

*a. chryse**(609)**339 -**5200*

**Initial 10 CFR 21 Notification  
NUS Summator and Isolator Modules**

*Pt 21 96741*

**I. NAME AND ADDRESS OF THE INDIVIDUAL(S) INFORMING THE COMMISSION.**

NAME: E. C. Simpson  
Senior Vice President - Nuclear Engineering

ADDRESS: Public Service Electric and Gas Company  
P.O. Box 236  
Hancock's Bridge, NJ 08038

**II. IDENTIFICATION OF THE FACILITY, ACTIVITY OR COMPONENT WHICH FAILS TO COMPLY OR CONTAINS A DEFECT.**

The facility is the Salem Generating Station, Unit 2. The basic components are Reactor Control and Protection System signal isolator and signal summator modules.

**III. IDENTIFICATION OF THE FIRM SUPPLYING THE BASIC COMPONENT WHICH FAILS TO COMPLY OR CONTAINS A DEFECT.**

The modules were manufactured by:

NUS  
P.O. Box 50736  
Idaho Falls, ID 83405

**IV. NATURE OF THE DEFECT OR FAILURE TO COMPLY AND THE SAFETY HAZARD WHICH IS CREATED OR COULD BE CREATED.**

NUS Model OCA801 signal isolator modules and Model MTH 801 Signal Summator Modules are being installed as replacements for modules in the Reactor Control and Protection System to provide improved reliability. During bench testing, an electrical connection with no solder was observed on a replacement summator module. All replacement summator and isolator modules for Salem Unit 2 were then inspected. Ten (of 222) modules were found to have unsoldered electrical connections. Another seven modules were found to have insufficient solder on at least one connection. Some of the defective connections were covered by heat shrink insulation.

The isolator modules function to provide electrical separation between the Reactor Protection System (Class 1E) and the Process Control System (non-Class 1E) portions of the Reactor Control and Protection (RCP) instrument loops. The summator modules are used to algebraically combine analog signals, either adding or subtracting inputs in combination with module gain and bias. The summators accept up to four inputs and provide one summed and isolated output.

The reactor protection system is designed to assure that the system can perform its required functions in the event of a design basis earthquake. The defect could affect the modules' ability to function during a design basis earthquake. It could result in a loss of redundancy sufficient to constitute a major degradation of essential safety related equipment.

V. THE DATE ON WHICH THE INFORMATION OF SUCH DEFECT OR FAILURE TO COMPLY WAS OBTAINED.

The information was obtained on June 28, 1996.

VI. IN THE CASE OF A BASIC COMPONENT WHICH CONTAINS A DEFECT OR FAILS TO COMPLY, IDENTIFY THE NUMBER AND LOCATION OF ALL SUCH COMPONENTS IN USE AT OR SUPPLIED FOR PSE&G FACILITIES SUBJECT TO THE REGULATIONS OF 10 CFR 21.

222 replacement modules are being installed in the Salem Unit 2 Reactor Control and Protection System. The replacement modules for Salem Unit 1 have been returned to the vendor.

VII. THE CORRECTIVE ACTION WHICH HAS BEEN, IS BEING, OR WILL BE TAKEN; THE NAME OF THE RESPONSIBLE INDIVIDUAL OR ORGANIZATION; AND THE LENGTH OF TIME THAT HAS BEEN OR WILL BE TAKEN TO COMPLETE THE ACTION.

All replacement modules for Salem Unit 2 have been inspected by the vendor and repaired. All replacement modules for Salem Unit 1 have been returned to the vendor for inspection and repair.

PSE&G is investigating the cause of the defect with the vendor. Results will be provided when the investigation is complete.

VIII. ANY ADVICE RELATED TO THE DEFECT OR FAILURE TO COMPLY THAT HAS BEEN, IS BEING, OR WILL BE GIVEN TO PURCHASERS OR LICENSEES.

None.

**NRC DATA SHEET**  
(Page 1 of 2)

NOTIFICATION TIME <b>1617</b>	FACILITY OR ORGANIZATION <b>Salem</b>	UNIT <b>2</b>	CALLER'S NAME <b>E. Armando</b>	TELEPHONE NUMBER (FOR CALL BACK) <b>609-339-5200</b>
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EVENT TIME & ZONE <b>1600/EASTERN</b>	EVENT DATE <b>8/2/96</b>
POWER/MODE BEFORE <b>0/Defueled</b>	POWER/MODE AFTER <b>0/Defueled</b>

EVENT CLASSIFICATION (Check One)	
<input type="checkbox"/> GENERAL EMERGENCY	<input type="checkbox"/> 1HR 10CFR50.72(b)(1) ( )
<input type="checkbox"/> SITE AREA EMERGENCY	<input type="checkbox"/> 4HR 10CFR50.72(b)(2) ( )
<input type="checkbox"/> ALERT	<input type="checkbox"/> 1HR SECURITY/SAFEGUARDS
<input type="checkbox"/> UNUSUAL EVENT	<input type="checkbox"/> TRANSPORTATION EVENT <b>8</b>
<input checked="" type="checkbox"/> OTHER: <b>10CFR21.21(e)(3)(i)</b>	

\* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

**(C) EVENT DESCRIPTION**

Include In accordance with 10 CFR 21.21(e)(3)(i), the attached initial notification is provided on the or planned, etc. NUS Summator and Isolator modules. NUS Model OCA801 signal isolator modules and Model MTH 801 Signal Summator Modules are being installed as replacements for modules in the Reactor Control and Protection System to provide improved reliability. During bench testing, an electrical connection with no solder was observed on a replacement summator module. All replacement summator and isolator modules for Salem Unit 2 were then inspected. Ten (of 222) modules were found to have unsoldered electrical connections. Another seven modules were found to have insufficient solder on at least one connection. Some of the defective connections were covered by heat shrink insulation.

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NOTIFICATIONS	YES	NO	WILL BE	ANYTHING UNUSUAL OR NOT UNDERSTOOD?	YES (Explain above)	NO
NRC RESIDENT	<b>X</b>					<b>X</b>
STATE(s) (NJ) (DEL)		<b>X</b>		DID ALL SYSTEMS FUNCTION AS REQUIRED?	<b>YES N/A</b>	<b>NO (Explain above)</b>
LOCAL (LACT)		<b>X</b>				
OTHER GOV. AGENCIES		<b>X</b>		MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:	ADDITIONAL INFO ON PAGE 27
MEDIA/PRESS RELEASE		<b>X</b>		<b>DEFUELED</b>	<b>unknown</b>	<b>NO</b>

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section U/b Initiating Condition N/A

APPROVED FOR TRANSMITTAL: **DPK**

SNSS