Jersey Central Power & Light Company

MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. 07960 • 201-539-6111

MEMBER OF THE General GPU ELECTRIC POWER COMPANIES SYSTEM Public Utilities Corporation

OYSTER CREEK NUCLEAR GENERATING STATION
FORKED RIVER, NEW JERSEY 08731

Abnormal Occurrence
Report No. 50-219/74/38

Report Date

July 23, 1974

Occurrence Date

July 14, 1974

Identification of Occurrence

Violation of the Technical Specifications, paragraph 4.5.I.2, failure of the main steam isolation valve NS04B to close in less than 10 seconds. This event is considered to be an abnormal occurrence as defined in the Technical Specifications, paragraphs 1.15D and E.

Conditions Prior to Occurrence

The reactor was shut down and reactor coolant temperature was approximately 160°F.

Description of Occurrence

During the routine full closure surveillance test of the main steam isolation valves, performed as part of the prerequisites to a plant startup, it was observed that main steam isolation valve NS04B closed in 13.0 seconds. Two subsequent trials resulted in times of 8.0 and 8.5 seconds.

Apparent Cause of Occurrence

As a result of installation of the new pilot control system for the main steam isolation valves' air operators, throttling of the hydraulic speed control valves to some degree greater than with the former system appears to be necessary to control the closing speed for the valves. The increased throttling appears to have decreased somewhat the sensitivity of the hydraulic valves themselves. Consequently, repeatability of the closing speeds is not as firm as it has been in the past.

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Analysis of Occurrence

The 10 second maximum time for full closure of the main steam isolation valves is to provide a safety margin in the event of a main steam line break. Closure of these valves minimizes the radioactive dose to the environs and provides for maintaining a coolant level above the fuel assemblies in the reactor without consideration of coolant makeup systems. The failure of one main steam isolation valve to close in the required time removed the system redundancy. If a steam line break had occurred, NS03B would have isolated the system in the required time.

Corrective Action

In order to eliminate any question as to the operability of the new main steam isolation valve pilot modifications, the four-way valve in the pilot valve assembly was inspected, cleaned and relubricated. Following reinstallation, the valve was retested but still did not close within the required time. The hydraulic needle valves were then adjusted to give the required closing speed. Action had previously been initiated to purchase more sensitive hydraulic valve stems to permit better throttling characteristics. However, the valve stems purchased were not sized properly for the actual hydraulic valves installed. Since installation of the modified pilot assemblies, new hydraulic valves have been ordered. Current plans are to install these units during the first shutdown (where drywell entry is allowed) following receipt of the new valves.

Failure Data

Not applicable.