

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

the

Docket Nos. 50-443
50-444

DEC 31 1979

Public Service Company of New Hampshire
ATTN: Mr. W. C. Tallman
President
1000 Elm Street
Manchester, New Hampshire 03105

Gentlemen:

This Information Notice is provided as an early notification of a possibly significant matter. It is expected that recipients will review the information for possible applicability to their facilities. No specific action or response is requested at this time. If NRC evaluations so indicate, further licensee actions may be requested or required. If you have questions regarding this matter, please contact this office.

Sincerely,

R. W. McDaniel
for Boyce H. Grier
Director

Enclosures:

1. IE Information Notice No. 79-37 with attachments
2. List of Recently Issued IE Information Notices

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cc w/encls:
John DeVincentis, Project Manager

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ENCLOSURE 1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

ISINS NO.: 6870
Accession No.:
7910250525

IE Information Notice No. 79-37
Date: December 31, 1979
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CRACKING IN LOW PRESSURE TURBINE DISCS

Description of Circumstances:

An anonymous letter was received by the Director of the Office of Inspection and Enforcement, on November 17, 1979 which alleged possible violation of Part 10 CFR 50.55(e) and/or 10 CFR 21 Regulations concerning reportability of recently discovered stress corrosion cracking in Westinghouse 1800 rpm low pressure turbine discs. Westinghouse had made a presentation on the turbine disc cracking to electric utility executives on October 30, 1979.

Telephone discussions between the NRC staff and Westinghouse's Turbine Division on November 20, 1979 established that cracking, attributed to stress corrosion phenomena, had been found in the keyway areas of several LP turbine discs at operating plants and that inservice inspection techniques (i.e., in situ ultrasonic examination) for crack detection have been developed and are being implemented in the field. The Office of Inspection and Enforcement was also notified on November 20, 1979 that during the current overhaul of Commonwealth Edison's Zion Unit 1 LP turbine, ultrasonic examination revealed embedded cracks located on the inlet side on the disc bore area where no cracks had been previously observed. Ultrasonic measurements indicate this disc bore cracking is of greater depth than the keyway cracks found to date. According to Westinghouse, these bore cracks have been metallurgically examined and preliminary findings show them not to be typical of classical stress corrosion cracking observed in the keyways. The probable cracking mechanism and impact on disc integrity is being further evaluated by Westinghouse.

A meeting was held on December 17, 1979 between the NRC staff, Westinghouse and utility representatives to discuss the disc cracking problem, repair alternatives, turbine missile evaluation, inspection techniques and plant inspection priorities. In response to the staffs' request, Westinghouse provided the staff an updated report on December 21, 1979 regarding the current field inspection program that included a list of nuclear power plants already inspected, recommended inspection schedules and pertinent information related to LP turbines where cracks have been observed. Inspections to date have identified turbine disc cracks at Surry Unit 2, Point Beach Unit 2, Palisades, Indian Point Unit 3 and Zion Unit 1. All units except Point Beach have returned to power. Point Beach is currently out of service with a small crack in the No. 2 disc of the turbine. Westinghouse indicated that the observed cracking during 28 additional months of turbine operation will be reported in the turbine inspection results and analysis.

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DUPLICATE DOCUMENT

Entire document previously
entered into system under:

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