

BFN-16

TABLE 1.11-1

(Sheet 1)

BROWNS FERRY NUCLEAR PLANT TOPICAL REPORTS
SUBMITTED TO THE AEC IN SUPPORT OF DOCKET

<u>GE Report No.</u>	<u>Title</u>
1. APED 5286	Design Basis for Critical Heat Flux in Boiling Water Reactors (September 1966)
2. APED 5446	Control Rod Velocity Limiter (March 1967)
3. APED 5449	Control Rod Worth Minimizer (March 1967)
4. APED 5450	Design Provisions for In Service Inspection (April 1967)
5. APED 5453	Vibration Analysis and Testing of Reactor Internals (April 1967)
6. APED 5555	Impact Testing on Collet Assembly for Control Rod Drive Mechanism 7RDB144A (November 1967)
7. TR67SL211	An Analysis of Turbine Missiles Resulting from Last Stage Wheel Failure (October 1967)
8. APED 5608	General Electric Company Analytical and Experimental Program for Resolution of ACRS Safety Concerns (April 1968) (Not Class I)
9. APED 5455	The Mechanical Effects of Reactivity Transients (January 1968)
10. APED 5528	Nuclear Excursion Technology (August 1967)
11. APED 5448	Analysis Methods of Hypothetical Super Prompt Critical Reactivity Transients in Large Power Reactors (April 1968)
12. APED 5458	Effectiveness of Core Standby Cooling Systems for General Electric Boiling Water Reactors (March 1968)
13. APED 5640	Xenon Considerations in Design of Large Boiling Water Reactors (June 1968)
14. APED 5454	Metal Water Reactions Effects on Core Cooling and Containment (March 1968)
15. APED 5460	Design and Performance of General Electric Boiling Water Reactor Jet Pumps (September 1968)
16. APED 5654	Considerations Pertaining to Containment Inerting (August 1968)
17. APED 5696	Tornado Protection for the Spent Fuel Storage Pool (November 1968)
18. APED 5706	In Core Neutron Monitoring System for General Electric Boiling Water Reactors, Rev. 1 (April 1969)
19. APED 5703	Design and Analysis of Control Rod Drive Reactor Vessel Penetrations (November 1968)
20. SPED 5698	Summary of Results Obtained From a Typical Startup and Power Test Program for a General Electric Boiling Water Reactor (February 1969)
21. APED 5750	Design and Performance of General Electric Boiling Water Reactor Main Steam Line Isolation Valves (March 1969)
22. APED 5756	Analytical Methods for Evaluating the Radiological Aspects of the General Electric Boiling Water Reactor (March 1969)
23. APED 5652	Stability and Dynamic Performance of the General Electric Boiling Water Reactor (April 1969)

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BROWNS FERRY NUCLEAR PLANT TOPICAL REPORTS
SUBMITTED TO THE AEC IN SUPPORT OF DOCKET

<u>GE Report No.</u>	<u>Title</u>
24. APED 5736	Guidelines for Determining Safe Test Intervals and Repair Times for Engineered Safeguards (April 1969)
25. APED 5447	Depressurization Performance of the General Electric Boiling Water Reactor High Pressure Coolant Injection System (June 1969)
26. NEDO 10017	Field Testing Requirements for Fuel, Curtains and Control Rods (June 1969)
27. NEDO 10029	An Analytical Study on Battle Fracture of GE-BWR Vessel Subject to the Design Basis Accident (July 1969)
28. NEDO 10045	Consequences of a Steam Line Break for a General Electric Boiling Water Reactor (October 1969)
29. NEDO 10173	Current State of Knowledge High Performance BWR Zircaloy-Clad UO ₂ Fuel (May 1970)
30. NEDO 10139	Compliance of Protection Systems to Industry Criteria: General Electric BWR Nuclear Steam Supply System (June 1970)
31. NEDO 10179	Effects of Cladding Temperature and Material on ECCS Performance (June 1970)
32. NEDO 10174	Consequences of a Postulated Flow Blockage Incident in a Boiling Water Reactor (May 1970)
33. NEDO 10189	An Analysis of Functional Common-Mode Failures in GE BWR Protection and Control Instrumentation (July 1970)
34. NEDO 10208	Effects of Fuel Rod Failure on ECCS Performance (August 1970)
35. NEDO 10320	The General Electric Pressure Suppression Containment Analytical Model (April 1971)
36. NEDO 10320 Supplement 1	The General Electric Pressure Suppression Containment Analytical Model(May 1971)
37. NEDO 10329	Loss-of-Coolant Accident and Emergency Core Cooling Models for General Electric Boiling Water Reactors (April 1971)
38. NEDO 10329 Supplement 1	Loss-of-Coolant Accident and Emergency Core Cooling Models for General Electric Boiling Water Reactors (April 1971)
39. NEDO 10349	Analysis of Anticipated Transients Without Scram (March 1971)

TABLE 1.11-2

(Sheet 1)

BROWNS FERRY NUCLEAR PLANT
AEC-ACRS CONCERNS - RESOLUTIONS

Identification Section No.	AEC-ACRS Concern	Browns Ferry Resolutions
1.2.2	Effects of Fuel Failure on CSCS Performance	Topical Report (GE-APED-5608) Topical Report (NEDO-10208 August 1970)
1.2.3	Effects of Fuel Bundle Flow Blockage	Topical Report (GE-APED-5608) Topical Report (NEDO-10174 July 1970)
1.2.4	Verification of Fuel Damage Limit	Topical Report (GE-APED-5608) Dresden 2/3 - Amendment 14/15 Topical Report (NEDO-10173 May 1970)
1.2.6	Effects of Cladding Temperature and Materials on CSCS Performance	Topical Report (GE-APED-5608) Topical Report (GE-APED-5458) Topical Report (NEDO-10179 June 1970)
1.2.5	Quality Assurance and Inspection of the Reactor Primary System	FSAR (Incorporated in Design - Section 4 and Appendix D)
1.2.7	Control Rod Block Monitor Design	FSAR (Incorporated in Design - Sections 1, 7 and Appendix G) Dresden 2/3 - Amendments 17/18 and 19/20 Brunswick 1/2 - Supplement 5
1.2.8	Station Startup Program	Topical Report (GE-APED-5698) FSAR (Incorporated in Design - Section 13)
1.2.9	Main Steam Line Isolation Valve Testing Under Simulated Accident Conditions	FSAR (Incorporated in Design - Section 4) Topical Report (GE-APED-5750) Topical Report (GE-NEDO-10045) Topical Report (GE-APED-5608)
1.2.10	Performance Testing of the Plant Standby Diesel Generator System	FSAR (Incorporated in Design - Section 8) General Motors Report
1.2.11	Formulation of an In-Service Inspection Program	FSAR (Incorporated in Design - Section 4) Technical Specifications - Sections 3/4)
1.2.12	Diversification of CSCS Initiation Signals	FSAR (Incorporated in Design - Sections 6 and 7)
1.2.13	Control Systems for Emergency Power	FSAR (Incorporated in Design - Section 8)
1.2.14	Misorientation of Fuel Assemblies	FSAR (Incorporated in Design - Section 3)
1.2.15	Concern of Dr. Stephen H. Hanauer - emergency power and Core Standby Cooling Systems	FSAR (Incorporated in Design - Sections 6, 8 and 14, Appendix I)

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(Sheet 2)

BROWNS FERRY NUCLEAR PLANT
AEC-ACRS CONCERNS - RESOLUTIONS

Identification Section No.	AEC-ACRS Concern	Browns Ferry Resolutions
1.2.16	Fuel Clad Disintegration Limitations	FSAR (Incorporated in Design - Section 6) Topical Report (GE-APED-5608) Dresden 2/3 - Amendment 7/8
1.2.17	General concerns with regard to reactors of high power density and all large water-cooled power reactors	FSAR (Incorporated in Design - Appendix I)

TABLE 1.11-3

(Sheet 1)

BROWNS FERRY NUCLEAR PLANT UNITS 1 AND 2
AEC-STAFF CONCERNS - RESOLUTIONS

Identification Section No.	AEC-Staff Concern	Resolutions
1.3.2.1	Units 1 and 2 ACRS concerns	FSAR Appendix I, subsection 1.2
1.3.2.2	Core Spray Cooling Effectiveness	FSAR (Incorporated in Design Section 6) Topical Report (GE-APED-5458)
1.3.2.3a	Reliability of CSCS Injection Valves	FSAR (Incorporated in Design - Section 4, 6 and 7)
1.3.2.3b	Diversification of the CSCS Initiation Signals	FSAR (Incorporated in Design - Sections 6 and 7)
1.3.2.3c	Sequencing of CSCS	FSAR (Incorporated in Design - Sections 6 and 8)
1.3.2.3d	Core Spray Cooling Effectiveness	(See 1.3.2.2 above)
1.3.2.3e	Performance Testing of the Standby Diesel Generator System	FSAR (Incorporated in Design - Section 8) General Motors Report
1.3.2.3f	Fuel Failure Modes	FSAR (Incorporated in Design - Sections 6, 7, 14 and Appendix A) Topical Report (GE-APED-5652) Topical Report (GE-APED-5756) Topical Report (GE-APED-5448) Topical Report (GE-APED-5528) Topical Report (GE-APED-5455) Topical Report (GE-APED-5608) Topical Report (GE-APED-5458) Topical Report (NEDO 10208 August 1970) Topical Report (NEDO 10174 July 1970) Topical Report (NEDO 10173 May 1970) Topical Report (NEDO 10179 June 1970) Dresden 2/3 Amendment 7/8
1.3.2.4	Control Rod Block Monitor Design	FSAR (Incorporated in Design - Sections 1, 7 and Appendix G) Dresden 2/3 Amendments 17/18 and 19/20 Brunswick 1/2 Supplement 5
1.3.2.5	Core Cooling	FSAR (Incorporated in Design - Section 6) Topical Report (GE-APED-5458)
1.3.2.6	Control Rod Worth Minimizer	Topical Report (GE-APED-5449) FSAR (Incorporated in Design - Section 7)
1.3.2.7	Control Rod Velocity Limiter	Topical Report (GE-APED-5446) FSAR (Incorporated in Design - Section 3)

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BROWNS FERRY NUCLEAR PLANT UNITS 1 AND 2
AEC-STAFF CONCERNS - RESOLUTIONS

Identification Section No.	AEC-Staff Concern	Resolutions
1.3.2.8	In-Core Nuclear Instrumentation	Topical Report (GE-APED-5456) Topical Report (GE-APED-5706) FSAR (Incorporated in Design - Section 7)
1.3.2.9	Jet Pump Development	Topical Report (GE-APED-5460)
1.3.2.10.1	Core Analytical Models	FSAR (Incorporated in Design - Sections 6, 7 and 14) Topical Report (GE-APED-5652) Topical Report (GE-APED-5756) Topical Report (GE-APED-5448) Topical Report (GE-APED-5528) Topical Report (GE-APED-5455) Dresden 2/3 Amendment 10/11
1.3.2.10.2	Fuel Failure Modes	(See 1.3.2.3f above)
1.3.2.10.3	Electrical Load Control Using Variable Speed Reactor Coolant Recirculation System Pumps	FSAR (Incorporated in Design - Section 7) Startup Test Results Oyster Creek No. 1 Nine Mile Point No. 1 Dresden No. 2 Millstone No. 1
1.3.2.10.4	Diversification of the CSCS Initiation Signals	(See 1.3.2.3b above)
1.3.2.10.5	Main Steam Line Isolation Valve Testing Under Simulated Accident Conditions	FSAR (Incorporated in Design - Section 4) Topical Report (GE-APED-5750) Topical Report (GE-NEDO-10045) Topical Report (GE-APED-5608)
1.3.2.10.6	Performance Testing of the Station Standby Diesel Generator System	(See 1.3.2.3e above)

TABLE 1.11-4

BROWNS FERRY NUCLEAR PLANT UNIT 3
AEC-STAFF CONCERNS - RESOLUTIONS

Identification Section No.	AEC-Staff Concern	Resolutions
1.3.3.1	Performance Testing of the Standby Diesel Generator System	(See 1.3.2.3e above, Table 1.11-3)
1.3.3.2	Reactor Building Basement Corner Room Flooding	FSAR (Incorporated in Design - Section 4)
1.3.3.3	Automatic Pressure Relief System Initiation Interlock	FSAR (Incorporated in Design - Sections 6 and 7)
1.3.3.4	Criterion 35 Intent	FSAR (Incorporated in Design - Section 4 Appendix A)
1.3.3.5	RPV-Stub Tube Design	FSAR (Incorporated in Design - Section 4) Topical Report (GE-APED-5703)
1.3.3.6	Requirements for Further Technical Information from Unit 1 and 2 C.P.	(See Table 1.11-3)
1.3.3.7	CSCS Thermal Effects on The Reactor Vessel and Internals	Topical Report (GE-NEDO-10029) FSAR (Incorporated in Design - Sections 3 and 4)
1.3.3.8	Depressurization Performance of HPCIS	FSAR (Incorporated in Design - Section 6) Topical Report (GE-APED-5608) Topical Report (GE-APED-5447)
1.3.3.9	Electrical Equipment Inside Containment	FSAR (Incorporated in Design - Section 7)
1.3.3.10	Primary System Leakage Detection	FSAR (Incorporated in Design - Sections 4 and 10)

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(Sheet 1)

AEC ACRS CONCERNS ON OTHER DOCKETS - RESOLUTIONS

Identification Section No.	AEC-ACRS Concern	Resolutions
1.4.2	Ring Header Leakage Design	FSAR (Incorporated in Design - Sections 4, 5 and 6)
1.4.3	CSCS Thermal Effects on The Reactor Vessel and Internals	Topical Report (GE-NEDO-10029) FSAR (Incorporated in Design - Sections 3 and 4)
1.4.4	Effects of Blowdown Forces on Reactor Primary System Components	FSAR (Incorporated in Design - Sections 3, 4 and Appendix C)
1.4.5	Separation of Control and Protection System Functions	FSAR (Incorporated in Design - Sections 6, 7 and Appendix A)
1.4.6	Instrumentation For Prompt Detection of Gross Fuel Failures	FSAR (Incorporated in Design - Section 7) Brunswick 1/2 - Supplements 3 and 4
1.4.7	Design of Piping Systems to Withstand Earthquake Forces	FSAR (Incorporated in Design - Section 12 and Appendix C) Dresden 2/3 - Amendment 13/14
1.4.8	LPCIS - Logic Control System Design	FSAR (Incorporated in Design - Section 6)
1.4.9	Reevaluation of Main Steam Line Break Accident	Topical Report (GE-APED-5608) Topical Report (NEDO-10045) FSAR (Incorporated in Design - Section 14)
1.4.10	Depressurization Performance of HPCIS	FSAR (Incorporated in Design - Section 6) Topical Report (GE-APED-5608) Topical Report (GE-APED-5447)
1.4.11	AEC General Design Criteria No. 35 Intent Design Conformance	FSAR (Incorporated in Design - Section 4)
1.4.12	Automatic Pressure Relief System Initiation Interlock	FSAR (Incorporated in Design - Sections 6 and 7)
1.4.13	Scram Reliability Study	FSAR (Incorporated in Design - Sections 3 and 7) Study Results (To be Available Early 1970) Brunswick 1/2, Supplement 6
1.4.14	Design Basis of Engineered Safety Features	Topical Report (GE-APED-5756) FSAR (Examined Capability of Design - Section 14)

TABLE 1.11-5 (Cont')

(Sheet 2)

AEC ACRS CONCERNS ON OTHER DOCKETS - RESOLUTIONS

Identification Section No.	AEC-ACRS Concern	Resolutions
1.4.15	Hydrogen Generation Study	Topical Report (GE-APED-5454) Topical Report (GE-APED-5654) Brunswick 1/2, Supplement 4 Study Results (To be Available Middle 1970)
1.4.16	Primary Containment Inerting	Topical Report (GE-APED-5454) Topical Report (GE-APED-5654) FSAR (Incorporate in Design - Sections 5 and 6) Dresden 2 - ACRS Letter, 9/10/69)
1.4.17	Seismic Design and Analysis Models	FSAR (Re-Confirmation of Design - Section 12 and Appendix C) Dresden 2 - Re-Confirmation Information (submitted October 1969)
1.4.18	Automatic Pressure Relief System Single Component Failure Capability Manual Operation	FSAR (Incorporated in Design - Sections 6 and 8)
1.4.19	Matters of Current Regulatory Staff Applicant Discussion	
	(a) Standby Gas Treatment System Electrical and Physical Separation	FSAR (Incorporated in Design - Sections 5, 7, and 8)
	(b) Official, Issued Technical Specifications - License Appendix A	Proposed Technical Specifications Appendix B
1.4.20	Flow Reference Scram	FSAR (Incorporated in Design - Section 7)
1.4.21	Future Items of Consideration for Incorporation	
	(a) Radiolytic Decomposition of Cooling Water	Topical Report (GE-APED-5454) Topical Report (GE-APED-5654) Brunswick 1/2, Supplement 4 Study Results (To be Available Middle 1970)
	(b) Development of Instrumentation Vibration and Loose Parts Detection	FSAR (Justified Design - Sections 3, 4 and Appendix C)
	(c) Consequences of Water Contamination Structural Material - LOCA	FSAR (Incorporated in Design - Section 14)
1.4.22	Diesel Generator Synchronization Considerations	FSAR (Incorporated in Design - Sections 6, 7, and 8)

TABLE 1.11-5 (Cont'd)

(Sheet 3)

AEC ACRS CONCERNS ON OTHER DOCKETS - RESOLUTIONS

Identification Section No.	AEC-ACRS Concern	Resolutions
1.4.23	Development of Instrumentation Primary Containment Leakage Detection System Increased Sensitivity Studies	FSAR (Justified Design - Section 4) Technication Specification - Appendix B Sections 3 and 4)
1.4.24	Development of Instrumentation - Vibration and Loose Parts Detection Studies	FSAR (Justified Design - Sections 3, 4, and Appendix C)
1.4.25	CSCS - Leakage Detection, Protection, and Isolation Capability	FSAR (Justified in Design - Sections 4, 10 and Appendix A) Brunswick 1/2 - Supplement 4, C/R 6.4
1.4.26	Main Steam Lines - Standards For Fabrication, Q/C and Inspection	FSAR paragraph 1.4.2.6

TABLE 1.11-6

AEC ACRS CONCERNS ON OTHER DOCKETS - CAPABILITY FOR RESOLUTION

Identification Section No.	AEC-Staff Concern	Capability for Resolution
1.5.2	Tornado and Missile Protection GE BWR-Spent Fuel Storage Pool	FSAR (Incorporated in Design - Sections 2, 10, and 12) Topical Report (GE-APED-5696)
1.5.3	BWR System Stability Analysis	FSAR (Incorporated in Design - Section 7) Topical Report (GE-APED-5652) Topical Report (GE-APED-5640) Peach Bottom 2/3 - Amendment 2