



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

February 25, 1980

Docket No. 50-302

Mr. J. A. Hancock
Director, Nuclear Operations
Florida Power Corporation
P. O. Box 14042, Mail Stop C-4
St. Petersburg, Florida 33733

Dear Mr. Hancock:

On December 28, 1979 the NRC Office of Inspection and Enforcement issued Information Notice No. 79-37 that presented information available to the staff related to the discovery of cracks in the keyway and bore sections of Westinghouse 1800 rpm low pressure turbines. A copy of this Information Notice with errata sheet is enclosed.

Westinghouse notified utility users of this potential problem on October 30, 1979 and was requested by the staff to present a similar briefing in Bethesda, Maryland on December 17, 1979. You were contacted on December 14, 1979 and invited to send representatives to the staff briefing and also were requested to advise the staff of the actions being taken in regard to this potential problem at your operating nuclear power plant. Westinghouse was later requested to meet again with the staff and licensee-users on January 8, 1980 to supplement the information provided in the earlier meeting and in interim correspondence with the staff.

On the basis of information provided by Westinghouse and recent indications from turbine disc inspections now underway at Arkansas Nuclear One Unit 1, Beaver Valley Unit 1 and Indian Point Unit 2, it is evident that the probability of crack formation in these turbine discs is significantly greater than previously assumed by the vendor. In light of this information and the actions being taken by the licensee-users, we consider this warrants your prompt full UT inspection of LP rotor discs, especially the keyways and bore areas, and documentation to the NRC of your justification for continued operation until such inspections are made and all defects thus identified are corrected. Therefore, in accordance with 10 CFR 50.54(f), you are requested to provide within 20 days of the date of this letter, or in any event prior to restart if your unit is not operating, written statements, signed under oath or affirmation, which will enable the staff to determine whether or not your license to operate Crystal River, Unit No. 3 should be modified, suspended, or revoked. As part of your statement, you should provide and address the safety significance of the information requested in Enclosure 2 to this letter.

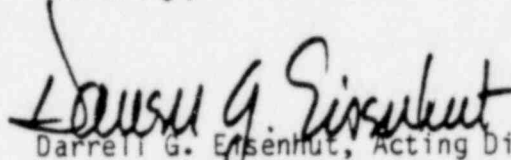
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Mr. J. A. Hancock

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Because of the general nature of the information sought in Enclosure 2 we are transmitting a copy of this enclosure to Westinghouse by separate letter. As discussed in the December 17, 1979 meeting we urge you to address the generic aspects of this problem and to coordinate your responses through an owner's group.

Sincerely,



Darrell G. Eisenhut, Acting Director
Division of Operating Reactors

Enclosures:

1. IE Information Notice No. 79-37
With Errata Sheet
2. Request for Information Related to
Turbine Disc Cracks - 20 Day Response

cc: w/enclosures
See next page

Florida Power Corporation

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OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

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Accession No.:
7910250525

December 28, 1979

IE Information Notice No. 79-37

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 50.55e 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 Unit 2 will make repairs before the plants return to power. Point Beach returned to power on December 23, 1979 with a small crack in the No. 2 disc of LP Turbine No. 2. An analysis by Westinghouse indicated that the observed cracking could be expected during 28 additional months of turbine operation. The turbine inspection results and analysis

DUPLICATE DOCUMENT

Entire document previously
entered into system under:

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