

Energy Systems Group
8900 De Soto Avenue
Canoga Park, California 91304

Telephone: (213) 341-1000
TWX: 910-494-1237
Telex: 181017



Rockwell
International

November 3, 1982

In reply refer to 82ESG8085

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 82ESG7948, 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

Timetrol SCR Power Controller - Three-phase, 1066Z series, Part No. 2053C-125K.

Test Results

During IEEE 323 Environmental Qualification Testing and after the unit was irradiated with 1.62×10^6 rads, the SCR failed functional testing

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and the SCR Power Controller was removed from the Qualification Program. In hydrogen recombiner operation, loss of electrical power control to the heaters would result in a loss of safety function.

Corrective Action/Comments

We are recommending that the Timetrol unit be replaced with a Halmar unit (per our design on current production recombiners). None of the affected BWR plants are operating and this replacement can be done prior to startup. Although three of the affected PWR plants are operating (Zion, North Anna, and Beaver Valley) the environment at the power/control cabinet should be such that replacement of the power controller can be done at any time. Although this expected low radiation environment could be interpreted as making replacement optional, Zion and TMI did include an overall radiation requirement in their specifications to us and we cannot unilaterally determine that these radiation environments will not be seen by the power/control cabinets.

Affected Plants

Customer Name	NRC Licensed Facility/Activity	Qty	Date Shipped	Specified Radiation Dose Rads TID
Detroit Edison	Fermi 2 NPS	2	08-76	Not Specified
Philadelphia Electric Co.	Limerick 1 & 2 NPS	6	06-30-77	6×10^5
Duquesne Light Co.	Beaver Valley 1 & 2 NPS	2	07-02-74	Not Specified
Virginia Elec. & Power Co.	North Anna, 1, 2, 3, and 4 NPS	3	10-75	Not Specified
Northeast Utilities	Millstone 3 NPS	2	02-77	Not Specified
Jersey Central Power & Light Co.	Three Mile Island 2 NPS	2	03-77	2×10^5
Commonwealth Edison Co.	Zion 1 and 2 NPS	2	10-05-73	$< 10^4$

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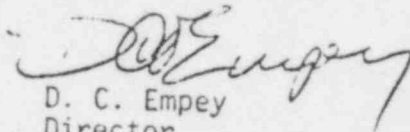
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Notifications

Each listed plant operator has been notified of the results of our IEEE 323 qualification testing along with our recommendation for replacement of these units. Additional components which failed to function properly following the qualification environments given in our program are reported 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