UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of)

General Electric Company) Docket No. STN 50-447

Standard Plant)

AMENDMENT NO. 47 TO APPLICATION

FOR EXTENSION OF GESSAR-238 NUCLEAR ISLAND

General Electric Company, applicant in the above named proceedings, hereby files Amendment No. 47 to the General Electric Standard Safety Analysis Report (238 GESSAR).

Amendment No. 47 consists of the written assessments on four PDA extension items that were inadvertently evaluated to the wrong revision. The original assessment package was submitted as Amendment No. 46 and provides written assessments of the GESSAR 238 Nuclear Island design against Category I, II, III and IV matters approved by the staff since March 1, 1974.

Respectfully Submitted

General Electric Company

By: Glenn G. Sherwood

Glenn G. Sherwood, Manager
Safety & licensing Operation

Subscribed and sworn to before me the 21 day of December 1978.

By: Ruthe M. Kinnamon

RUTHE M. KINNAMON
NOTARY PUBLIC

OFFICIAL SEAL
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My comm. expires MAR 28, 1981

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GENERAL ELECTRIC

APPLICABLE TO	
PUBLICATION NO.	NEDO-10741
TITLE	GENERAL ELECTRIC STANDARD SAFETY ANALYSIS REPORT
ISSUE DATE	April 1973

ERRATA And ADDENDA SHEET

NO. 47

DATE December 1978

NOTE Correct all copies of the applicable publication as specified below.

ITEM	REFERENCES (SECTION, PAGE, PARAGRAPH, LINE)	INSTRUCTIONS (CORRECTIONS AND ADDITIONS)
	APPENDIX C	
1	Page C-6	Replace With New Page
2	Page C-9 Page C-10	Replace with New Page Replace with New Page
3	Page C-49	Replace with New Page
4	Page C-90	Replace with New Page

C.2.1.2 REGULATORY GUIDE: 1.9 REVISION: 1 DATED: NOVEMBER 1978

TITLE: Selection of Diesel Generator Set Capacity for Standby Power Supplies

REGULATORY GUIDE:

This safety guide describes an acceptable basis for the selection of diesel generator sets of sufficient capacity and margin to implement General Design Criterion 17.

A diesel generator set selected for use as a standby power supply should have the capability to (1) start and accelerate a number of large motor loads in rapid succession, and be able to sustain the loss of any such load, and (2) supply continuously the sum of the loads needed to be powered at any one time.

EVALUATION OF GESSAR (BWR-6/MK III) WITH RESPECT TO REG. GUIDE:

The Division 1 and Division 2 (emergency) diesel-generator set will be selected to assure compliance with Regulatory Guide 1.9. They will start, accelerate and sustain loads on ESF buses in the pattern required for various modes within the parameter suggested in the safety guide. This will include loads in GESSAR Tables 8.3.1 and 8.3.2 and those balance of plant loads such as service water later determined to be justified for connection to ESF buses.

The HPCS diesel-generator will conform with Regulatory Guide 1.9 except that the starting transient for the single large motor load may cause the voltage or frequency variations to exceed the maximum suggested, but without impairment of the system function. The components of this system are supplied as a package and will be tested for performance under typical starting conditions.

A detailed assessment of this guide against the HPCS diesel is provided in Table 7-2 of Topical Report 10905, dated May 1973. The report was written based upon the criteria in IEEE Standard 387-1972, whereas this guide refers to a 1977 version of the same standard. Instead of meeting the reliability test requirements of IEEE 387-1977, a unique reliability test as recommended by the NRC for the HPCS power supply application is performed. The test procedure is described in NEDO 10905-2.

C.2.1.5 REGULATORY GUIDE: 1.29 REVISION: 3 DATED: September 1978

TITLE: Seismic Design Classification

REGULATORY GUIDE:

Regulatory Guide 1.29 describes an acceptable method of identifying and classifying those features of light-water cooled nuclear power plants that should be designed to withstand the effects of SSE.

EVALUATION OF GESSAR (BWR-6/MK III) WITH RESPECT TO REG. GUIDE

Except for those items identified below, the structures, systems and components important to safety that are required to withstand the effects of a Safe Shutdown Earthquake, and remain functional have been properly classified as seismic Category I items. All other structures, systems, and components that may be required for operation of the facility are designed to other than seismic Category I requirements. The exceptions are as follows:

Position C.1(b) is interpreted to apply only to the reactor core and reactor vessel internals which are engineered safety features.

Position C.1(e) is interpreted in the following manner:

A. A suitable interface restraint shall be provided for the Main Steam Line (MSL) and the Main Feedwater Line (MFL) to physically define the seismic category transitional point between steam and feedwater piping in the Auxiliary Building and in the Turbine Building.

B. MSL and MFL piping and other components (including the shutoff valves and branch piping of 2-1/2 in. or larger nominal pipe up to and including the first valve capable of timely action) that are located between the reactor vessel and the seismic interface restraint shall be designated Seismic 1.

C. MSL and MFL piping and other components outside the seismic interface restraint (i.e., generally located in the Standard Plant Turbine Building) are not designated Seismic 1.

Position C.1.(h)

The component cooling water portions of the reactor recirculation pumps are not required to be Seismic Category I since the pumps do not perform a safety function. Interruption of coolant to the recirculation pumps does not result in unacceptable consequences. See response to SRP 9.2.2.

Position C.1.(o)

The secondary containment is interpreted to mean the reactor shield building, fuel building, and ECCS rooms and their main corridors at basement level in the auxiliary building.

Position C.1 (n)

GESSAR (Table 3.2.1) states that the control room and its associated equipment plus all other equipment needed to maintain the control room within safe habitability limits for personnel are designated as seismic Category I and will remain functional following the postulated SSE. For example, the control room's HVAC system is seismic Category I.

Position C.2

Items in the control room which could cause injury to its occupants are designed and constructed so that the postulated SSE would not cause such failure. For example, restraining wires are provided to prevent light fixtures from falling on control room occupants.

GESSAR REGULATORY GUIDANCE ASSESSMENT

PDA EXTENSION

C.2.1.35 REGULATORY GUIDE: 1.128 REVISION: 1 DATED: October 1978

TITLE: Intallation Design and Installation of Large Lead Storage Batteries for Nuclear Power Plants

REGULATORY GUIDE:

This Regulatory Guide describes an installation design for Class 1E batteries that is in general agreement with IEEE-484-1975.

EVALUATION OF GESSAR (BWR-6/MK III) WITH RESPECT TO REG. GUIDE:

The 125 volt d-c systems are divided into 4 Class 1E divisions. Each system has d-c battery, battery charges, and load center distribution panels. These are designed as Class 1E equipment in accordance with applicable classes of IEEE Standard 308-1974. The plant design and layout from these d-c systems will provide physical separation of the equipment, cabling, and instrumentation essential to plant safety. Each system is located in its own ventilated room and all the components are housed in a safety class structure. The battery rooms are independently ventilated to keep the gases produced due to charging of the batteries below an explosure concentration.

Therefore the Class 1E battery installations are in accordance with the regulatory guide with the following interpretation of position C.1: The area in the immediate vicinity of the battery vent is excluded from the area defined by the phrase".....at any location within the battery area."

Fire detection instrumentation is part of the fire protection system rather than the battery system.

GESSAR REGULATORY GUIDANCE ASSESSMENT

PDA EXTENSION

C.2.3.5 REGULATORY GUIDE 1.114 REVISION: 1 DATED: NOVEMBER 1976

TITLE: Guidance on Being Operator at the Controls of a Nuclear Power Plant

REGULATORY GUIDE:

This guide describes the necessary methods for complying with the Commission's regulations that require an operator to be present at the controls of a nuclear power plant and also takes a position on appropriate control room design.

EVALUATION OF GESSAR (BWR-6/MK III) WITH RESPECT TO REGULATORY GUIDE:

The operation of the nuclear plant is the owner's responsibility and although General Electric provides guidance, and training, most of the items in this guide are outside the scope of GESSAR. However, regulatory position C.1 has applicability with respect to the control room layout and is defined in GESSAR Section 2.5 which describes the controls, displays, and other instrumentation which provides information to the operator to enable him to control the unit in an efficient manner and to perform required safety functions. GESSAR Figure 7.5-1 shows the arrangement of the control room panels and Figures 7.5-2a and 7.5-2c show the locations of displays and controls on the various panels.

These figures indicate that all the controls, instrumentation displays, and alarms required for the safe operation, shutdown, and cooldown of the unit are readily available to the operator in the control room. Therefore, the GESSAR design complies with this guide wherever applicable.