CENTERIOR ENERGY

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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Inoperable Seismic Monitoring
Instrumentation - Special Report

Dear Sir:

Attached is a Special Report concerning inoperable Seismic Monitoring Instrumentation. This report satisfies the conditions of Perry Technical Specifications 3.3.7.2 and 6.9.2.

If you have any questions, please feel free to call.

Sincerely,

M. D. Lyster

Michael D. Lyster

MDL:NJL:sc

Attachment

cc: USNRC Project Manager
USNRC Resident Office
USNRC Region III
Director, Office of Resource Management

Operating Units:
Cleveland Electric Illuminating
Toledo Edison

IE22
1/1

SPECIAL REPORT
SEISMIC RECORDER INOPERABILITY

On September 13, 1990 the High Pressure Core Spray (HPCS) Piping triaxial peak accelerograph recorder was undergoing surveillance testing and could not be calibrated; some internal components were observed to be damaged. On September 15, 1990 the triaxial peak accelerograph recorder for the "A" Reactor Recirculation Pump Motor was removed to facilitate motor removal. The recorder was bench calibrated in accordance with its surveillance procedure and portions of the as-found data were found outside of the "allowable value". On September 17, 1990 the Reactor Recirculation Piping Support triaxial response spectrum recorder was being tested and portions of the as-found data were found outside of the "allowable value". This recorder also had evidence of internal damage to some components. These channels were declared inoperable, and the unit entered Technical Specification Action Statement 3.3.7.2, which, if the channel remains inoperable for more than thirty days, requires that a special report be submitted to the Commission within the next 10 days. The thirty day limit for the HPCS Piping recorder was exceeded on October 12, 1990. The thirty day time limit for two recorders was exceeded on October 15 and 17, 1990, respectively.

The triaxial peak accelerograph recorders are designed to sense and record low frequency accelerations in three orthogonal directions. Three diamond tipped scribers trace a permanent record on metal plates by a series of sensitive adjustable components. The recorders are self contained and the plates are easily removed for analysis after a seismic event. The triaxial response spectrum recorder also senses and records low frequency accelerations. It is composed of three detector assemblies which are identical but have orientations in three different planes (east-west, north-south, vertical). The recorder uses reed stylus mechanisms to trace metal plates. Each detector has twelve reeds, each with its own plate, corresponding to various frequencies. The plates can be removed and analyzed for a frequency spectrum after a seismic event. Both types of recorders are passive in nature and are used for data collection.

During troubleshooting, it was determined that some of the internal components of these recorders were damaged and misaligned. The damage indicated that the recorders were jarred or stepped on sometime prior to the surveillance tests. This is believed to be due to a large amount of work activity in the drywell area where these three detectors are located at the start of the second refuel outage which began approximately September 10, 1990. The HPCS Piping recorder was not able to be reworked, therefore a replacement unit was procured and calibrated in accordance with its surveillance instruction and is awaiting installation. The "A" Reactor Recirculation Pump Motor recorder only required adjustments to internal components and is awaiting installation. The Reactor Recirculation Piping Support recorder was reworked and calibrated successfully in accordance with its surveillance instruction and is also awaiting installation.

These three recorders were not installed and declared operable due to continued work activities in the drywell area which potentially would cause repeated damage to the sensitive recorders. The HPCS Piping and Reactor Recirculation Piping recorders are in high traffic and work areas. The "A" Recirculation Pump recorder cannot be installed until the motor is reinstalled. All out-of-service seismological instruments are expected to be restored within 30 days.

We do not anticipate these out-of-service instruments to significantly degrade our ability to detect/record seismic motion within the plant. The Perry Plant is a fully instrumented Regulatory Guide 1.112 facility. With these three instruments unavailable, we would still have several instrumented locations including both a triaxial response spectrum recorder and critical instruments at the Containment baseslab. At this location a strong motion triaxial time-history accelerograph is available, with the ability to alarm at the Control Room. The strong motion triaxal accelerograph provides a permanent paper/magnetic record locally at the electrical equipment room, and the triaxial response spectrum recorder provides spectral information directly to the Control Room. In the event of detecting an earthquake during this refueling time period, we would have the ability to adequately record the event and take appropriate action.

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