GENERAL ELECTRIC

NUCLEAR ENERGY

PROJECTS DIVISION

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MFN 424-78

November 30, 1978

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: H. R. Denton, Director

Gentlemen:

SUBJECT: IN THE MATTER OF EXTENSION OF PRELIMINARY DESIGN APPROVAL FOR THE GENERAL ELECTRIC STANDARD SAFETY ANALYSIS REPORT (GESSAR), DOCKET NO. STN 50-447

Reference:
1) Letter to Edson G. Case from Glenn G. Sherwood, March 20, 1978, Application for Extension of Preliminary Design Approvals
2) Letter to Glenn G. Sherwood from Roger S. Boyd, October 13, 1978, Extension Review Matters for Preliminary Design Approvals

Enclosed, please find three (3) original copies (transmitted under separate cover are 60 conformed copies) of Amendment No. 46 to the General Electric Standard Safety Analysis Report (238 Nuclear Island GESSAR) for the above numbered application.

In GE's letter of March 20, 1978 (Reference 1), General Electric requested an extension of the Preliminary Design Approvals (PDA's) for each of the GESSAR dockets.

On October 13, 1978, the NRC issued a letter (Reference 2) stating that each application for a PDA extension will be subject to an assessment of the design with respect to regulatory guidance issued since the regulatory requirements cutoff date for the PDA in question. This letter included a tabulation of each Category I II, III and IV matters approved since the March 1, 1974, the regulatory requirements cutoff date for the GESSAR-238 Nuclear Island.

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This amendment contains General Electric's assessments of the Category I, II, III and IV matters against the GESSAR-238 Nuclear Island Design in the form of a new Appendix C. We have also provided a listing of these matters in Attachment 1 which identifies their applicability to the NSSS scope. In view of the fact that the 251 and 238 size BWRs contain identical NSSS designs (except for size differences), and since the regulatory guide cutoff date of October 1975 has been applied to each of the NSSS designs, we request that the NRC Staff conduct one review of the NSSS for each of the three GESSARs (238 NI, 251 NSSS, and 238 NSSS). Accordingly, submittal of the 238 Nuclear Island assessment package (Appendix C) will provide the basis for the NRC Staff granting extensions of PDA-1, PDA-9, and PDA-10. We believe conducting a common review of the three identical NSSS designs on the NI GESSAR docket optimizes the staff review time and furthers the benefits of standardization.

As you recall, the Nuclear Island GESSAR incurred the most thorough, exhaustive, and detailed review ever conducted on the BWR. It is not surprising, then, that our review of the Category I, II, III and IV matters revealed that each of the matters were previously treated during the PDA review. We have found that the Nuclear Island GESSAR design incorporates resolution of the concerns enumerated in the Staff regulatory guidance provided in the enclosure to the October 13, 1978 letter. We have found the design to be acceptable as demonstrated in the assessments contained in Appendix C without requiring design changes to our previously reviewed GESSAR designs.

Your letter of October 13, 1978, states that the Commission has under consideration the matter of whether licensing fees will be assessed for PDA extensions. General Electric strongly believes that fees should not be assessed. It is now apparent that, because of the low number of new applications submitted to the NRC during the approval period, the present three year approval duration does not allow a reasonable return on investment. Both the staff and the industry have invested substantial resources to stabilize the licensing process through standardization. Accordingly, we believe the Commission should encourage further use of standardization by not assessing fees for extending the current PDA's to a full five year duration.

We believe Amendment 46 contains sufficient information as required to enable the staff to issue PDA extensions for all three GESSARs prior to December 22, 1978, the expiration date for the Nuclear Island GESSAR.

In addition, we would be pleased to meet with members of your staff to discuss the procedural requirements for extending the PDAs and to obtain clarification of the fee aspects of the PDA extensions. It is our desire that this meeting be held in early December 1978.

Very truly yours,

Glenn G. Sherwood, Manager
Safety & Licensing Operation

GGS:mh/1652-1654

Attachment

cc: R. S. Boyd (w/o Attachment)
R. J. Mattson (w/o Attachment)
C. J. Heltemes (w/o Attachment)
W. F. Kane
L. S. Gifford

ATTACHMENT I

LIST OF PDA ASSESSMENT MATTERS
AND
THEIR SCOPE

Category I Matters		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.7	Control of Combustible Gas		X
1.9	Diesel-Generator Design		X
1.20	Preop Vibration Testing of RPV Internals	X	X
1.28	Quality Assurance Program Requirements (Design & Constr.)	X	X
1.29	Seismic Design Classification	X	X
1.31	Control of Ferrite in Welds	X	X
1.32	Electric Power Systems	X	X
1.33	QA Program Requirements (Operation)	X	X
1.35	Inspection of Prestressed Concrete	NA	
1.38	QA (Packaging, Shipping, etc.)	X	X
1.39	Housekeeping	(Applicant)	
1.52	Criteria for ESF Filter Systems		X
1.63	Containment Electric Penetrations	X	X
1.64	QA Requirements for Design	X	X
1.68	Initial Preop and Starup Tests	X	X
1.68.1	Test of Feedwater System	X	X
1.72	Spray Pond Plastic Piping	Applicant	
1.84	Code Case Acceptability (Design)	X	X
1.85	Code Case Acceptability (Material)	X	X
1.90	Inspection Prestressed Concrete	NA	

Category I Matters (Con't)		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.92	Combining Seismic Responses and Special Components	X	X
1.94	QA - Structural Concrete & Steel		X
1.95	Control Room Protection - Chlorine		X
1.99	RPV Radiation Damage	X	X
1.100	Seismic Qualification of Electric Equipment	X	X
1.103	Post Tensioned Core Stressed Concrete	NA	
1.106	Thermal Overload Protection, Valve Motors	X	X
1.107	Qualifications for Cement Grouting	NA	
1.116	QA - Mechanical Equipment	X	X
1.118	Testing of Electric Power & Protection	X	X
1.120	Fire Protection	X	X
1.122	Floor Design Response Spectra	X	X
1.126	Analysis Methods for Full Densification	X	
1.128	Storage Batteries (Design)	X	X
1.129	Storage Batteries (Maintenance)	X	X
1.131	Tests of Electric Cables, Splices & Connections	Applicant	
1.134	Medical Certification for Operators	Applicant	
1.135	Normal Water Level & Discharge		X
1.136	Material for Conrete Containments	NA	
1.137	Fuel Oil System for Diesels		X
NUREG-0102 (SRP1.8)	Interfaces for Standard Designs	X	X
1.138	Soil Analysis	Applicant	
1.XXX	Permanent Dewatering Systems	Applicant	

Category I Matters (Cont'd)		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.140	Design and Testing of Normal Vent		X
1.142	Safety Related Concrete Structures	X	X
8.19	Occupatonal Dose	X	X
RSB5-2	Reactor Coolant Overpressure Protection	NA	

Category II Matters		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.27	Ultimate Heat Sink		X
1.52	Criteria for ESF Filter Systems		X
1.59	Design Basis Floods		X
1.91	Transportation Route Explosions		X
1.97	Post-Accident Instrumentation	X	X
1.102	Flood Protection		X
1.105	Instrument Setpoints	X	X
1.108	Diesel Generator Testing		
1.115	Protection Against Turbine Missiles		X
1.117	Tornado Design Classification		X
1.124	Design of Class I Linear Components	X	X
1.130	Class I Plate & Shell Component Supports	X	X
1.137	Fuel Oil Systems for Diesels		X
8.8	Occupational Radiation (ALARA)	X	X
BTP-9.5-1	Guidelines for Fire Protection	X	X
BTP-MTLB 5-7	Stress Corrosion Cracking	X	X

Category III Matters		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.56	Maintenance of Water Purity	X	X
1.68.2	Demonstrate Remote Shutdown	X	X
1.99	RPV Radiation Damage	X	X
1.101	Emergency Planning	Applicant	
1.114	Guidance on Being Operator	X	X
1.121	Plugging PWR Steam Generator Tubes	NA	
1.127	Inspection of Water Control Structures	Applicant	
SRP-5.4.7	Residual Heat Removal System	X	X
1.141	Primary Containment Isolation	X	X
RSB-5-2	Overpressure Protection PWR's	NA	

Category IV Matters		Scope	
Regulatory Guide No. & Title		NSSS	NI
1.12	Instrumentation for Earthquakes	X	X
1.13	Input Fuel Storage Facility		X
1.14	Reactor Coolant Pump Flywheel Integrity	NA	
1.75	Physical Independence of Electrical Systems	X	X
1.76	Design Basis Tornado		X
1.79	ECCS Testing - PWR's	NA	
1.80	Preop Test Instrument Air		X
1.82	Containment Sumps		X
1.83	Inspection of Steam Generator Tubes	NA	
1.89	Qualification of IE Equipment	X	X
1.93	Availability of Electric Power Sources		X
1.104	Overload Cranes		X
SRP 5.4.2.1	PWR Water Chemistry	NA	
6.2.1	Containment Functional Design		X
6.2.5	Combustible Gas Control In Containment		X
6.2.3	Secondary Containment Functional Design		X
6.2.4	Containment Isolation System		X
9.1.4	Overhead Fuel Handling System	X	X
10.4.9	Auxiliary Feedwater System (PWR)	NA	
3.5.5	Barrier Design Procedure		X
3.7.1	Seismic Input	X	X
3.7.2	Seismic System Analysis	X	X
3.7.3	Seismic Subsystem Analysis	X	X
3.8.1	Concrete Containment	NA	

Category IV Matters (Cont'd)		Scope	
Regulatory Guide No. & Title		NSSS	NI
3.8.2	Steel Containment		X
3.8.3	Concrete & Steel Internal Structures in Containment	X	X
3.8.4	Other Seismic Category I Structures		X
3.8.5	Design Criteria for Foundations		X
3.7	Seismic Design Requirements	X	X
3.3.2	Tornado Loads Effects	X	X
3.4.2	Dynamic Effects of Wave Action	X	X
10.4.7	Water Hammer for Steam Generators	N/A	
4.4	Thermal-Hydraulic Stability	X	
5.2.5	Reactor Core Pressure Boundary Leakage Detection	X	X
3.2.2	MSIV Leakage Control Systems	X	
3.5.3	Quality of Reinforced Concrete Steel		X
3.7.1	Response Spectra in Vertical Direction		X
3.8.1	BWR Mark III Containment Pool Dynamics		X
3.8.4	Air Blast Loads	X	X
3.5.3	Tornado Missile Impact		X
6.3	Passive Failures During Long Term Cooling LOCA	X	X
15.1.5	Long Term Recovery from Steam Line Break	X	X
5.4.6	Pump Operability Requirements	X	X
3.5.1	Gravity Missiles Inside Containment		X
4.4	Core Thermal Hydraulic Analysis		X
8.3	Degraded Grid Voltage Conditions	Applicant	
6.2.1.2	Asymmetric Loads on Containment Subcompartments		X

Category IV Matters (Cont'd)		Scope	
Regulatory Guide No. & Title		NSSS	NI
6.2.6	Containment Leak Testing		X
6.2.1.4	Containment Response Due to Main Steam Line Break Without MSLIV Closure		X
3.6.1	Main Steam & Feedwater Pipe Failures	X	X
9.222	Design Requirements for Cooling Water to Pumps	X	X
10.4.7	Water Hammer - Steam Generators	N/A	
3.11	Environmental Control System for Safety Related Equipment	X	X