RZI 85018
Publicly Available

GENERAL ELECTRIC

G-ER-5-028

SUBJECT: General Electric PRC 84-27, Seismic Capability of GEMAC 5000 Modules

The following information is supplied as part of the General Electric Program for evaluation of Potentially Reportable Conditions in satisfaction of 10CFR Part 21. General Electric has concluded that this information is germane to safety and that a Reportable Condition does not exist within the scope of GE technical information.

should evaluate this information as it relates to existing or future plant equipment, conditions, procedures or plans.

GE is notifying BWR owners, which have or had GEMAC 5000 modules in safety related systems as listed in Attachment 1 of the following information. This information was also made available to the NRC on January 11. 1985.

Information concluded to be Germane to Safety: In a recent review of seismic test results of GEMAC 5000 modules installed in an overseas plant it was determined that the module case mounting configuration in control room panels could cause an increase in seismic acceleration above that for which the device was originally qualified. This could result in the case to module interconnecting cable becoming disconnected from the module at G levels above 3Gs. In addition, the module could become loose and slide out from the case. This new evaluation is a result of the seismic requirements and testing methods having changed for equipment since the early seismic testing was accomplished.

A generic evaluation has been completed regarding the above concern as it relates to the HPCI safety related application because this application is known and considered to be the most important. It

FROM 2341 '85.03.19 11:37
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has been concluded that, even if the HPCI becomes non-functional, the remaining plant ECCS network (ADS, RHR, CS) would still provide for completion of any necessary safe shutdown. This includes the addition of a worst case single failure to the postulated accident condition. As such, the concern has been judged not reportable but germane to safety. This conclusion should be confirmed by . because of possible unique equipment configurations and system changes unknown to GE.

should evaluate the above information in the light of the changing seismic testing requirements and as regards the safety related and non-safety related applications of the equipment. The GEMAC 5000 modules are not used in recent new design as the equipment is no longer manufactured.

If a review of this concern should result in a corrective action decision, some available alternatives are:

Replace the bottom plate of GEMAC 5000 Module with one that has a plug holding mechanism.

Fasten the rear of GEMAC 5000 cases securely to the cabinet.

Install a restraining bar or clamp to hold the GEMAC Modules in the case.

cc: G. B. Stramback

FROM 7341 '85.03.19 11:38

GENERAL ELECTRIC

85-018

NUCLEAR POWER SYSTEMS DIVISION
GENERAL ELECTRIC COMPANY • 175 CURTNER AVENUE • SAN JOSE, CALIFORNIA 95125

MC 682, (408) 925-1913

Weiss follow
VBs info

January 11, 1985

U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Washington, D.C. 20555

Attention: Mr. Ernie Rossi

Gentlemen:

SUBJECT: TELECON - GERMANE TO SAFETY - SEISMIC CAPABILITY OF GEMAC 5000 MODULES

Please find the attached memo of my telecon, to you of January 11, 1985. The telecon provided information about the limited seismic capability of the GEMAC 5000 module design for control room mounted equipment.

Very truly yours,

G. B. Stramback, Manager
Safety Evaluation Programs

GBS:pc:rm/L112002*

cc: L. S. Gifford, GE-Bethesda
U. Potapovs, NRC-Bethesda
G. G. Zech, NRC-Bethesda

MEMO OF TELECON

DATE: January 11, 1985

TIME: 10:05 a.m.

PERSON CALLING: G.B. Stramback

PERSON CALLED: Ernie Rossi (NRC-I&E; 301-492-4193)

SUBJECT: SEISMIC CAPABILITY OF GEMAC 5000 MODULES

E. Rossi was called in order to inform the NRC of a condition determined to be not-reportable but considered to be germane to safety. This conclusion is based upon GE completing its evaluation as to reportability under 10CFR Part. 21.

The concern is the limited seismic capability of the GEMAC 5000 module design that could allow the case to module interconnecting cable to become disconnected from the module at G levels above 3Gs. In addition, the module may become loose and slide out from the case. The module case mounting configuration in control room panels could cause an increase in seismic acceleration above that which the device was originally qualified. This concern was discovered while reviewing seismic test results from similar modules in an overseas plant. A few GEMAC 5000 modules may still be used in the High Pressure Coolant Injection (HPCI) system safety-related application in some BWR plants and may be used in various non-safety-related plant applications.

The domestic plants which have or had GEMAC 5000 modules are listed in Attachment 1, in addition eight foreign plants have been identified.

The following is a generic evaluation of the HPCI safety related module application because this application is known and considered to be the most important. Even if the module becomes non-functional, the plant ECCS network (HPCI, ADS, RHR, CS) would still provide for completion of any necessary safe shutdown. This includes the addition of a worst case single failure to the postulated accident condition and loss of HPCI. Because of unique equipment configurations and possible changes made by utilities after plant turnover, GE is advising the operating plant utilities to confirm the above conclusion.

After review of existing applications some of the available corrective actions are:

- Replace the bottom plate of GEMAC 5000 Module with one that has a plug holding mechanism.
- Fasten the rear of GEMAC 5000 cases securely to the cabinet.
- Install a restraining bar or clamp to hold the GEMAC Modules in the case.

Fermi 2 is the only requisition plant affected by this concern. An investigation for Fermi 2 concluded that there is no system or safety impact. Operating BWR utilities that have or had GEMAC 5000 Modules are being informed of the GEMAC 5000 limitations to seismic forces. The requirements and testing methods have changed for equipment since the early seismic testing was accomplished. The utilities should make their evaluation and determination in this regards. The GEMAC 5000 Modules are not used in recent new design.

GBS:pc:rm/L112003*

Attachment

ATTACHMENT 1

LIST OF PLANTS WHICH HAVE OR HAD GEMAC 5000 MODULES

Domestic	Foreign
Nine Mile Pt. 1	Eight plants
Oyster Creek	
Dresden 2	
Dresden 3	
Millstone 1	
Monticello	
Quad Cities 1	
Quad Cities 2	
Browns Ferry 1	
Browns Ferry 2	
Browns Ferry 3	
Vermont Yankee	
Peach Bottom 2	
Peach Bottom 3	
FitzPatrick	
Cooper	
Pilgrim	
Hatch 1	
Hatch 2	
Brunswick 1	
Brunswich 2	
Duane Arnold	
Enrico Fermi 2	

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1/8/85