Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

September 30, 2005

TVA-SQN-TS-05-02 10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - UNITS 1 AND 2 - TECHNICAL SPECIFICATIONS (TS) CHANGE 05-02 "CYCLIC AND TRANSIENT LIMITS WITH DESIGN FEATURES REVISION"

Pursuant to 10 CFR 50.90, Tennessee Valley Authority (TVA) is submitting a request for a TS change (TSC 05-02) to Licenses DPR-77 and DPR-79 for SQN Units 1 and 2. The proposed TS change will modify the TS Section 5.0, "Design Features," to be more consistent with the content of the same section in NUREG-1431, Revision 3, "Improved Standard TS for Westinghouse Plants."

Enclosure 1 provides a description of the proposed change. Enclosure 2 provides the existing TS pages marked-up to show the proposed change.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(10).

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Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee State Department of Public Health.

TVA believes the proposed change is administrative in nature and has not defined a specific schedule or milestone by which the approval of the amendment is desired. Furthermore, there are no commitments contained in this submittal. Therefore, TVA requests that once this amendment is approved, 45 days be allowed for implementation.

If you have any questions about this change, please contact me at 843-7170 or Jim Smith at 843-6672.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 30 day of September, 2005.

Sincerely,

P. L. Pace
Manager, Site Licensing
and Industry Affairs

Enclosures:
1. TVA Evaluation of the Proposed Changes
2. Proposed Technical Specifications Changes (mark-up)
cc: See page 3

Enclosures
cc (Enclosures):

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY (TVA)
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

1.0 DESCRIPTION

This letter is a request to amend Operating Licenses DPR-77 and DPR-79 for SQN Units 1 and 2. The proposed changes revise the SQN Technical Specification (TS) Section 5.0, "Design Features," to more conform with NUREG-1431 Revision 3, "Standard Technical Specifications for Westinghouse Plants," henceforth NUREG-1431. The proposed change includes the elimination of exclusion area, low population zone, and effluent subsections and associated figures referred to in Section 5.1, "Site." A description of the site location would be added for consistency with NUREG-1431. The site boundary definition would be revised to delete a reference to the exclusion area figure. It is proposed to eliminate Section 5.2, "Containment," consistent with NUREG-1431, which is absent these characteristics. A similar change is proposed to eliminate Section 5.4, "Reactor Coolant System," as well as Section 5.5, "Meteorological Tower Location," and its associated figure. The meteorological figure corresponds to that containing exclusion area and effluent release point information. Lastly, a proposed change to the TS "Administrative Control" section to acquire the component cyclic or transient limits currently located in the "Design Features" section. This proposed relocation would also move Table 5.7.1, "Component Cyclic or Transient Limits," to the Final Safety Analysis Report (FSAR). In regards to the fuel assemblies, control rod assemblies, and fuel storage design features sections, no proposed changes are considered.

2.0 PROPOSED CHANGE

The following information provides the specific proposed changes mentioned in the above section:

Included within Section 5.1, subsections Exclusion Area, Low Population Zone, Site Boundary for Gaseous Effluents, and Site Boundary for Liquid Effluents will be eliminated including associated Figures 5.1-1 "Exclusion Area," and 5.1-2, "Low Population Zone." Each of these subsections will retain their title (i.e., "Exclusion Area"), however; text is added to indicate the sections are deleted. The title of

Section 5.1, "Site," is renamed "Site Location" and the following site location description is added,

> "The Sequoyah Nuclear Plant is located on a site near the geographical center of Hamilton County, Tennessee, on a peninsula on the western shore of Chickamauga Lake at Tennessee River mile (TRM) 484.5. The Sequoyah site is approximately 7.5 miles northeast of the nearest city limit of Chattanooga, Tennessee, 14 miles west-northwest of Cleveland, Tennessee, and approximately 31 miles south-southwest of TVA's Watts Bar Nuclear Plant."

The site boundary definition refers to Figure 5.1-1. This reference is deleted.

The subsections, configuration, and design pressure and temperature of Section 5.2, "Containment," are deleted. Text is included to indicate the deletion of these subsections. Similarly, subsections design pressure and temperature, and volume included within Section 5.4, are deleted with added text indicating the deletion.

Lastly, Section 5.5 and its associated figure are deleted and replaced with text indicating the deletion. The associated figure, used to show the location of the meteorological tower, is the same as that for exclusion area and effluents boundaries.

Design Feature Section 5.7, "Component Cyclic or Transient Limit," is relocated to a new Administrative Control Section 6.8.4.k, "Component Cyclic or Transient Limit," and the language is revised as follows,

> "This program provides control to track the FSAR, Section 5.2.1, cyclic and transient occurrences to ensure that components are maintained within the design limits."

All administrative changes to the TS index are made for accuracy with the above changes.

In summary, the above described changes include removal of current site information regarding exclusion area, low population zone, and site boundary for gaseous and liquid effluents from the TS "Design Features" section. Descriptive language relating to the site location is added. Information regarding the design features for containment, reactor

coolant system (RCS), and meteorological tower location is deleted. The "Component Cyclic or Transient Limit" section is relocated to TS "Administrative Control" section. A referral in the site boundary definition is removed and the TS index is modified for consistency with the revised design features.

3.0 BACKGROUND

Subsequent to the SQN Unit 1 Cycle 13 Refueling Outage, it was recognized that specific components identified in the "Component Cyclic or Transient Limits" table of "Design Features" Section 5.7, would eventually require a change to the limits currently specified. NUREG-1431 maintains the component cyclic or transient limits as a program to ensure these specific plant components are tracked and maintained within their appropriate design limits; however, specific limits are defined in the operating plant's FSAR. Section 5.2 of the SQN FSAR also maintains information regarding the plant cyclic or transient events and requirements.

The proposal to relocate the "Component Cyclic or Transient Limit" section provided an opportunity to revise the SQN "Design Features" section for consistency with NUREG-1431. The sections proposed for revision provides important information regarding the SQN plant and site. The following discussion describes these sections in more detail:

<u>Design Features Section 5.1 "Site Exclusion Area"</u>

This TS section provides a map of the site exclusion area. This area, which TVA has absolute authority for the exclusion of personnel and property, contains no residencies, commercial operations, or public recreational areas. The area boundaries include the western shore of the Chickamauga Lake of the Tennessee River and two rural county roads that penetrate and run adjacent to the area before leaving the site. A description of the site exclusion area is in FSAR Chapter 2.

<u>Design Features Section 5.1 "Site Low Population Zone"</u>

This TS section provides a map of the low population zone surrounding the SQN site featuring towns, roads and recreational areas. This area was chosen pursuant to 10 CFR Part 100 as an area of three mile radius surrounding the plant site. The area is of such size that in the unlikely event of a serious accident there is a reasonable probability that appropriate measure could be taken to

protect the health and safety of the residents. Additionally, provisions for protection of this area were considered during the development of the site emergency plan. Similar information regarding the site low population zone is in FSAR Section 2.1.3.3.

Design Features Section 5.1 "Site Boundary for Gaseous Effluents"

This TS section identifies the site boundary for gaseous effluents. This effluent release boundary is the same as the exclusion area boundary discussed above. There are three specific gaseous release points on the SQN site defined as zones. These three locations are Release Zone 1, the Auxiliary Building vent exhaust, and the Shield Building vent exhaust; Release Zone 2, the radioactive chemical hood exhaust; and Release Zone 3, the condenser air ejector exhaust. A discussion of the gaseous effluents' site boundary is found in FSAR Chapter 2.

Design Features Section 5.1 "Site Boundary for Liquid Effluents"

This TS section identifies the site boundary for liquid effluents. All liquid effluent, either routine or accidental from SQN, flows into the river from a diffuser pond through a system of diffuser pipes. The diffuser system is designed to provide rapid mixing of discharged effluent as it enters the river. Additional information regarding the liquid effluents' site boundary is in FSAR Section 2.4.12.

Design Features Section 5.2 "Containment Configuration"

The TS containment configuration section provides a brief description of the shielding building that surrounds the steel containment vessel including some nominal dimensions of each structure. The shield building's design provides: radiation shielding from accident conditions, radiation shielding from parts of the RCS during operation, and protection of the steel containment vessel from low temperatures, adverse atmospheric conditions, external missiles, and flood. The steel containment vessel, including access openings, penetrations, and vacuum relief systems, is designed so that the leakage of radioactive materials from the containment structure under conditions of pressure and temperature resulting from the design basis accident will not result in undue risk to the health and safety of the public; and is designed to limit releases below 10 CFR 100 values. Additional design features of containment, including the

concrete shielding building and the steel containment vessel are in Section 3.8 of the FSAR.

Design Features Section 5.2 "Containment Design Pressure and Temperature"

This TS section ensures the steel containment vessel is designed and maintained for a maximum internal pressure and temperature. The containment vessel is designed to accommodate the maximum internal pressure and temperature calculated to occur following a loss-of-coolant accident (LOCA) (design basis accident). Additional information regarding the steel containment vessel is described within FSAR Section 3.8.2.

Design Features Section 5.4 "Reactor Coolant System Design Pressure and Temperature"

This TS section ensures the RCS is designed and maintained in accordance with specific code requirements and for a specific pressure and temperature. The RCS boundary is designed to accommodate the system pressures and temperatures attained under all expected modes of plant operation including all anticipated transients, and to maintain the stresses within applicable stress limits. The system is protected from overpressure by means of pressure relieving devices as required by applicable codes. Materials of construction are specified to minimize corrosion and erosion and to provide a structural system boundary throughout the life of the plant. Fracture prevention measures are taken to prevent brittle fracture. Inspection in accordance with applicable codes and provisions defined in FSAR Subsection 5.2.8 are made for surveillance of critical areas to enable periodic assessment of the boundary integrity. The RCS is further detailed in FSAR Section 5.2.

Design Features Section 5.4 "Reactor Coolant System Volume"

This TS section describes the total water and steam volume of the RCS at a nominal temperature. The volume of the RCS is a principle value used by various supporting fluid design analysis. Further discussions of the RCS characteristics are detailed in FSAR Chapter 5.

Design Features Section 5.5 "Meteorological Tower Location"

This TS section identifies the location on the onsite meteorological tower. The onsite meteorological equipment provides local wind speed and direction, temperature and dew

point, and rainfall measurements. A more detailed discussion of the meteorological equipment, including the tower, is located in FSAR Section 2.3.3.

Design Features Section 5.7 "Component Cyclic or Transient Limit"

This TS section provides specific limits to ensure a high degree of integrity for the equipment in the RCS for the design life of the plant. The limiting cycle or transient values are normally used in the equipment fatigue evaluations. Information of component cycles or design transients is further detailed in FSAR Section 5.2.

4.0 TECHNICAL ANALYSIS

The following discussion provides a justification of each of the proposed changes presented in Section 2.0 of this letter.

Design Features Section 5.1 "Site"

SQN proposes deleting the information pertaining to the SQN site exclusion area, low population zone, and site boundary for gaseous and liquid effluents. This entails elimination of both the exclusion area figure and low population zone figure. This change also requires removal of a figure reference within the site boundary definition. The TS Design Features section titled "Site" will be re-titled "Site Location" and a description of the site location will be added that is consistent with the text in the SQN FSAR. These changes are considered administrative in nature and conforming to NUREG-1431. This information, as described in Section 3.0, "Background" of this letter, is discussed in the SQN FSAR and reliance on the FSAR content is acceptable based on the fact that a change to this information would be controlled by the 10 CFR 50.59 program. In addition, the inclusion of site and plant area maps are not requirements of 10 CFR Section 50.36(c)(4), Design Features of TS. A similar amendment request was approved in NRC letter to Turkey Point Units 3 & 4 dated February 12, 2002, "Issuances of Amendments Regarding Removal of Site Area and Plant Area Maps from Technical Specifications (TAC Nos. MB1968 and MB1969)."

Design Features Section 5.2 "Containment"

SQN proposes deleting the containment configuration, and design pressure and temperature information. This change is considered administrative in nature and conforming to NUREG-1431. Generally, the information contained in this TS

section is located in other plant documents. As described in Section 3.0, "Background" of this letter, the SQN FSAR contains similar information and reliance on the FSAR content is acceptable based on the fact that a change to this information would be controlled by the 10 CFR 50.59 program. Some detailed information is not described in the FSAR and will require relocation to ensure fidelity. The TS identifies the maximum steel containment design temperature to be 250 degree Fahrenheit (°F) and will not be relocated to the SQN FSAR. The steel containment vessel maximum design temperature and pressure values, identified in the SQN FSAR, are 220°F and 12 pounds per square inch gauge (psig). The design basis LOCA results in containment environmental temperature reaching 240°F with the vessel wall temperature converging near 220°F. The maximum environmental temperature value is established by the main steam line break event. A rupture of a main steam line creates a harsh environment temperature of 327°F in lower containment. However, the containment vessel is maintained less than 220°F and 12 psig for this event as described in FSAR Section 3.8.2.

Additionally, SQN TS Limiting Condition of Operation (LCO) Section 3.6 provides requirements to ensure containment configuration integrity.

Design Features Section 5.4 "Reactor Coolant System"

SQN proposes deleting the RCS design pressure and temperature, and volume information for the TS design features. This change is conforming to NUREG-1431, which does not contain this information. Generally, the information contained in this TS section is located in other plant documents, as described in Section 3.0 "Background" of this letter. The SQN FSAR contains similar information, as well as the code requirements in FSAR Section 5.2, and reliance on the FSAR content is acceptable based on the fact that a change to this information would be controlled by the 10 CFR 50.59 program. As described previously, some detailed information is not described in the FSAR and will require relocation to ensure fidelity. Additionally, SQN TS LCO Section 3.4 provides requirements to ensure safe reactor coolant system operation.

Design Features Section 5.5 "Meteorological Tower Location"

SQN proposes deleting the meteorological tower location information from TS design features. This change is considered administrative in nature and conforming to NUREG-1431. This information, as described in Section 3.0

"Background" of this letter, is discussed in the SQN FSAR and reliance on the FSAR content is acceptable based on the fact that a change to this information would be controlled by the 10 CFR 50.59 program. In addition, 10 CFR Section 50.36(c)(4) states that design features are those features such as material of construction and geometric arrangements which, if altered or modified, would have a significant effect on safety and are not covered in other TS sections. A figure showing the location of the meteorological tower does not meet these requirements.

Design Features Section 5.7 "Component Cyclic or Transient Limit"

SQN proposes to relocate the component cyclic or transient limit requirements to TS Section 6.0 "Administrative Controls" including revising the language to conform to that of NUREG-1431 and relocate the associated table with specific cyclic and transient limits to the FSAR. This change is considered administrative in nature because the requirements to track and maintain these limits remain in the SQN TSs. This change also is conforming to NUREG-1431.

5.0 REGULATORY SAFETY ANALYSIS

SQN proposes to revise specific sections of the SQN Technical Specification (TS) "Design Features." The change will remove figures identifying the site exclusion area, low population zone, site boundary gaseous and liquid effluents, and meteorological tower. A description of the site location will be added to the newly titled "Site Location" section. The "Site Boundary" definition will be revised for consistency. SQN also proposes deletion of Containment Configuration and Design Pressure and Temperature Sections, as well as the Reactor Coolant System Design Pressure and Temperature and Volume Sections. Lastly, SQN proposes relocating the component cyclic or transient limit requirements to the SQN TS "Administrative Controls" section. Each of the proposed changes is conforming to NUREG-1431, Revision 3, "Improved Standard Technical Specifications for Westinghouse Plants."

5.1 No Significant Hazards Consideration

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

   Response: No.

   The removal of information and figures featuring the locations of the site exclusion area, gaseous and liquid effluent boundaries, low population zone, and the meteorological tower is administrative in nature. Most, if not, all of this information is located in other licensee-control documents, such as the Final Safety Analysis Report (FSAR). Congruently, the addition of a site location description only adds geographical information to the TSs. The relocation and revision of the component cyclic or transient limits requirement does not alter the requirement to track and maintain these limits and thus considered administrative. This proposed amendment involves no technical changes to the existing TSs and does not impact initiators of analyzed events. The changes also do not impact the assumed mitigation of accidents or transient events. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   Response: No.

   The proposed change does not involve a change to plant systems, components, or operating practices that could result in a change in accident generation potential. The proposed changes do not impose any new or different requirements or eliminate any existing requirements. The proposed changes do not alter assumptions made in the safety analyses and licensing basis. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No.

The deletion of information and figures featuring the locations of the site exclusion area, gaseous and liquid effluent boundaries, low population zone, and the meteorological tower does not affect operational limits or functional capabilities of plant systems, structures and components. The addition of a site location description adds geographical information to the TSs. The relocation and revision of the component cyclic or transient limits requirements also does not affect operational limits or functional capabilities of plant systems, structures and components. These changes pose no effect on margin of safety. The TS identified maximum steel containment temperature value is not the current limiting design value, which is found in the FSAR. Its elimination is considered administrative in nature and does not result in a change of margin of safety to the containment design. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed amendment(s) present no significant hazards consideration under the standards set forth in 10 CFR 50.92 (c), and accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The Commission's regulatory requirements related to the content of the TSs are contained in Title 10, Code of Federal Regulations (10 CFR), Section 50.36. The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings, (2) limiting conditions for operation (LCO), (3) surveillance requirements (SRs), (4) design features, and (5) administrative controls. The design features proposed for removal are included in the TSs but do not meet the applicability requirements in 10 CFR 50.36,

"Technical Specifications." NRC noticed in the *Federal Register* on July 22, 1993, "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," that included the position that specifications that do not meet the 10 CFR 50.36 applicability criteria may be proposed for removal and relocation to licensee-controlled documents such as the Final Safety Analysis Report (FSAR). Several licensees have made similar changes during conversion to vendor-specific Standard TSs, such that information is relocated to the FSAR, which includes 10 CFR 50.59 review requirements. The FSAR meets the NRC expectations for a licensee-controlled document for the purpose of removal and relocated specifications that do not meet 10 CFR 50.36 criteria. Therefore, the proposed removal of these design features is acceptable.

NUREG-1431, provides generic recommendations for requirements associated with the operation of Westinghouse Electric Company designed nuclear power plants. The design features proposed for removal is not included in NUREG-1431. The design feature proposed for relocation including the revised text is maintained in the "Administrative" section of NUREG-1431. Therefore, the change of these design features by either relocation with revised text, or removal of from the TSs and reliance on other license-controlled documents is consistent with the NUREG.

10 CFR Part 50 General Design Criterion (GDC) 10, "Reactor Design," requires the design of the reactor core and associated systems be such that specified fuel design limits are not exceeded during normal operation and anticipated operational occurrences. The design of the reactor cooling system (RCS) including the design pressure and temperature and volume are not changed by this proposal. Removing the "Design Features" section regarding RCS pressure, temperature, and volume does not results in a loss of margin for normal operation or anticipated operational occurrences; therefore, the compliance with GDC 10 is still met.

10 CFR Part 50 GDC 14, "Reactor Coolant Pressure Boundary," requires the RCS pressure boundary to be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture.

This proposed change does not physical modify the RCS pressure boundary nor does it change calculations related to the design of the RCS pressure boundary.

10 CFR Part 50 GDC 15, "Reactor Coolant System Design," requires that the design of the RCS and associated systems be designed to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during normal operation, including anticipated operational occurrences. This proposed change does not physical modify the RCS pressure boundary. Additionally, the Sequoyah TS LCO's for the RCS are maintained to ensure the safe continued operation.

10 CFR Part 50 CGC 16, "Containment Design," prescribes that the reactor containment and associated systems be provided to ensure against uncontrolled release of radioactivity to the environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require. This proposed change does not physical modify the containment structure or assisting systems, structure, and components, nor does it change calculations related to the containment design. Additionally, the TS LCO's are maintained for the containment systems with no proposed change.

10 CFR Part 50 GDC 31, "Fracture Prevention of Reactor Coolant Pressure Boundary," requires the reactor coolant pressure boundary (RCPB) be designed with sufficient margin to assure that when stressed under operating, maintenance, testing, and postulated accident conditions (1) the boundary behaves in a nonbrittle manner and (2) the probability of rapidly propagating fracture is minimized. This proposed change does not physical modify the RCPB nor does it change calculations related to the RCPB design. This change does propose relocating the requirement to track cyclic and transient limits of the RCS and a secondary system from the TS design features to the TS administrative control section, including relocating the specific limits to the FSAR. This change does not eliminate the requirement to track and trend the limits, nor does it revise any limits.

10 CFR Part 50 GDC 50, "Containment Design Basis," requires the reactor containment structure be designed

with margin to accommodate, without exceeding the design leakage rate, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident (LOCA). This proposed change does not physical modify the containment structure nor does it change the design basis calculations related to the containment design. Additionally, the TS LCO's are maintained for the containment systems with no proposed change.

10 CFR Part 50 GDC 51, "Fracture Prevention of Containment Pressure Boundary," requires the reactor containment boundary be designed with sufficient margin to ensure against (1) its ferritic materials behave in a nonbrittle manner, and (2) the probability of rapidly propagating fracture is minimized. This proposed change does not physical modify the containment pressure boundary nor does it change calculations related to the containment pressure boundary design.

10 CFR Part 50 GDC 60, "Control of Releases of Radioactive Materials to The Environment," prescribes that the nuclear power unit design includes means to control suitably the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. The proposed change does not modify system, structure, or component related to control of liquid or gaseous effluents. The proposed change does not modify any systems, structures, components, or programs nor increase limits regarding the release of liquid or gaseous effluents.

10 CFR Part 50 GDC 64, "Monitoring Radioactivity Releases," requires a means be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of LOCA fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents. The proposed change does not modify systems, structures, or components related to monitoring the release of liquid or gaseous effluents.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment is confined to (i) changes to surety, insurance, and/or indemnity requirements, or (ii) changes to recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10CFR 51.22(c)(10). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

1. NUREG-1431, Revision 3, "Standard Technical Specifications Westinghouse Plants," June 2004

2. NRC Letter to Turkey Point Units 3 & 4 Dated February 12, 2002, "Issuance of Amendments Regarding Removal of Site Area and Plant Area Maps From Technical Specifications (TAC Nos. MB1968 and MB1969)"

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

Proposed Technical Specification Changes (mark-up)

I. AFFECTED PAGE LIST

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II. MARKED PAGES

See attached.

This page affected by Amendment # 278, TSC 00-06

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DESIGN FEATURES

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Drainage 5-5a

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SHIELD BUILDING INTEGRITY

1.30 SHIELD BUILDING INTEGRITY shall exist when:

a. The door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

b. The emergency gas treatment system is OPERABLE.

c. The sealing mechanism associated with each penetration (e.g., welds, bellows or 0-rings) is OPERABLE.

SHUTDOWN MARGIN

1.31 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.32 The SITE BOUN~~DARY shall be that~~ line beyond which the land is not owned, leased, or otherwise controlled by the licensee~~ (see Figure 5.1-1)~~.

SOLIDIFICATION

1.33 Deleted

SOURCE CHECK

1.34 Deleted

STAGGERED TEST BASIS

1.35 A STAGGERED TEST BASIS shall consist of:

a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals,

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

THERMAL POWER

1.36 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

5.1 SITE LOCATION

INSERT 1

EXCLUSION AREA

5.1.1 ~~The exclusion area shall be as shown in Figure 5.1-1.~~ DELETED

LOW POPULATION ZONE

5.1.2 ~~The low population zone shall be as shown in Figure 5.1-2.~~ DELETED

SITE BOUNDARY FOR GASEOUS EFFLUENTS

5.1.3 ~~The site boundary for gaseous effluents shall be as shown in Figure 5.1-1.~~ DELETED

SITE BOUNDARY FOR LIQUID EFFLUENTS

5.1.4 ~~The site boundary for liquid effluents shall be as shown in Figure 5.1-1.~~ DELETED

5.2 CONTAINMENT

CONFIGURATION

5.2.1 ~~The shield building is a reinforced concrete building of cylindrical shape, with a dome roof around a free standing steel containment and having the following design features:~~

~~a. Nominal inside diameter = 125 feet.~~

~~b. Nominal inside height = 175 feet.~~

~~c. Minimum thickness of concrete walls = 3 feet.~~

~~d. Minimum thickness of concrete roof = 2 feet.~~

~~e. Minimum thickness of concrete floor pad = 8 feet.~~

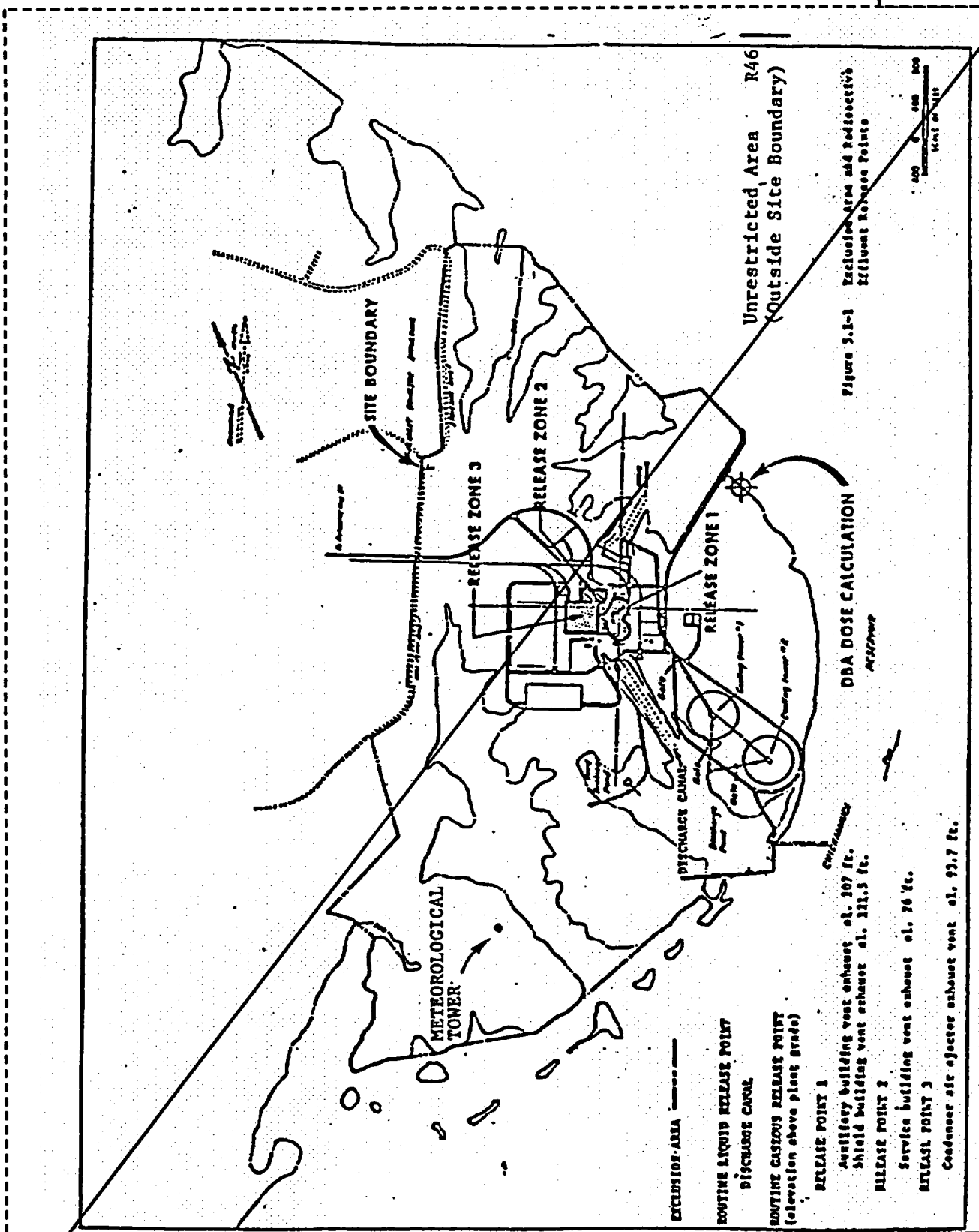
~~f. Minimum thickness of steel containment = 0.5 inches at the spring line and 0.25 inches at the bottom liner plate.~~

~~g. Net free volume = 375,000 cubic feet between the steel containment and the shield building.~~ DELETED

DESIGN PRESSURE AND TEMPERATURE

5.2.2 ~~The steel containment is designed and shall be maintained for a maximum internal pressure of 12 psig and a temperature of 250°F.~~ DELETED

INSERT 2



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EXCLUSION AREA

FIGURE 5.1-1

INSERT 3

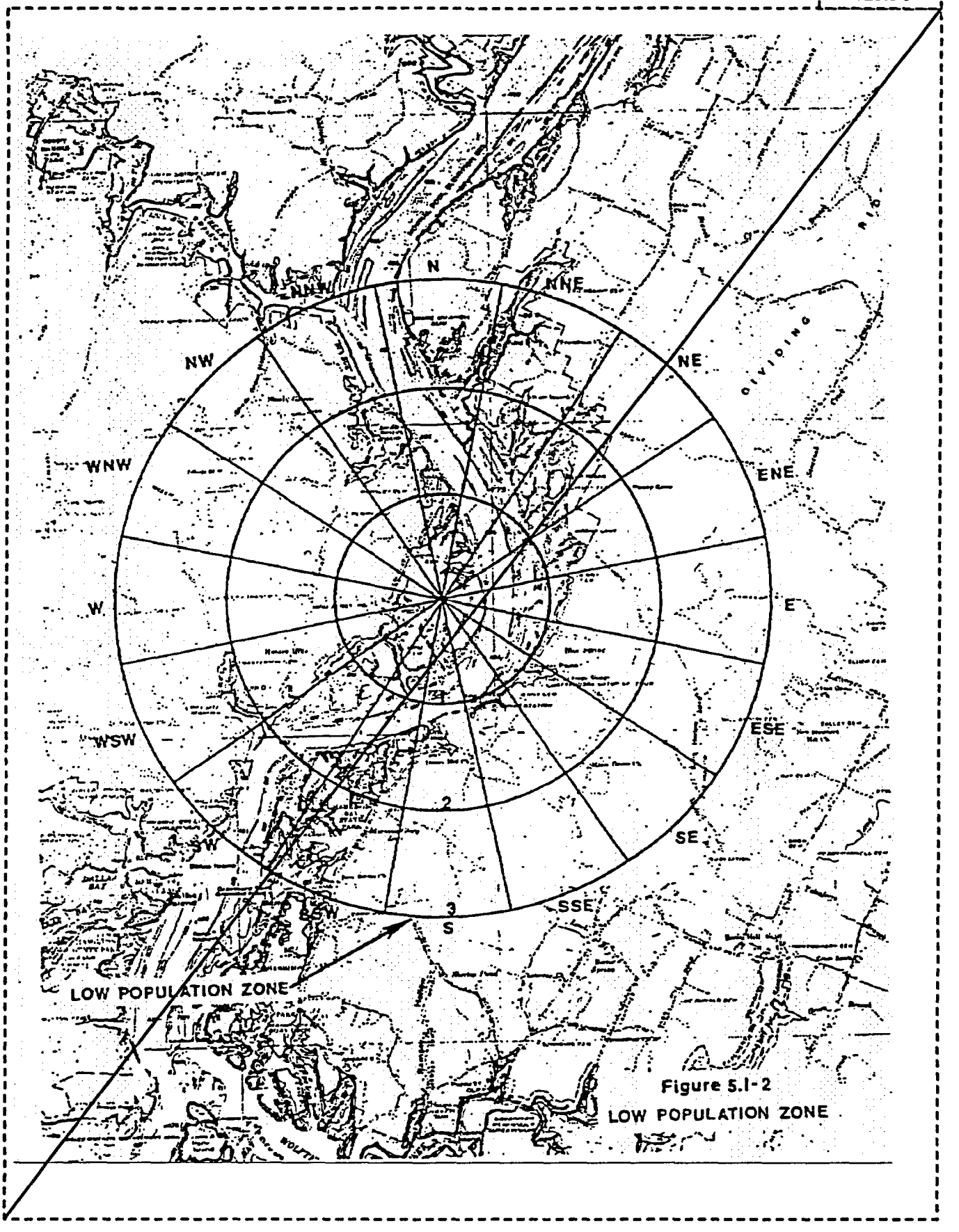

Figure 5.1-2
LOW POPULATION ZONE

This page affected by Amendment # 278, TSC 00-06

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of zircaloy or M5 clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.
Sequoyah is authorized to place a limited number of lead test assemblies into the reactor as described in the Framatome-Cogema Fuels report BAW-2328, beginning with the Unit 1 Operating Cycle 12.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 ~~The reactor coolant system is designed and shall be maintained:~~

~~a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,~~

~~b. For a pressure of 2485 psig, and~~

~~c. For a temperature of 650°F, except for the pressurizer which is 680°F.~~ DELETED

VOLUME

5.4.2 ~~The total water and steam volume of the reactor coolant system is 12,612 ± 100 cubic feet at a nominal T_{avg} of 525°F.~~ DELETED

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 ~~The meteorological tower shall be located as shown on Figure 5.1-1.~~ DELETED

DESIGN FEATURES

5.6 FUEL STORAGE

CRITICALITY - NEW FUEL

5.6.1.2 The new fuel pit storage racks are designed for fuel enriched to 5.0 weight percent U-235 and shall be maintained with the arrangement of 146 storage locations shown in Figure ~~5.6-4. The cells shown as~~ empty cells in Figure 5.6-4 shall have physical barriers installed to ensure that ~~inadvertant~~ inadvertent loading of fuel assemblies into these locations does not occur. This configuration ~~ensures k_{eff} will remain~~ less than or equal to 0.95 when flooded with unborated water and less than or equal to 0.98 under optimum moderation conditions.

DRAINAGE

5.6.2 The spent fuel pit is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 722 ft.

CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2091 fuel assemblies. In addition, no more than 225 fuel assemblies will be stored in a rack module in the cask loading area of the cask pit.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 ~~The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.~~ DELETED

INSERT 4

TABLE 5.7.1

COMPONENT CYCLIC OR TRANSIENT LIMITS

~~COMPONENT~~	~~CYCLIC OR TRANSIENT LIMIT~~	~~DESIGN CYCLE OR TRANSIENT~~
~~Reactor Coolant System~~	~~200 heatup cycles at ≤ 100°F/hr and 200 cooldown cycles at ≤ 100°F/hr~~	~~Heatup cycle – T_{avg} from ≤ 200°F to ≥ 550°F. Cooldown cycle – T_{avg} from ≥ 550°F to ≤ 200°F.~~
	~~200 pressurizer cooldown cycles at ≤ 200°F/hr~~	~~Pressurizer cooldown cycle temperatures from ≥ 650°F to ≤ 200°F.~~
	~~80 loss of load cycles, without immediate turbine or reactor trip.~~	~~≥ 15% of RATED THERMAL POWER to 0% of RATED THERMAL POWER.~~
	~~40 cycles of loss of offsite A.C. electrical power.~~	~~Loss of offsite A.C. electrical power source supplying the onsite ESF Electrical System.~~
	~~80 cycles of loss of flow in one reactor coolant loop.~~	~~Loss of only one reactor coolant pump.~~
	~~400 reactor trip cycles.~~	~~100% to 0% of RATED THERMAL POWER.~~
	~~12 spray actuation cycles.~~	~~Spray water temperature differential > 320°F and ≤ 560°F.~~
	~~50 leak tests~~	~~Pressurized to 2485 psig~~
	~~5 hydrostatic pressure tests~~	~~Pressurized to 3107 psig~~
	~~10 low temperature water-solid overpressure events~~	~~Water-solid system activation~~
~~Secondary System~~	~~5 hydrostatic pressure tests~~	~~Pressurized to 1356 psig~~

j. Technical Specification (TS) Bases Control Program

This program provides a means for processing changes to the Bases of TSs.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 6.8.4.j.b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

k. Component Cyclic and Transient Limit

This program provides controls to track the FSAR, Section 5.2.1, cyclic and transient occurrences to ensure that components are maintained within the design limits.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted in accordance with 10 CFR 50.4.

STARTUP REPORT

6.9.1.1 DELETED

6.9.1.2 DELETED

6.9.1.3 DELETED

ANNUAL REPORTS [1/]

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March I of the year following initial criticality.

6.9.1.5 DELETED

1/ A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

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RATED THERMAL POWER (RTP)

1.27 RATED THERMAL POWER (RTP) shall be a total reactor core heat transfer rate to the reactor coolant of 3455 MWt.

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

1.28 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its (RTS) trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by NRC.

REPORTABLE EVENT

1.29 DELETED

SHIELD BUILDING INTEGRITY

1.30 SHIELD BUILDING INTEGRITY shall exist when:

a. The door in each access opening is closed except when the access opening is being used for normal transit entry and exit.

b. The emergency gas treatment system is OPERABLE.

c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

SHUTDOWN MARGIN

1.31 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.32 The SITE BOUND~~ARY shall be that line~~ beyond which the land is not owned, leased, or otherwise controlled by the license~~e (see figure 5.1-1)~~.

5.0 DESIGN FEATURES

5.1 SITE LOCATION

INSERT 1

EXCLUSION AREA

5.1.1 ~~The exclusion area shall be as shown in Figure 5.1-1.~~ DELETED

LOW POPULATION ZONE

5.1.2 ~~The low population zone shall be as shown in Figure 5.1-2.~~ DELETED

SITE BOUNDARY FOR GASEOUS EFFLUENTS

5.1.3 ~~The site boundary for gaseous effluents shall be as shown in Figure 5.1-1.~~ DELETED

SITE BOUNDARY FOR LIQUID EFFLUENTS

5.1.4 ~~The site boundary for liquid effluents shall be as shown in Figure 5.1-1.~~ DELETED

5.2 CONTAINMENT

~~CONFIGURATION~~

5.2.1 ~~The shield building is a reinforced concrete building of cylindrical shape, with a dome roof around a free standing steel containment and having the following design features:~~

~~a. Nominal inside diameter = 125 feet.~~

~~b. Nominal inside height = 175 feet.~~

~~c. Minimum thickness of concrete walls = 3 feet.~~

~~d. Minimum thickness of concrete roof = 2 feet.~~

~~e. Minimum thickness of concrete floor pad = 9 feet.~~

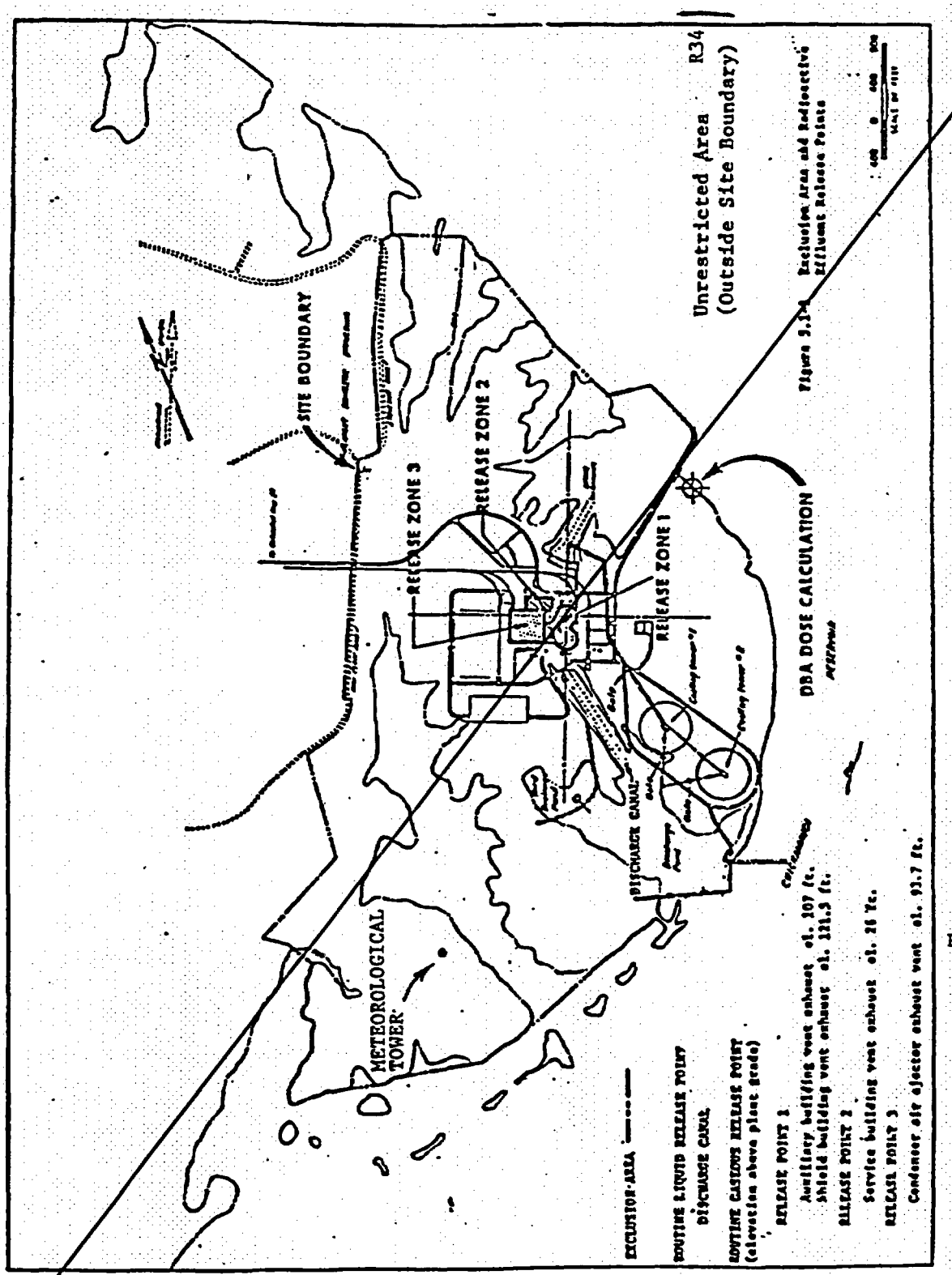
~~f. Minimum thickness of steel containment liner = 0.5 inches at the spring line and 0.25 inches at the bottom liner plate.~~

~~g. Net free volume = 3.75 x 10^6 cubic feet between the steel containment and the shield building.~~ DELETED

DESIGN PRESSURE AND TEMPERATURE

5.2.2 ~~The steel containment is designed and shall be maintained for a maximum internal pressure of 12 psig and a temperature of 250°F.~~ DELETED

INSERT 2



R104

EXCLUSION AREA

FIGURE 5.1-1

INSERT 3

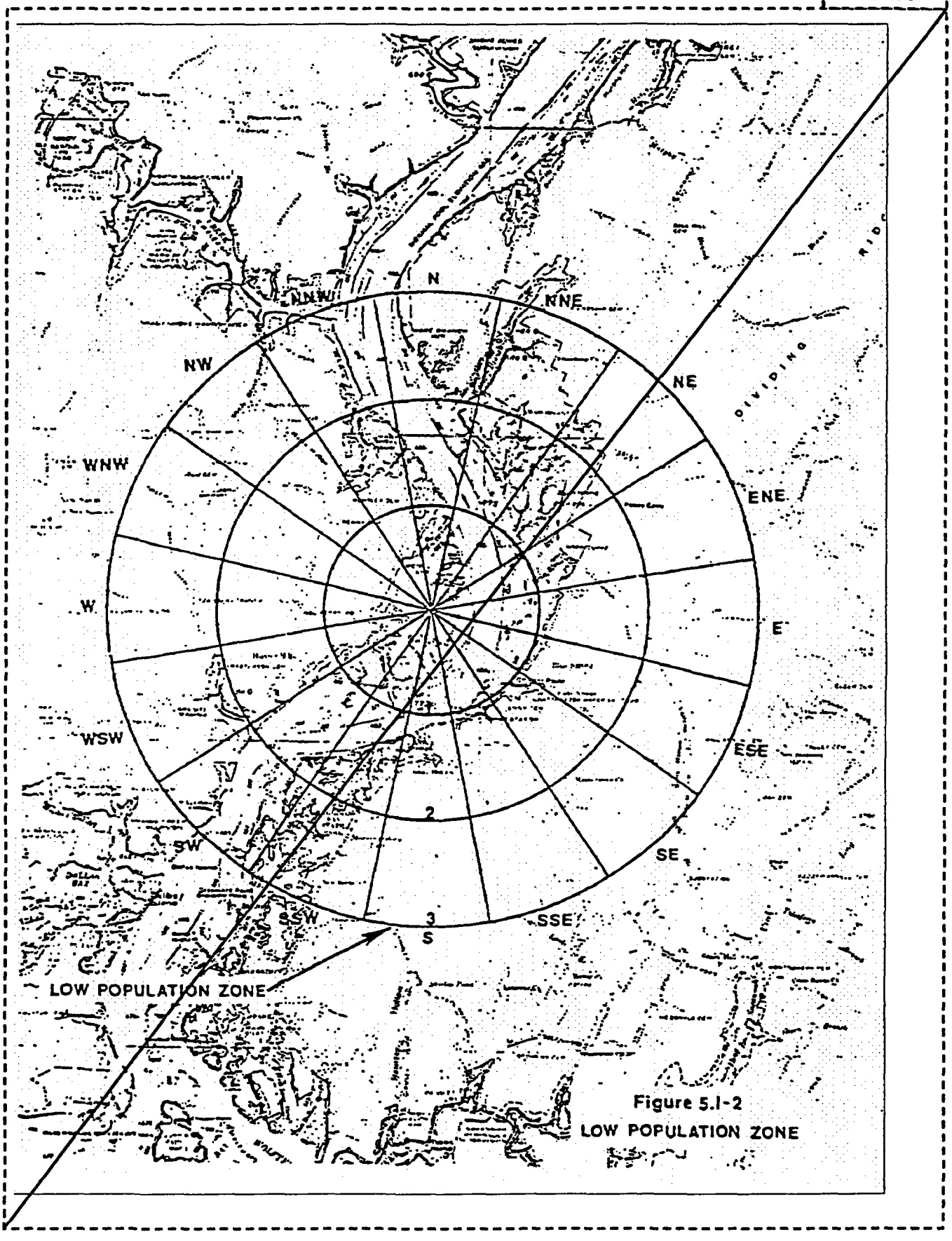


Figure 5.1-2
LOW POPULATION ZONE

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of zircaloy or M5 clad fuel rods with an initial composition of natural or slightly enriched uranium dioxide as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions. Sequoyah is authorized to place a limited number of lead test assemblies into the reactor, as described in the Framatome Cogema Fuels Report BAW-2328, beginning with the Unit 2 Operating Cycle 10 core.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 53 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 ~~The reactor coolant system is designed and shall be maintained:~~

~~a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,~~

~~b. For a pressure of 2485 psig, and~~

~~c. For a temperature of 650°F, except for the pressurizer which is 680°F.~~ DELETED

VOLUME

~~5.4.2 The total water and steam volume of the reactor coolant system is 12,612 ± 100 cubic feet at a nominal T_{avg} of 525°F.~~

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 ~~The meteorological tower shall be located as shown on Figure 5.1-1.~~ DELETED

5.6 FUEL STORAGE

CRITICALITY - NEW FUEL

5.6.1.2 The new fuel pit storage racks are designed for fuel enriched to 5.0 weight percent U-235 and shall be maintained with the arrangement of 146 storage locations shown in Figure ~~5.6-4. The cells shown as~~ empty cells in Figure 5.6-4 shall have physical barriers installed to ensure that ~~inadvertant~~ inadvertent loading of fuel assemblies into these locations does not occur. This configuration ensures k_{eff} will remain less than or equal to 0.95 when flooded with unborated water and less than or equal to 0.98 under optimum moderation conditions.

DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 722 ft.

CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2091 fuel assemblies. In addition, no more than 225 fuel assemblies will be stored in a rack module in the cask loading area of the cask pit.

5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 ~~The components identified in Table 5.7-1 are designed and shall be maintained within the cyclic or transient limits of Table 5.7-1.~~ DELETED

INSERT 4

~~TABLE 5.7.1~~

~~COMPONENT CYCLIC OR TRANSIENT LIMITS~~

~~COMPONENT~~	~~CYCLIC OR TRANSIENT LIMIT~~	~~DESIGN CYCLE OR TRANSIENT~~
~~Reactor Coolant System~~	~~200 heatup cycles at ≤ 100°F/hr and 200 cooldown cycles at ≤ 100°F/hr~~	~~Heatup cycle - T_{avg} from ≤ 200°F to ≥ 550°F. Cooldown cycle - T_{avg} from ≥ 550°F to ≤ 200°F.~~
	~~200 pressurizer cooldown cycles at ≤ 200°F/hr~~	~~Pressurizer cooldown cycle temperatures from ≥ 650°F to ≤ 200°F.~~
	~~80 loss of load cycles, without immediate turbine or reactor trip.~~	~~≥ 15% of RATED THERMAL POWER to 0% of RATED THERMAL POWER.~~
	~~40 cycles of loss of offsite A.C. electrical power.~~	~~Loss of offsite A.C. electrical power source supplying the onsite ESF Electrical System.~~
	~~80 cycles of loss of flow in one reactor coolant loop.~~	~~Loss of only one reactor coolant pump.~~
	~~400 reactor trip cycles.~~	~~100% to 0% of RATED THERMAL POWER.~~
	~~12 spray actuation cycles.~~	~~Spray water temperature differential > 320°F and ≤ 560°F.~~
	~~50 leak tests~~	~~Pressurized to 2485 psig~~
	~~5 hydrostatic pressure tests~~	~~Pressurized to 3107 psig~~
	~~10 low temperature water-solid overpressure events~~	~~Water-solid system actuation~~
~~Secondary System~~	~~5 hydrostatic pressure tests~~	~~Pressurized to 1356 psig~~

b. Air lock testing acceptance criteria are:

1) Overall air lock leakage rate is ≤ 0.05 L_a when tested at ≥ P_a.

2) For each door, leakage rate is ≤ 0.01 L_a when pressurized to ≥ 6 psig for at least two minutes.

The provisions of SR 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 4.0.3 are applicable to the Containment Leakage Rate Testing Program.

i. Configuration Risk Management Program (DELETED)

j. Technical Specification (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these TSs.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 6.8.4.j.b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

k. Component Cyclic and Transient Limit

This program provides controls to track the FSAR, Section 5.2.1, cyclic and transient occurrences to ensure that components are maintained within the design limits.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted in accordance with 10 CFR 50.4.

STARTUP REPORT

6.9.1.1 DELETED

6.9.1.2 DELETED

6.9.1.3 DELETED

INSERTS

1. The Sequoyah Nuclear Plant is located on a site near the geographical center of Hamilton County, Tennessee, on a peninsula on the western shore of Chickamauga Lake at Tennessee River mile (TRM) 484.5. The Sequoyah site is approximately 7.5 miles northeast of the nearest city limit of Chattanooga, Tennessee, 14 miles west-northwest of Cleveland, Tennessee, and approximately 31 miles south-southwest of TVA's Watts Bar Nuclear Plant.

2. THIS PAGE INTENTIONALLY DELETED

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