General Information or Other (PAR) Event # 39148

Rep Org: GENERAL ELECTRIC COMPANY		**Notification Date / Time:** 08/23/2002 15:45	(EDT)
Supplier: GE NUCLEAR ENERGY		**Event Date / Time:** 08/23/2002	(PDT)
		Last Modification: 08/23/2002	
Region: 4	**Docket #:**		
City: SAN JOSE	**Agreement State:** Yes		
County:	**License #:**		
State: CA			
NRC Notified by: JASON POST	**Notifications:**	WILLIAM JOHNSON	R4
HQ Ops Officer: FANGIE JONES		KEN BARR	R2
Emergency Class: NON EMERGENCY		VERN HODGE - FAX	NRR
10 CFR Section:			
21.21 UNSPECIFIED PARAGRAPH			

10 CFR 21 REPORT: MAIN STEAM LINE OUT-OF-SERVICE

The following is taken from a facsimile report:

"This letter provides notification of a Reportable Condition under 10CFR 21.21(d) and as an interim report per §21.21.(a)(2) for other plants that may be determined to be affected. The basis for this conclusion is that a 1988 GE Nuclear Energy (GE) analysis for Brunswick Units 1 and 2 full power operation with one Main Steamline Isolation Valve (MSIV) Out of Service (OOS) provided to Carolina Power and Light (CP&L) did not adequately address the increased flow induced vibratory loads on the MSIVs to assure they would be able to perform their required safety function which could result in potential offsite exposures in excess of those in 10CFR100.11.

"The GE MSIV OOS analysis evaluated plant operation at 100% power with three active steamlines and one set of MSIVs closed (OOS). The GE analysis did not address the increased steam flow hardware effect of potential long-term flow induced vibration degradation on the MSIVs, including the effect on the MSIV air operated controls. During three steamline operation the steam flow in each line would increase to approximately 133% of normal flow. No vibration measurements (empirical or experimental data) exist for either Brunswick Units during operation up to this increased steam flow level.

"If it is postulated that the plant operated for an extended period in the MSIV OOS condition and then a main steam line break is postulated to occur in one of the three operational steam lines, then there is the potential that neither MSIV would close to terminate the release from a steamline break. Because GE has no analytical or experience basis (no available empirical or experimental data) to support higher main steam line flow rates greater than previously tested, it could be postulated that a common mode failure of both MSIVs, in the broken line, could occur. Alternatively, failure of one MSIV due to the high flow induced vibration and the other MSIV as the design basis single failure, would result in an un-terminated release, which would exceed the existing 10 CFR 100 radiation release limits.

IE19

General Information or Other (PAR) Event # 39148

"GE has verbally communicated to CP&L the need for the 75% power limitation when exercising the MSIV OOS flexibility and will follow-up with a written communication

"GE is reviewing all other MSIV OOS analyses performed by GE for other BWRs and will communicate to any similarly affected utilities, similar corrective actions GE will notify all affected utilities that GE recommends operation at the 75% power level when operating with one MSIV 005, unless there is sufficient test data to support operation at a higher power level. This effort will be completed by September 30, 2002."

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GE Nuclear Energy

General Electric Company
175 Curtner Ave., San Jose, CA 95125

August 23, 2002
02-05NRC.DOC
MFN 02-049

Document Control Desk
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Subject: **Main Steam Line Valve Out-of-Service**

This letter provides notification of a Reportable Condition under 10CFR 21.21(d) and as an interim report per §21.21.(a)(2) for other plants that may be determined to be affected. The basis for this conclusion is that a 1988 GE Nuclear Energy (GE) analysis for Brunswick Units 1 and 2 full power operation with one Main Steamline Isolation Valve (MSIV) Out of Service (OOS) provided to Carolina Power and Light (CP&L) did not adequately address the increased flow induced vibratory loads on the MSIVs to assure they would be able to perform their required safety function which could result in potential offsite exposures in excess of those in 10CFR100.11.

If you have any questions, please call me at (408) 925-5362.

Sincerely,

for

Jason. S. Post, Manager
Engineering Quality and Safety Evaluations

cc: S. D. Alexander (NRC-NRR/DISP/PSIB) Mail Stop 6 F2
G. C. Cwalina (NRC-NRR/DISP/PSIB) Mail Stop 6 F2
J. F. Klapproth (GE-NE)
H. J. Neems (GE-NE)
PRC File

Attachment:
1. Reportable Condition Evaluation per §21.21(d)

Attachment 1 – Reportable Condition per §21.21(d)

(i) Name and address of the individual informing the Commission:

Jason S. Post, Manager, Engineering Quality & Safety Evaluation, GE Nuclear Energy, 175 Curtner Avenue, San Jose, CA 95125

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect:

The Main Steam Line Valve Out-of-Service analysis for Brunswick Units 1 and 2.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect:

GE Nuclear Energy, San Jose, California

(iv) Nature of the defect or failure to comply and safety hazard which is created or could be created by such defect or failure to comply:

The GE MSIV OOS analysis evaluated plant operation at 100% power with three active steamlines and one set of MSIVs closed (OOS). The GE analysis did not address the increased steam flow hardware effect of potential long-term flow induced vibration degradation on the MSIVs, including the effect on the MSIV air operated controls. During three steamline operation the steam flow in each line would increase to approximately 133% of normal flow. No vibration measurements (empirical or experimental data) exist for either Brunswick Units during operation up to this increased steam flow level.

If it is postulated that the plant operated for an extended period in the MSIV OSS condition and then a main steam line break is postulated to occur in one of the three operational steam lines, then there is the potential that neither MSIV would close to terminate the release from a steamline break. Because GE has no analytical or experience basis (no available empirical or experimental data) to support higher main steamline flow rates greater than previously tested, it could be postulated that a common mode failure of both MSIVs, in the broken line, could occur. Alternatively, failure of one MSIV due to the high flow induced vibration and the other MSIV as the design basis single failure, would result in an un-terminated release, which would exceed the existing 10 CFR 100 radiation release limits.

(v) The date on which the information of such defect or failure to comply was obtained:

June 24, 2002

(vi) In the case of a basic component which contains a defect or failure to comply, the number and locations of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part:

A defect has been confirmed to exist at Brunswick Units 1 and 2.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action (note, these are actions specifically associated with the identified Reportable Condition):

GE has verbally communicated to CP&L the need for the 75% power limitation when exercising the MSIV OOS flexibility and will follow-up with a written communication.

GE is reviewing all other MSIV OOS analyses performed by GE for other BWRs and will communicate to any similarly affected utilities, similar corrective actions. GE will notify all affected utilities that GE recommends operation at the 75% power level when operating with one MSIV OOS, unless there is sufficient test data to support operation at a higher power level. This effort will be completed by September 30, 2002.

GE has initiated a review of recent power uprate projects for proper inclusion and evaluation of other limiting configurations/conditions. This effort will be completed by September 16, 2002.

GE is reviewing and will revise existing internal engineering and program processes to explicitly screen any limiting configurations/conditions for current and future evaluations.

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, ore will be given to purchasers or licensees:

GE recommends operation at the 75% power level when operating with one MSIV OOS, unless there is sufficient test data to support operation at a higher power level.