

GRAND GULF NUCLEAR POWER PLANT
AUDIT OF NUCLEAR PLANT TECHNICAL SPECIFICATIONS
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ABSTRACT

This report reviews the Grand Gulf Nuclear Power Plant Technical Specifications (T/S) to determine if selected sections of the T/S are consistent with the Grand Gulf Final Safety Analysis Report (FSAR) as amended, and the Grand Gulf Safety Evaluation Report (SER) as supplemented. Inconsistencies, if any, are listed in this report but no further evaluation was conducted to determine if the inconsistency was an indication of an error in any of the subject documents.

FORWARD

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AUDIT OF NUCLEAR PLANT TECHNICAL SPECIFICATIONS

1. INTRODUCTION

The Grand Gulf Nuclear Power Plant is a boiling water reactor (BWR) plant. It has been selected for an audit to determine if the Grand Gulf Technical Specifications (T/S) (Ref. 1), are consistent with the Grand Gulf Final Safety Analysis Report (FSAR) as amended (Ref. 2), and the Grand Gulf Safety Evaluation Report (SER) as supplemented (Ref. 3). The specific sections of the T/S selected for audit are listed in Table I.

Inconsistencies between these sections of the T/S and the FSAR and SER will be identified but no further evaluation was conducted to determine if the inconsistency was an indication of error in any of the subject documents.

2. REVIEW CRITERIA

The T/S Limiting Conditions for Operation (LCOs) and Action Statements for each technical specification listed in Table 1 were compared to the FSAR and SER to determine if the T/S are consistent to the FSAR and SER. Emphasis was on the T/S Operational Mode 1, power operation, with any exceptions to this noted in this report. Setpoints and lists of valves, instruments, over current protective devices and electrical buses in the T/S were checked against tables in the FSAR and SER.

The SER was reviewed to determine that requirements in the SER were addressed in the T/S.

The T/S Bases and Surveillance requirements were not reviewed in this audit of the T/S.

An explanation of each inconsistency between the T/S and the FSAR and SER is included in this report.

TABLE I. PLANT SPECIFIC TECHNICAL SPECIFICATION AUDIT TOPICS

SECTION

3/4.3 INSTRUMENTATION

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ECCS - OPERATING

3/4.5.3 SUPPRESSION CHAMBER

3/4.6 CONTAINMENT SYSTEMS

3/4.6.1 PRIMARY CONTAINMENT

Primary Containment Integrity

Primary Containment Leakage

Primary Containment Air Locks

Feedwater Leakage Control System

MSIV Leakage Control System

Primary Containment Structural Integrity

Primary Containment Internal Pressure

Primary Containment Purge System

3/4.6.2 DRYWELL

Drywell Integrity

Drywell Bypass Leakage

Drywell Air Locks

Drywell Structural Integrity

Drywell Internal Pressure

Drywell Average Air Temperature

TABLE I. (Continued)

SECTION

3/4.6.3 DEPRESSURIZATION SYSTEMS

Suppression Chamber

Primary Containment Spray

Suppression Pool Cooling

Drywell-Suppression Chamber Differential Pressure

3/4.6.4 CONTAINMENT AND DRYWELL ISOLATION VALVES

3/4.6.6 SECONDARY CONTAINMENT

Secondary Containment Automatic Isolation Dampers

Standby Gas Treatment System

3/4.6.7 ATMOSPHERE CONTROL

Containment and Drywell Hydrogen Recombiner Systems

Containment and Drywell Hydrogen Ignition System

Drywell Purge System

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

A.C. Sources-Operating

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

D.C. Distribution - Operating

Distribution - Operating

Primary Containment Penetration Conductor Overcurrent Protective
Devices

3. DISCUSSION

The overall results of the audit are given in Table II. The table gives each section of the T/S and the overall determination of consistency or inconsistency between the T/S and the FSAR and SER.

The conclusion that a specific section of the T/S are not consistent with the FSAR and/or the SER are documented in tabular form on the following pages. Each of the following tables includes the T/S Limiting Conditions for Operation or Action Statement, the related section in the FSAR and SER and an explanation of the inconsistency seen between the T/S and the FSAR and/or SER.

A. Topic: 3/4/3 Instrumentation
T/S: 3/4/3/2 Isolation Actuation Instrumentation
Table 3.3.2-1 Item 5.m

1. Explanation of Inconsistency

- a. Table 3.3.2-1, Item 5.m of T/S Amendment 9 identifies Drywell Pressure-High concurrent with RCIC Steam Supply Pressure-Low, as a RCIC isolation signal which causes Valve Group 4 and Valve Group 9 to close isolating RCIC. The FSAR does not address the Drywell Pressure-High isolation signal, or the required Concurrence logic.

- B. Topic: 3/4.3 Instrumentation
T/S: 3/4.3.2 Isolation Actuation Instrumentation

1. Explanation of Inconsistency

- a. Table 3.3.2-1 Item 5.h of T/S refers to "Main Steam Line Tunnel Temperature Timer"

The timer is identified in the FSAR Figure 7.6-17 as Instrument E-31R617. However, the FSAR does not address the function of this timer which is to delay RCIC isolation for 30 minutes (to allow the operator time to establish an alternate means of Reactor Vessel Level Control). Without an FSAR discussion, the timer identified in Figure 7.6-17 cannot be verified as the timer addressed in T/S Table 3.3.2-1 Item 5.h.

- b. Table 3.3.2-2 Item 2.d of T/S identifies the Main Steam Line Flow-High setpoint as ≤ 169 psid with an instrument range of -50/0/250. A 169 psid signal corresponds to 140% steam flow which is consistent with FSAR assumptions.

However, the FSAR Table 7.3-10 identifies the setpoint as ≤ 133.5 psid with an instrument range of -15/0/50 psid which is inconsistent with the previous assumptions.

C. Topic: 3/4.6 Containment Systems
T/S: 3.6.4 Containment and Drywell Isolation valves

1. Explanation of Inconsistency

- a. The following sections of the T/S Table 3.6.4-1 listing of Containment and Drywell Isolation Valves identifies valves that cannot be found in the FSAR listings under Containment Isolation Valves (Table 6.2-44) specifically.

3.6.4-1.2.b

3.6.4-1.2.b

3.6.4-1.3.b

3.6.4-1.4.b

Several of the valves are listed in FSAR Tables; 7.6-12, Auxiliary Building Isolation System Actuated Equipment List; 6.2-48 Primary Containment Integrated Leakage Rate Instrumentation, and Table 6.2-49 Reactor Containment Penetration and Containment Isolation Valve Leakage Rate Test List.

D. Topic: 3/4.6 Containment Systems
T/S: 3.6.6.5 Secondary Containment Automatic Isolation
Dampers/Valves

1. Explanation of Inconsistency

- a. The adequacy of T/S Table 3.6.6.2-1, Secondary Containment Isolation Dampers/Valves cannot be verified consistent with the FSAR Table 7.6-12, Auxiliary Building Isolation System Actuated Equipment List, because the specific Isolation Dampers are not listed in Table 7.6-12. The Isolation Valves are listed.

TABLE II. PLANT SPECIFIC TECHNICAL SPECIFICATION CONSISTENCY SUMMARY

SECTION	CONSISTENT/INCONSISTENT
3/4.3 INSTRUMENTATION	
3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION	Inconsistent
3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION	Inconsistent
3/4.5 EMERGENCY CORE COOLING SYSTEMS	
3/4.5.1 ECCS - OPERATING	Consistent
3/4.5.3 SUPPRESSION CHAMBER	Consistent
3/4.6 CONTAINMENT SYSTEMS	
3/4.6.1 PRIMARY CONTAINMENT	Consistent
Primary Containment Integrity	Consistent
Primary Containment Leakage	Consistent
Primary Containment Air Locks	Consistent
MSIV Leakage Control System	Consistent
Feedwater Leakage Control System	Consistent
Primary Containment Structural Integrity	Consistent
Primary Containment Internal Pressure	Consistent
Primary Containment Purge System	Consistent
3/4.6.2 DRYWELL	
Drywell Integrity	Consistent
Drywell Bypass Leakage	Consistent
Drywell Air Locks	Consistent
Drywell Structural Integrity	Consistent
Drywell Internal Pressure	Consistent

TABLE II. (Continued)

SECTION	CONSISTENT/INCONSISTENT
3/4.6.3 DEPRESSURIZATION SYSTEMS	
Suppression Chamber	Consistent
Primary Containment Spray	Consistent
Suppression Pool Cooling	Consistent
Drywell-Suppression Chamber Differential Pressure	Consistent
3/4.6.4 CONTAINMENT AND DRYWELL ISOLATION VALVES	Inconsistent
3/4.6.5 SECONDARY CONTAINMENT	
Secondary Containment Automatic Isolation Dampers/Valves	Inconsistent
Standby Gas Treatment System	Consistent
3/4.6.7 ATMOSPHERE CONTROL	
Containment and Drywell Hydrogen Recombiner Systems	Consistent
Drywell Purge System	Consistent
3/4.8 ELECTRICAL POWER SYSTEMS	
3/4.8.1 A.C. SOURCES	Consistent
A.C. Sources-Operating	Consistent
3/4.8.2/3/4.8.3 ONSITE POWER DISTRIBUTION SYSTEMS	
A.C. Distribution - Operating	Consistent
D.C. Distribution - Operating	Consistent
3/4.8.4 Primary Containment Penetration Conductor Overcurrent Protective Devices	Consistent

4. CONCLUSION

There are 4 technical specifications of the 32 reviewed in this audit of the Grand Gulf Technical Specifications (Ref. 1) that were determined inconsistent with the Grand Gulf FSAR as amended (Ref. 2) and the Grand Gulf SER as supplemented (Ref. 3). Inconsistencies were identified but no further evaluation was conducted to determine if the inconsistency was an indication of an error in any of the subject documents.

5. REFERENCES

1. Grand Gulf Technical Specifications Rev. June 1982
2. Grand Gulf FSAR up to Amendment No. 57
3. Grand Gulf SER up to Amendment No. 4

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