Table 1.

Table of Contents Proposed Safety Evaluation Review Topics

Watts Bar Nuclear Plant Unit 2

1.0.0	Introduction and General Discussion
1.1.0	Introduction
1.1.1	Metrication
1.1.2	Proprietary Information
1.1.4	Additional Information
1.2.0	General Design Description
1.3.0	Comparison With Similar Facility Designs
1.3.1	Comparison With the Sequoyah Nuclear Plant
1.3.2	Comparison With Other Facilities
1.4.0	Identification of Agents and Contractors
1.5.0	Summary of Principal Review Matters
1.6.0	Modifications to the Watts Bar Facility During the Course of NRC Review
1.7.0	Summary of Outstanding Issues
1.8.0	Confirmatory Issues
1.9.0	License Conditions
1.10.0	Unresolved Safety Issues
2.0.0	Site Envelope
2.1.0	Geography and Demography
2.1.1	Site Location and Description
2.1.2	Exclusion Area Authority and Control
2.1.3	Population Distribution
2.1.4	Conclusions
2.2.0	Nearby Industrial, Transportation, and Military Facilities
2.2.1	Transportation Routes
2.2.2	Nearby Facilities
2.2.3	Conclusions
2.3.0	Meteorology
2.3.1	Regional Climatology
2.3.2	Local Meteorology

Subsection Title

	continued.
	Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
2.3.3	Onsite Meteorological Measurements Program
2.3.4	Short-Term (Accident) Atmospheric Diffusion Estimates
2.3.5	Long-Term (Routine) Diffusion Estimates
2.4.0	Hydrologic Engineering
2.4.1	Introduction
2.4.2	Hydrologic Description
2.4.3	Flood Potential
2.4.4	Local Intense Precipitation in Plant Area
2.4.5	Roof Drainage
2.4.6	Ultimate Heat Sink
2.4.7	Groundwater
2.4.8	Design Basis for Subsurface Hydrostatic Loading
2.4.9	Transport of Liquid Releases
2.4.10	Flooding Protection Requirements and Technical Specifications
2.5.0	Geological, Seismological, and Geotechnical Engineering
2.5.1	Geology
2.5.2	Seismology
2.5.3	Surface Faulting
2.5.4	Stability of Subsurface Materials and Foundations
2.5.5	Stability of Slopes
2.5.6	Embankments and Dams
2.6.0	References
3.0.0	Design of Structures, Components, Equipment, and Systems
3.1.0	Introduction
3.1.1	Conformance With General Design Criteria
3.1.2	Conformance With Industry Codes and Standards
3.2.0	Classification of Structures, Systems, and Components
3.2.1	Seismic Qualification
3.2.2	System Quality Group Classification
3.3.0	Wind and Tornado Loadings

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

3.3.1 Wind Loading

Table of	continued. Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
3.3.2	Tornado Loading
3.4.0	Flood Level (Flood) Design
3.4.1	Flood Protection
3.5.0	Missile Protection
3.5.1	Missile Selection and Description
3.5.2	Structures, Systems, and Components To Be Protected From Externally Generated Missiles
3.5.3	Barrier Design Procedures
3.6.0	Protection Against the Dynamic Effects Associated with the Postulated Rupture of Piping
3.6.1	Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
3.6.2	Determination of Break Locations and Dynamic Effects Associated with the Postulated Rupture of Piping
3.6.3	Leak-Before-Break Evaluation Procedures
3.7.0	Seismic Design
3.7.1	Seismic Input
3.7.2	Seismic Analysis
3.7.3	Seismic Subsystem Analysis
3.7.4	Seismic Instrumentation
3.8.0	Design of Seismic Category I Structures
3.8.1	Steel Containment
3.8.2	Concrete and Structural Steel Internal Structures
3.8.3	Other Seismic Category I Structures
3.8.4	Foundations
3.9.0	Mechanical Systems and Components
3.9.1	Special Topics for Mechanical Components
3.9.2	Dynamic Testing and Analysis of Systems, Components, and Equipment
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures $$
3.9.4	Control Rod Drive Systems
3.9.5	Reactor Pressure Vessel Internals

Table 1, continued. Table of Contents Proposed Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2 Subsection Title 3.9.6 Inservice Testing of Pumps and Valves 3.10.0 Seismic and Dynamic Qualification of Seismic Category I Mechanical and **Electrical Equipment** 3.11.0 Environmental Qualification of Mechanical and Electrical Equipment 3.13.0 Threaded Fasteners - ASME Code Class 1, 2, and 3 [SRP TOC] 4.0.0 Reactor 4.1.0 Introduction 4.2.0 Fuel System Design 4.2.1 Description 4.2.2 Thermal Performance 4.2.3 Mechanical Performance 4.2.4 Surveillance 4.2.5 Fuel Design Conclusions 4.3.0 Nuclear Design 4.3.1 Design Basis 4.3.2 Design Description 4.3.3 Analytical Methods 4.3.4 Summary of Evaluation Findings 4.4.0 Thermal-Hydraulic Design 4.4.1 Perfomance in Safety Criteria 4.4.2 Design Bases 4.4.3 Thermal-Hydraulic Design Methodology

- 4.4.4 Operating Abnormalities
- 4.4.5 Loose Parts Monitoring System
- 4.4.6 Thermal-Hydraulic Comparison
- 4.4.7 N-1 Loop Operation
- 4.4.8 Instrumentation for Inadequate Core Cooling Detection (II.F.2)
- 4.4.9 Summary and Conclusion
- 4.5.0 Reactor Materials
- 4.5.1 Control Rod Drive Structural Materials
- 4.5.2 Reactor Internals and Core Support Materials

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

Table of	continued. Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
4.6.0	Functional Design of Reactivity Control Systems
5.0.0	Reactor Coolant System and Connected Systems
5.1.0	Summary Description
5.2.0	Integrity of Reactor Coolant Pressure Boundary
5.2.1	Compliance With Codes and Code Cases
5.2.2	Overpressure Protection
5.2.3	Reactor Coolant Pressure Boundary Materials
5.2.4	RCS Pressure Boundary Inservice Inspection and Testing
5.2.5	Reactor Coolant Pressure Boundary Leakage Detection
5.3.0	Reactor Vessel
5.3.1	Reactor Vessel Materials
5.3.2	Pressure-Temperature Limits
5.3.3	Reactor Vessel Integrity
5.4.0	Component and Subsystem Design
5.4.1	Reactor Coolant Pumps
5.4.2	Steam Generators
5.4.3	Residual Heat Removal System
5.4.4	Pressurizer Relief Tank
5.4.5	Reactor Coolant System Vents (II.B.1)
6.0.0	Engineered Safety Features
6.1.0	Engineered Safety Features Materials
6.1.1	Metallic Materials
6.1.2	Organic Materials
6.1.3	Postaccident Emergency Cooling Water Chemistry
6.2.0	Containment Systems
6.2.1	Containment Functional Design
6.2.2	Containment Heat Removal Systems
6.2.3	Secondary Containment Functional Design
6.2.4	Containment Isolation System
6.2.5	Combustible Gas Control Systems

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

6.2.6 Containment Leakage Testing

-	continued.
	Contents de Safety Evaluation Review Topics - Watts Bar Nuclear P
Subsection	·
	Fracture Prevention of Containment Pressure Boundary
6.3.0	Emergency Core Cooling System
6.3.1	System Design
6.3.2	Evaluation
6.3.3	Testing
6.3.4	Performance Evaluation
6.3.5	Conclusions
6.4.0	Control Room Habitability
6.5.0	Engineered Safety Feature (ESF) Filter Systems
6.5.1	ESF Atmosphere Cleanup Systems
6.5.2	Fission Product Cleanup System
6.5.3	Fission Product Control System
6.5.4	Ice Condenser as a Fission Product Control System
6.6.0	Inservice Inspection of Class 2 and 3 Components
7.0.0	Instrumentation and Controls
7.1.0	Introduction
7.1.1	General
7.1.2	Comparison with Other Plants
7.1.3	Design Criteria
7.2.0	Reactor Trip System
7.2.1	System Description
7.2.2	Manual Trip Switches
7.2.3	Testing of Reactor Trip Breaker Shunt Coils
7.2.4	Anticipatory Trips
7.2.5	Steam Generator Water Level Trip
7.2.6	Conclusions
7.3.0	Engineered Safety Features System
7.3.1	System Description

7.3.2 Containment Sump Level Measurement7.3.3 Auxiliary Feedwater Initiation and Control

7.3.4 Failure Modes and Effects Analysis

Plant Unit 2

	continued.
	Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	·
	IE Bulletin 80-06
7.3.6	Conclusions
7.4.0	Systems Required for Safe Shutdown
7.4.1	System Description
7.4.2	Safe Shutdown from Auxiliary Control Room
7.4.3	Conclusions
7.5.0	Safety-Related Display Instrumentation
7.5.1	System Description
7.5.2	Post-Accident Monitoring System
7.5.3	IE Bulletin 79-27
7.5.4	Conclusions
7.6.0	All Other Systems Required for Safety
7.6.1	System Description
7.6.2	Residual Heat Removal System Bypass Valves
7.6.3	Upper Head Injection Manual Control
7.6.4	Protection Against Spurious Actuation of Motor-Operated Valves
7.6.5	Overpressure Protection During Low Temperature Operation
7.6.6	Valve Power Lockout
7.6.7	Cold Leg Accumulator Valve Interlocks and Position Indication
7.6.8	Automatic Switchover From Injection to Recirculation Mode
7.6.9	Conclusions
7.7.0	Control Systems Not Required for Safety
7.7.1	System Description
7.7.2	Safety System Status Monitoring System
7.7.3	Volume Control Tank Level Control System
7.7.4	Pressurizer and Steam Generator Overfill

7.7.8 Anticipated Transient Without Scram Mitigation System Actuation Circuitry

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

7.7.5 IE Information Notice 79-22

7.7.7 Conclusions

(AMSAC)

7.7.6 Multiple Control System Failures

Table of	continued. Contents
Propose	d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
7.8.0	NUREG-0737 Items
7.8.1	Relief and Safety Valve Position Indication (II.D.3)
7.8.2	Auxiliary Feedwater System Initiation and Flow Indication (II.E.1.2)
7.8.3	Proportional Integral Derivative Control Modification (II.K.3.9)
7.8.4	Proposed Anticipatory Trip Modification (II.K.3.10)

- 705 Confirm Existence of Artisinators Depotes Trip He
- 7.8.5 Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip (II.K.3.12)
- 7.9.0 Data Communication Systems [SRP TOC]

8.0.0 Electric Power Systems

- 8.1.0 General
- 8.2.0 Offsite Power System
- 8.2.1 Compliance With GDC 5
- 8.2.2 Compliance With GDC 17
- 8.2.3 Compliance With GDC 18
- 8.2.4 Evaluation Findings
- 8.3.0 Onsite Power Systems
- 8.3.1 Onsite AC Power System Compliance With GDC 17
- 8.3.2 Onsite DC System Compliance With GDC 17
- 8.3.3 Evaluation Findings
- 8.4.0 Station Blackout

9.0.0 Auxiliary Systems

- 9.1.0 Fuel Storage Facility
- 9.1.1 New Fuel Storage
- 9.1.2 Spent Fuel Storage
- 9.1.3 Spent Fuel Pool Cooling and Cleanup System
- 9.1.4 Fuel Handling System
- 9.2.0 Water Systems
- 9.2.1 Essential Raw Cooling Water and Raw Cooling Water Systems
- 9.2.2 Component Cooling System (Reactor Auxiliaries Cooling Water System)
- 9.2.3 Demineralized Water Makeup System
- 9.2.4 Potable and Sanitary Water Systems
- 9.2.5 Ultimate Heat Sink

Table 1, continued. Table of Contents Proposed Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2		
Subsection		
	Condensate Storage Facilities	
9.3.0	Process Auxiliaries	
9.3.1	Compressed Air System	
9.3.2	Process Sampling System	
9.3.3	Equipment and Floor Drainage System	
9.3.4	Chemical and Volume Control System	
9.4.0	Heating, Ventilation, and Air Conditioning Systems	
9.4.1	Control Room Area Ventilation System	
9.4.2	Fuel Handling Area Ventilation System	
9.4.3	Auxiliary and Radwates Area Ventilation System	
9.4.4	Turbine Building Area Ventilation System	
9.4.5	Engineered Safety Features Ventilation System	
9.5.0	Other Auxiliary Systems	
9.5.1	Fire Protection	
9.5.2	Communication Systems	
9.5.3	Lighting System	
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System	
9.5.5	Emergency Diesel Engine Cooling Water System	
9.5.6	Emergency Diesel Engine Starting Systems	
9.5.7	Emergency Diesel Engine Lubricating Oil System	
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System	
10.0.0	Steam and Power Conversion System	
10.1.0	Summary Description	
10.2.0	Turbine Generator	
10.2.1	Turbine Generator Design	
10.2.2	Turbine Disc Integrity	
10.3.0	Main Steam Supply System	
10.3.1	Main Steam Supply System (up to and including the Main Steam Isolation Valves)	
10.3.2	Main Steam Supply System	
10.3.3	Steam and Feedwater System Materials	

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

Table 1, continued. Table of Contents Proposed Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2		
Subsection	<u>Title</u>	
10.3.4	Secondary Water Chemistry	
10.4.0	Other Features	
10.4.1	Main Condenser	
10.4.2	Main Condenser Evacuation System	
10.4.3	Turbine Gland Sealing System	
10.4.4	Turbine Bypass System	
10.4.5	Condenser Circulating Water System	
10.4.6	Condensate Cleanup System	
10.4.7	Condensate and Feedwater Systems	
10.4.8	Steam Generator Blowdown System	
10.4.9	Auxiliary Feedwater System	
11.0.0	Radioactive Waste Management	
11.1.0	Summary Description	
11.2.0	Liquid Waste Management	
11.3.0	Gaseous Waste Management	
11.4.0	Solid Waste Management System	
11.5.0	Process and Effluent Radiological Monitoring and Sampling Systems	
11.6.0	Evaluation Findings	
11.7.0	NUREG-0737 Items	
11.7.1	Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors (II.F.1(1) and II.F.1(2))	
11.7.2	Primary Coolant Outside Containment (III.D.1.1)	
12.0.0	Radiation Protection	
12.1.0	General	
12.2.0	Ensuring that Occupational Radiation Doses Are As Low As Reasonably Achievable	
12.3.0	Radiation Sources	
12.4.0	Radiation Protection Design Features	
12.5.0	Dose Assessment	
12.6.0	Health Physics Program	
12.7.0	NUREG-0737 Items	

	Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
12.7.1	Plant Shielding (II.B.2)
12.7.2	High Range Incontainment Monitor (II.F.1(3))
12.7.3	Inplant Radioiodine Monitor (III.D.3.3)
13.0.0	Conduct of Operations
13.1.0	Organizational Structure of the Applicant
13.1.1	Management and Technical Organization
13.1.2	Corporate Organization and Technical Support
13.1.3	Plant Staff Organization
13.2.0	Training
13.2.1	Licensed Operator Training Program
13.2.2	Training for Nonlicensed Personnel
13.3.0	Emergency Preparedness Evaluation
13.3.1	Introduction
13.3.2	Evaluation of the Emergency Plan
13.3.3	Conclusions
13.4.0	Review and Audit
13.5.0	Plant Procedures
13.5.1	Administrative Procedures
13.5.2	Operating and Maintenance Procedures
13.5.3	NUREG-0737 Items
13.6.0	Physical Security Plan
14.0.0	Initial Test Program
15.0.0	Accident Analysis
15.1.0	General Discussion
15.2.0	Normal Operation and Anticipated Transients
15.2.1	Loss of Cooling Transients
15.2.2	Increased Cooling Transients
15.2.3	Change in Coolant Inventory Transients
15.2.4	Reactivity and Power Distribution Anomalies
15.2.5	Conclusions
15.3.0	Limiting Accidents

Table 1, continued.

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold.

Table 1, continued. Table of Contents		
Propose	d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2	
Subsection		
	Loss-of-Coolant Accident Steamline Break	
	Feedwater System Pipe Break	
15.3.4	Reactor Coolant Pump Shoft Brook	
15.3.5	Reactor Coolant Pump Shaft Break	
15.3.6	Anticipated Transients Without Scram	
	Conclusions	
15.4.0	Radiological Consequences of Accidents	
15.4.1	Loss-of-Coolant Accident	
15.4.2	Main Steamline Break Outside of Containment	
15.4.3	·	
15.4.4	Control Rod Ejection Accident	
	Fuel-Handling Accident	
15.4.6	Failure of Small Line Carrying Coolant Outside Containment	
15.4.7	Postulated Radioactive Releases as a Result of Liquid Tank Failures	
15.5.0	NUREG-0737 Items	
15.5.1	Thermal Mechanical Report (II.K.2.13)	
15.5.2	Voiding in the Reactor Coolant System During Transients (II.K.2.17)	
15.5.3	Installation and Testing of Automatic Power-Operated Relief Valve Isolation	
	System (II.K.3.1) Report on Overall Safety Effect of Power-Operated Relief Valve Isolation System (II.K.3.2)	
15.5.4	Automatic Trip of Reactor Coolant Pumps (II.K.3.5)	
15.5.5	Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations (II.K.3.31)	
15.6.0	Relative Risk of Low Power Operation	
16.0.0	Technical Specifications	
17.0.0	Quality Assurance	
17.1.0	General	
17.2.0	Organization	
17.3.0	Quality Assurance Program	
17.4.0	Conclusions	

Table of	continued. Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	<u>Title</u>
17.6.0	Maintenance Rule
18.0.0	Control Room Design Review
18.1.0	General
18.2.0	Conclusions
19.0.0	Report of the Advisory Committee on Reactor Safeguards
20.0.0	Common Defense and Security
21.0.0	Financial Qualifications
22.0.0	Financial Protection and Indemnity Requirements
22.1.0	General
22.2.0	Preoperational Storage of Nuclear Fuel
22.3.0	Operating Licenses
23.0.0	Nuclear Performance Plan
23.1.0	Introduction
23.2.0	Corrective Actions
23.2.1	Cable Issues
23.2.2	Cable Tray and Tray Supports
23.2.3	Design Baseline and Verification Program
23.2.4	Electrical Conduit and Conduit Support
23.2.5	Electrical Issues
23.2.6	Equipment Seismic Qualification
23.2.7	Fire Protection
23.2.8	Hanger and Analysis Update Program
23.2.9	Heat Code Traceability
23.2.10	Heating, Ventilation, and Air-Conditioning Duct and Duct Supports
23.2.11	Instrument Lines
23.2.12	Prestart Test Program
23.2.13	QA Records
23.2.14	Q-List
23.2.15	Replacement Items Program (Piece Parts)
23.2.16	Seismic Analysis
23.2.17	Vendor Information Program
	chapter.section.subsection. designations shown in bold.

Page 13 of 15

Table of	continued. Contents d Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2
Subsection	
	Welding
	Special Programs
	Concrete Quality Program
	Containment Cooling
23.3.3	Detailed Control Room Design Review
23.3.4	Environmental Qualification Program
23.3.5	Master Fuse List
23.3.6	Mechanical Equipment Qualification
23.3.7	Microbiologically Induced Corrosion (MIC)
23.3.8	Moderate Energy Line Break Flooding
23.3.9	Radiation Monitoring System
23.3.10	Soil Liquefaction
23.3.11	Use-as-is CAQs
23.4.0	Implementation, Verification, and Closure of Corrective Actions
23.4.1	Corrective Action Program Plans and Special Programs
23.4.2	Quality Verification Process
23.5.0	Management and Organization
23.5.1	Introduction
23.5.2	Organizational and Management Improvements
23.5.3	Conclusions
23.6.0	Operational Readiness
23.7.0	Employee Concerns
23.8.0	Allegations
24.0.0	Generic Issues
25.0.0	NUREG-0737 TMI Action Items
26.0.0	Other Regulatory Topics
26.1.0	License Conditions
26.2.0	Orders
27.0.0	Conclusions
	Appendix A - Chronology of Radiological Review of Watts Bar Nuclear Plant Units 1 and 2, Operating License Review

X.Y.Z = chapter.section.subsection. Chapter designations shown in bold. Table 1, continued.

Table of Contents

Proposed Safety Evaluation Review Topics - Watts Bar Nuclear Plant Unit 2

Subsection Title

Appendix B - Bibliography

Appendix C - Nuclear Regulatory Commission Unresolved Safety Issues

Appendix D - Evaluation of the Applicant's Control Room Design

Appendix E - Principal Contributors

Appendix F - Abbreviations

Table 2. Status of NUREG-0847 Review Topics Watts Bar Nuclear Plant Unit 2

Subsection	<u>Title</u>	Resolved in NUREG-0847?*
2.1.1	Site Location and Description	Yes
2.1.2	Exclusion Area Authority and Control	Yes
2.1.3	Population Distribution	No
2.1.4	Conclusions	No
2.2.1	Transportation Routes	No
2.2.2	Nearby Facilities	No
2.2.3	Conclusions	No
2.3.1	Regional Climatology	Yes
2.3.2	Local Meteorology	Yes
2.3.3	Onsite Meteorological Measurements Program	Yes
2.3.4	Short-Term (Accident) Atmospheric Diffusion Estimates	Yes
2.3.5	Long-Term (Routine) Diffusion Estimates	Yes
2.4.1	Introduction	Yes
2.4.2	Hydrologic Description	Yes
2.4.3	Flood Potential	Yes
2.4.4	Local Intense Precipitation in Plant Area	Yes
2.4.5	Roof Drainage	Yes
2.4.6	Ultimate Heat Sink	Yes
2.4.7	Groundwater	Yes
2.4.8	Design Basis for Subsurface Hydrostatic Loading	Yes
2.4.9	Transport of Liquid Releases	No
2.4.10	Flooding Protection Requirements and Technical Specifications	Yes
2.5.0	Geological, Seismological, and Geotechnical Engineering	Yes
2.5.1	Geology	Yes
2.5.2	Seismology	No
2.5.3	Surface Faulting	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

	·	
Subsect	on <u>Title</u> 4 Stability of Subsurface Materials and Foundations	Resolved in NUREG-0847?*
2.5.	·	No
2.5.	•	Yes
3.1.	Conformance With General Design Criteria	Yes
3.1.	2 Conformance With Industry Codes and Standards	Yes
3.2.	Seismic Qualification	Yes
3.2.	2 System Quality Group Classification	No
3.3.	Wind Loading	Yes
3.3.	2 Tornado Loading	Yes
3.4.	Flood Protection	Yes
3.5.	Missile Selection and Description	Yes
3.5.	2 Structures, Systems, and Components To Be Protected From Externally Generated Missiles	Yes
3.5.	Barrier Design Procedures	Yes
3.6.	1 Plant Design for Protection Against Postulated Piping Failures in Flui	id No
3.6.	Determination of Break Locations and Dynamic Effects Associated with the Postulated Rupture of Piping	e Yes
3.6.	B Leak-Before-Break Evaluation Procedures	Yes
3.7.	1 Seismic Input	No
3.7.	2 Seismic Analysis	No
3.7.	3 Seismic Subsystem Analysis	No
3.7.	4 Seismic Instrumentation	Yes
3.8.	Steel Containment	Yes
3.8.	2 Concrete and Structural Steel Internal Structures	No
3.8.	3 Other Seismic Category I Structures	No
3.8.	1 Foundations	Yes
3.9.	1 Special Topics for Mechanical Components	No
3.9.	2 Dynamic Testing and Analysis of Systems, Components, and Equipment	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

Subsection		Resolved in REG-0847?*
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and	No
3.9.4	Control Rod Drive Systems	Yes
3.9.5	Reactor Pressure Vessel Internals	Yes
3.9.6	Inservice Testing of Pumps and Valves	No
3.10.0	Seismic and Dynamic Qualification of Seismic Category I Mechanical	No
3.11.0	Environmental Qualification of Mechanical and Electrical Equipment	No
4.2.1	Description	No
4.2.2	Thermal Performance	No
4.2.3	Mechanical Performance	No
4.2.4	Surveillance	Yes
4.2.5	Fuel Design Conclusions	No
4.3.1	Design Basis	No
4.3.2	Design Description	No
4.3.3	Analytical Methods	No
4.3.4	Summary of Evaluation Findings	No
4.4.1	Perfomance in Safety Criteria	Yes
4.4.2	Design Bases	No
4.4.3	Thermal-Hydraulic Design Methodology	No
4.4.4	Operating Abnormalities	No
4.4.5	Loose Parts Monitoring System	No
4.4.6	Thermal-Hydraulic Comparison	Yes
4.4.7	N-1 Loop Operation	No
4.4.8	Instrumentation for Inadequate Core Cooling Detection (II.F.2)	No
4.4.9	Summary and Conclusion	No
4.5.1	Control Rod Drive Structural Materials	Yes
4.5.2	Reactor Internals and Core Support Materials	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

Subsection	<u>Title</u>	Resolved in NUREG-0847?*
4.6.0	Functional Design of Reactivity Control Systems	Yes
5.2.1	Compliance With Codes and Code Cases	Yes
5.2.2	Overpressure Protection	Yes
5.2.3	Reactor Coolant Pressure Boundary Materials	Yes
5.2.4	RCS Pressure Boundary Inservice Inspection and Testing	No
5.2.5	Reactor Coolant Pressure Boundary Leakage Detection	Yes
5.3.1	Reactor Vessel Materials	Yes
5.3.2	Pressure-Temperature Limits	No
5.3.3	Reactor Vessel Integrity	No
5.4.1	Reactor Coolant Pumps	Yes
5.4.2	Steam Generators	Yes
5.4.3	Residual Heat Removal System	No
5.4.4	Pressurizer Relief Tank	Yes
5.4.5	Reactor Coolant System Vents (II.B.1)	Yes
6.1.1	Metallic Materials	Yes
6.1.2	Organic Materials	Yes
6.1.3	Postaccident Emergency Cooling Water Chemistry	Yes
6.2.1	Containment Functional Design	Yes
6.2.2	Containment Heat Removal Systems	Yes
6.2.3	Secondary Containment Functional Design	Yes
6.2.4	Containment Isolation System	Yes
6.2.5	Combustible Gas Control Systems	No
6.2.6	Containment Leakage Testing	Yes
6.2.7	Fracture Prevention of Containment Pressure Boundary	Yes
6.3.0	Emergency Core Cooling System	Yes
6.3.1	System Design	No
6.3.2	Evaluation	No
6.3.3	Testing	No

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

Subsection	<u>Title</u>	Resolved in NUREG-0847?*
6.3.4	Performance Evaluation	Yes
6.3.5	Conclusions	No
6.4.0	Control Room Habitability	Yes
6.5.1	ESF Atmosphere Cleanup Systems	Yes
6.5.2	Fission Product Cleanup System	Yes
6.5.3	Fission Product Control System	Yes
6.5.4	Ice Condenser as a Fission Product Control System	Yes
6.6.0	Inservice Inspection of Class 2 and 3 Components	No
7.1.1	General	No
7.1.2	Comparison with Other Plants	Yes
7.1.3	Design Criteria	No
7.2.0	Reactor Trip System	Yes
7.2.1	System Description	No
7.2.2	Manual Trip Switches	Yes
7.2.3	Testing of Reactor Trip Breaker Shunt Coils	Yes
7.2.4	Anticipatory Trips	Yes
7.2.5	Steam Generator Water Level Trip	No
7.2.6	Conclusions	No
7.3.0	Engineered Safety Features System	No
7.3.1	System Description	Yes
7.3.2	Containment Sump Level Measurement	Yes
7.3.3	Auxiliary Feedwater Initiation and Control	Yes
7.3.4	Failure Modes and Effects Analysis	Yes
7.3.5	IE Bulletin 80-06	Yes
7.3.6	Conclusions	No
7.4.1	System Description	Yes
7.4.2	Safe Shutdown from Auxiliary Control Room	No
7.4.3	Conclusions	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

Subsection	Title	Resolved in NUREG-0847?*
7.5.1	System Description	Yes
7.5.2	Post-Accident Monitoring System	No
7.5.3	IE Bulletin 79-27	Yes
7.5.4	Conclusions	No
7.6.1	System Description	Yes
7.6.2	Residual Heat Removal System Bypass Valves	Yes
7.6.3	Upper Head Injection Manual Control	Yes
7.6.4	Protection Against Spurious Actuation of Motor-Operated Valves	Yes
7.6.5	Overpressure Protection During Low Temperature Operation	Yes
7.6.6	Valve Power Lockout	Yes
7.6.7	Cold Leg Accumulator Valve Interlocks and Position Indication	Yes
7.6.8	Automatic Switchover From Injection to Recirculation Mode	Yes
7.6.9	Conclusions	Yes
7.7.1	System Description	Yes
7.7.2	Safety System Status Monitoring System	No
7.7.3	Volume Control Tank Level Control System	Yes
7.7.4	Pressurizer and Steam Generator Overfill	Yes
7.7.5	IE Information Notice 79-22	Yes
7.7.6	Multiple Control System Failures	Yes
7.7.7	Conclusions	Yes
7.7.8	Anticipated Transient Without Scram Mitigation System Actuation	No
7.8.0	NUREG-0737 Items	Yes
7.8.1	Relief and Safety Valve Position Indication (II.D.3)	No
7.8.2	Auxiliary Feedwater System Initiation and Flow Indication (II.E.1.2)	Yes
7.8.3	Proportional Integral Derivative Control Modification (II.K.3.9)	Yes
7.8.4	Proposed Anticipatory Trip Modification (II.K.3.10)	Yes
7.8.5	Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip (II.K.3.12	2) Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

	·	
Subsection 8.1.0	<u>Title</u> General	Resolved in IUREG-0847?* Yes
8.2.1	Compliance With GDC 5	Yes
8.2.2	Compliance With GDC 17	No
8.2.3	Compliance With GDC 18	Yes
8.2.4	Evaluation Findings	Yes
8.3.0	Onsite Power Systems	Yes
8.3.1	Onsite AC Power System Compliance With GDC 17	No
8.3.2	Onsite DC System Compliance With GDC 17	No
8.3.3	Evaluation Findings	No
9.0.0	Auxiliary Systems	Yes
9.1.1	New Fuel Storage	Yes
9.1.2	Spent Fuel Storage	Yes
9.1.3	Spent Fuel Pool Cooling and Cleanup System	Yes
9.1.4	Fuel Handling System	No
9.2.1	Essential Raw Cooling Water and Raw Cooling Water Systems	No
9.2.2	Component Cooling System (Reactor Auxiliaries Cooling Water System	n) No
9.2.3	Demineralized Water Makeup System	Yes
9.2.4	Potable and Sanitary Water Systems	Yes
9.2.5	Ultimate Heat Sink	Yes
9.2.6	Condensate Storage Facilities	Yes
9.3.1	Compressed Air System	Yes
9.3.2	Process Sampling System	No
9.3.3	Equipment and Floor Drainage System	Yes
9.3.4	Chemical and Volume Control System	Yes
9.4.1	Control Room Area Ventilation System	Yes
9.4.2	Fuel Handling Area Ventilation System	Yes
9.4.3	Auxiliary and Radwates Area Ventilation System	Yes
9.4.4	Turbine Building Area Ventilation System	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

	Tile	Resolved in
Subsection 9.4.5	Engineered Safety Features Ventilation System	NUREG-0847?* No
9.5.1	Fire Protection	Yes
9.5.2	Communication Systems	No
9.5.3	Lighting System	Yes
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System	Yes
9.5.5	Emergency Diesel Engine Cooling Water System	No
9.5.6	Emergency Diesel Engine Starting Systems	No
9.5.7	Emergency Diesel Engine Lubricating Oil System	No
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System	No No
10.1.0	Summary Description	Yes
10.2.1	Turbine Generator Design	Yes
10.2.2	Turbine Disc Integrity	Yes
10.3.0	Main Steam Supply System	Yes
10.3.1	Main Steam Supply System (up to and including the Main Steam Isolation Valves)	Yes
10.3.2	Main Steam Supply System	Yes
10.3.3	Steam and Feedwater System Materials	Yes
10.3.4	Secondary Water Chemistry	No
10.4.1	Main Condenser	Yes
10.4.2	Main Condenser Evacuation System	Yes
10.4.3	Turbine Gland Sealing System	Yes
10.4.4	Turbine Bypass System	Yes
10.4.5	Condenser Circulating Water System	Yes
10.4.6	Condensate Cleanup System	Yes
10.4.7	Condensate and Feedwater Systems	Yes
10.4.8	Steam Generator Blowdown System	Yes
10.4.9	Auxiliary Feedwater System	Yes
11.1.0	Summary Description	No

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

Otatao o	The NEW Control of the Part National Flat Control	
Subsection 11.2.0	<u>Title</u> Liquid Waste Management	Resolved in JREG-0847?* Yes
	Gaseous Waste Management	Yes
	Solid Waste Management System	No
	Process and Effluent Radiological Monitoring and Sampling Systems	No
		No
	Evaluation Findings	
	NUREG-0737 Items	No
11.7.1	Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors	No
11.7.2	Primary Coolant Outside Containment (III.D.1.1)	No
12.1.0	General	No
12.2.0	Ensuring that Occupational Radiation Doses Are As Low As Reasonably	y No
	Radiation Sources	No
12.4.0	Radiation Protection Design Features	No
12.5.0	Dose Assessment	No
12.6.0	Health Physics Program	No
12.7.1	Plant Shielding (II.B.2)	No
12.7.2	High Range Incontainment Monitor (II.F.1(3))	No
12.7.3	Inplant Radioiodine Monitor (III.D.3.3)	No
13.1.1	Management and Technical Organization	Yes
13.1.2	Corporate Organization and Technical Support	Yes
13.1.3	Plant Staff Organization	No
13.2.1	Licensed Operator Training Program	Yes
13.2.2	Training for Nonlicensed Personnel	Yes
13.3.1	Introduction	No
13.3.2	Evaluation of the Emergency Plan	No
13.3.3	Conclusions	No
13.4.0	Review and Audit	No

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

	·	
Subsection 13.5.1	Title Administrative Procedures	Resolved in NUREG-0847?* Yes
13.5.2	Operating and Maintenance Procedures	Yes
13.5.3	NUREG-0737 Items	Yes
13.6.0	Physical Security Plan	No
14.0.0	Initial Test Program	Yes
15.1.0	General Discussion	Yes
15.2.0	Normal Operation and Anticipated Transients	No
15.2.1	Loss of Cooling Transients	Yes
15.2.2	Increased Cooling Transients	Yes
15.2.3	Change in Coolant Inventory Transients	No
15.2.4	Reactivity and Power Distribution Anomalies	No
15.2.5	Conclusions	Yes
15.3.0	Limiting Accidents	Yes
15.3.1	Loss-of-Coolant Accident	No
15.3.2	Steamline Break	No
15.3.3	Feedwater System Pipe Break	No
15.3.4	Reactor Coolant Pump Rotor Seizure	No
15.3.5	Reactor Coolant Pump Shaft Break	No
15.3.6	Anticipated Transients Without Scram	No
15.3.7	Conclusions	Yes
15.4.0	Radiological Consequences of Accidents	Yes
15.4.1	Loss-of-Coolant Accident	No
15.4.2	Main Steamline Break Outside of Containment	No
15.4.3	Steam Generator Tube Rupture	No
15.4.4	Control Rod Ejection Accident	No
15.4.5	Fuel-Handling Accident	No
15.4.6	Failure of Small Line Carrying Coolant Outside Containment	No
15.4.7	Postulated Radioactive Releases as a Result of Liquid Tank Failures	No

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Table 2, continued. Status of NUREG-0847 Review Topics - Watts Bar Nuclear Plant Unit 2

		Resolved in
<u>Subsection</u> 15.5.1	Thermal Mechanical Report (II.K.2.13)	NUREG-0847?* No
15.5.2	Voiding in the Reactor Coolant System During Transients (II.K.2.17)	Yes
15.5.3	Installation and Testing of Automatic Power-Operated Relief Valve Isolation System (II.K.3.1) Report on Overall Safety Effect of Power-Operated Relief Valve Isolati	No ion
15.5.4	Automatic Trip of Reactor Coolant Pumps (II.K.3.5)	No
15.5.5	Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations	s No
15.6.0	Relative Risk of Low Power Operation	Yes
16.0.0	Technical Specifications	No
17.1.0	General	Yes
17.2.0	Organization	Yes
17.3.0	Quality Assurance Program	Yes
17.4.0	Conclusions	Yes
18.1.0	General	No
18.2.0	Conclusions	No
20.0.0	Common Defense and Security	Yes
21.0.0	Financial Qualifications	Yes
22.1.0	General	Yes
22.2.0	Preoperational Storage of Nuclear Fuel	Yes
22.3.0	Operating Licenses	Yes

^{*}Resolved means that a topic was previously reviewed and approved in NUREG-0847 or its supplements.

Subsection 2.1.1	
	Exclusion Area Authority and Control
2.3.1	Regional Climatology
	Local Meteorology
	Onsite Meteorological Measurements Program
	· · · · · · · · · · · · · · · · · · ·
2.3.4	, ,
	Long-Term (Routine) Diffusion Estimates
2.4.1	Introduction
2.4.2	
2.4.3	Flood Potential
2.4.4	Local Intense Precipitation in Plant Area
2.4.5	Roof Drainage
2.4.6	Ultimate Heat Sink
2.4.7	Groundwater
2.4.8	Design Basis for Subsurface Hydrostatic Loading
2.4.10	Flooding Protection Requirements and Technical Specifications
2.5.0	Geological, Seismological, and Geotechnical Engineering
2.5.1	Geology
2.5.3	Surface Faulting
2.5.6	Embankments and Dams
3.1.1	Conformance With General Design Criteria
3.1.2	Conformance With Industry Codes and Standards
3.2.1	Seismic Qualification
3.3.1	Wind Loading
3.3.2	Tornado Loading
3.4.1	Flood Protection

Table 3, continued.

Review Topics Resolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2

Subsection	
	Missile Selection and Description
3.5.2	Structures, Systems, and Components To Be Protected From Externally Generated Missiles
3.5.3	Barrier Design Procedures
3.6.2	Determination of Break Locations and Dynamic Effects Associated with the Postulated Rupture of Piping
3.6.3	Leak-Before-Break Evaluation Procedures
3.7.4	Seismic Instrumentation
3.8.1	Steel Containment
3.8.4	Foundations
3.9.2	Dynamic Testing and Analysis of Systems, Components, and Equipment
3.9.4	Control Rod Drive Systems
3.9.5	Reactor Pressure Vessel Internals
4.2.4	Surveillance
4.4.1	Perfomance in Safety Criteria
4.4.6	Thermal-Hydraulic Comparison
4.5.1	Control Rod Drive Structural Materials
4.5.2	Reactor Internals and Core Support Materials
4.6.0	Functional Design of Reactivity Control Systems
5.2.1	Compliance With Codes and Code Cases
5.2.2	Overpressure Protection
5.2.3	Reactor Coolant Pressure Boundary Materials
5.2.5	Reactor Coolant Pressure Boundary Leakage Detection
5.3.1	Reactor Vessel Materials
5.4.1	Reactor Coolant Pumps
5.4.2	Steam Generators
5.4.4	Pressurizer Relief Tank
5.4.5	Reactor Coolant System Vents (II.B.1)

Subsection 6.1.1	<u>Title</u> Metallic Materials
6.1.2	Organic Materials
6.1.3	Postaccident Emergency Cooling Water Chemistry
6.2.1	Containment Functional Design
6.2.2	Containment Heat Removal Systems
6.2.3	Secondary Containment Functional Design
6.2.4	Containment Isolation System
6.2.6	Containment Leakage Testing
6.2.7	Fracture Prevention of Containment Pressure Boundary
6.3.0	Emergency Core Cooling System
6.3.4	Performance Evaluation
6.4.0	Control Room Habitability
6.5.1	ESF Atmosphere Cleanup Systems
6.5.2	Fission Product Cleanup System
6.5.3	Fission Product Control System
6.5.4	Ice Condenser as a Fission Product Control System
7.1.2	Comparison with Other Plants
7.2.0	Reactor Trip System
7.2.2	Manual Trip Switches
7.2.3	Testing of Reactor Trip Breaker Shunt Coils
7.2.4	Anticipatory Trips
7.3.1	System Description
7.3.2	Containment Sump Level Measurement
7.3.3	Auxiliary Feedwater Initiation and Control
7.3.4	Failure Modes and Effects Analysis
7.3.5	IE Bulletin 80-06
7.4.1	System Description

Table 3, continued.

Review Topics Resolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2

Subsection 7.4.3	<u>Title</u> Conclusions
7.5.1	System Description
7.5.3	IE Bulletin 79-27
7.6.1	System Description
7.6.2	Residual Heat Removal System Bypass Valves
7.6.3	Upper Head Injection Manual Control
7.6.4	Protection Against Spurious Actuation of Motor-Operated Valves
7.6.5	Overpressure Protection During Low Temperature Operation
7.6.6	Valve Power Lockout
7.6.7	Cold Leg Accumulator Valve Interlocks and Position Indication
7.6.8	Automatic Switchover From Injection to Recirculation Mode
7.6.9	Conclusions
7.7.1	System Description
7.7.3	Volume Control Tank Level Control System
7.7.4	Pressurizer and Steam Generator Overfill
7.7.5	IE Information Notice 79-22
7.7.6	Multiple Control System Failures
7.7.7	Conclusions
7.8.0	NUREG-0737 Items
7.8.2	Auxiliary Feedwater System Initiation and Flow Indication (II.E.1.2)
7.8.3	Proportional Integral Derivative Control Modification (II.K.3.9)
7.8.4	Proposed Anticipatory Trip Modification (II.K.3.10)
7.8.5	Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip (II.K.3.12)
8.1.0	General
8.2.1	Compliance With GDC 5
8.2.3	Compliance With GDC 18
824	Evaluation Findings

Subsection 8.3.0	<u>Title</u> Onsite Power Systems
	Auxiliary Systems
	New Fuel Storage
	Spent Fuel Storage
9.1.3	Spent Fuel Pool Cooling and Cleanup System
9.2.3	Demineralized Water Makeup System
9.2.4	Potable and Sanitary Water Systems
9.2.5	Ultimate Heat Sink
9.2.6	Condensate Storage Facilities
9.3.1	Compressed Air System
9.3.3	Equipment and Floor Drainage System
9.3.4	Chemical and Volume Control System
9.4.1	Control Room Area Ventilation System
9.4.2	Fuel Handling Area Ventilation System
9.4.3	Auxiliary and Radwates Area Ventilation System
9.4.4	Turbine Building Area Ventilation System
9.5.1	Fire Protection
9.5.3	Lighting System
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System
10.1.0	Summary Description
10.2.1	Turbine Generator Design
10.2.2	Turbine Disc Integrity
10.3.0	Main Steam Supply System
10.3.1	Main Steam Supply System (up to and including the Main Steam Isolation Valves)
10.3.2	Main Steam Supply System
10.3.3	Steam and Feedwater System Materials

Subsection 10.4.1	
	Main Condenser Evacuation System
	·
	Turbine Gland Sealing System
10.4.4	
10.4.5	ů ,
	Condensate Cleanup System
10.4.7	Condensate and Feedwater Systems
10.4.8	Steam Generator Blowdown System
10.4.9	Auxiliary Feedwater System
11.2.0	Liquid Waste Management
11.3.0	Gaseous Waste Management
13.1.1	Management and Technical Organization
13.1.2	Corporate Organization and Technical Support
13.2.1	Licensed Operator Training Program
13.2.2	Training for Nonlicensed Personnel
13.5.1	Administrative Procedures
13.5.2	Operating and Maintenance Procedures
13.5.3	NUREG-0737 Items
14.0.0	Initial Test Program
15.1.0	General Discussion
15.2.1	Loss of Cooling Transients
15.2.2	Increased Cooling Transients
15.2.5	Conclusions
15.3.0	Limiting Accidents
15.3.7	Conclusions
15.4.0	Radiological Consequences of Accidents
15.5.2	Voiding in the Reactor Coolant System During Transients (II.K.2.17)

Subsection 15.6.0	Title Relative Risk of Low Power Operation
17.1.0	General
17.2.0	Organization
17.3.0	Quality Assurance Program
17.4.0	Conclusions
20.0.0	Common Defense and Security
21.0.0	Financial Qualifications
22.1.0	General
22.2.0	Preoperational Storage of Nuclear Fuel
22.3.0	Operating Licenses

Table 4. Review Topics Unresolved in NUREG-0847 Watts Bar Nuclear Plant Unit 2

Subsection 2.1.3	Title Population Distribution
2.1.4	Conclusions
2.2.1	Transportation Routes
2.2.2	Nearby Facilities
2.2.3	Conclusions
2.4.9	Transport of Liquid Releases
2.5.2	Seismology
2.5.4	Stability of Subsurface Materials and Foundations
2.5.5	Stability of Slopes
3.2.2	System Quality Group Classification
3.6.1	Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
3.7.1	Seismic Input
3.7.2	Seismic Analysis
3.7.3	Seismic Subsystem Analysis
3.8.2	Concrete and Structural Steel Internal Structures
3.8.3	Other Seismic Category I Structures
3.9.1	Special Topics for Mechanical Components
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures
3.9.6	Inservice Testing of Pumps and Valves
3.10.0	Seismic and Dynamic Qualification of Seismic Category I Mechanical and Electrical Equipment
3.11.0	Environmental Qualification of Mechanical and Electrical Equipment
4.2.1	Description
4.2.2	Thermal Performance
4.2.3	Mechanical Performance

Table 4, continued.

Review Topics Unresolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2

Su	bsection	Title
υu	DOCULOIT	1111

- 4.2.5 Fuel Design Conclusions
- 4.3.1 Design Basis
- 4.3.2 Design Description
- 4.3.3 Analytical Methods
- 4.3.4 Summary of Evaluation Findings
- 4.4.2 Design Bases
- 4.4.3 Thermal-Hydraulic Design Methodology
- 4.4.4 Operating Abnormalities
- 4.4.5 Loose Parts Monitoring System
- 4.4.7 N-1 Loop Operation
- 4.4.8 Instrumentation for Inadequate Core Cooling Detection (II.F.2)
- 4.4.9 Summary and Conclusion
- 5.2.4 RCS Pressure Boundary Inservice Inspection and Testing
- 5.3.2 Pressure-Temperature Limits
- 5.3.3 Reactor Vessel Integrity
- 5.4.3 Residual Heat Removal System
- 6.2.5 Combustible Gas Control Systems
- 6.3.1 System Design
- 6.3.2 Evaluation
- 6.3.3 Testing
- 6.3.5 Conclusions
- 6.6.0 Inservice Inspection of Class 2 and 3 Components
- 7.1.1 General
- 7.1.3 Design Criteria
- 7.2.1 System Description
- 7.2.5 Steam Generator Water Level Trip
- 7.2.6 Conclusions
- 7.3.0 Engineered Safety Features System

Table 4, continued. Review Topics Unresolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2 <u>Subsection</u> <u>Title</u> 7.3.6 Conclusions

- 7.4.2 Safe Shutdown from Auxiliary Control Room
- 7.5.2 Post-Accident Monitoring System
- 7.5.4 Conclusions
- 7.7.2 Safety System Status Monitoring System
- 7.7.8 Anticipated Transient Without Scram Mitigation System Actuation Circuitry (AMSAC)
- 7.8.1 Relief and Safety Valve Position Indication (II.D.3)
- 8.2.2 Compliance With GDC 17
- 8.3.1 Onsite AC Power System Compliance With GDC 17
- 8.3.2 Onsite DC System Compliance With GDC 17
- 8.3.3 Evaluation Findings
- 9.1.4 Fuel Handling System
- 9.2.1 Essential Raw Cooling Water and Raw Cooling Water Systems
- 9.2.2 Component Cooling System (Reactor Auxiliaries Cooling Water System)
- 9.3.2 Process Sampling System
- 9.4.5 Engineered Safety Features Ventilation System
- 9.5.2 Communication Systems
- 9.5.5 Emergency Diesel Engine Cooling Water System
- 9.5.6 Emergency Diesel Engine Starting Systems
- 9.5.7 Emergency Diesel Engine Lubricating Oil System
- 9.5.8 Emergency Diesel Engine Combustion Air Intake and Exhaust System
- 10.3.4 Secondary Water Chemistry
- 11.1.0 Summary Description
- 11.4.0 Solid Waste Management System
- 11.5.0 Process and Effluent Radiological Monitoring and Sampling Systems
- 11.6.0 Evaluation Findings
- 11.7.0 NUREG-0737 Items

Table 4, continued. Review Topics Unresolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2 Subsection Title 11.7.1 Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors (II.F.1(1) and II.F.1(2)) 11.7.2 Primary Coolant Outside Containment (III.D.1.1) 12.1.0 General 12.2.0 Ensuring that Occupational Radiation Doses Are As Low As Reasonably Achievable 12.3.0 Radiation Sources 12.4.0 Radiation Protection Design Features 12.5.0 Dose Assessment 12.6.0 Health Physics Program 12.7.1 Plant Shielding (II.B.2) 12.7.2 High Range Incontainment Monitor (II.F.1(3)) 12.7.3 Inplant Radioiodine Monitor (III.D.3.3) 13.1.3 Plant Staff Organization 13.3.1 Introduction 13.3.2 Evaluation of the Emergency Plan 13.3.3 Conclusions 13.4.0 Review and Audit 13.6.0 Physical Security Plan 15.2.0 Normal Operation and Anticipated Transients 15.2.3 Change in Coolant Inventory Transients 15.2.4 Reactivity and Power Distribution Anomalies 15.3.1 Loss-of-Coolant Accident 15.3.2 Steamline Break 15.3.3 Feedwater System Pipe Break

15.3.4 Reactor Coolant Pump Rotor Seizure

15.3.6 Anticipated Transients Without Scram

15.3.5 Reactor Coolant Pump Shaft Break

•	continued. Topics Unresolved in NUREG-0847 - Watts Bar Nuclear Plant Unit 2
Subsection 15 4 1	Title Loss-of-Coolant Accident
15.4.2	Main Steamline Break Outside of Containment
15.4.3	Steam Generator Tube Rupture
15.4.4	Control Rod Ejection Accident
15.4.5	Fuel-Handling Accident
15.4.6	Failure of Small Line Carrying Coolant Outside Containment
15.4.7	Postulated Radioactive Releases as a Result of Liquid Tank Failures
15.5.1	Thermal Mechanical Report (II.K.2.13)
15.5.3	Installation and Testing of Automatic Power-Operated Relief Valve Isolation System (II.K.3.1)
	Report on Overall Safety Effect of Power-Operated Relief Valve Isolation System (II.K.3.2)
15.5.4	Automatic Trip of Reactor Coolant Pumps (II.K.3.5)
15.5.5	Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations (II.K.3.31)
16.0.0	Technical Specifications
18.1.0	General

18.2.0 Conclusions

Table 5.

NUREG-0847 Review Topics Where NRC Conclusions Do Not Match TVA

(NRC = Open, TVA = Closed)

Subsection 2.5.2	Title Seismology
	Stability of Subsurface Materials and Foundations
2.5.5	Stability of Slopes
3.2.2	System Quality Group Classification
3.6.1	Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
3.7.1	Seismic Input
3.7.2	Seismic Analysis
3.8.2	Concrete and Structural Steel Internal Structures
3.8.3	Other Seismic Category I Structures
3.9.1	Special Topics for Mechanical Components
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures $$
3.9.6	Inservice Testing of Pumps and Valves
3.10.0	Seismic and Dynamic Qualification of Seismic Category I Mechanical and Electrical Equipment
4.2.1	Description
4.2.3	Mechanical Performance
4.3.1	Design Basis
4.3.2	Design Description
4.3.3	Analytical Methods
4.3.4	Summary of Evaluation Findings
4.4.2	Design Bases
4.4.4	Operating Abnormalities
4.4.7	N-1 Loop Operation
5.4.3	Residual Heat Removal System
6.3.1	System Design

NUREG-	continued. -0847 Review Topics Where NRC Conclusions Do Not Match TVA Open, TVA = Closed)
Subsection 6.3.2	Title Evaluation
6.3.3	Testing
6.3.5	Conclusions
7.1.1	General
7.2.1	System Description
7.2.5	Steam Generator Water Level Trip
7.3.0	Engineered Safety Features System
7.4.2	Safe Shutdown from Auxiliary Control Room
7.5.2	Post-Accident Monitoring System
7.7.2	Safety System Status Monitoring System
7.7.8	Anticipated Transient Without Scram Mitigation System Actuation Circuitry (AMSAC)
7.8.1	Relief and Safety Valve Position Indication (II.D.3)
8.2.2	Compliance With GDC 17
8.3.1	Onsite AC Power System Compliance With GDC 17
8.3.2	Onsite DC System Compliance With GDC 17
8.3.3	Evaluation Findings
9.1.4	Fuel Handling System
9.2.2	Component Cooling System (Reactor Auxiliaries Cooling Water System)
9.3.2	Process Sampling System
9.4.5	Engineered Safety Features Ventilation System
9.5.2	Communication Systems
9.5.5	Emergency Diesel Engine Cooling Water System
9.5.6	Emergency Diesel Engine Starting Systems
9.5.7	Emergency Diesel Engine Lubricating Oil System
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System
11.1.0	Summary Description

NUREG	continued0847 Review Topics Where NRC Conclusions Do Not Match TVA Open, TVA = Closed)
Subsection 11.6.0	Title Evaluation Findings
11.7.0	NUREG-0737 Items
11.7.1	Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors (II.F.1(1) and II.F.1(2))
12.1.0	General
12.2.0	Ensuring that Occupational Radiation Doses Are As Low As Reasonably Achievable
12.3.0	Radiation Sources
12.4.0	Radiation Protection Design Features
12.5.0	Dose Assessment
12.6.0	Health Physics Program
12.7.1	Plant Shielding (II.B.2)
12.7.2	High Range Incontainment Monitor (II.F.1(3))
12.7.3	Inplant Radioiodine Monitor (III.D.3.3)
13.1.3	Plant Staff Organization
13.3.1	Introduction
13.3.2	Evaluation of the Emergency Plan
13.3.3	Conclusions
13.6.0	Physical Security Plan
15.2.0	Normal Operation and Anticipated Transients
15.2.3	Change in Coolant Inventory Transients
15.2.4	Reactivity and Power Distribution Anomalies
15.3.1	Loss-of-Coolant Accident
15.3.2	Steamline Break
15.3.3	Feedwater System Pipe Break
15.3.4	Reactor Coolant Pump Rotor Seizure
15.3.5	Reactor Coolant Pump Shaft Break
1536	Anticipated Transients Without Scram

Table 5, continued. NUREG-0847 Review Topics Where NRC Conclusions Do Not Match TVA (NRC = Open, TVA = Closed) Subsection Title 15.4.1 Loss-of-Coolant Accident 15.4.2 Main Steamline Break Outside of Containment 15.4.3 Steam Generator Tube Rupture 15.4.4 Control Rod Ejection Accident 15.4.5 Fuel-Handling Accident 15.4.6 Failure of Small Line Carrying Coolant Outside Containment 15.4.7 Postulated Radioactive Releases as a Result of Liquid Tank Failures 15.5.1 Thermal Mechanical Report (II.K.2.13) 15.5.3 Installation and Testing of Automatic Power-Operated Relief Valve Isolation System (II.K.3.1) Report on Overall Safety Effect of Power-Operated Relief Valve Isolation System (II.K.3.2) 15.5.4 Automatic Trip of Reactor Coolant Pumps (II.K.3.5) 15.5.5 Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations

(II.K.3.31)

Table 6.

Open NUREG-0847 Review Topics Requiring Additional Information to Resolve

Subsection 2.5.2	<u>Title</u> Seismology
2.5.4	Stability of Subsurface Materials and Foundations
2.5.5	Stability of Slopes
3.2.2	System Quality Group Classification
3.6.1	Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
3.7.1	Seismic Input
3.7.2	Seismic Analysis
3.8.2	Concrete and Structural Steel Internal Structures
3.8.3	Other Seismic Category I Structures
3.9.1	Special Topics for Mechanical Components
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures $$
3.10.0	Seismic and Dynamic Qualification of Seismic Category I Mechanical and Electrical Equipment
4.2.1	Description
4.2.3	Mechanical Performance
4.3.1	Design Basis
4.3.2	Design Description
4.3.3	Analytical Methods
4.3.4	Summary of Evaluation Findings
4.4.2	Design Bases
4.4.4	Operating Abnormalities
5.4.3	Residual Heat Removal System
6.3.1	System Design
6.3.2	Evaluation
6.3.3	Testing

Table 6, continued. Open NUREG-0847 Review Topics Requiring Additional Information to Resolve

Орони	2.12 00 17 Hoviour Popios Hodaming / taaitanat milioniation to Hooding
Subsection 6.3.5	Title Conclusions
7.1.1	General
7.2.1	System Description
7.2.5	Steam Generator Water Level Trip
7.3.0	Engineered Safety Features System
7.4.2	Safe Shutdown from Auxiliary Control Room
7.5.2	Post-Accident Monitoring System
7.7.2	Safety System Status Monitoring System
7.8.1	Relief and Safety Valve Position Indication (II.D.3)
8.2.2	Compliance With GDC 17
8.3.1	Onsite AC Power System Compliance With GDC 17
8.3.2	Onsite DC System Compliance With GDC 17
8.3.3	Evaluation Findings
9.1.4	Fuel Handling System
9.2.2	Component Cooling System (Reactor Auxiliaries Cooling Water System)
9.3.2	Process Sampling System
9.4.5	Engineered Safety Features Ventilation System
9.5.2	Communication Systems
9.5.5	Emergency Diesel Engine Cooling Water System
9.5.6	Emergency Diesel Engine Starting Systems
9.5.7	Emergency Diesel Engine Lubricating Oil System
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System
11.1.0	Summary Description
11.6.0	Evaluation Findings
11.7.0	NUREG-0737 Items
11.7.1	Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors (II.F.1(1) and II.F.1(2))
12.1.0	General

Table 6, continued. Open NUREG-0847 Review Topics Requiring Additional Information to Resolve

•	
Subsection 12.2.0	$\underline{^{\text{Title}}}$ Ensuring that Occupational Radiation Doses Are As Low As Reasonably Achievable
12.3.0	Radiation Sources
12.4.0	Radiation Protection Design Features
12.5.0	Dose Assessment
12.6.0	Health Physics Program
12.7.1	Plant Shielding (II.B.2)
12.7.2	High Range Incontainment Monitor (II.F.1(3))
12.7.3	Inplant Radioiodine Monitor (III.D.3.3)
13.1.3	Plant Staff Organization
13.3.1	Introduction
13.3.2	Evaluation of the Emergency Plan
13.3.3	Conclusions
13.6.0	Physical Security Plan
15.2.0	Normal Operation and Anticipated Transients
15.2.3	Change in Coolant Inventory Transients
15.2.4	Reactivity and Power Distribution Anomalies
15.3.1	Loss-of-Coolant Accident
15.3.2	Steamline Break
15.3.3	Feedwater System Pipe Break
15.3.4	Reactor Coolant Pump Rotor Seizure
15.3.5	Reactor Coolant Pump Shaft Break
15.3.6	Anticipated Transients Without Scram
15.4.1	Loss-of-Coolant Accident
15.4.2	Main Steamline Break Outside of Containment
15.4.3	Steam Generator Tube Rupture
15.4.4	Control Rod Ejection Accident
15.4.5	Fuel-Handling Accident

Table 6, continued.

Open NUREG-0847 Review Topics Requiring Additional Information to Resolve

Subsection Title

- 15.4.6 Failure of Small Line Carrying Coolant Outside Containment
- 15.4.7 Postulated Radioactive Releases as a Result of Liquid Tank Failures
- 15.5.1 Thermal Mechanical Report (II.K.2.13)
- 15.5.3 Installation and Testing of Automatic Power-Operated Relief Valve Isolation System (II.K.3.1) Report on Overall Safety Effect of Power-Operated Relief Valve Isolation System (II.K.3.2)
- 15.5.4 Automatic Trip of Reactor Coolant Pumps (II.K.3.5)
- 15.5.5 Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations (II.K.3.31)

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

<u>Subsection</u>	<u>Title</u>
<u>2.1.1</u>	Site Location and Description
	NUREG-0847 Supplement 0
2.1.2	Exclusion Area Authority and Control
	NUREG-0847 Supplement 0
212	Population Distribution
<u>2.1.3</u>	Population Distribution NUREG-0847 Supplement 0
	••
<u>2.1.4</u>	<u>Conclusions</u>
	NUREG-0847 Supplement 0
2.2.1	<u>Transportation Routes</u>
	NUREG-0847 Supplement 0
2.2.2	Nearby Facilities
	NUREG-0847 Supplement 0
2 2 3	Conclusions
2.2.3	NUREG-0847 Supplement 0
	••
<u>2.3.1</u>	Regional Climatology
	NUREG-0847 Supplement 0
2.3.2	Local Meteorology
	NUREG-0847 Supplement 0
2.3.3	Onsite Meteorological Measurements Program
	NUREG-0847 Supplement 0
2.3.4	Short-Term (Accident) Atmospheric Diffusion Estimates
<u> 2.0.+</u>	NUREG-0847 Supplement 0
	••
<u>2.3.5</u>	Long-Term (Routine) Diffusion Estimates
	NUREG-0847 Supplement 0
<u>2.4.1</u>	Introduction
	NUREG-0847 Supplement 0
2.4.2	Hydrologic Description
	NUREG-0847 Supplement 0

	G-0847 and Supplemental Safety Evaluations Topic Inventory dar Nuclear Plant Unit 2
Subsection 2.4.3	Title Flood Potential NUREG-0847 Supplement 0
<u>2.4.4</u>	Local Intense Precipitation in Plant Area NUREG-0847 Supplement 0
<u>2.4.5</u>	Roof Drainage NUREG-0847 Supplement 0
<u>2.4.6</u>	Ultimate Heat Sink NUREG-0847 Supplement 0
2.4.7	Groundwater NUREG-0847 Supplement 0 NUREG-0847 Supplement 3
2.4.8	Design Basis for Subsurface Hydrostatic Loading NUREG-0847 Supplement 0 NUREG-0847 Supplement 3
<u>2.4.9</u>	<u>Transport of Liquid Releases</u> NUREG-0847 Supplement 0
2.4.10	Flooding Protection Requirements and Technical Specifications NUREG-0847 Supplement 0
2.5.0	Geological, Seismological, and Geotechnical Engineering NUREG-0847 Supplement 0
<u>2.5.1</u>	Geology NUREG-0847 Supplement 0
<u>2.5.2</u>	Seismology NUREG-0847 Supplement 0
<u>2.5.3</u>	Surface Faulting NUREG-0847 Supplement 0

	-0847 and Supplemental Safety Evaluations Topic Inventory ar Nuclear Plant Unit 2
Subsection 2.5.4	Title Stability of Subsurface Materials and Foundations NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 9 NUREG-0847 Supplement 11
<u>2.5.5</u>	Stability of Slopes NUREG-0847 Supplement 0
<u>2.5.6</u>	Embankments and Dams NUREG-0847 Supplement 0
<u>3.1.1</u>	Conformance With General Design Criteria NUREG-0847 Supplement 0
3.1.2	Conformance With Industry Codes and Standards NUREG-0847 Supplement 0
3.2.1	Seismic Qualification NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 5 NUREG-0847 Supplement 6 NUREG-0847 Supplement 8
3.2.2	System Quality Group Classification NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 6 NUREG-0847 Supplement 7 NUREG-0847 Supplement 9
<u>3.3.1</u>	Wind Loading NUREG-0847 Supplement 0
3.3.2	Tornado Loading NUREG-0847 Supplement 0
<u>3.4.1</u>	Flood Protection NUREG-0847 Supplement 0

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

Subsection Title

3.5.1 Missile Selection and Description

NUREG-0847 Supplement 0 NUREG-0847 Supplement 9 NUREG-0847 Supplement 14

3.5.2 <u>Structures, Systems, and Components To Be Protected From Externally Generated Missiles</u>

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2

3.5.3 Barrier Design Procedures

NUREG-0847 Supplement 0

3.6.1 Plant Design for Protection Against Postulated Piping Failures in Fluid Systems

Outside Containment

NUREG-0847 Supplement 0 NUREG-0847 Supplement 14

3.6.2 Determination of Break Locations and Dynamic Effects Associated with the

Postulated Rupture of Piping

NUREG-0847 Supplement 0 NUREG-0847 Supplement 14

3.6.3 Leak-Before-Break Evaluation Procedures

NUREG-0847 Supplement 5

3.7.1 Seismic Input

NUREG-0847 Supplement 0 NUREG-0847 Supplement 6 NUREG-0847 Supplement 9 NUREG-0847 Supplement 16

3.7.2 Seismic Analysis

NUREG-0847 Supplement 0 NUREG-0847 Supplement 6 NUREG-0847 Supplement 8 NUREG-0847 Supplement 11 NUREG-0847 Supplement 16

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

Subsection Title

3.7.3 Seismic Subsystem Analysis

NUREG-0847 Supplement 0

NUREG-0847 Supplement 6

NUREG-0847 Supplement 7

NUREG-0847 Supplement 8

NUREG-0847 Supplement 9

NUREG-0847 Supplement 12

3.7.4 Seismic Instrumentation

NUREG-0847 Supplement 0

3.8.1 Steel Containment

NUREG-0847 Supplement 0

NUREG-0847 Supplement 3

3.8.2 Concrete and Structural Steel Internal Structures

NUREG-0847 Supplement 0

NUREG-0847 Supplement 7

3.8.3 Other Seismic Category I Structures

NUREG-0847 Supplement 0

NUREG-0847 Supplement 14

NUREG-0847 Supplement 16

3.8.4 Foundations

NUREG-0847 Supplement 0

3.9.1 Special Topics for Mechanical Components

NUREG-0847 Supplement 0

NUREG-0847 Supplement 6

NUREG-0847 Supplement 13

3.9.2 Dynamic Testing and Analysis of Systems, Components, and Equipment

NUREG-0847 Supplement 0

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory

Watts Bar Nuclear Plant Unit 2

Subsection Title

3.9.3 ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures

NUREG-0847 Supplement 0

NUREG-0847 Supplement 3

NUREG-0847 Supplement 4

NUREG-0847 Supplement 6

NUREG-0847 Supplement 7

NUREG-0847 Supplement 8

NUREG-0847 Supplement 15

3.9.4 Control Rod Drive Systems

NUREG-0847 Supplement 0

3.9.5 Reactor Pressure Vessel Internals

NUREG-0847 Supplement 0

3.9.6 Inservice Testing of Pumps and Valves

NUREG-0847 Supplement 0

NUREG-0847 Supplement 5

NUREG-0847 Supplement 12

NUREG-0847 Supplement 14

NUREG-0847 Supplement 20

3.10.0 Seismic and Dynamic Qualification of Seismic Category I Mechanical and Electrical Equipment

NUREG-0847 Supplement 0

NUREG-0847 Supplement 1

NUREG-0847 Supplement 3

NUREG-0847 Supplement 4

NUREG-0847 Supplement 5

NUREG-0847 Supplement 6

NUREG-0847 Supplement 8

NUREG-0847 Supplement 9

3.11.0 Environmental Qualification of Mechanical and Electrical Equipment

NUREG-0847 Supplement 0

Table 7.
NUREG-0847 and Supplemental Safety Evaluations Topic Inventory
Watts Bar Nuclear Plant Unit 2

Subsection Title

4.2.1 Description

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13

4.2.2 Thermal Performance

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2

4.2.3 Mechanical Performance

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 10 NUREG-0847 Supplement 13

4.2.4 Surveillance

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2

4.2.5 Fuel Design Conclusions

NUREG-0847 Supplement 0

4.3.1 Design Basis

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13

4.3.2 <u>Design Description</u>

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13 NUREG-0847 Supplement 15

4.3.3 Analytical Methods

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13

4.3.4 Summary of Evaluation Findings

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13

4.4.1 Perfomance in Safety Criteria

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsectio	n Title	
4.4.2	<u>Design Bases</u>	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 12	
4.4.0	The same of the slage with Decision Mother delegans	
<u>4.4.3</u>	Thermal-Hydraulic Design Methodology	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 8	
	NUREG-0847 Supplement 12	
	NUREG-0847 Supplement 13	
	NUREG-0847 Supplement 16	
4.4.4	Operating Abnormalities	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 13	
4.4.5	Loose Parts Monitoring System	
<u>+.+.5</u>	NUREG-0847 Supplement 0	
	• •	
	NUREG-0847 Supplement 5	
	NUREG-0847 Supplement 5	
	NUREG-0847 Supplement 16	
<u>4.4.6</u>	Thermal-Hydraulic Comparison	
	NUREG-0847 Supplement 0	
4.4.7	N-1 Loop Operation	
<u> </u>	NUREG-0847 Supplement 0	
	TOTALE CONTROLLED	
<u>4.4.8</u>	Instrumentation for Inadequate Core Cooling Detection (II.F.2)	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 10	
<u>4.4.9</u>	Summary and Conclusion	
<u>1.1.0</u>	NUREG-0847 Supplement 0	
	Nones out outploment o	
<u>4.5.1</u>	Control Rod Drive Structural Materials	
	NUREG-0847 Supplement 0	
4.5.2	Reactor Internals and Core Support Materials	
	NUDEO 0047 Occupations and O	

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 4.6.0	Title Functional Design of Reactivity Control Systems NUREG-0847 Supplement 0	
<u>5.2.1</u>	Compliance With Codes and Code Cases NUREG-0847 Supplement 0	
<u>5.2.2</u>	Overpressure Protection NUREG-0847 Supplement 0 NUREG-0847 Supplement 2	
<u>5.2.3</u>	Reactor Coolant Pressure Boundary Materials NUREG-0847 Supplement 0	
<u>5.2.4</u>	RCS Pressure Boundary Inservice Inspection and Testing NUREG-0847 Supplement 0 NUREG-0847 Supplement 12	
<u>5.2.5</u>	Reactor Coolant Pressure Boundary Leakage Detection NUREG-0847 Supplement 0	
<u>5.3.1</u>	Reactor Vessel Materials NUREG-0847 Supplement 0	
<u>5.3.2</u>	Pressure-Temperature Limits NUREG-0847 Supplement 0	
<u>5.3.3</u>	Reactor Vessel Integrity NUREG-0847 Supplement 0	
<u>5.4.1</u>	Reactor Coolant Pumps NUREG-0847 Supplement 0	
<u>5.4.2</u>	Steam Generators NUREG-0847 Supplement 0 NUREG-0847 Supplement 4	
5.4.3	Residual Heat Removal System NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 10	

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 5.4.4	Pressurizer Relief Tank NUREG-0847 Supplement 0	
<u>5.4.5</u>	Reactor Coolant System Vents (II.B.1) NUREG-0847 Supplement 0	
<u>6.1.1</u>	Metallic Materials NUREG-0847 Supplement 0	
<u>6.1.2</u>	Organic Materials NUREG-0847 Supplement 0	
<u>6.1.3</u>	Postaccident Emergency Cooling Water Chemistry NUREG-0847 Supplement 0	
6.2.1	Containment Functional Design NUREG-0847 Supplement 0 NUREG-0847 Supplement 3	
6.2.2	Containment Heat Removal Systems NUREG-0847 Supplement 0	
6.2.3	Secondary Containment Functional Design NUREG-0847 Supplement 0	
6.2.4	Containment Isolation System NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 5 NUREG-0847 Supplement 12	
6.2.5	Combustible Gas Control Systems NUREG-0847 Supplement 0 NUREG-0847 Supplement 4 NUREG-0847 Supplement 8	
<u>6.2.6</u>	Containment Leakage Testing NUREG-0847 Supplement 0	
6.2.7	Fracture Prevention of Containment Pressure Boundary NUREG-0847 Supplement 0 NUREG-0847 Supplement 4	

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 6.3.0	Title Emergency Core Cooling System NUREG-0847 Supplement 0	
6.3.1	System Design NUREG-0847 Supplement 0 NUREG-0847 Supplement 7 NUREG-0847 Supplement 11	
6.3.2	Evaluation NUREG-0847 Supplement 0 NUREG-0847 Supplement 5	
6.3.3	Testing NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 9	
<u>6.3.4</u>	Performance Evaluation NUREG-0847 Supplement 0	
<u>6.3.5</u>	Conclusions NUREG-0847 Supplement 0	
<u>6.4.0</u>	Control Room Habitability NUREG-0847 Supplement 0	
<u>6.5.1</u>	ESF Atmosphere Cleanup Systems NUREG-0847 Supplement 0	
<u>6.5.2</u>	Fission Product Cleanup System NUREG-0847 Supplement 0	
<u>6.5.3</u>	Fission Product Control System NUREG-0847 Supplement 0	
<u>6.5.4</u>	Ice Condenser as a Fission Product Control System NUREG-0847 Supplement 0	
6.6.0	Inservice Inspection of Class 2 and 3 Components NUREG-0847 Supplement 0 NUREG-0847 Supplement 10	

	G-0847 and Supplemental Safety Evaluations Topic Inventory Bar Nuclear Plant Unit 2
Subsection	n <u>Title</u>
<u>7.1.1</u>	<u>General</u>
	NUREG-0847 Supplement 0
	NUREG-0847 Supplement 13
	NUREG-0847 Supplement 16
7.1.2	Comparison with Other Plants
	NUREG-0847 Supplement 0
<u>7.1.3</u>	Design Criteria
	NUREG-0847 Supplement 0
	NUREG-0847 Supplement 3
	NUREG-0847 Supplement 15
7.2.0	Reactor Trip System
	NUREG-0847 Supplement 0
7.2.1	System Description
	NUREG-0847 Supplement 0
	NUREG-0847 Supplement 13
	NUREG-0847 Supplement 15
7.2.2	Manual Trip Switches
	NUREG-0847 Supplement 0
7.2.3	Testing of Reactor Trip Breaker Shunt Coils
	NUREG-0847 Supplement 0
7.2.4	Anticipatory Trips
	NUREG-0847 Supplement 0
7.2.5	Steam Generator Water Level Trip
	NUREG-0847 Supplement 0
	NUREG-0847 Supplement 2
	NUREG-0847 Supplement 14
7.2.6	Conclusions
	NUREG-0847 Supplement 0
7.3.0	Engineered Safety Features System
_	NUREG-0847 Supplement 0

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 7.3.1	n Title System Description NUREG-0847 Supplement 0	
<u>7.3.2</u>	Containment Sump Level Measurement NUREG-0847 Supplement 0 NUREG-0847 Supplement 2	
<u>7.3.3</u>	Auxiliary Feedwater Initiation and Control NUREG-0847 Supplement 0	
<u>7.3.4</u>	Failure Modes and Effects Analysis NUREG-0847 Supplement 0	
<u>7.3.5</u>	IE Bulletin 80-06 NUREG-0847 Supplement 0 NUREG-0847 Supplement 3	
<u>7.3.6</u>	Conclusions NUREG-0847 Supplement 0 NUREG-0847 Supplement 13	
<u>7.4.1</u>	System Description NUREG-0847 Supplement 0	
<u>7.4.2</u>	Safe Shutdown from Auxiliary Control Room NUREG-0847 Supplement 0 NUREG-0847 Supplement 7	
<u>7.4.3</u>	Conclusions NUREG-0847 Supplement 0	
<u>7.5.1</u>	System Description NUREG-0847 Supplement 0	
<u>7.5.2</u>	Post-Accident Monitoring System NUREG-0847 Supplement 0 NUREG-0847 Supplement 9 NUREG-0847 Supplement 14 NUREG-0847 Supplement 15	
<u>7.5.3</u>	IE Bulletin 79-27 NUREG-0847 Supplement 0	

	0847 and Supplemental Safety Evaluations Topic Inventory ar Nuclear Plant Unit 2
Subsection 7.5.4	Title Conclusions NUREG-0847 Supplement 0
<u>7.6.1</u>	System Description NUREG-0847 Supplement 0
7.6.2	Residual Heat Removal System Bypass Valves NUREG-0847 Supplement 0
7.6.3	Upper Head Injection Manual Control NUREG-0847 Supplement 0
7.6.4	Protection Against Spurious Actuation of Motor-Operated Valves NUREG-0847 Supplement 0
<u>7.6.5</u>	Overpressure Protection During Low Temperature Operation NUREG-0847 Supplement 0 NUREG-0847 Supplement 4
7.6.6	Valve Power Lockout NUREG-0847 Supplement 0
7.6.7	Cold Leg Accumulator Valve Interlocks and Position Indication NUREG-0847 Supplement 0
7.6.8	Automatic Switchover From Injection to Recirculation Mode NUREG-0847 Supplement 0
7.6.9	Conclusions NUREG-0847 Supplement 0
<u>7.7.1</u>	System Description NUREG-0847 Supplement 0
<u>7.7.2</u>	Safety System Status Monitoring System NUREG-0847 Supplement 0 NUREG-0847 Supplement 7 NUREG-0847 Supplement 13
<u>7.7.3</u>	Volume Control Tank Level Control System NUREG-0847 Supplement 0

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 7.7.4	Title Pressurizer and Steam Generator Overfill NUREG-0847 Supplement 0	
<u>7.7.5</u>	IE Information Notice 79-22 NUREG-0847 Supplement 0	
<u>7.7.6</u>	Multiple Control System Failures NUREG-0847 Supplement 0	
<u>7.7.7</u>	Conclusions NUREG-0847 Supplement 0	
<u>7.7.8</u>	Anticipated Transient Without Scram Mitigation System Actuation Circuitry (AMSAC) NUREG-0847 Supplement 9 NUREG-0847 Supplement 14	
<u>7.8.0</u>	NUREG-0737 Items NUREG-0847 Supplement 0	
<u>7.8.1</u>	Relief and Safety Valve Position Indication (II.D.3) NUREG-0847 Supplement 0 NUREG-0847 Supplement 5 NUREG-0847 Supplement 14	
<u>7.8.2</u>	Auxiliary Feedwater System Initiation and Flow Indication (II.E.1.2) NUREG-0847 Supplement 0	
<u>7.8.3</u>	Proportional Integral Derivative Control Modification (II.K.3.9) NUREG-0847 Supplement 0	
<u>7.8.4</u>	Proposed Anticipatory Trip Modification (II.K.3.10) NUREG-0847 Supplement 0 NUREG-0847 Supplement 4	
<u>7.8.5</u>	Confirm Existence of Anticipatory Reactor Trip Upon Turbine Trip (II.K.3.12) NUREG-0847 Supplement 0	
<u>8.1.0</u>	General NUREG-0847 Supplement 0	
<u>8.2.1</u>	Compliance With GDC 5 NUREG-0847 Supplement 0	

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2	
Subsection 8.2.2	Title Compliance With GDC 17 NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 13
8.2.3	Compliance With GDC 18 NUREG-0847 Supplement 0
8.2.4	Evaluation Findings NUREG-0847 Supplement 0
8.3.0	Onsite Power Systems NUREG-0847 Supplement 0
8.3.1	Onsite AC Power System Compliance With GDC 17 NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 7 NUREG-0847 Supplement 13
8.3.2	Onsite DC System Compliance With GDC 17 NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 13
8.3.3	Evaluation Findings NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 3 NUREG-0847 Supplement 7 NUREG-0847 Supplement 13
9.0.0	Auxiliary Systems NUREG-0847 Supplement 0
9.1.1	New Fuel Storage NUREG-0847 Supplement 0
9.1.2	Spent Fuel Storage NUREG-0847 Supplement 0

	0847 and Supplemental Safety Evaluations Topic Inventory ar Nuclear Plant Unit 2
Subsection	<u>Title</u>
<u>9.1.3</u>	Spent Fuel Pool Cooling and Cleanup System NUREG-0847 Supplement 0
<u>9.1.4</u>	Fuel Handling System NUREG-0847 Supplement 0 NUREG-0847 Supplement 13
<u>9.2.1</u>	Essential Raw Cooling Water and Raw Cooling Water Systems NUREG-0847 Supplement 0 NUREG-0847 Supplement 18
9.2.2	Component Cooling System (Reactor Auxiliaries Cooling Water System) NUREG-0847 Supplement 0 NUREG-0847 Supplement 5
9.2.3	Demineralized Water Makeup System NUREG-0847 Supplement 0
9.2.4	Potable and Sanitary Water Systems NUREG-0847 Supplement 0
9.2.5	Ultimate Heat Sink NUREG-0847 Supplement 0
9.2.6	Condensate Storage Facilities NUREG-0847 Supplement 0
9.3.1	Compressed Air System NUREG-0847 Supplement 0
<u>9.3.2</u>	Process Sampling System NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 14
9.3.3	Equipment and Floor Drainage System NUREG-0847 Supplement 0
9.3.4	Chemical and Volume Control System NUREG-0847 Supplement 0

	0847 and Supplemental Safety Evaluations Topic Inventory ar Nuclear Plant Unit 2
Subsection	Title
9.4.1	Control Room Area Ventilation System NUREG-0847 Supplement 0
9.4.2	Fuel Handling Area Ventilation System NUREG-0847 Supplement 0
9.4.3	Auxiliary and Radwates Area Ventilation System NUREG-0847 Supplement 0
9.4.4	Turbine Building Area Ventilation System NUREG-0847 Supplement 0
9.4.5	Engineered Safety Features Ventilation System NUREG-0847 Supplement 0 NUREG-0847 Supplement 9 NUREG-0847 Supplement 10 NUREG-0847 Supplement 11 NUREG-0847 Supplement 16
<u>9.5.1</u>	Fire Protection NUREG-0847 Supplement 0 NUREG-0847 Supplement 18 NUREG-0847 Supplement 19
9.5.2	Communication Systems NUREG-0847 Supplement 0 NUREG-0847 Supplement 5
9.5.3	<u>Lighting System</u> NUREG-0847 Supplement 0
<u>9.5.4</u>	Emergency Diesel Engine Fuel Oil Storage and Transfer System NUREG-0847 Supplement 0 NUREG-0847 Supplement 5
<u>9.5.5</u>	Emergency Diesel Engine Cooling Water System NUREG-0847 Supplement 0 NUREG-0847 Supplement 5

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 9.5.6	Title Emergency Diesel Engine Starting Systems NUREG-0847 Supplement 0 NUREG-0847 Supplement 5	
9.5.7	Emergency Diesel Engine Lubricating Oil System NUREG-0847 Supplement 0 NUREG-0847 Supplement 5	
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System NUREG-0847 Supplement 0 NUREG-0847 Supplement 5	
<u>10.1.0</u>	Summary Description NUREG-0847 Supplement 0	
<u>10.2.1</u>	Turbine Generator Design NUREG-0847 Supplement 0	
10.2.2	Turbine Disc Integrity NUREG-0847 Supplement 0	
10.3.0	Main Steam Supply System NUREG-0847 Supplement 0	
10.3.1	Main Steam Supply System (up to and including the Main Steam Isolation Valves) NUREG-0847 Supplement 0	
10.3.2	Main Steam Supply System NUREG-0847 Supplement 0	
10.3.3	Steam and Feedwater System Materials NUREG-0847 Supplement 0	
10.3.4	Secondary Water Chemistry NUREG-0847 Supplement 0 NUREG-0847 Supplement 5	
<u>10.4.1</u>	Main Condenser NUREG-0847 Supplement 0	
10.4.2	Main Condenser Evacuation System NUREG-0847 Supplement 0	

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 10.4.3	Title Turbine Gland Sealing System NUREG-0847 Supplement 0	
10.4.4	Turbine Bypass System NUREG-0847 Supplement 0	
10.4.5	Condenser Circulating Water System NUREG-0847 Supplement 0	
10.4.6	Condensate Cleanup System NUREG-0847 Supplement 0	
10.4.7	Condensate and Feedwater Systems NUREG-0847 Supplement 0	
10.4.8	Steam Generator Blowdown System NUREG-0847 Supplement 0	
10.4.9	Auxiliary Feedwater System NUREG-0847 Supplement 0	
<u>11.1.0</u>	Summary Description NUREG-0847 Supplement 0 NUREG-0847 Supplement 16	
11.2.0	<u>Liquid Waste Management</u> NUREG-0847 Supplement 0 NUREG-0847 Supplement 4 NUREG-0847 Supplement 16	
11.3.0	Gaseous Waste Management NUREG-0847 Supplement 0 NUREG-0847 Supplement 8 NUREG-0847 Supplement 16	
<u>11.4.0</u>	Solid Waste Management System NUREG-0847 Supplement 0 NUREG-0847 Supplement 16	

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

Subsection Title

11.5.0 Process and Effluent Radiological Monitoring and Sampling Systems

NUREG-0847 Supplement 0 NUREG-0847 Supplement 16 NUREG-0847 Supplement 20

11.6.0 Evaluation Findings

NUREG-0847 Supplement 16

11.7.0 NUREG-0737 Items

NUREG-0847 Supplement 0 NUREG-0847 Supplement 5 NUREG-0847 Supplement 6

11.7.1 Wide Range Noble Gas, Iodine, and Particulate Effluent Monitors (II.F.1(1) and II.F.1(2))

NUREG-0847 Supplement 5 NUREG-0847 Supplement 15

11.7.2 Primary Coolant Outside Containment (III.D.1.1)

NUREG-0847 Supplement 5 NUREG-0847 Supplement 10 NUREG-0847 Supplement 16

12.1.0 General

NUREG-0847 Supplement 0 NUREG-0847 Supplement 14

12.2.0 Ensuring that Occupational Radiation Doses Are As Low As Reasonably Achievable

NUREG-0847 Supplement 0 NUREG-0847 Supplement 14

12.3.0 Radiation Sources

NUREG-0847 Supplement 0 NUREG-0847 Supplement 14

12.4.0 Radiation Protection Design Features

NUREG-0847 Supplement 0 NUREG-0847 Supplement 10 NUREG-0847 Supplement 14 NUREG-0847 Supplement 18

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection	n <u>Title</u>	
<u>12.5.0</u>	<u>Dose Assessment</u>	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 14	
12.6.0	Health Physics Program	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 10	
	NUREG-0847 Supplement 14	
<u>12.7.1</u>	Plant Shielding (II.B.2)	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 14	
	NUREG-0847 Supplement 16	
12.7.2	High Range Incontainment Monitor (II.F.1(3))	
	NUREG-0847 Supplement 5	
12.7.3	Inplant Radioiodine Monitor (III.D.3.3)	
	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 16	
<u>13.1.1</u>	Management and Technical Organization	
	NUREG-0847 Supplement 0	
13.1.2	Corporate Organization and Technical Support	
<u></u>	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 8	
<u>13.1.3</u>	Plant Staff Organization	
10.1.0	NUREG-0847 Supplement 0	
	NUREG-0847 Supplement 8	
	NOINEG-0047 Supplement o	
<u>13.2.1</u>	Licensed Operator Training Program	
	NUREG-0847 Supplement 0	
13.2.2	Training for Nonlicensed Personnel	
	NUREG-0847 Supplement 0	

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

Subsection Title

13.3.1 Introduction

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13 NUREG-0847 Supplement 20

13.3.2 Evaluation of the Emergency Plan

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13 NUREG-0847 Supplement 20

13.3.3 Conclusions

NUREG-0847 Supplement 0 NUREG-0847 Supplement 13 NUREG-0847 Supplement 20

13.4.0 Review and Audit

NUREG-0847 Supplement 0 NUREG-0847 Supplement 8

13.5.1 Administrative Procedures

NUREG-0847 Supplement 0 NUREG-0847 Supplement 9 NUREG-0847 Supplement 10

13.5.2 Operating and Maintenance Procedures

NUREG-0847 Supplement 0 NUREG-0847 Supplement 9 NUREG-0847 Supplement 10

13.5.3 NUREG-0737 Items

NUREG-0847 Supplement 0 NUREG-0847 Supplement 3

13.6.0 Physical Security Plan

NUREG-0847 Supplement 0 NUREG-0847 Supplement 10 NUREG-0847 Supplement 15

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

C	hone	ction	Title
ou	usec	Juon	riue

14.0.0 Initial Test Program

NUREG-0847 Supplement 0

NUREG-0847 Supplement 3

NUREG-0847 Supplement 5

NUREG-0847 Supplement 7

NUREG-0847 Supplement 9

NUREG-0847 Supplement 10

NUREG-0847 Supplement 12

NUREG-0847 Supplement 14

NUREG-0847 Supplement 16

NUREG-0847 Supplement 18

NUREG-0847 Supplement 19

15.1.0 General Discussion

NUREG-0847 Supplement 0

15.2.0 Normal Operation and Anticipated Transients

NUREG-0847 Supplement 0

15.2.1 Loss of Cooling Transients

NUREG-0847 Supplement 0

NUREG-0847 Supplement 13

NUREG-0847 Supplement 14

15.2.2 <u>Increased Cooling Transients</u>

NUREG-0847 Supplement 0

15.2.3 Change in Coolant Inventory Transients

NUREG-0847 Supplement 0

NUREG-0847 Supplement 18

15.2.4 Reactivity and Power Distribution Anomalies

NUREG-0847 Supplement 0

NUREG-0847 Supplement 4

NUREG-0847 Supplement 7

NUREG-0847 Supplement 13

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2		
Subsection 15.2.5	<u>Title</u> Conclusions NUREG-0847 Supplement 0 NUREG-0847 Supplement 4	
<u>15.3.0</u>	<u>Limiting Accidents</u> NUREG-0847 Supplement 0	
<u>15.3.1</u>	Loss-of-Coolant Accident NUREG-0847 Supplement 0 NUREG-0847 Supplement 12 NUREG-0847 Supplement 15	
<u>15.3.2</u>	Steamline Break NUREG-0847 Supplement 0 NUREG-0847 Supplement 14	
<u>15.3.3</u>	Feedwater System Pipe Break NUREG-0847 Supplement 0 NUREG-0847 Supplement 14	
<u>15.3.4</u>	Reactor Coolant Pump Rotor Seizure NUREG-0847 Supplement 0 NUREG-0847 Supplement 14	
<u>15.3.5</u>	Reactor Coolant Pump Shaft Break NUREG-0847 Supplement 0 NUREG-0847 Supplement 14	
<u>15.3.6</u>	Anticipated Transients Without Scram NUREG-0847 Supplement 0 NUREG-0847 Supplement 3 NUREG-0847 Supplement 5 NUREG-0847 Supplement 6 NUREG-0847 Supplement 10 NUREG-0847 Supplement 11 NUREG-0847 Supplement 11	

<u>15.3.7</u> <u>Conclusions</u>

NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

Subsection Title

15.4.0 Radiological Consequences of Accidents

NUREG-0847 Supplement 0

15.4.1 Loss-of-Coolant Accident

NUREG-0847 Supplement 0

NUREG-0847 Supplement 5

NUREG-0847 Supplement 9

NUREG-0847 Supplement 15

NUREG-0847 Supplement 18

15.4.2 Main Steamline Break Outside of Containment

NUREG-0847 Supplement 0

NUREG-0847 Supplement 18

<u>15.4.3</u> <u>Steam Generator Tube Rupture</u>

NUREG-0847 Supplement 0

NUREG-0847 Supplement 3

NUREG-0847 Supplement 5

NUREG-0847 Supplement 12

NUREG-0847 Supplement 14

NUREG-0847 Supplement 15

15.4.4 Control Rod Ejection Accident

NUREG-0847 Supplement 0

NUREG-0847 Supplement 15

15.4.5 Fuel-Handling Accident

NUREG-0847 Supplement 0

NUREG-0847 Supplement 4

NUREG-0847 Supplement 15

15.4.6 Failure of Small Line Carrying Coolant Outside Containment

NUREG-0847 Supplement 0

NUREG-0847 Supplement 15

15.4.7 Postulated Radioactive Releases as a Result of Liquid Tank Failures

NUREG-0847 Supplement 0

	-0847 and Supplemental Safety Evaluations Topic Inventory ar Nuclear Plant Unit 2
Subsection	<u>Title</u>
<u>15.5.1</u>	Thermal Mechanical Report (II.K.2.13) NUREG-0847 Supplement 0 NUREG-0847 Supplement 4
<u>15.5.2</u>	Voiding in the Reactor Coolant System During Transients (II.K.2.17) NUREG-0847 Supplement 0 NUREG-0847 Supplement 4
<u>15.5.3</u>	Installation and Testing of Automatic Power-Operated Relief Valve Isolation System (II.K.3.1) Report on Overall Safety Effect of Power-Operated Relief Valve Isolation System (II.K.3.2) NUREG-0847 Supplement 0 NUREG-0847 Supplement 5
<u>15.5.4</u>	Automatic Trip of Reactor Coolant Pumps (II.K.3.5) NUREG-0847 Supplement 0 NUREG-0847 Supplement 4 NUREG-0847 Supplement 5 NUREG-0847 Supplement 16
<u>15.5.5</u>	Small-Break LOCA Methods (II.K.3.30) and Plant-Specific Calculations (II.K.3.31) NUREG-0847 Supplement 0 NUREG-0847 Supplement 4 NUREG-0847 Supplement 5 NUREG-0847 Supplement 16
<u>15.6.0</u>	Relative Risk of Low Power Operation NUREG-0847 Supplement 0
<u>16.0.0</u>	Technical Specifications NUREG-0847 Supplement 0
<u>17.1.0</u>	General NUREG-0847 Supplement 0 NUREG-0847 Supplement 5
<u>17.2.0</u>	<u>Organization</u>

NUREG-0847 Supplement 0 NUREG-0847 Supplement 5 NUREG-0847 Supplement 13

Page 27 of 28

Table 7. NUREG-0847 and Supplemental Safety Evaluations Topic Inventory Watts Bar Nuclear Plant Unit 2

SII	bsection	Title
ou	DSECTION	HILLE

17.3.0 Quality Assurance Program

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 5 NUREG-0847 Supplement 10 NUREG-0847 Supplement 13 NUREG-0847 Supplement 15

17.4.0 Conclusions

NUREG-0847 Supplement 0 NUREG-0847 Supplement 2 NUREG-0847 Supplement 5 NUREG-0847 Supplement 13

<u>18.1.0</u> General

NUREG-0847 Supplement 0 NUREG-0847 Supplement 16

18.2.0 Conclusions

NUREG-0847 Supplement 0 NUREG-0847 Supplement 16

20.0.0 Common Defense and Security

NUREG-0847 Supplement 0

21.0.0 Financial Qualifications

NUREG-0847 Supplement 0

22.1.0 General

NUREG-0847 Supplement 0

22.2.0 Preoperational Storage of Nuclear Fuel

NUREG-0847 Supplement 0

22.3.0 Operating Licenses

Table 8. NUREG-0847 Supplements Not Addressed By TVA

Subsection 3.2.1	Title Seismic Qualification Does not address SSER 6 and 8
3.2.2	System Quality Group Classification Does not address SSER 3, 6, 7, and 9
3.5.1	Missile Selection and Description Does not address SSER 9 and 14
3.6.2	Determination of Break Locations and Dynamic Effects Associated with the Postulated Rupture of Piping Does not address SSER 14
3.7.1	Seismic Input Does not address SSER 9, and 16
3.7.2	Seismic Analysis Does not address SSER 16
3.8.1	Steel Containment Not addressed in SSER 9
3.9.2	Dynamic Testing and Analysis of Systems, Components, and Equipment Does not address SSER 14
3.9.3	ASME Code Class 1, 2, and 3 Components, Component Structures, and Core Support Structures Does not address SSER 15
3.9.6	Inservice Testing of Pumps and Valves Does not address SSER 20
4.2.1	Description Does not address SSER 13
4.2.3	Mechanical Performance Does not address SSER 10 and 13
4.3.2	Design Description Does not address SSER 13 and 15
4.3.3	Analytical Methods Does not address SSER 13
4.3.4	Summary of Evaluation Findings Does not address SSER 13

Table 8, continued. NUREG-0847 Supplements Not Addressed By TVA

Subsection Title

4.4.2 Design Bases

Does not address SSER 12

4.4.3 Thermal-Hydraulic Design Methodology

Does not address SSER 8, 12, 13, and 16

5.2.5 Reactor Coolant Pressure Boundary Leakage Detection

Does not address SSER 9, 11, and 12

5.4.3 Residual Heat Removal System

Does not address SSER 10

6.2.4 Containment Isolation System

Does not address SSER 12

6.2.5 Combustible Gas Control Systems

Does not address SSER 4 and 8

6.3.1 System Design

Does not address SSER 11

6.3.2 Evaluation

Does not address SSER 5

7.1.1 General

Does not address SSER 13 and 16

7.2.1 System Description

Does not address SSER 13 and 15

7.3.6 Conclusions

Does not address SSER 13

7.4.2 Safe Shutdown from Auxiliary Control Room

Does not address SSER 7

7.7.2 Safety System Status Monitoring System

Does not address SSER 13

7.7.8 Anticipated Transient Without Scram Mitigation System Actuation Circuitry

(AMSAC)

Does not address SSER 14

7.8.1 Relief and Safety Valve Position Indication (II.D.3)

Does not address SSER 5 and 14

8.3.1 Onsite AC Power System Compliance With GDC 17

Does not address SSER 13

Table 9	continued
-	continued. 0847 Supplements Not Addressed By TVA
Subsection	Title
	Spent Fuel Storage Does not address SSER 5, 15, and 16
9.2.4	Potable and Sanitary Water Systems Does not address SSER 9
9.2.6	Condensate Storage Facilities Does not address SSER 12
9.3.2	Process Sampling System Does not address SSER 16
9.5.4	Emergency Diesel Engine Fuel Oil Storage and Transfer System Does not address SSER 9, 10, 11, and 12
9.5.5	Emergency Diesel Engine Cooling Water System Does not address SSER 11
9.5.6	Emergency Diesel Engine Starting Systems Does not address SSER 10
9.5.7	Emergency Diesel Engine Lubricating Oil System Does not address SSER 10
9.5.8	Emergency Diesel Engine Combustion Air Intake and Exhaust System Does not address SSER 10
10.2.0	Turbine Generator Does not address SSER 5
10.2.1	Turbine Generator Design Does not address SSER 12
10.3.1	Main Steam Supply System (up to and including the Main Steam Isolation Valves) Does not address SSER 12 and 19
10.4.1	Main Condenser Does not address SSER 9
10.4.4	Turbine Bypass System Does not address SSER 5
10.4.7	Condensate and Feedwater Systems Does not address SSER 14

10.4.9 Auxiliary Feedwater System

Does not address SSER 14

•	continued. 0847 Supplements Not Addressed By TVA
Subsection 11.7.0	Title NUREG-0737 Items Does not address SSER 5 or 6
13.5.2	Operating and Maintenance Procedures Does not address SSER 10
14.0.0	Initial Test Program Does not address SSER 16, 18, and 19
15.2.1	Loss of Cooling Transients Does not address SSER 13 and 14
15.2.3	Change in Coolant Inventory Transients Does not address SSER 18
15.2.4	Reactivity and Power Distribution Anomalies Does not address SSER 7, 13, and 14
15.3.1	Loss-of-Coolant Accident Does not address SSER 12 and 15
15.3.2	Steamline Break Does not address SSER 14
15.3.3	Feedwater System Pipe Break Does not address SSER 14
15.3.4	Reactor Coolant Pump Rotor Seizure Does not address SSER 14
15.3.5	Reactor Coolant Pump Shaft Break Does not address SSER 14
15.3.6	Anticipated Transients Without Scram Does not address SSER 6, 10, 11, 12
15.4.1	Loss-of-Coolant Accident Does not address SSER 5, 9, 15, and 18
15.4.2	Main Steamline Break Outside of Containment Does not address SSER 18
15.4.3	Steam Generator Tube Rupture Does not address SSER 15
15.4.4	Control Rod Ejection Accident Does not address SSER 15

Table 8, continued. NUREG-0847 Supplements Not Addressed By TVA

Subsection Title

15.4.5 Fuel-Handling Accident

Does not address SSER 4 and 15

- 15.4.6 Failure of Small Line Carrying Coolant Outside Containment Does not address SSER 15
- 15.4.7 Postulated Radioactive Releases as a Result of Liquid Tank Failures
 Does not address SSER 15
- 17.1.0 General

 Does not address SSER 5
- 17.3.0 Quality Assurance Program

 Does not address SSER 2, 5, 10, 13, and 15
- 17.4.0 Conclusions

 Does not address SSER 2, 5, and 13