-192 | Ice Condenser - Gylcol In | 30* |
| 29. | FCV-61-193 | Ice Condenser - Gylcol Out | 30* |
| 30. | FCV-61-194 | Ice Condenser - Gylcol Out | 30* |
| 31. | FCV-62-61 | RCP Seals | 10 |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. PHASE "A" ISOLATION (Cont.) | | | |
| 32. | FCV-62-63 | RCP Seals | 10 |
| 33. | FCV-62-72 | Letdown Line | 10*# |
| 34. | FCV-62-73 | Letdown Line | 10*# |
| 35. | FCV-62-74 | Letdown Line | 10*# |
| 36. | FCV-62-77 | Letdown Line | 20 |
| 37. | FCV-63-23 | Accum to Hold Up Tank | 10* |
| 38. | FCV-63-64 | WDS $N_2$ to Accum | 10* |
| 39. | FCV-63-71 | Accum to Hold Up Tank | 10* |
| 40. | FCV-63-84 | Accum to Hold Up Tank | 10* |
| 41. | FCV-68-305 | WDS $N_2$ to PRT | 10* |
| 42. | FCV-68-307 | PRT to Gas Analyzer | 10* |
| 43. | FCV-68-308 | PRT to Gas Analyzer | 10* |
| 44. | FCV-70-85 | CCS from Excess Lt Dn Hx | 10* |
| 45. | FCV-70-143 | CCS to Excess Lt Dn Hx | 60* |
| 46. | FCV-77-9 | RCDT Pump Disch | 10* |
| 47. | FCV-77-10 | RCDT Pump Disch | 10* |
| 48. | FCV-77-16 | RCDT to Gas Analyzer | 10* |
| 49. | FCV-77-17 | RCDT to Gas Analyzer | 10* |
| 50. | FCV-77-18 | RCDT and PRT to V H | 10* |
| 51. | FCV-77-19 | RCDT and PRT to V H | 10* |
| 52. | FCV-77-20 | $N_2$ to RCDT | 10* |
| 53 | FCV-77-127 | Floor Sump Pump Disch | 10* |
| 54. | FCV-77-128 | Floor Sump Pump Disch | 10* |
| 55. | FCV-81-12 | Primary Water Makeup | 10* |
| 56. | FCV-87-7 | UHI Test Line | 10* |
| 57. | FCV-87-8 | UHI Test Line | 10* |
| 58. | FCV-87-9 | UHI Test Line | 10* |
| 59. | FCV-87-10 | UHI Test Line | 10* |
| 60. | FCV-87-11 | UHI Test Line | 10* |
| 61. | FCV-26-240 | Fire Protection Isol. | 20 |
| 62. | FCV-26-243 | Fire Protection Isol. | 20 |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. PHASE "A" ISOLATION (Cont.) | | | |
| 63. | FCV-43-2 | Sample Przr Steam Space | 10* |
| 64. | FCV-43-3 | Sample Przr Steam Space | 10* |
| 65. | FCV-43-11 | Sample Przr Liquid | 10* |
| 66. | FCV-43-12 | Sample Przr Liquid | 10* |
| 67. | FCV-43-34 | Accum Sample | 5* |
| 68. | FCV-43-35 | Accum Sample | 5* |
| 69. | FCV-43-75 | Boron Analyzer | 5* |
| 70. | FCV-43-77 | Boron Analyzer | 5* |
| B. PHASE "B" ISOLATION | | | |
| 1. | FCV-32-80 | Control Air Supply | 10 |
| 2. | FCV-32-102 | Control Air Supply | 10 |
| 3. | FCV-32-110 | Control Air Supply | 10 |
| 4. | FCV-67-83 | ERCW - LWR Cmpt Clrs | 60* |
| 5. | FCV-67-87 | ERCW - LWR Cmpt Clrs | 60* |
| 6. | FCV-67-88 | ERCW - LWR Cmpt Clrs | 60* |
| 7. | FCV-67-91 | ERCW - LWR Cmpt Clrs | 60* |
| 8. | FCV-67-95 | ERCW - LWR Cmpt Clrs | 60* |
| 9. | FCV-67-96 | ERCW - LWR Cmpt Clrs | 60* |
| 10. | FCV-67-99 | ERCW - LWR Cmpt Clrs | 60* |
| 11. | FCV-67-103 | ERCW - LWR Cmpt Clrs | 60* |
| 12. | FCV-67-104 | ERCW - LWR Cmpt Clrs | 60* |
| 13. | FCV-67-107 | ERCW - LWR Cmpt Clrs | 60* |
| 14. | FCV-67-111 | ERCW - LWR Cmpt Clrs | 60* |
| 15. | FCV-67-112 | ERCW - LWR Cmpt Clrs | 60* |
| 16. | FCV-67-130 | ERCW - Up Cmpt Clrs | 60* |
| 17. | FCV-67-131 | ERCW - Up Cmpt Clrs | 60* |
| 18. | FCV-67-133 | ERCW - Up Cmpt Clrs | 60* |
| 19. | FCV-67-134 | ERCW - Up Cmpt Clrs | 60* |
| 20. | FCV-67-138 | ERCW - Up Cmpt Clrs | 60* |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| B. PHASE "B" ISOLATION (Cont.) | | | |
| 21. | FCV-67-139 | ERCW - Up Cmpt Clrs | 60* |
| 22. | FCV-67-141 | ERCW - Up Cmpt Clrs | 60* |
| 23. | FCV-67-142 | ERCW - Up Cmpt Clrs | 60* |
| 24. | FCV-67-295 | ERCW - Up Cmpt Clrs | 60* |
| 25. | FCV-67-296 | ERCW - Up Cmpt Clrs | 60* |
| 26. | FCV-67-297 | ERCW - Up Cmpt Clrs | 60* |
| 27. | FCV-67-298 | ERCW - Up Cmpt Clrs | 60* |
| 28. | FCV-70-87 | RCP Thermal Barrier Ret | 60 |
| 29. | FCV-70-89 | CCS from RCP Oil Coolers | 60 |
| 30. | FCV-70-90 | RCP Thermal Barrier Ret | 60 |
| 31. | FCV-70-92 | CCS from RCP Oil Coolers | 60 |
| 32. | FCV-70-134 | To RCP Thermal Barriers | 60 |
| 33. | FCV-70-140 | CCS to RCP Oil Coolers | 60 |
| C. PHASE "A" CONTAINMENT VENT ISOLATION | | | |
| 1. | FCV-30-7 | Upper Compt Purge Air Supply | 4* |
| 2. | FCV-30-8 | Upper Compt Purge Air Supply | 4* |
| 3. | FCV-30-9 | Upper Compt Purge Air Supply | 4* |
| 4. | FCV-30-10 | Upper Compt Purge Air Supply | 4* |
| 5. | FCV-30-14 | Lower Compt Purge Air Supply | 4* |
| 6. | FCV-30-15 | Lower Compt Purge Air Supply | 4* |
| 7. | FCV-30-16 | Lower Compt Purge Air Supply | 4* |
| 8. | FCV-30-17 | Lower Compt Purge Air Supply | 4* |
| 9. | FCV-30-19 | Inst Room Purge Air Supply | 4* |
| 10. | FCV-30-20 | Inst Room Purge Air Supply | 4* |
| 11. | FCV-30-37 | Lower Compt Pressure Relief | 4* |
| 12. | FCV-30-40 | Lower Compt Pressure Relief | 4* |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| C. PHASE "A" CONTAINMENT VENT ISOLATION (Cont.) | | | |
| 13. | FCV-30-50 | Upper Compt Purge Air Exh | 4* |
| 14. | FCV3051 | Upper Compt Purge Air Exh | 4* |
| 15. | FCV3052 | Upper Compt Purge Air Exh | 4* |
| 16. | FCV3053 | Upper Compt Purge Air Exh | 4* |
| 17. | FCV3056 | Lower Compt Purge Air Exh | 4* |
| 18. | FCV3057 | Lower Compt Purge Air Exh | 4* |
| 19. | FCV3058 | Inst Room Purge Air Exh | 4* |
| 20. | FCV3059 | Inst Room Purge Air Exh | 4* |
| 21. | FCV90107 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 22. | FCV90108 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 23. | FCV90109 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 24. | FCV90110 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 25. | FCV90111 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 26. | FCV90113 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 27. | FCV90114 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 28. | FCV90115 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 29. | FCV90116 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 30. | FCV90117 | Cntmt Bldg LWR Compt Air Mon | 5* |
| D. OTHER | | | |
| 1. | FCV-30-46 | Vacuum Relief Isolation Valve | 25 |
| 2. | FCV-30-47 | Vacuum Relief Isolation Valve | 25 |
| 3. | FCV-30-48 | Vacuum Relief Isolation Valve | 25 |

*Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and leakage limits of Surveillance Requirement 4.6.3.4 are satisfied.

#Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and either FCV-62-73 or FCV-62-74 is maintained operable.

## 3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

### A.C. DISTRIBUTION - OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical boards shall be OPERABLE and energized with tie breakers open between redundant boards:

| | |
|---|---|
| 6900 | Volt Shutdown Board 1A-A |
| 6900 | Volt Shutdown Board 1B-B |
| 6900 | Volt Shutdown Board 2A-A |
| 6900 | Volt Shutdown Board 2B-B |
| 480 | Volt Shutdown Board 1A1-A |
| 480 | Volt Shutdown Board 1A2-A |
| 480 | Volt Shutdown Board 1B1-B |
| 480 | Volt Shutdown Board 1B2-B |
| 480 | Volt Shutdown Board 2A1-A |
| 480 | Volt Shutdown Board 2A2-A |
| 480 | Volt Shutdown Board 2B1-B |
| 480 | Volt Shutdown Board 2B2-B |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-I and 2-I energized from inverters 1-I and 2-I connected to D.C. Channel I*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-II and 2-II energized from inverters 1-II and 2-II connected to D.C. Channel II*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-III and 2-III energized from inverters 1-III and 2-III connected to D.C. Channel III*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-IV and 2-IV energized from inverters 1-IV and 2-IV connected to D.C. Channel IV*#. |

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With less than the above complement of A.C. boards OPERABLE and energized, restore the inoperable boards to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one inverter inoperable, energize the associated Vital Instrument Power Board within 8 hours; restore the inoperable inverter to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. boards and inverters shall be determined OPERABLE and energized with tie breakers open between redundant boards at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

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*Two inverters may be disconnected from their D.C. source for up to 24 hours for the purpose of performing an equalizing charge on their associated battery bank provide (1) the vital instrument power board is OPERABLE and energized, and (2) the vital instrument power boards associated with the other battery banks are OPERABLE and energized from their respective inverters connected to their respective D.C. source.

#D.C. Channel V may be substituted for any one channel of channels I-IV.

## A.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical boards and inverters shall be OPERABLE and energized:

2 - 6900 volt shutdown boards, either 1A-A and 2A-A or 1B-B and 2B-B,

4 - 480 volt shutdown boards associated with the required OPERABLE 6900 volt shutdown boards,

2 - 120 volt A.C. vital instrument power boards either Channels I and III or Channels II and IV energized from their respective inverters connected to their respective D.C. battery banks*, and 480 volt shutdown boards.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. boards and inverters OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. boards and inverters shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated voltage on the bus.

*Any one of the inverters may be connected to D.C. Battery Bank V.

## D.C. DISTRIBUTION - OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. vital battery channels shall be energized and OPERABLE:

| | |
|---|---|
| CHANNEL I | Consisting of 125 -volt D.C. board No. I, 125 - volt D.C. battery bank No. I* and a full capacity charger. |
| CHANNEL II | Consisting of 125 - volt D.C. board No. II, 125 - volt D.C. battery bank No. II*, and a full capacity charger. |
| CHANNEL III | Consisting of 125 - volt D.C. board No. III, 125 - volt D.C. battery bank No. III*, and a full capacity charger. |
| CHANNEL IV | Consisting of 125 - volt D.C. board No. IV, 125 - volt D. C. battery bank No. IV*, and a full capacity charger. |

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one 125-volt D.C. board inoperable, restore the inoperable board to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one 125-volt D.C. battery bank and/or its charger inoperable, restore the inoperable battery bank and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

*D.C. Battery Bank may be substituted for any other Battery Bank as needed.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment, indicated power availability from the charger and battery, and voltage on the bus of greater than or equal to 125 volts.

4.8.2.3.2* Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying that the parameters in Table 4.8-2 meet the Category A limits, and

2. Verifying total battery terminal voltage is greater than or equal to 129-volts on float charge.

b. At least once per 92 days and within 7 days after a battery discharge (battery terminal voltage below 110-volts), or battery overcharge (battery terminal voltage above 150-volts), by:

1. Verifying that the parameters in Table 4.8-2 meet the Category B limits,

2. Verifying there is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than $150 \times 10^{-6}$ 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 cell-to-cell 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 $150 \times 10^{-6}$ ohms, and

4. The battery charger will supply at least 150 amperes at 125 volts for at least 4 hours.

*This surveillance includes Battery Bank V, but not charger V.

## D.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and boards shall be energized and OPERABLE:

2 - 125-volt D.C. boards either I and III or II and IV, and

2* - 125-volt battery banks and chargers, one associated with each operable D.C. board

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and board OPERABLE, establish CONTAINMENT INTEGRITY within 8 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. vital battery boards shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability with an overall battery voltage of greater than or equal to 125 volts.

4.8.2.4.2 The above required 125-volt D.C. vital battery banks and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

*D.C. Battery Bank V may be substituted for any other Battery Bank.

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. 29
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment to the Sequoyah Nuclear Plant, Unit 2 (the facility) Facility Operating License No. DPR-79 filed by the Tennessee Valley Authority (licensee), dated July 21, 1983, and August 20, August 27, and August 28, 1984, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the license, as amended, 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 hereby amended by page changes to the Appendix A 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 Appendix A, as revised through Amendment No. 29, are hereby incorporated into 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

Darl S. Hood
for Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Appendix A Technical
Specification Changes

Date of Issuance: January 24, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 29

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

| Amended Page |
|---|
| 3/4 3-20 |
| 3/4 3-66 |
| 3/4 3-67 |
| 3/4 6-19 |
| 3/4 6-20 |
| 3/4 6-21 |
| 3/4 6-22 |
| 3/4 6-23 |
| 3/4 8-10 |
| 3/4 8-11 |
| 3/4 8-12 |
| 3/4 8-15 |

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

| FUNCTIONAL UNIT | TOTAL NO. OF CHANNELS | CHANNELS TO TRIP | MINIMUM CHANNELS OPERABLE | APPLICABLE MODES | ACTION |
|---|---|---|---|---|---|
| 6. AUXILIARY FEEDWATER | | | | | |
| a. Manual Initiation | 2 | 1 | 2 | 1, 2, 3 | 24 |
| b. Automatic Actuation Logic | 2 | 1 | 2 | 1, 2, 3 | 23 |
| c. Main Stm. Gen. Water Level-Low-Low | | | | | |
| i. Start Motor Driven Pumps | 3/stm. gen. | 2/stm. gen. any stm gen. | 2/stm. gen. | 1, 2, 3 | 16* |
| ii. Start Turbine-Driven Pump | 3/stm. gen. | 2/stm. gen. any 2 stm. gen. | 2/stm. gen | 1, 2, 3 | 16* |
| d. S.I. Start Motor-Driven Pumps and Turbine Driven Pump | See 1 above (all S.I. initiating functions and requirements) | | | | |
| e. Station Blackout Start Motor-Driven Pump associated with the shutdown board and Turbine Driven Pump | 2/shutdown board | 1/shutdown board | 2/shutdown board | 1, 2, 3 | 20 |
| f. Trip of Main Feedwater Pumps Start Motor-Driven Pumps and Turbine Driven Pump | 1/pump | 1/pump | 1/pump | 1, 2 | 20* |
| g. Auxiliary Feedwater Suction Pressure-Low | 3/pump | 2/pump | 2/pump | 1, 2, 3 | 20* |

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| FIRE ZONE | INSTRUMENT LOCATION | MINIMUM INSTRUMENTS OPERABLE Ionization | Photoelectric | Thermal | Infrared |
|---|---|---|---|---|---|
| 241 | 480-V XFMR Rm. 1A, El. 749 | 3 | | | |
| 242 | 480-V XFMR Rm. 1A, El. 749 | 3 | | | |
| 243 | 480-V XFMR Rm. 1B, El. 749 | 3 | | | |
| 244 | 480-V XFMR Rm. 1B, El. 749 | 3 | | | |
| 245 | 480-V XFMR Rm. 2A, El. 749 | 3 | | | |
| 246 | 480-V XFMR Rm. 2A, El. 749 | 3 | | | |
| 247 | 480-V XFMR Rm. 2B, El. 749 | 3 | | | |
| 248 | 480-V XFMR Rm. 2B, El. 749 | 3 | | | |
| 249 | 125-V Batt. Rm. I, El. 749 | 1 | | | |
| 250 | 125-V Batt. Rm. I, El. 749 | 1 | | | |
| 251 | 125-V Batt. Rm. II, El. 749 | 1 | | | |
| 252 | 125-V Batt. Rm. II, El. 749 | 1 | | | |
| 253 | 125-V Batt. Rm. III, El. 749 | 1 | | | |
| 254 | 125-V Batt. Rm. III, El. 749 | 1 | | | |
| 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 | | | |
| 269 | Computer Rm. El. 685 | 4 | | | |
| 270 | Computer Rm. El. 685 | | | 4 | |
| 271 | Aux. Inst. Rm. El. 685 | 8 | | | |
| 272 | Aux. Inst. Rm. El. 685 | | | 9 | |
| 273 | Computer Rm. Corridor, El. 685 | 3 | | | |
| 276 | Intake Pump Sta. El. 690 & 670.5 | 15 | | | |
| 277 | ERCW Pump Sta. El. 704 | 21 | | | |
| 427 | 125-V Batt. Rm. V El. 749 | 2 | | | |
| 428 | 125-V Batt. Rm. V El. 749 | 2 | | | |

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

| FIRE ZONE | INSTRUMENT LOCATION | MINIMUM INSTRUMENTS OPERABLE Ionization | Photoelectric | Thermal | Infrared |
|---|---|---|---|---|---|
| 296 | Aux. CR Bds. L-4B, 4D, & 11B El 732 | 6 | | | |
| 297 | Main CR Bds. El. 732 | 9 | | | |
| 298 | Common MCR Bds. El 732 | 9 | | | |
| 387 | Turbine Cont. Bldg. Wall, El. 706 | | | 18 | |
| 353 | Lwr. Compt. Coolers, El. 693 | | 4 | | |
| 355 | Upr. Compt. Coolers, El. 778 | | 4 | | |
| 374 | Reactor Building Annulus | | 18 | | |
| 375 | Reactor Building Annulus | | 18 | | |
| 362 | RCP 1 El. 693 | | | 2* | |
| 363 | RCP 1 El. 693 | | | 2 | |
| 358 | RCP 2 El. 693 | | | 2* | |
| 359 | RCP 2 El. 693 | | | 2 | |
| 366 | RCP 3 El. 693 | | | 2* | |
| 367 | RCP 3 El. 693 | | | 2 | |
| 370 | RCP 4 El. 693 | | | 2* | |
| 371 | RCP 4 El. 693 | | | 2 | |

*This change is effective upon completion of the modifications.

## TABLE 3.6-2

## CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. | PHASE "A" ISOLATION | | |
| 1. | FCV-1-7 | SG Blow Dn | 10* |
| 2. | FCV-1-14 | SG Blow Dn | 10* |
| 3. | FCV-1-25 | SG Blow Dn | 10* |
| 4. | FCV-1-32 | SG Blow Dn | 10* |
| 5. | FCV-1-181 | SG Blow Dn | 15* |
| 6. | FCV-1-182 | SG Blow Dn | 15* |
| 7. | FCV-1-183 | SG Blow Dn | 15* |
| 8. | FCV-1-184 | SG Blow Dn | 15* |
| 9. | FCV-31C-222 | CW-Inst Room Clrs | 10* |
| 10. | FCV-31C-223 | CW-Inst Room Clrs | 10* |
| 11. | FCV-31C-224 | CW-Inst Room Clrs | 10* |
| 12. | FCV-31C-225 | CW-Inst Room Clrs | 10* |
| 13. | FCV-31C-229 | CW-Inst Room Clrs | 10* |
| 14. | FCV-31C-230 | CW-Inst Room Clrs | 10* |
| 15. | FCV-31C-231 | CW-Inst Room Clrs | 10* |
| 16. | FCV-31C-232 | CW-Inst Room Clrs | 10* |
| 17. | FCV-43-22 | Sample RC Outlet Hdrs | 10* |
| 18. | FCV-43-23 | Sample RC Outlet Hdrs | 10* |
| 19. | FCV-43-55 | SG Blow Dn Sample Line | 10* |
| 20. | FCV-43-58 | SG Blow Dn Sample Line | 10* |
| 21. | FCV-43-61 | SG Blow Dn Sample Line | 10* |
| 22. | FCV-43-64 | SG Blow Dn Sample Line | 10* |
| 23. | FCV-61-96 | Gylcol Inlet to Floor Cooler | 30* |
| 24. | FCV-61-97 | Gylcol Inlet to Floor Cooler | 30* |
| 25. | FCV-61-110 | Gylcol Outlet to Floor Cooler | 30* |
| 26. | FCV-61-122 | Gylcol Outlet to Floor Cooler | 30* |
| 27. | FCV-61-191 | Ice Condenser - Gylcol In | 30* |
| 28. | FCV-61-192 | Ice Condenser - Gylcol In | 30* |
| 29. | FCV-61-193 | Ice Condenser - Gylcol Out | 30* |
| 30. | FCV-61-194 | Ice Condenser - Gylcol Out | 30* |
| 31. | FCV-62-61 | RCP Seals | 10 |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. PHASE "A" ISOLATION (Cont.) | | | |
| 32. | FCV-62-63 | RCP Seals | 10 |
| 33. | FCV-62-72 | Letdown Line | 10*# |
| 34. | FCV-62-73 | Letdown Line | 10*# |
| 35. | FCV-62-74 | Letdown Line | 10*# |
| 36. | FCV-62-77 | Letdown Line | 20 |
| 37. | FCV-63-23 | Accum to Hold Up Tank | 10* |
| 38. | FCV-63-64 | WDS $N_2$ to Accum | 10* |
| 39. | FCV-63-71 | Accum to Hold Up Tank | 10* |
| 40. | FCV-63-84 | Accum to Hold Up Tank | 10* |
| 41. | FCV-68-305 | WDS $N_2$ to PRT | 10* |
| 42. | FCV-68-307 | PRT to Gas Analyzer | 10* |
| 43. | FCV-68-308 | PRT to Gas Analyzer | 10* |
| 44. | FCV-70-85 | CCS from Excess Lt Dn Hx | 10* |
| 45. | FCV-70-143 | CCS to Excess Lt Dn Hx | 60* |
| 46. | FCV-77-9 | RCDT Pump Disch | 10* |
| 47. | FCV-77-10 | RCDT Pump Disch | 10* |
| 48. | FCV-77-16 | RCDT to Gas Analyzer | 10* |
| 49. | FCV-77-17 | RCDT to Gas Analyzer | 10* |
| 50. | FCV-77-18 | RCDT and PRT to V H | 10* |
| 51. | FCV-77-19 | RCDT and PRT to V H | 10* |
| 52. | FCV-77-20 | $N_2$ to RCDT | 10* |
| 53. | FCV-77-127 | Floor Sump Pump Disch | 10* |
| 54. | FCV-77-128 | Floor Sump Pump Disch | 10* |
| 55. | FCV-81-12 | Primary Water Makeup | 10* |
| 56. | FCV-87-7 | UHI Test Line | 10* |
| 57. | FCV-87-8 | UHI Test Line | 10* |
| 58. | FCV-87-9 | UHI Test Line | 10* |
| 59. | FCV-87-10 | UHI Test Line | 10* |
| 60. | FCV-87-11 | UHI Test Line | 10* |
| 61. | FCV-26-240 | Fire Protection Isol. | 20 |
| 62. | FCV-26-243 | Fire Protection Isol. | 20 |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| A. PHASE "A" ISOLATION (Cont.) | | | |
| 63. | FCV-43-2 | Sample Przr Steam Space | 10* |
| 64. | FCV-43-3 | Sample Przr Steam Space | 10* |
| 65. | FCV-43-11 | Sample Przr Liquid | 10* |
| 66. | FCV-43-12 | Sample Przr Liquid | 10* |
| 67. | FCV-43-34 | Accum Sample | 5* |
| 68. | FCV-43-35 | Accum Sample | 5* |
| 69. | FCV-43-75 | Boron Analyzer | 5* |
| 70. | FCV-43-77 | Boron Analyzer | 5* |
| B. PHASE "B" ISOLATION | | | |
| 1. | FCV-32-81 | Control Air Supply | 10 |
| 2. | FCV-32-103 | Control Air Supply | 10 |
| 3. | FCV-32-111 | Control Air Supply | 10 |
| 4. | FCV-67-83 | ERCW - LWR Cmpt Clrs | 60* |
| 5. | FCV-67-87 | ERCW - LWR Cmpt Clrs | 60* |
| 6. | FCV-67-88 | ERCW - LWR Cmpt Clrs | 60* |
| 7. | FCV-67-91 | ERCW - LWR Cmpt Clrs | 60* |
| 8. | FCV-67-95 | ERCW - LWR Cmpt Clrs | 60* |
| 9. | FCV-67-96 | ERCW - LWR Cmpt Clrs | 60* |
| 10. | FCV-67-99 | ERCW - LWR Cmpt Clrs | 60* |
| 11. | FCV-67-103 | ERCW - LWR Cmpt Clrs | 60* |
| 12. | FCV-67-104 | ERCW - LWR Cmpt Clrs | 60* |
| 13. | FCV-67-107 | ERCW - LWR Cmpt Clrs | 60* |
| 14. | FCV-67-111 | ERCW - LWR Cmpt Clrs | 60* |
| 15. | FCV-67-112 | ERCW - LWR Cmpt Clrs | 60* |
| 16. | FCV-67-130 | ERCW - Up Cmpt Clrs | 60* |
| 17. | FCV-67-131 | ERCW - Up Cmpt Clrs | 60* |
| 18. | FCV-67-133 | ERCW - Up Cmpt Clrs | 60* |
| 19. | FCV-67-134 | ERCW - Up Cmpt Clrs | 60* |
| 20. | FCV-67-138 | ERCW - Up Cmpt Clrs | 60* |

TABLE 3.6-2 (Continued)

CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| B. PHASE "B" ISOLATION (Cont.) | | | |
| 21. | FCV-67-139 | ERCW - Up Cmpt Clrs | 60* |
| 22. | FCV-67-141 | ERCW - Up Cmpt Clrs | 60* |
| 23. | FCV-67-142 | ERCW - Up Cmpt Clrs | 60* |
| 24. | FCV-67-295 | ERCW - Up Cmpt Clrs | 60* |
| 25. | FCV-67-296 | ERCW - Up Cmpt Clrs | 60* |
| 26. | FCV-67-297 | ERCW - Up Cmpt Clrs | 60* |
| 27. | FCV-67-298 | ERCW - Up Cmpt Clrs | 60* |
| 28. | FCV-70-87 | RCP Thermal Barrier Ret | 60 |
| 29. | FCV-70-89 | CCS from RCP Oil Coolers | 60 |
| 30. | FCV-70-90 | RCP Thermal Barrier Ret | 60 |
| 31. | FCV-70-92 | CCS from RCP Oil Coolers | 60 |
| 32. | FCV-70-134 | To RCP Thermal Barriers | 60 |
| 33. | FCV-70-140 | CCS to RCP Oil Coolers | 60 |
| C. PHASE "A" CONTAINMENT VENT ISOLATION | | | |
| 1. | FCV-30-7 | Upper Compt Purge Air Supply | 4* |
| 2. | FCV-30-8 | Upper Compt Purge Air Supply | 4* |
| 3. | FCV-30-9 | Upper Compt Purge Air Supply | 4* |
| 4. | FCV-30-10 | Upper Compt Purge Air Supply | 4* |
| 5. | FCV-30-14 | Lower Compt Purge Air Supply | 4* |
| 6. | FCV-30-15 | Lower Compt Purge Air Supply | 4* |
| 7. | FCV-30-16 | Lower Compt Purge Air Supply | 4* |
| 8. | FCV-30-17 | Lower Compt Purge Air Supply | 4* |
| 9. | FCV-30-19 | Inst Room Purge Air Supply | 4* |
| 10. | FCV-30-20 | Inst Room Purge Air Supply | 4* |
| 11. | FCV-30-37 | Lower Compt Pressure Relief | 4* |
| 12. | FCV-30-40 | Lower Compt Pressure Relief | 4* |

## TABLE 3.6-2 (Continued)

## CONTAINMENT ISOLATION VALVES

| VALVE NUMBER | | FUNCTION | MAXIMUM ISOLATION TIME (Seconds) |
|---|---|---|---|
| C. PHASE "A" CONTAINMENT VENT ISOLATION (Cont.) | | | |
| 13. | FCV-30-50 | Upper Compt Purge Air Exh | 4* |
| 14. | FCV-30-51 | Upper Compt Purge Air Exh | 4* |
| 15. | FCV-30-52 | Upper Compt Purge Air Exh | 4* |
| 16. | FCV-30-53 | Upper Compt Purge Air Exh | 4* |
| 17. | FCV-30-56 | Lower Compt Purge Air Exh | 4* |
| 18. | FCV-30-57 | Lower Compt Purge Air Exh | 4* |
| 19. | FCV-30-58 | Inst Room Purge Air Exh | 4* |
| 20. | FCV-30-59 | Inst Room Purge Air Exh | 4* |
| 21. | FCV-90-107 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 22. | FCV-90-108 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 23. | FCV-90-109 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 24. | FCV-90-110 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 25. | FCV-90-111 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 26. | FCV-90-113 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 27. | FCV-90-114 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 28. | FCV-90-115 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 29. | FCV-90-116 | Cntmt Bldg LWR Compt Air Mon | 5* |
| 30. | FCV-90-117 | Cntmt Bldg LWR Compt Air Mon | 5* |
| D. OTHER | | | |
| 1. | FCV-30-46 | Vacuum Relief Isolation Valve | 25 |
| 2. | FCV-30-47 | Vacuum Relief Isolation Valve | 25 |
| 3. | FCV-30-48 | Vacuum Relief Isolation Valve | 25 |

*Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and leakage limits of Surveillance Requirement 4.6.3.4 are satisfied.

#Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed and either FCV-62-73 or FCV-62-74 is maintained operable.

## 3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

### A.C. DISTRIBUTION - OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.1 The following A.C. electrical boards and inverters shall be OPERABLE and energized with tie breakers open between redundant boards:

| | |
|---|---|
| 6900 | Volt Shutdown Board 1A-A |
| 6900 | Volt Shutdown Board 1B-B |
| 6900 | Volt Shutdown Board 2A-A |
| 6900 | Volt Shutdown Board 2B-B |
| 480 | Volt Shutdown Board 1A1-A |
| 480 | Volt Shutdown Board 1A2-A |
| 480 | Volt Shutdown Board 1B1-B |
| 480 | Volt Shutdown Board 1B2-B |
| 480 | Volt Shutdown Board 2A1-A |
| 480 | Volt Shutdown Board 2A2-A |
| 480 | Volt Shutdown Board 2B1-B |
| 480 | Volt Shutdown Board 2B2-B |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-I and 2-I energized from inverters 1-I and 2-I connected to D.C. Channel I*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-II and 2-II energized from inverter 1-II and 2-II connected to D.C. Channel II*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-III and 2-III energized from inverter 1-III and 2-III connected to D.C. Channel III*#. |
| 120 | Volt A.C. Vital Instrument Power Board Channels 1-IV and 2-IV energized from inverter 1-IV and 2-IV connected to D.C. Channel IV*#. |

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With less than the above complement of A.C. boards OPERABLE and energized, restore the inoperable boards to OPERABLE status within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one inverter inoperable, energize the associated Vital Instrument Power Board within 8 hours; restore the inoperable inverter to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.1 The specified A.C. boards and inverters shall be determined OPERABLE and energized with tie breakers open between redundant boards at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses.

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*Two invertes may be disconnected from their D.C. source for up to 24 hours for the purpose of performing an equalizing charge on their associated battery bank provided (1) the vital instrument power board is OPERABLE and energized, and (2) the vital instrument power boards associated with the other battery banks are OPERABLE and energized from their respective inverters connected to their respective D.C. sources.

#D.C. Channel V may be substituted for any one channel of channels I -IV.

## A.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical boards and inverters shall be OPERABLE and energized:

2 - 6900 volt shutdown boards, either 1A-A and 2A-A or 1B-B and 2B-B,

4 - 480 volt shutdown boards associated with the required OPERABLE 6900 volt shutdown boards,

2 - 120 volt A.C. vital instrument power boards either Channels I and III or Channels II and IV energized from their respective inverters connected to their respective D.C. battery banks,* and 480 volt shutdown boards.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of A.C. boards and inverters OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. boards and inverters shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated voltage on the bus.

*Any one of the inverters may be connected to D.C. Battery Bank V.

## D.C. DISTRIBUTION - OPERATING

### LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. vital battery channels shall be OPERABLE and energized:

| | |
|---|---|
| CHANNEL I | Consisting of 125 -volt D.C. board No. I, 125 - volt D.C. battery bank No. I* and a full capacity charger. |
| CHANNEL II | Consisting of 125 - volt D.C. board No. II, 125 - volt D.C. battery bank No. II*, and a full capacity charger. |
| CHANNEL III | Consisting of 125 - volt D.C. board No. III, 125 - volt D.C. battery bank No. III*, and a full capacity charger. |
| CHANNEL IV | Consisting of 125 - volt D.C. board No. IV, 125 - volt D. C. battery bank No. IV*, and a full capacity charger. |

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one 125-volt D.C. board inoperable or not energized, restore the inoperable board to OPERABLE and energized status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one 125-volt D.C. battery bank and/or its charger inoperable or not energized, restore the inoperable battery bank and/or charger to OPERABLE and energized status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment, indicated power availability from the charger and battery, and voltage on the bus of greater than or equal to 125 volts.

4.8.2.3.2** Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying that the parameters in Table 4.8-2 meet the Category A limits, and

*D.C. Battery Bank V may be substituted for any other Battery Bank as needed.
**This surveillance includes Battery Bank V, but not Charger V.

## D.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and boards shall be and OPERABLE and energized:

2 - 125-volt D.C. boards either I and III or II and IV, and

2* - 125-volt battery banks and chargers, one associated with each operable D.C. board

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above complement of D.C. equipment and board OPERABLE and energized, establish CONTAINMENT INTEGRITY within 8 hours.

### SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 125-volt D.C. vital battery boards shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and voltage on the board with an overall battery voltage of greater than or equal to 125 volts.

4.8.2.4.2 The above required 125-volt D.C. vital battery banks and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

*D.C. Battery Bank V may be substituted for any other Battery Bank.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 37 TO FACILITY OPERATING LICENSE DPR-77

AND AMENDMENT NO. 29 TO FACILITY OPERATING LICENSE DPR-79

TENNESSEE VALLEY AUTHORITY

## INTRODUCTION

These amendments address four Technical Specification changes that were requested by Tennessee Valley Authority (the licensee) for Sequoyah Nuclear Plant, Units 1 and 2, which are as follows:

(1) By letter dated July 21 and supplemented July 26, 1983, the licensee proposed certain changes to Table 3.6-2, "Containment Isolation Valves," of the Technical Specifications. These proposed changes would affect the requirements for operability of containment isolation valves.

(2) In a letter dated August 20, 1984, the licensee requested an amendment to the Technical Specifications (TS) to allow the fifth vital battery to be used to satisfy limiting conditions for operations when one of the four train vital batteries (vital power channels) is out of service. Under the terms of the existing TS, four channels of 125 V DC vital power are required to be operable to provide control power for engineered safety features (ESF) equipment. If one of the four vital power channels is in an inoperable status for more than two hours, the action statement requires both units to be shutdown. The licensee states that operating experience at Sequoyah has shown there is a significant probability of exceeding this two-hour limit resulting in a costly forced two-unit shutdown. The proposed fifth vital battery system is intended to serve as a temporary replacement for any one of the four primary 125 V DC vital batteries should a channel be inoperable.

(3) By letter dated August 27, 1984, the licensee requested an amendment to the Technical Specifications so as to replace infrared-type fire detectors with thermal detectors.

(4) By letter dated August 28, 1984, the licensee requested a change related to main steam generator low-low level instrumentation that is required to start both auxiliary feedwater motor driven pumps.

## EVALUATION

(1) The Technical Specification on containment isolation valves requires that the valves specified in Table 3.6-2 be operable; if one or more is inoperable, the Action Statement, section 3/4.6.3, would allow continued plant operation indefinitely if each affected penetration is isolated with either a deactivated power operated valve secured in its isolated position, a closed manual valve, or a blind flange. However, section 3.0.4 does

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not allow a change in operational mode (e.g., from Mode 2 [startup] to Mode 1 [power operation]) when an Action Statement is in effect to satisfy a Limiting Condition for Operation (LCO); it only permits those changes that are directed toward cold shutdown.

The licensee submits that when a containment isolation valve is secured in its isolated position (closed), it is performing its intended safety function, and thus should not preclude mode changes for continued plant operation. Therefore, the licensee proposes to add a footnote to Table 3.6-2 to indicate that certain valves are not subject to the provisions of section 3.0.4 if the valve is secured in its isolated position, with power removed. The licensee has excluded valves which, if secured (closed) during normal plant operation, may affect plant operation or potentially affect post-accident safety functions. A separate footnote to valves FCV-62-72, FCV-62-73, and FCV-62-74, (letdown lines) will be used to assure that at least two reactor coolant letdown lines remain operable.

The staff has reviewed the proposed changes to Table 3.6-2 and the attendant justification, and finds them acceptable, with one exception. Section 4.6.3.4 requires that each containment purge/vent isolation valve be leak tested to demonstrate its operability. In order to preclude plant operation with purge/vent line isolation valves inoperable because they leak excessively, the staff recommends that the footnote be revised as follows. The proposed footnote reads: "*Provisions of LCO 3.0.4 are not applicable if valve is secured in its isolated position with power removed." The following should be added to the end of the footnote: "... and leakage limits of Surveillance Requirement 4.6.3.4 are satisfied." The licensee has agreed to adopt this recommended change. This additional change was not noticed since it further clarified the proposed change that had been noticed. The staff finds the proposed changes to T.S. Table 3.6-2 acceptable, with the footnote change as noted above.

(2) The existing vital 125 V DC system is a Class 1E system composed of four redundant channels (I, II, III and IV). These channels are divided into the trains, of which Train A contains vital battery channels I and III while Train B contains channels II and IV. Each channel consists of a battery for emergency DC power and a distribution board which facilitates load grouping and provides circuit protection. In addition, there are two spare battery chargers for supplemental/backup capacity. Each spare charger is connected to facilitate use on either Train A or B. Each channel is electrically and physically independent so that a single failure in one channel will not cause a failure in another channel. No automatic connections are used among the four redundant channels.

The fifth vital battery system is designed so that in the event a single primary vital battery is removed from service for any reason, the fifth battery system can be substituted for it with no impact on the unavailability of the 125 V DC vital power system. The fifth vital battery board employs a manually operated transfer switch (to preserve train separation) to permit system alignment to either Train A or B by

selecting one of two distribution panels (A or B). At the distribution panel, a similar (manually operated) transfer switch is provided which allows alignment of the fifth battery system to the primary vital battery board when a battery is inoperable. The proposed fifth vital DC battery system is Class 1E qualified, including its battery rack, battery board (fifth), two distribution panels (A and B), cabling, instrumentation and protection devices.

Because the fifth vital battery system may be substituted for any one of four redundant vital DC channels, it is subject to all the quality assurance (Class 1E) procedures for design, equipment specification, testing and installation applicable to the existing vital DC system. The following describes the design and equipment employed for the fifth vital battery system and our evaluation as to how the proposed fifth vital DC system conforms with and satisfies the existing requirements for the vital DC system.

A) REDUNDANCY/SEPARATION

Because the proposed fifth vital battery system is designed to replace an inoperable vital battery, there are actually no changes in redundancy and separation to the existing primary vital DC distribution system. The only modifications are to install a new battery board and two distribution panels to facilitate substitution. The battery board contains a manually operated break-before-make (BBM) transfer switch (mechanically interlocked to preserve Train separation) to permit system alignment to either distribution panel A or B. Also each distribution panel contains a manually operated BBM transfer switch (mechanically interlocked to preserve channel separation) to align with the selected vital battery board. The cables and conduit are installed in accordance with physical and electrical separation requirements of the previously approved TVA design criteria (SQN-DC-V-12.2) for the existing vital DC system. In addition, the licensee has developed a special procedure for the substitution operation; and there is no change in the existing redundancy or physical and electrical separation.

B) BATTERY CAPACITY

Similar to the existing vital 125 V batteries, the fifth Class 1E battery is designed to carry plant emergency loads for 30 minutes under accident conditions without the battery charger and for two hours during a loss of all AC power. Also, the battery is sized in accordance with IEEE Std 485.

According to the information provided by the licensee, the two hour discharge rating of the battery is 663 amperes at 60°F when discharged to a minimum voltage of 105 volts. The staff finds this new Class 1E battery capacity is 2.5% greater than the existing primary vital battery capacity.

C) BATTERY CHARGER

Because of the fact that the present vital DC system has a spare Class 1E battery charger on each Train (A & B), the licensee has decided to use the already tested and qualified spare battery charger while the fifth battery is in the substitution mode. Therefore, the fifth battery charger is solely used to recharge the fifth vital battery and to maintain the proper voltage during the standby mode when the fifth battery is not connected to the vital DC system. The fifth battery charger is isolated from the Class 1E system by a combination of a fuse and circuit breaker. The staff finds this arrangement of the battery charger acceptable.

D) TEST/INSPECTION

The fifth vital battery will be periodically tested and inspected according to the standard TS requirements which are currently applicable to the vital DC system. However, to ensure further the adequacy of the fifth power source, the licensee will also perform a series of post modification tests. These include a discharge test, a charger test, and separate alignment tests for each of the four vital power channels.

E) INSTRUMENTATION/ANNUNCIATION

When on standby (not substituting), the fifth vital battery system is equipped with instruments such as bus voltmeter, charge/discharge ammeter, and alarms for ground detection, to continuously monitor the DC system. When the fifth vital battery is being used as a substitute for one of the four vital batteries, the monitoring and annunciation in the main control room of the battery being substituted for is used to indicate conditions of the fifth channel. The intent is to make maximum use of the existing Class 1E circuitry and components for the condition of the fifth vital battery when it serves as a substitute for one of the four Class 1E vital batteries.

F) VENTILATION/ENVIRONMENTAL CONDITIONS

To maintain hydrogen concentration below 2% of room volume, the fifth vital battery room is equipped with ventilation provided by redundant Class 1E exhaust fans. All components of the fifth vital battery system are designed to operate continuously within specified tolerances of expected environmental conditions and all control system components are safety-related, seismic category I and are powered where necessary from redundant, Class 1E power sources.

Based upon our evaluation of all the requirements to be implemented, we find that the fifth vital battery is designed and constructed to comply with IEEE Std 308-1971 criteria, to which the existing Class 1E vital 125 V DC system is designed. Also, the proposed DC system conforms with the redundancy and separation requirements for the plant. The testing will be in accordance with the standard technical specification (STS) and with IEEE Std 450. Additionally, post modification tests will be performed to demonstrate adequacy.

The staff concludes that the proposed change which allows the fifth vital battery to satisfy LCOs 3.8.2.1, 3.8.2.2, 3.8.2.3 and 3.8.2.4 when one of the vital batteries is inoperable, is acceptable.

(3) The infrared detectors at Sequoyah have been experiencing a relatively high failure rate attributed, in part, to the high radiation environment. The licensee proposes to replace these detectors with Underwriter's Laboratories (U.L.) listed thermal detectors. The detectors will be installed in accordance with the guidelines contained in NFPA Standard 72E, Standard on Automatic Fire Detectors. This change will increase the reliability and availability of the fire detection systems in the subject areas and conforms to the guidelines contained in Section C.1 of Appendix A to BTP APCSB 9.5-1. The staff finds this change acceptable.

(4) This change is related to main steam generator low-low level instrumentation (3 channel) required to start both AFW motor driven pumps (Table 3.3.3, "Engineered Safety Feature Actuation System Instrumentation," Item 6.c.1) and the main steam generator low-low level instrumentation to start the AFW turbine driven pump (Table 3.3.3, Item 6.c.ii). The change specified by the licensee was to add an asterisk to each of the Action Statements for these items, making the provisions of Limiting Condition for Operation (LCO) Specification 3.0.4 inapplicable. Specification 3.0.4 states:

> "Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the conditions for the Limiting Condition for Operation are met without reliance on provisions contained in the Action requirements. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION requirements. Exception to these requirements are stated in the individual specifications."

This change would permit either unit, as applicable, to enter operating modes 1, 2 or 3 (Power Operation Mode, Startup Mode, or Hot Standby Mode, respectively) with one of the total of three instrumentation channels inoperable. The action statement, which would not otherwise be altered by this change, permits continued operation with two channels in Modes 1, 2 or 3, should a channel become inoperable while in these states, until the next required channel functional test, provided the inoperable channel is placed in the tripped condition within one hour. This change will

bring the Sequoyah Technical Specifications into agreement with the Westinghouse Standard Technical Specifications (NUREG-0452) which have been previously approved. Therefore, we find the licensee's proposal acceptable.

## III. ENVIRONMENTAL CONSIDERATION

These amendments involve changes in the installation of facility components located within the restricted area as defined in 10 CFR Part 20. 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 Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

## IV. CONCLUSION

The Commission made proposed determinations that the amendments involve no significant hazards consideration which were published in the Federal Register on October 12, 1983 (48 FR 46460) and November 21, 1984 (49 FR 45979) and consulted with the state of Tennessee. No public comments were recieved, and the state of Tennessee did not have any comments.

We have 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: January 24, 1985

January 24, 1985

AMENDMENT NO. 37 TO FACILITY OPERATING LICENSE NO. DPR-77 - Sequoyah Nuclear Plant
AMENDMENT NO. 29 TO FACILITY OPERATING LICENSE NO. DPR-79 - Sequoyah Nuclear Plant

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