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

October 10, 1980

Docket No. 50-29

Yankee Atomic Electric Company  
ATTN: Mr. James A. Kay  
Senior Engineer - Licensing  
25 Research Drive  
Westborough, Massachusetts 01581

Gentlemen:

The enclosed IE Information Notice No. 80-36, "Failure of Steam Generator Support Bolting," is forwarded to you for information. No written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

*Boyce H. Grier*  
Boyce H. Grier  
Director

Enclosures:

1. IE Information Notice No. 80-36
2. List of Recently Issued IE Information Notices

CONTACT: E. G. Greenman  
(215-337-5267)

cc w/encls:  
H. Autio, Plant Superintendent  
J. E. Tribble, President

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

DUPLICATE

October 10, 1980

IE Information Notice No. 80-36: FAILURE OF STEAM GENERATOR SUPPORT BOLTING

Description of Circumstances:

On September 4, 1980, the NRC staff was informed by the Northern States Power Company that extensive cracking of the bolting for the supports attached to bottom of the steam generators on Prairie Island Unit 1 had occurred. The licensee initially discovered the bolting problem when two bolts failed during detensioning. The licensee was attempting to remove the pre-load on the bolting (specified at 1400 ft-lbs) to minimize the potential for stress corrosion cracking of the high strength 1-1/2 in. dia. 250 ksi maraging steel bolting (Vascomax 250).

Ultrasonic examination of the support bolting revealed cracks or breaks in 47 of 48 support bolts for the two steam generators at the Prairie Island Unit 1 facility. The licensee subsequently shut down the Prairie Island Unit 2 facility and performed ultrasonic examinations of the same steam generator support bolting, that failed on Unit 1. The results of the UT examinations revealed cracks in three of the 48 steam generator support bolts. The licensee attempted to remove the cracked bolts from the steam generator supports. Two cracked bolts were successfully removed while the third failed during removal. Two bolts that were judged as defect free by the ultrasonic examination were also removed. Magnetic particle examinations confirmed the results of the ultrasonic examinations on the bolts which were removed. As part of the short term corrective actions taken, the licensee has unloaded and retensioned the bolting at approximately 50 to 100 ft.-lbs.

Inservice ultrasonic examination of the affected bolting had been performed previously. In the case of Unit 1 a significant number of the bolts were examined at the last refueling outage 14 months ago. No cracks were found at that time.

The susceptibility for stress corrosion cracking was identified in NUREG-0577 (for comment). The NUREG identifies those facilities which have utilized maraging steels for reactor coolant pump and steam generator support bolting. Further the NUREG recommends augmented inspections for the facilities included in Group I.

Licensees are encouraged to review the bolting materials used at their respective facilities and consider inspection of maraging steel bolting that are either pre-loaded or significantly loaded during operation.

This Information Notice is provided as an early notification of a possibly significant matter that is still under review by the NRC staff. It is expected that recipients will review the information for possible applicability to their facility. No specific action or response is requested at this time. If you have any questions regarding this matter, please contact the Director of the appropriate NRC Regional Office.

RECENTLY ISSUED  
IE INFORMATION NOTICES

Information Notice No.	Subject	Date Issued	Issued to
80-35	Leaking and Dislodged Iodine-125 Implant Seeds	10/10/80	All holders of a Category G or G1 Medical License
80-34	Boron Dilution of Reactor Coolant During Steam Generator Decontamination	9/26/80	All holders of a PWR Power Reactor OL
80-33	Determination of Teletherapy Timer Accuracy	9/15/80	All holders of a teletherapy license
80-32	Clarification of Certain Requirements for Exclusive-use Shipments of Radioactive Materials	9/12/80	All holders of an NRC or Agreement State License
80-31	Maloperation of Gould-Brown Boveri 480V-Type K-600S and K-Don 600S Circuit Breakers	8/27/80	All holders of a power reactor OL or CP
80-30	Potential for Unacceptable Interaction Between the Control Rod Drive Scram Function and Non-essential Control Air at Certain BWR Facilities	8/27/80	All holders of a BWR power reactor OL or CP
80-29	Broken Studs on Terry Turbine Steam Inlet Flange	8/7/80	All holders of a power reactor OL or CP
Supplement to 80-06	Notification of Significant Events at Operating Power Reactor Facilities	7/29/80	All holders of a power reactor OL and near term OL applicants
80-28	Prompt Reporting of Required Information To NRC	6/13/80	All applicants for and holders of a power reactor construction permit