UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 12, 2020

Mr. James Barstow
Vice President, Nuclear Regulatory Affairs
and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A-C
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 349 AND 343 REGARDING TECHNICAL SPECIFICATION 3.3.1, "REACTOR PROTECTION SYSTEM INSTRUMENTATION," TURBINE TRIP FUNCTION ON LOW FLUID OIL PRESSURE (EPID L-2020-LLA-0044)

Dear Mr. Barstow:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 349 to Renewed Facility Operating License No. DPR-77, and Amendment No. 343 to Renewed 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 March 13, 2020.

The amendments revise Technical Specification 3.3.1, Table 3.3.1-1, "Reactor Trip System Instrumentation," Function 14.a. "Turbine Trip - Low Fluid Oil Pressure," to increase the nominal trip setpoint from 45 pounds per square inch gauge (psig) to 800 psig, and the allowable value from greater than or equal to 39.5 psig to greater than or equal to 710 psig.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Michael J. Wentzel, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures:
1. Amendment No. 349 to DPR-77
2. Amendment No. 343 to DPR-79
3. Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 349
Renewed License No. DPR-77

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

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated March 13, 2020, 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 Title 10 of the *Code of Federal Regulations* (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 Renewed 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. 349 are hereby incorporated in the renewed 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 and shall be implemented prior to startup from the Cycle 24 (U1R24) refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

EVA A. BROWN

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Date: 2020.11.12 15:33:02 -05'00'

Undine Shoop, Chief
Plant Licensing Branch II-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License
and Technical Specifications

Date of Issuance: November 12, 2020

ATTACHMENT TO LICENSE AMENDMENT NO. 349

SEQUOYAH NUCLEAR PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace page 3 of the Renewed Facility Operating License with the attached page 3.

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page	Insert Page
3.3.1-18	3.3.1-18

(3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the Sequoyah and Watts Bar Unit 1 Nuclear Plants.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Tennessee Valley Authority is authorized to operate the facility at reactor core power levels not in excess of 3455 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 349 are hereby incorporated into the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

The Tennessee Valley Authority shall conduct the post-fuel-loading initial test program (set forth in Section 14 of Tennessee Valley Authority's Final Safety Analysis Report, as amended), without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

a. Elimination of any test identified in Section 14 of TVA's Final Safety Analysis Report as amended as being essential;

b. Modification of test objectives, methods, or acceptance criteria for any test identified in Section 14 of TVA's Final Safety Analysis Report as amended as being essential;

Table 3.3.1-1 (page 5 of 9)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
b. Low-Low (EAM)	1,2	3 per SG	R	SR 3.3.1.1 SR 3.3.1.7[b][c] SR 3.3.1.10[b][c] SR 3.3.1.14	≥ 10.1% NR Span	10.7% NR Span
Coincident with RCS Loop ΔT	1,2	4	T	SR 3.3.1.1 SR 3.3.1.7[b][c] SR 3.3.1.10[b][c] SR 3.3.1.14	RCS Loop ΔT variable input ≤ nominal trip setpoint + 2.5% RTP	RCS Loop ΔT variable input 50% RTP
with Time Delay T_S if one SG is affected					≤ (1.01)T_S (Note 3)	T_S (Note 3)
or Time Delay T_m if two or more SGs are affected					≤ (1.01)T_m (Note 3)	T_m (Note 3)
14. Turbine Trip						
a. Low Fluid Oil Pressure	1[h]	3	L	SR 3.3.1.10[b][c] SR 3.3.1.13	≥ 710 psig	800 psig
b. Turbine Stop Valve Closure	1[h]	4	L	SR 3.3.1.10 SR 3.3.1.13	≥ 1% open	1% open
15. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	M	SR 3.3.1.12	NA	NA

(b) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures (field setting) to confirm channel performance. The methodologies used to determine the as-found and as-left tolerances are specified in UFSAR, Section 7.1.2.

(h) Above the P-9 (Power Range Neutron Flux) interlock.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 343
Renewed License No. DPR-79

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

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated March 13, 2020, 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 Renewed 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. 343 are hereby incorporated in the renewed 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 and shall be implemented prior to startup from the Cycle 24 (U2R24) refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

EVA A. BROWN

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Date: 2020.11.12 15:33:39 -05'00'

Undine Shoop, Chief
Plant Licensing Branch II-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License
and Technical Specifications

Date of Issuance: November 12, 2020

ATTACHMENT TO LICENSE AMENDMENT NO. 343

SEQUOYAH NUCLEAR PLANT, UNIT 2

RENEWED FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace page 3 of the Renewed Facility Operating License with the attached page 3.

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page	Insert Page
3.3.1-18	3.3.1-18

(3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the Sequoyah and Watts Bar Unit 1 Nuclear Plants.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Tennessee Valley Authority is authorized to operate the facility at reactor core power levels not in excess of 3455 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 343 are hereby incorporated into the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

The Tennessee Valley Authority shall conduct the post-fuel-loading initial test program (set forth in Section 14 of Tennessee Valley Authority's Final Safety Analysis Report, as amended), without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

a. Elimination of any test identified in Section 14 of TVA's Final Safety Analysis Report as amended as being essential;

Table 3.3.1-1 (page 5 of 9)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
b. Low-Low (EAM)	1,2	3 per SG	R	SR 3.3.1.1 SR 3.3.1.7[b][c] SR 3.3.1.10[b][c] SR 3.3.1.14	≥ 10.1% NR Span	10.7% NR Span
Coincident with RCS Loop ΔT	1,2	4	T	SR 3.3.1.1 SR 3.3.1.7[b][c] SR 3.3.1.10[b][c] SR 3.3.1.14	RCS Loop ΔT variable input ≤ nominal trip setpoint + 2.5% RTP	RCS Loop ΔT variable input 50% RTP
with Time Delay T_S if one SG is affected					≤ (1.01)T_S (Note 3)	T_S (Note 3)
or Time Delay T_m if two or more SGs are affected					≤ (1.01)T_m (Note 3)	T_m (Note 3)
14. Turbine Trip						
a. Low Fluid Oil Pressure	1[h]	3	L	SR 3.3.1.10[b][c] SR 3.3.1.13	≥ 710 psig	800 psig
b. Turbine Stop Valve Closure	1[h]	4	L	SR 3.3.1.10 SR 3.3.1.13	≥ 1% open	1% open
15. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	M	SR 3.3.1.12	NA	NA

(b) If the as-found channel setpoint is outside its predefined as-found tolerance, then the channel shall be evaluated to verify that it is functioning as required before returning the channel to service.

(c) The instrument channel setpoint shall be reset to a value that is within the as-left tolerance around the Nominal Trip Setpoint (NTSP) at the completion of the surveillance; otherwise, the channel shall be declared inoperable. Setpoints more conservative than the NTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures (field setting) to confirm channel performance. The methodologies used to determine the as-found and as-left tolerances are specified in UFSAR, Section 7.1.2.

(h) Above the P-9 (Power Range Neutron Flux) interlock.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 349

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 343

TO RENEWED 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 dated March 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20073P120), Tennessee Valley Authority (TVA; the licensee) proposed amendments to the Technical Specifications (TSs) for Sequoyah Nuclear Plant (Sequoyah), Units 1 and 2. The requested changes are due to the replacement and relocation of the pressure switches from the low pressure auto-stop trip (AST) fluid oil header (AST header) that operates at a nominal control pressure of 80 pounds per square inch gauge (psig) to the high pressure turbine electrohydraulic control (EHC) oil header that operates at a nominal control pressure of 2000 psig. The requested changes would revise Sequoyah, Units 1 and 2, TS 3.3.1, Table 3.3.1-1, "Reactor Trip System Instrumentation," Function 14.a. "Turbine Trip - Low Fluid Oil Pressure," to increase the nominal trip setpoint (NTSP) from 45 pounds per psig to 800 psig, and the allowable value from greater than or equal to (≥) 39.5 psig to ≥ 710 psig.

2.0 REGULATORY EVALUATION

2.1 System Description

The reactor trip system initiates a unit shutdown based on the values of selected unit parameters to protect against violating the core fuel design limits and reactor coolant system (RCS) pressure boundary during anticipated operational occurrences, and to assist the engineered safety features systems in mitigating accidents.

The turbine trip low fluid oil pressure trip function anticipates the loss of heat removal capabilities of the secondary system following a turbine trip. This trip function acts to minimize the pressure/temperature transient on the reactor. The reactor trip on a turbine trip is actuated by two-out-of-three logic from low oil pressure signals (TS Table 3.3.1-1, Function 14.a) or by closed signals from all four turbine steam stop valves (TS Table 3.3.1-1, Function 14.b, "Turbine

Stop Valve Closure”). The circuitry associated with the pressure switches is independent of the turbine control system and does not perform any turbine control functions.

A turbine trip causes a direct reactor trip above the P-9 power range neutron flux interlock setpoint of approximately 50 percent (%) of full power. Any turbine trip from a power level below the P-9 interlock setpoint will not directly trip the reactor but will allow the RCS to bring the reactor to zero power utilizing steam dump to the condenser as an artificial load. The reactor trip on turbine trip provides additional protection and conservatism beyond that required for the health and safety of the public. No credit is taken by the licensee for the reactor trip on low oil pressure in any accident analyses.

2.1.1 Existing Pressure Switch Configuration

Three pressure switches are located on the AST header (also referred to as the AST system). The three low oil pressure switches have two output contacts that provide redundant inputs to each of the three reactor protection system (RPS) protection instrument channels I, II, and III (for a two-out-of-three trip logic). This signal initiates a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock setpoint (approximately 50% of full power). The AST header operates at a nominal control pressure of approximately 80 psig. The existing NTSP is 45 psig and the existing allowable value (AV) is ≥ 39.5 psig.

2.1.2 Proposed Pressure Switch Configuration

The licensee specified in its license amendment request (LAR) that modifications to the EHC system will remove the fluid oil from the AST header where the low oil pressure switches are located. To support this modification, the RPS trip function will instead be performed by three new pressure switches located on the high pressure EHC trip header. As with the original pressure switches, the three new pressure switches will have two output contacts that provide redundant inputs to each of the three RPS protection channels I, II, and III to initiate a two-out-of-three trip logic. The RPS logic is not affected by the change, and the signal will still initiate a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock setpoint (approximately 50% of full power).

The EHC system supplies hydraulic control oil fluid to the turbine stop, governor, intercept, and reheat valves. The EHC fluid is provided by skid-mounted hydraulic pumps that maintain operating pressure at approximately 2000 psig. The licensee specified that the proposed changes to the NTSP and AV are needed due to the higher EHC system operating pressure. The operation of the turbine is dependent on maintaining proper EHC system pressure. On a turbine trip initiation signal, EHC dump valves connected to the EHC fluid header are signaled to open, draining the EHC fluid from the header. The EHC header pressure rapidly decreases, closing the turbine stop valves and tripping the turbine. The decreased EHC fluid pressure is sensed by the new low fluid oil pressure switches. The decreased pressure opens the normally closed pressure switches and actuates a reactor trip when the when the turbine power is above the P-9 power range neutron flux interlock setpoint.

In accordance with the existing TS 3.3.1 for the RPS Instrumentation, the limiting condition for operation (LCO) requires three channels of Turbine Trip - Low Fluid Oil Pressure to be operable in Mode 1 above the P-9 power range neutron flux interlock setpoint. The licensee did not propose to change this LCO. Under the proposed revised TS 3.3.1, three channels will still be required to be operable above the P-9 interlock setpoint. Below the P-9 interlock setpoint, a turbine trip does not actuate a reactor trip. In Mode 2, 3, 4, 5, or 6, the condition for P-9

interlock is not met and, therefore, there is no potential for a turbine trip. Accordingly, the Turbine Trip - Low Fluid Oil Pressure trip function does not need to be operable in these modes.

In its LAR, the licensee cited Section 7.2.1.1.2.6, “Reactor Trips” (ADAMS Accession No. ML18017A448) of the Sequoyah, Units 1 and 2, Updated Final Safety Analysis Report (UFSAR), which describes the reactor trip on a turbine trip function as follows:

> The turbine trip-reactor trip is actuated by two out of three logic from low autostop oil pressure signals or by all closed signals from the turbine steam stop valves. A turbine trip causes a direct reactor trip above P-9 setpoint.
>
> The reactor trip on turbine trip is an anticipatory trip input signal to the reactor protection system. This trip is anticipatory in that it is not assumed to occur in any of the Chapter 15 accident analysis. This trip meets all of the requirements of IEEE 279-1971 including separation, redundancy, single failure, and testability. Seismic location, qualification, or mounting of the sensors is not practical because of their location in the nonseismic Turbine Building.

The licensee also cited Section 15.2.7, “Loss Of External Electrical Load And/Or Turbine Trip” of the UFSAR, which states that a turbine trip will cause a direct reactor trip (unless below approximately 50% power) from a signal derived from the turbine auto-stop oil pressure and turbine stop valves. That section also describes how Sequoyah, Units 1 and 2, are designed to accept a load rejection of 50% of its rated electrical load, and signals from the reactor protection system will trip the plant for load rejections in excess of 50% of rated load.

In its LAR, the licensee cited Section 15.2.7.2, “Analysis of Effects and Consequences,” of the UFSAR, which states that the initial plant response and conditions assumed in the analysis for the loss of load from 100% rated thermal power are:

> The reactor was not tripped on the turbine trip, but tripped later on a high pressurizer pressure trip. Main feedwater flow is terminated at the time of turbine trip, with no credit taken for auxiliary feedwater to mitigate the consequences of the transient.

The licensee also stated in its LAR that because the reactor trip on turbine trip function of the low fluid oil pressure is not credited in the accident analysis, the pressure switches are quality related, non-seismic devices. The switches are similar to switches used in the same EHC application in the Watts Bar Nuclear Plant, Units 1 and 2 (Watts Bar), and in similar EHC applications at the Browns Ferry Nuclear Plant, Units 1, 2, and 3 (Browns Ferry) on the turbine stop valves. The Browns Ferry pressure switches have been in service since the late 1990s. The new switches are designed for consistent, dependable operation at the higher EHC fluid oil pressure. Operational experience at Browns Ferry has shown this style of switch to be reliable. The piping connecting the switches to the EHC header is capable of withstanding the system pressure. Postulated pipe breaks in the EHC header do not need to be considered in the design, as no safety-related equipment would be adversely impacted. A break would result in closure of the associated turbine valves and actuation of the pressure switches.

2.2 Proposed TS Changes

The licensee plans to replace and relocate the pressure switches from the AST header, which operates at a nominal control pressure of 80 psig, to the high-pressure turbine EHC fluid oil header that operates at a nominal control pressure of 2000 psig. The licensee stated in its license amendment request that the proposed changes to the NTSP and AV are needed due to the higher EHC system operating pressure. The licensee stated in its LAR that relocation of the pressure switches to the high-pressure turbine EHC fluid oil header is needed to accommodate a modification to the EHC turbine control system while maintaining the function of transmitting the trip signal to the RPS. The licensee stated that this change does not affect any RPS trip functions.

The licensee proposed the following changes to the AV and NTSP of Sequoyah, Units 1 and 2, TS Table 3.3.1-1:

The existing TS states, in part:

FUNCTION	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
14. Turbine Trip a. Low Fluid Oil Pressure	≥ 39.5 psig	45 psig

The proposed TS would state, in part:

FUNCTION	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT
14. Turbine Trip a. Low Fluid Oil Pressure	≥ 710 psig	800 psig

As shown above, the AV for turbine trip, low fluid oil pressure would be changed from ≥ 39.5 psig to ≥ 710 psig, and the NTSP would be changed from 45 psig to 800 psig.

2.3 Regulatory Requirements

Section 50.36, “Technical specifications,” of 10 CFR establishes the regulatory requirements related to the content of TSs. Section 50.36(a)(1) requires an application for an operating license to include proposed TSs. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the TSs.

Pursuant to 10 CFR 50.36, TSs for operating reactors are required, in part, to include items in the following five specific categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls.

Paragraph 50.36(c)(2) of 10 CFR states that LCOs are the lowest functional capability or performance levels of equipment required for safe operation of the facility, and when an LCO is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

Appendix A, “General Design Criteria (GDC) for Nuclear Power Plants,” to 10 CFR Part 50 establishes the minimum requirements for the principal design criteria for water-cooled nuclear power plants. The following GDC are applicable for this review:

> Criterion 13 - Instrumentation and control
>
> Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.
>
> Criterion 20 - Protection system functions
>
> The protection system shall be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.
>
> Criterion 22 - Protection system independence
>
> The protection system shall be designed to assure that the effects of natural phenomena, and of normal operating, maintenance, testing, and postulated accident conditions on redundant channels do not result in loss of the protection function, or shall be demonstrated to be acceptable on some other defined basis. Design techniques, such as functional diversity or diversity in component design and principles of operation, shall be used to the extent practical to prevent loss of the protection function.
>
> Criterion 23 - Protection system failure modes
>
> The protection system shall be designed to fail into a safe state or into a state demonstrated to be acceptable on some other defined basis if conditions such as disconnection of the system, loss of energy (e.g., electric power, instrument air), or postulated adverse environments (e.g., extreme heat or cold, fire, pressure, steam, water, and radiation) are experienced.

Section 50.65, “Requirements for monitoring the effectiveness of maintenance at nuclear power plants” (i.e., the Maintenance Rule) of 10 CFR establishes the regulatory requirements for monitoring the effectiveness of maintenance at nuclear power plants. Paragraph 50.65(a)(1) requires, in part, that each holder of an operating license for a nuclear power reactor under this part shall monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these

structures, systems, and components, as defined in paragraph (b) of this section, are capable of fulfilling their intended functions.

Regulatory Guide (RG) 1.105, Revision 3, “Setpoints for Safety-Related Instrumentation” (ADAMS Accession No. ML993560062), describes a method acceptable to the NRC staff for complying with the NRC regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. The RG endorses Part 1 of International Society of Automation (ISA) standard, ISA-S67.04-1994, “Setpoints for Nuclear Safety-Related Instrumentation,” subject to NRC staff clarifications. The ISA standard provides a basis for establishing setpoints for nuclear instrumentation for safety systems and addresses known contributing errors in the channel: Part 1 establishes a framework for ensuring that setpoints for nuclear safety-related instrumentation are established and maintained within specified limits.

NUREG-1431, Revision 4, “Standard Technical Specifications [STS], Westinghouse Plants” (ADAMS Accession No. ML12100A222). The STS describe an acceptable method for licensees to satisfy the requirements in 10 CFR 50.36.

3.0 TECHNICAL EVALUATION

3.1 Evaluation of the New Pressure Switch Configuration

The proposed modification to the EHC system removes the AST header where the existing low oil pressure switches are located. In order to support this modification, the RPS trip function will now be performed by three new pressure switches located on the high-pressure turbine EHC trip header. Like the original pressure switches, the three new pressure switches have two output contacts that provide redundant inputs to each of the three RPS protection instrument channels I, II, and III (two-out-of-three logic). The RPS logic is unaffected by the change because the signal will still initiate a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock (approximately 50% of full power). The EHC fluid is provided by skid-mounted hydraulic pumps that maintain operating pressure at approximately 2000 psig. The changes to the NTSP and allowable value are needed due to the higher EHC system operating pressure. The operation of the turbine is dependent on maintaining proper EHC system pressure.

The new EHC pressure switches will monitor the control oil pressure in the turbine EHC system high pressure header. The licensee’s LAR cites Sequoyah, Units 1 and 2, TS Bases B3.3.1, Function 14.a, which states that a low-pressure condition sensed by two-out-of-three pressure switches will actuate a reactor trip if in Mode 1 and above the P-9 interlock setpoint. These pressure switches do not provide any input to the control system. Sequoyah, Units 1 and 2, are designed to withstand a complete loss of load and not sustain core damage or challenge the RCS pressure limitations. This core protection is provided by the Pressurizer Pressure – High trip function and RCS integrity are ensured by the pressurizer safety valves.

The licensee specified that the new Barksdale TC9622-3-V pressure switch has a hydraulically actuated piston that closes the electrical contacts on the switch. There is no electrical power to the piston. The only electrical connections to the pressure switch are to the two sets of contacts on each switch. As explained earlier, the wiring to the existing pressure switches will be lifted and re-landed on the new pressure switches so that the electrical connections to the solid-state protection system (SSPS) are the same as to the existing pressure switches. Power to one set of the contacts on each pressure switch is from SSPS Train A and the power to the second set of contacts on each pressure switch is from the SSPS Train B. The SSPS system is configured

as a failsafe system so that on a loss of SSPS power to one train of the SSPS system, a scram will be initiated. On a turbine trip initiation signal, EHC dump valves connected to the EHC fluid header are signaled to open, draining the EHC fluid from the piping. The EHC header pressure decreases rapidly, initiates the new pressure switches, and trips the turbine. A turbine trip causes a direct reactor trip above the P-9 power range neutron flux interlock setpoint of approximately 50% of full power.

The LAR states, in part, that

> The new low fluid oil pressure setpoint allows for operator recovery actions from a decreasing EHC system pressure occurrence prior to a turbine trip (e.g., EHC system leakage). The EHC system low pressure alarm setpoint has sufficient margin to the system trip setpoint. The low pressure EHC fluid "Low Pressure Alarm" occurs on decreasing pressure at 1775 psig and alerts the operator in the control room that the EHC fluid oil pressure is decreasing. The "Main Pump Auto Start" is initiated on decreasing pressure at 1500 psig and starts the backup EHC fluid oil pump to maintain pressure in the high-pressure header to prevent a turbine trip. An EHC fluid "Low-Low Pressure Alarm" occurs on decreasing pressure at 1350 psig and alerts the operator in the control room. This alarm allows for operator action to recover the EHC fluid oil pressure in response to the low-pressure alarm and main pump auto start action. If EHC fluid oil pressure is not recovered by the time the pressure drops below 800 psig, the new low oil pressure switch contacts will open to send a trip signal to the RPS if reactor power is above the P-9 power range neutron flux interlock (approximately 50% of full power). The main turbine control system will also initiate a turbine trip when pressure is ≤ 800 psig from separate EHC pressure transmitters that input to the control system.

The NRC staff reviewed whether the proposed pressure switch configuration meets the intent of GDC 20. GDC 20 is applicable to this amendment request because the input into the RPS must ensure RPS actuation even if the input component fails. The normal operational state of the existing auto stop low fluid oil pressure switch is contacts closed. The contacts open when the low fluid oil pressure drops below the setpoint. If the pressure switch fails, the contacts would open and therefore provide input to the associated RPS channel. Pressure switch failure would result in contact opening and input provided to the associated RPS channel in the same manner as an EHC header pressure drop below the trip setpoint. GDC 20 is met because the new EHC fluid oil header pressure switches are designed to fail into a safe state. Based on the above discussion, the staff finds that the new switches will continue to meet the requirements of GDC 20.

3.2 Evaluation of Response Time for New Pressure Switches

In the LAR, TVA provided the following information regarding the response time for the new pressure switches:

> Because the reactor trip on turbine trip function of the low fluid oil pressure is not credited in the accident analysis, the UFSAR does not impose any response time requirements for the initiation of this trip. The reactor trip on a turbine trip function from the low oil pressure switches response times are not included in the scope of plant surveillance instructions that verify safety system initiation and trip response times.

TVA stated that its surveillance instructions 1/2-SI-IRT-099-621.A and 1/2-SI-IRT-099-621.B checks response time from manual operation of SSPS Slave Relay K621 until the main turbine stop valves close (i.e., not associated with the low oil pressure switch function). Turbine trip will be monitored at the input relays to SSPS. A protective relay is manually actuated that energizes to open the auto-stop oil line solenoid and emergency trip valves and depressurizes the auto-stop oil line. The time interval from the actuation of relay K621 to the closure of the stop valves is recorded and verified to be ≤ 1.2 seconds. Because this action includes the time to close the stop valves, the time to depressurize the auto-stop oil line is also ≤ 1.2 seconds.

The new EHC solenoid valve trip block assembly will be connected to the high-pressure EHC emergency trip header. On a trip condition, the solenoid valves are de-energized and open to depressurize the dump valves that release the high-pressure EHC fluid to the main steam governor and stop valves actuators to drain (to approximately zero psig). The time to directly depressurize the high-pressure EHC emergency trip header is expected to be the same or better than the existing configuration using the low-pressure AST. The time response of the new trip block assembly to depressurize the EHC lines and close the stop valves will be confirmed during post installation testing by the performance of plant surveillance instructions 1/2-SI-IRT-099-621.A and 1/2-SI-IRT-099-621.B. The time interval from the actuation of the protective relay to the closure of the stop valves will be recorded and verified to be ≤ 1.2 seconds which is the same as the existing response time. This judgement by the licensee is based on the fact that both the current and new pressure switches are piston type and not likely to have a discernable delay in actuation at the low pressure setpoints.

The NRC staff reviewed the above information provided by the licensee and finds it to be acceptable because the time interval between depressurization to trip logic initiation for the existing and the new configurations is essentially the same and no negative effects are expected.

3.3 Evaluation of Setpoint Methodology and Setpoints

The licensee's LAR stated that TVA Branch Technical Instruction BTI-EEB-TI-28, Setpoint Calculations, incorporates methodologies for the determination of setpoints for nuclear safety-related instrumentation in ISA Standard ISA-S67.04-1982 and 1994, as endorsed in RG 1.105, Revisions 2 and 3, respectively. Although the pressure switches are considered non-safety related, the new turbine trip setpoint on low fluid oil pressure has been conservatively determined in accordance with BTI-EEB-TI-28. Instrument uncertainties including calibration error and drift were considered in determining a total device uncertainty for the pressure switches. The safety analyses in Chapter 15 of the Sequoyah, Units 1 and 2, UFSAR do not credit the operation of the reactor trip on turbine trip function of the low fluid oil pressure switches. Therefore, an Analytical Limit or Limiting Trip Setpoint is not defined for the low oil pressure trip function. Hence, the low fluid oil pressure setpoint is not a limiting setpoint used to protect a design or licensing basis limiting condition. The purpose of the switches is to actuate a reactor trip in response to a turbine trip event, not as a direct result of an accident such as a loss of coolant accident or a main steam line break. The low fluid oil pressure setpoint represents the turbine tripped condition.

The AV is derived from the NTSP based on performance data and not based on total loop uncertainties applied to an Analytical Limit or Limiting Trip Setpoint. The acceptance band and AV were calculated in accordance with TVA Branch Technical Instruction BTI-EEB-TI-28, "Setpoint Calculations," as described below.

NTSP

The Sequoyah, Units 1 and 2, UFSAR Section 7.1.2.1.9, Setpoints, states “The Technical Specifications for the Sequoyah Nuclear Plant incorporate the Nominal Trip Setpoint (NTSP) and the AV for setpoints within the RPS which includes the reactor trip system and the Engineering Safety Features Actuation System. Instrument spans are selected such that the AVs are at least 5% from the end of the instrument span. Automatic initiation of protective functions occurs at the NTSP (plus or minus the allowed tolerances).”

The NTSP is the value at which the instrument is set when it is calibrated. Since it is not possible to set the NTSP at an exact value, the instrument is set to the nominal setpoint within an allowed tolerance band defined as acceptable As-Left (AL), which is also referred to as an Acceptance Band (Ab) in BTI-EEB-TI-28.

The NRC staff reviewed the licensee proposed changes and finds it to be acceptable because the setpoint value of 800 psig for Sequoyah, Units 1 and 2, is based on the minimum required EHC fluid oil pressure, the expected calibration tolerance and frequency of the switches, and the expected time-based drift of the pressure switches. Further, this value is consistent with the Turbine Trip on Low Fluid Oil Pressure NTSP reference value of 800 psig provided in Table 3.3.1-1, Item 16.a of the STSs.

As-Left Tolerance (AL) or Ab

The Sequoyah, Units 1 and 2, UFSAR, Section 7.1.2.1.9 defines the AL or Ab as follows:

> To ensure the AV protects the Analytical Limit, the channel must be reset or confirmed to be within the As Left (AL) tolerance during periodic surveillance testing. The AL is the tolerance band on either side of the NTSP within which an instrument or instrument loop is left after calibration or setpoint verification to ensure future operability. The As Found (AF) is the tolerance band on either side of the NTSP which defines the limits of acceptable instrument performance, beyond which the channel may be considered degraded and must be evaluated for operability prior to returning to service. Conditions where the device is found outside the AF will be entered into the corrective action program for further evaluation.

BTI-EEB-TI-28 Section 5.5.6, states that for TSTF-493, “Clarify Application of Setpoint Methodology for LSSS Functions” (ADAMS Accession No. ML092150990), AL or Ab is calculated by the Square Root Sum of the Squares combination of Reference Accuracy (Re), measurement and test instrument errors, and accuracy of the output instrument. Accordingly, the calculated AL tolerance for Sequoyah, Units 1 and 2, is ± 83.14 psi.

However, BTI-EEB-TI-28, Sections 5.5.3.A and 5.5.6.B.6 state that Ab should always be equal to or greater than the device's reference accuracy. The Ab should not be so large that it could prevent or mask detection of instrument degradation or failure. As-left tolerances should never dominate the as-found (AF) tolerance. Therefore, Ab was conservatively set to equal Reference Accuracy (Ab = ± 48 psi).

The NRC staff reviewed the above information provided by the licensee and finds it to be acceptable because the AL was calculated using the acceptable methodology and the Ab was set in a manner that will not prevent or mask detection of instrument degradation or failure.

AV and AF

The Sequoyah, Units 1 and 2, UFSAR Section 7.1.2.1.9 define the AV as follows:

> NTSPs are chosen, in conjunction with the AV, to ensure that the Analytical Limits will not be exceeded during either accidents or anticipated operational occurrences, the NTSP is more conservative than the Analytical Limit. The AV provides an allowance to the Analytical Limit to account for unmeasurable uncertainties such as process effects to ensure that the protective action is performed under worst case conditions before the Analytical Limit is exceeded. To ensure the AV protects the Analytical Limit, the channel must be reset or confirmed to be within the As Left (AL) tolerance during periodic surveillance testing. The AL is the tolerance band on either side of the NTSP within which an instrument or instrument loop is left after calibration or setpoint verification to ensure future operability

Because an AL or safety limit is not stated for the low oil pressure trip function, the allowable value is derived from the NTSP in accordance with BTI-EEB-TI-28 as described below. Normal Measurable Accuracy (Anf) or AF Tolerance have been calculated in accordance with the TVA methodology in BTI-EEB-TI-28.

Using all the applicable random and bias errors the licensee calculated the following values for the positive and the negative as-found tolerances, the positive and the negative allowable values, and calculated the minimum allowable value to be 709.43 psig. An allowable value of 710 psig has been selected which is slightly above the minimum calculated value and, therefore, conservative. This allowable value is based on a setpoint of 800 psig and a calibration span of 2400 psi.

In order to ensure that an instrument channel is capable of performing its specified function, Sequoyah, Units 1 and 2, performs testing of these instruments in accordance with current station procedures that govern the control of calibration requirements (including AF and AL), and the evaluation of out-of-tolerance instruments.

In addition to the trip function various alarms are also generated to warn the operator that the EHC fluid pressure is falling. These alarms and associated actions have been explained in Section 3.1 of this safety evaluation.

The NRC staff reviewed the licensee's setpoint calculations for the proposed changes and finds them to be acceptable because they are conservative and the approved setpoint methodology was followed.

3.4 Regulatory Compliance Evaluation

Criterion 13 - Instrumentation and Control

Instrumentation and controls have been provided to monitor and control the EHC fluid pressure to for all required conditions. In addition to actuation of the turbine trip relays, alarms have also been provided for pre-trip conditions to warn the plant operators as explained in Section 3.1 above. The proposed changes do not affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls have been provided to maintain these variables and systems within

prescribed operating ranges. Based on the discussion above, the NRC staff finds the changes would continue to meet the requirements of GDC 13 for Sequoyah Units 1 and 2.

Criterion 20 - Protection System Functions

GDC 20 is applicable to this LAR because the input into the RPS must ensure RPS actuation even if the input component fails. The normal operational state of the existing auto stop low fluid oil pressure switch is contacts closed. The contacts open when the low fluid oil pressure drops below the setpoint. If the pressure switch fails, the contacts would open and therefore provide input to the associated RPS channel. Pressure switch failure or loss of power to the relays actuating the trip would result in contact opening and providing input to the associated RPS channel in the same manner as an EHC header pressure drop below the trip setpoint. Based on the design discussed in Section 3.1 above and the failsafe mode of the pressure switches, the NRC staff finds that if the changes were implemented, the licensee would continue to fulfill the protection system function, and TVA would continue to meet GDC 20 for Sequoyah Units 1 and 2.

Criterion 22 - Protection System Independence

GDC 22 is applicable to this amendment request because the input into the RPS must ensure RPS channel separation is maintained to provide protection system independence. The AST header pressure switches provides inputs to each of the three RPS protection instrument channels I, II and III (two-out-of-three logic) to initiate a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock. When the low oil pressure condition is sensed below the setpoint following a turbine trip by two-out-of-three pressure switches in RPS Channel I, II, and III, the RPS initiates a reactor trip signal. Separation between the three pressure switches and associated wiring is provided in accordance with IEEE 279-1971 and ensures independence between the RPS channels. If approved, the RPS trip function would now be performed by three new pressure switches located on the high-pressure turbine EHC trip header. As with the original pressure switches, the three new pressure switches have two output contacts that provide redundant inputs to each of the three RPS protection instrument channels I, II and III (two-out-of-three logic) in the same manner as the old system. The RPS logic is not affected by the change, and a signal would still initiate a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock (approximately 50% of full power). Based on the discussion above, the NRC staff finds that, if the NRC approved this LAR, protection system independence would be maintained at Sequoyah Units 1 and 2, and GDC 22 would continue to be met by the licensee.

Criterion 23 - Protection System Failure Modes

Per GDC 23, the protection system shall be designed to fail into a safe state or into a state demonstrated to be acceptable on some other defined basis if conditions such as disconnection of the system, loss of energy (e.g., electric power, instrument air), or postulated adverse environments (e.g., extreme heat or cold, fire, pressure, steam, water, and radiation) are experienced. GDC 23 is applicable to this modification to the extent that inputs to the RPS are affected. The RPS and the turbine control systems are independent systems. A failure of the turbine control system does not affect the input to the RPS from the existing auto stop low fluid

oil pressure switches. The RPS trip function will now be performed by three new pressure switches located on the high-pressure turbine EHC trip header. The three new pressure switches provide input contacts to the RPS logic similar to the low-pressure system and the signal will still initiate a reactor trip on a turbine trip if reactor power is above the P-9 power range neutron flux interlock (approximately 50% of full power).

The licensee state that the proposed switches to be installed at Sequoyah Units 1 and 2 have been used in similar EHC turbine stop valve applications at Watts Bar and Browns Ferry, and have a reliable operating history. The new low fluid oil header pressure switches do not provide any input into the turbine control system. The low fluid oil header pressure switches utilize the existing auxiliary relays to communicate with the RPS. The connection to the RPS from the auxiliary relays is not being modified. If the proposed changes are approved, GDC 23 would be met because the relocation and replacement of the pressure switches maintains system reliability, redundancy, and independence from the turbine control system. The loss of pressure or power will lead to failsafe operation. Based on the discussion above, the staff finds the licensee's proposed design to be acceptable and would continue to meet GDC 23 if implemented.

10 CFR 50.36

In accordance with the current TS 3.3.1 for reactor trip system Instrumentation, the LCO requires three channels of Turbine Trip – Low Fluid Oil Pressure to be operable in Mode 1 above the P-9 interlock setpoint. As described in in the LAR, there is no change to this current requirement; three channels will still be required to be operable above the P-9 interlock setpoint. What the licensee proposes to change is the TSs numerical values (i.e., ALLOWABLE VALUE and NOMINAL TRIP SETPOINT) associated with the Turbine Trip – Low Fluid Oil Pressure function. As described and evaluated above, the NRC staff reviewed the numerical values for the proposed TS by the licensee and finds them acceptable. The NRC staff also finds the proposed changes to Technical Specification 3.3.1, Table 3.3.1-1, Function 14.a. for Sequoyah, Units 1 and 2, are consistent with STS format and content and accurately reflect the licensee's analysis in the LAR. Because the proposed changes are consistent with STS and accurately reflect the licensee's analysis found to be acceptable, the NRC staff finds that compliance with 10 CFR 50.36 continues to be met for having a TS provision for a reactor trip upon a turbine trip on low fluid oil pressure.

10 CFR 50.65

In the LAR, the licensee states that that the proposed pressure switches are in the scope of the Maintenance Rule and are monitored in the same way as the current pressure switches. In addition, the licensee states that RPS is in the scope of the Maintenance Rule and that the TS changes will have no effect on the monitoring of RPS in the Maintenance Rule. Because the proposed pressure switches and RPS remain in the scope of the Maintenance Rule and monitoring remains the same, the NRC staff finds that, if the licensee's proposed changes were implemented, the applicable parts of 10 CFR 50.65 would continue to be met.

Regulatory Guidance

RG 1.105, Revision 3, describes a method acceptable to the NRC staff for complying with the Commission's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the TS limits. This RG endorses Part 1 of ISA-S67.04-1994, subject to NRC staff clarifications. The ISA standard provides a basis for establishing setpoints

for nuclear instrumentation for safety systems and addresses known contributing errors in the channel. Part 1 establishes a framework for ensuring that setpoints for nuclear safety-related instrumentation are established and maintained within specified limits. The NRC staff reviewed the TVA setpoint methodology and the settings as explained earlier in Section 3.3 of this safety evaluation and found that TVA's methodology is acceptable to staff, and it meets the intent of RG 1.105.

3.5 Technical Conclusion

Based on the above review, the NRC staff finds that the proposed changes to the Sequoyah, Units 1 and 2, TS Table 3.3.1-1 AV and NTSP for the turbine trip function above the P-9 interlock setpoint, based on low fluid oil pressure from the EHC high pressure header, are acceptable. The low fluid oil pressure setpoint is not a limiting setpoint used to protect a design or licensing basis limiting condition. Although the reactor trip on turbine trip – low fluid oil pressure is not credited in any Sequoyah, Units 1 and 2, design basis accident analyses, this anticipatory trip would minimize the effects of a reactor coolant pressure and temperature transient for a loss of load transient.

Based on the above review, the NRC staff concludes that the proposed changes are consistent with the guidance and meet the regulatory requirements set forth in Section 2.3 of this safety evaluation, and are, therefore, acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendments on September 18, 2020. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on May 5, 2020 (85 FR 26731). 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 or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission 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, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the

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

Principal Contributors: G. Singh
C. Ashley

Dated: November 12, 2020

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 349 AND 343 REGARDING TECHNICAL SPECIFICATION 3.3.1, "REACTOR PROTECTION SYSTEM INSTRUMENTATION," TURBINE TRIP FUNCTION ON LOW FLUID OIL PRESSURE (EPID L-2020-LLA-0044) DATED NOVEMBER 12, 2020

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