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Rockwell
International

November 3, 1982

In reply refer to 82ESG7948

U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Arlington, Texas 76012

Attention: Mr. John Collins, Administrator
Region IV

- References:
- 1) ESG Letter 82ESG7725, D. C. Empey to John Collins
"Report of Deviation/Defect (10CFR21)" dated
October 21, 1982
 - 2) ESG Letter 82ESG8085, D. C. Empey to John Collins,
"Report of Possible Defect (10CFR21)" dated
November 3, 1982

Gentlemen:

Subject: Report of Possible Defect (10CFR21)

Energy Systems Group is currently undertaking a program to establish IEEE-323 qualification of our post-LOCA Hydrogen Recombiner designs. This program is structured to umbrella equipment delivered in the past as well as current and future production, and therefore specifies environmental conditions severe enough to satisfy any expected customer specifications.

As a result of this qualification effort to date, it has been determined that the below noted component may not operate properly following the radiation exposure given in the ESG qualification program.

COMPONENT DESCRIPTION

Square D disconnect switch, three-pole nonfusible unit, 30A, 15 hp at 480 VAC or 20 hp at 600 VAC, P/N 9422-RC-1.

Test Results

During the IEEE 323 Environmental Qualification testing and following the Irradiation and Associated Baseline Functional Test the disconnect switches failed when they were mechanically operated due to a plastic

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Mr. John Collins, Administrator
Region IV
U.S. Nuclear Regulatory Commission

Page 2
November 3, 1982
82ESG7948

component breaking. It was concluded that the applied dose of 1.1×10^7 rads degraded the plastic sufficiently to initiate the failure. The switch is the main disconnect switch for the recombiner skid 480 VAC, 3-phase, power bus for the inlet gas, recirculating gas and water valve motor circuits; its failure would prevent operation of the recombiner.

Corrective Action/Comments

Failure analysis of the component shows that the switch could fail open during a seismic event thus disrupting the 480 VAC power to the recombiner skid. ESG has not determined whether or not the switch would fail with radiation doses less than 1.1×10^7 rads, but we believe that since there is a reasonable chance of failure, the switch should be eliminated from the circuit. This modification is consistent with current design which does not use a switch for this function.

An Engineering Field Bulletin has been issued with instructions to by-pass the switch.

Affected Plants

<u>Customer Name</u>	<u>NRC Licensed Facility/Activity</u>	<u>Qty</u>	<u>Date Shipped</u>	<u>Specified Radiation Dose Rads TID</u>
Detroit Edison	Fermi 2 NPS	2	08-76	Not specified
Philadelphia Electric Co.	Limerick 1 & 2 NPS	4	06-30-77	6×10^5
Georgia Power Company	Hatch 2 NPS	2	06-14-77	Not specified
Commonwealth Edison Co.	LaSalle County 1 & 2	2	08-29-78	1.7×10^5
Niagara Mohawk Power Corp.	Nine Mile Pt 2 NPS	2	02-23-79	1.7×10^5

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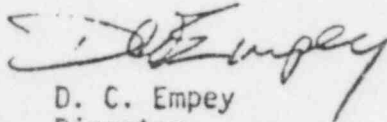
Page 3
November 3, 1982
82ESG7948

Notifications

Each listed plant operator has been notified of the results of our IEEE-323 qualification testing along with the above mentioned bulletin on bypassing of the disconnect switch. Additional components which failed to function properly following the qualification program are given in the References.

If you require further information or clarification, please call me at (213) 700-3926.

Very truly yours,



D. C. Empey
Director
Quality Assurance

cc: (3)
Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555