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Federal General Electric Company

Charles Goodwin, Jr. Assistant Vice President

April 16, 1979

Trojan Nuclear Plant Docket 50-314
License NPF-1

Mr. R. H. Engdiken, Director
U.S. Nuclear Regulatory Commission
Region V
Suite 202, Walnut Creek Plaza
1900 N. California Blvd.
Walnut Creek, CA 94596

POOR ORIGINAL

Dear Sir:

We have determined that a deficiency may exist in the impeller locknut design for the containment spray pumps at the Trojan Nuclear Plant. There is a potential for the impeller locknuts to loosen. If locknut loosening occurs, the impeller locknuts could come off the shaft and/or the impeller could contact the pump casing, either of which may lead to pump failure.

These pumps, manufactured by the Ingersoll-Rand Company of Phillipsburg, New Jersey, are similar in design to the Trojan Residual Heat Removal (RHR) pumps. In 1976, during maintenance on an RHR pump, the impeller locknut was found to be loose. Subsequently, the impeller nut locking design was modified on both RHR pumps to provide a positive mechanical lock, instead of relying on locknut torque which provides only thread and nut friction to prevent loosening. We are performing a similar impeller locknut modification on our containment spray pumps.

We have also learned that loosening of similar impeller locknuts has been reported by other nuclear plants (i.e., Significant Deficiency Report by Arkansas-1 on May 9, 1978 and LER 78-023 by Oconee-3). Because of our uncertainty as to whether the NRC had been adequately informed of this potential generic problem, we are making this report in accordance with 10 CFR 21. Attached please find 10 CFR 21 Report No. 79-01 as required by this regulation.

Sincerely,

C. Goodwin, Jr.
Assistant Vice President
Thermal Power Plant Operations & Maintenance

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- cc: Director, Office of Inspection & Enforcement (3)
- Director, State of Oregon, Department of Energy

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Copy Requested: No. State of Oregon 01234

10 CFR 21 Report on Potential
Containment Spray Pump Impeller Locknut Design Deficiency

I. Individual Informing the Commission

Mr. Charles Goodwin, Jr.
Assistant Vice President
Thermal Operations & Maintenance
Portland General Electric Company
121 S. W. Salmon Street
Portland, OR 97204
Phone: 503-226-8181

II. Facility and Component Potentially Containing the Defect

- A. Facility: Trojan Nuclear Plant
- B. Component: Containment Spray Pumps
Equipment Nos. P-204A & B

III. Component Supplier

Ingersoll-Rand Company
Cameron Pump Division
P. O. Box 486
Phillipsburg, NJ 08865

IV. Nature of Potential Defect

The potential exists for the impeller locknuts to loosen, allowing the impeller to contact the pump casing which may lead to pump failure; however, this condition has not been observed for the Trojan containment spray pumps.

V. Date

The Nuclear Operations Board met on Thursday, April 12, 1979, to determine whether there was a possibility that a deficiency exists. Based on this meeting, a recommendation was made to the responsible company officer to report the matter even though neither the need to report nor PGE's responsibility to report were clearly established.

VI. Number and Location of Similar Components

At the Trojan Nuclear Plant, the RHR pumps, P-202A & B, are the only other pumps similar to the containment spray pumps. These pumps were supplied by the same manufacturer and originally had a similar locknut design. In 1976, the locking mechanism for the RHR pump impellers was modified after it was discovered that one locknut had loosened. The manufacturer believes that the nut loosened as a result of improper installation and that the RHR pumps may be more susceptible to locknut loosening than the containment spray pumps due to a faster coastdown. The RHR pumps have also been subject to higher temperature cycling and more frequent operation than the containment spray pumps.

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4. Corrective Action

- A. The corrective action consists of modifying the locking mechanism to include use of set screws and locking tabs. Both the jaw nut and the cap nut are provided with a "positive" mechanical lock.

The modification for the containment spray pumps will be complete by June 15, 1979. The design concept is presently under review by the pump manufacturer.

B. Responsible PCE Personnel

Engineering: Mr. S. R. Christensen, Manager
Generation Engineering Department

Installation: Mr. B. D. Withers, Superintendent
Trojan Nuclear Plant

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ATTACHED IS A PART 21 REPORT FROM IE MAIL UNIT - ROOM 359E/W

PART 21 IDENTIFICATION NO. 79-115-000 COMPANY NAME Portland General

DATE OF LETTER 4/16/79 DOCKET NO. 50-344 Electric Co.

DATE DISTRIBUTED 4/23/79 ORIGINAL REPORT SUPPLEMENTARY

DISTRIBUTION:

REACTOR(R) FUEL CYCLE & SAFEGUARDS(S)

MATERIALS(M)

NRR/DOR (STELLO)	AD/FFMSI	AD/SG-IE
NRR/DPM (BOYD)	NMSS/FCMS	AD/ROI
AD/ROI (2)	REGIONS	REGIONS
AD/RCI	IE FILES	NRR/DOR (STELLO)
REGIONS	PDR	NMSS/SG SS-881
IE FILES (2)	LPDR	PDR
CENTRAL FILES	CENTRAL FILES-SS-396	LPDR
CENTRAL FILES (CHRON)	CENTRAL FILES(CHRON)	TERA
PDR	(0.5)	IE FILES (2)
LPDR	TERA	CENTRAL FILES 016
TERA	BOB DENWIG, MPA	CENTRAL FILES (CHRON)
BOB DENWIG, MPA		CENTRAL FILES - SS-396
		BOB DENWIG, MPA

ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOW-UP AS SHOWN BELOW:

IE NRR NMSS OTHER

RCI
ROI
SG
FFMSI

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