NON-PUBLIC?: N
ACCESSION #: 9408220260
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Maine Yankee Atomic Power Company PAGE: 1 OF 2

DOCKET NUMBER: 05000309

TITLE: Manual Reactor Trip Due To High Reactor Coolant Pump
Vibration Indication During A Plant Shutdown
EVENT DATE: 07/16/94 LER #: 94-011-00 REPORT DATE: 08/15/94

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 6 POWER LEVEL: <2%

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Robert E. Maloney, TELEPHONE: (207) 882-6321
Shift Technical Advisor

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS: No

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

At 0207 on July 16, 1994, during a plant shutdown, with the plant in Hot Standby (Condition 6), operators manually actuated the Reactor Protective System (RPS) to trip the reactor in accordance with plant procedures, after receiving a high vibration alarm and observing abnormal vibration indications for the #2 Reactor Coolant Pump (RCP). The #2 RCP was shut down at 0210 pending an engineering evaluation of the indicated vibration amplitudes.
Subsequent investigation determined the cause of the increased vibration indication to be a faulty vibration monitoring instrument.

END OF ABSTRACT

TEXT PAGE 2 OF 2

On July 15, 1994 Maine Yankee commenced an unscheduled plant shutdown to investigate a suspected steam generator tube leak.
At approximately 0205 on July 16, 1994, with the plant in Hot Standby (Condition 6) and reactor power at
annunciator for REACTOR COOLANT PUMP VIBRATION ALERT (VA) alarmed. Control Room Operators referenced the annunciator response manual and observed that the vibration monitoring instrument (VI) for #2 Reactor Coolant Pump (P) was indicating a vibration amplitude of 26 mils from proximity probe #1; the same probe that provides the alarm signal to the RCP vibration alert annunciator (ANN).
Operators entered the Abnormal Operating Procedure (AOP) for Reactor Coolant Pump Abnormalities. This AOP contains operating limits for the RCPs and mandates an RCP shutdown if the vibration indication from proximity probe #1 reaches an amplitude of 20 mils. In accordance with the action criteria directed by the AOP, operators immediately entered the plant procedure for an Emergency Shutdown From Power or Safety Injection, and, at 0207, tripped the reactor by manually actuating the Reactor Protective System (RPS). After verifying a normal, post-trip plant response, the #2 RCP was shutdown at 0210 pending an engineering evaluation of the indicated vibration amplitudes.
A visual inspection of the RCP did not reveal any conditions that would have contributed to abnormal vibration during pump operation. However, with the pump shaft at rest, the vibration instrument indicated over 100 mils, suggesting an instrumentation failure. At 0704 on July 16, 1994, #2 RCP was re-started for evaluation by plant engineers. The evaluation revealed that actual pump vibration was within normal limits, and confirmed that the vibration monitoring instrumentation was providing erroneous alarms and indications. Troubleshooting determined that an electrolytic capacitor (CAP) in the vibration instrumentation power supply card (JX) had failed, causing the normal -18 volt signal to the vibration proximity probes to degrade to a value of only -12 volts. This degraded, negative voltage signal produced the erroneously high vibration indication.
A root cause evaluation determined that failure of the 20-year old capacitor was characteristic, age-related, in-service component failure.
A contributing factor to this failure is that components in non-nuclear safety systems, used only for indication and alarm functions, are not included in the plant's Preventive Maintenance Program. Consequently, these components are not replaced at regularly scheduled intervals.
The immediate corrective action was to replace all similar, obsolete capacitors in the vibration instrumentation for all 3 RCPs (2 capacitors per RCP; 6 capacitors total) with a suitably qualified substitute component.
A secondary corrective action was to review other plant AOPs to ensure that any other AOP action criteria for tripping the plant was not based solely upon a single parameter whose indication is provided by

components not included in the plant's Preventive Maintenance Program.
NOTE: The existing RCP vibration monitoring system is already scheduled to be replaced with a more modern, state-of-the-art system during the 1995 refueling outage.

There are no similar events previously reported via LER.

Maine Yankee
RELIABLE ELECTRICITY SINCE 1972

329 BATH ROAD o BRUNSWICK, MAINE 04011 o (207) 798-4100

August 15, 1994
MN-94-87 JRH-94-198

UNITED STATES NUCLEAR REGULATORY COMMISSION
Attention: Document Control Desk
Washington, DC 20555

Reference: (a) License No. DPR-36 (Docket No. 50-309)

Subject: Maine Yankee Licensee Event Report 94-011, Manual Reactor Trip Due To High Reactor Coolant Pump Vibration Indication During A Plant Shutdown.

Gentlemen:

Please find enclosed Maine Yankee Licensee Event Report 94-011. This report is submitted in accordance with 10CFR50.73(a)(2)(iv).

Please contact us should you have any questions regarding this matter.

Very truly yours,

James R. Hebert, Manager
Licensing & Engineering Support Department

JVW/mwf

Enclosure

c: Mr. Thomas T. Martin
Mr. J. T. Yerokun

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