Entergy         CORRECTIVE ACTION         Submitted Match 23, 2012         LO-NOE-2006-00611           CA Number:         13         Image: State of the state				ENT000085				
CA Number:       13         Site       Group       Name         Assigned By:       NOE       IP2 Design Eng Mgnt       Drake,Richard S         Assigned To:       NOE       IP3 P&C Eng Codes Staff       Hartjen,Harry G         Subassigned To:       NOE       IP3 P&C Eng Codes Staff       Hartjen,Harry G         Originated By:       Drake,Richard S       7/5/2006 14:52:24         Performed By:       Hartjen,Harry G       7/19/2006 13:57:33         Subperformed By:       Approved By:       Closed By:       10/26/2006         Closed By:       Hartjen,Harry G       7/19/2006 13:57:33         Closed By:       Hartjen,Harry G       7/19/2006 13:57:33         Closed By:       Originated By:       Originated By:         Approved By:       Originated By:       0/26/2006         CA Type:       OE IMPACT EVALUATION         Plant Constraint:       NONE OEN         CA Description:       Evaluate NRC INFORMATION NOTICE 2006-08: SECONDARY PIPING RUPTURE AT THE MIHAMA POWER         STATION IN JAPAN - for IPEC (Unit 2 and Unit 3) applicability. The OE deals with FAC on Secondary side piping, review for the CQ program. The OE is starthed to the condition report description for this OEN. If applicable, close this CA to a Condition Report per LI-102 to track and changes to the facility.         Response:       Sec attac	Entergy		CORRECTIVE ACTION					Supmitted: March 28, 2012 LO-NOE-2006-00611
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IPEC Response to IN 2006-08

# LO-OEN-2006-00122 CA 13

IPEC Response to USNRC Information Notice 2006-08, March 16, 2006, Secondary Piping Rupture at the Mihama Power Station in Japan

# Background:

The Mihama event was previously evaluated for IPEC in response to PCRS commitments LO-OEN-2004-00272-CA2 and LO-OEN-2004-00328-CA6.

IN 2006-008 identified wall thinning as the direct cause of the failure but identified other contributing factors:

- 1. Omission of the pipe from the initial inspection plan
- 2. Ineffective Management
- 3. Ineffective quality management systems
- 4. Insufficient penetration of a safety culture

IN 2006-008 acknowledges that FAC is managed differently in the US than in Japan. Most US licensees manage FAC by implementing industry developed guidelines contained in EPRI NSAC-202L, "Recommendations for an Effective Flow Accelerated Corrosion Program". The IN notes that a successful FAC Program depends on periodic review and re-evaluation of the program in light of new information and operation experience, application of sound engineering judgment, evaluation of design changes with respect to FAC, a strong safety culture, and management support.

# **Discussion:**

Each of the contributing factors identified for the Mihama event listed above are addressed for IPEC as follows:

1. Omission of the pipe from the initial inspection plan -

The omission of this component from the inspection list was a book keeping type error in the original inspection plan. The location, downstream of an orifice plate restricting orifice (RO) has long been identified as a FAC susceptible location based on industry experience.

The applicability of the Mihama event on the IPEC FAC Program with respect to the condensate lines having similar temperatures and pressure as the Mihama plant was previously evaluated in response to PCRS commitments LO-OEN-2004-00272-CA2 and LO-OEN-2004-00328-CA6.

The piping components upstream and downstream of the boiler feed pump suction RO's, similar to the failure location at Mihama, were inspected during 2R16 and 3R13. No wall thinning was evident from any of the inspections.

# 2. Ineffective Management

The management of the inspection program at Mihama had deferred a previously planned inspection at this location from the last outage due to impact on the schedule. Apparently, no comprehensive assessment was performed of the potential risks associated with not inspecting this component.

For IPEC, the process and criteria for planning and scoping for the FAC Outage inspections is contained in Section 5.3 of ENN-DC-315. In addition to these criteria, the IPEC FAC scope undergoes a peer review in the form of a Snapshot Self Assessment in which an independent review of the scope is performed. Experience has shown that based on this review, few scope changes were requested by management.

In addition, the FAC Engineer would be involved with the decision to delete scope based on the Entergy fleet procedure EN-OU-104 "Refueling Outage Scope Identification and Control" where outage scope changes after scope freeze require the approval of Department Head/designee in Operations, Maintenance, Engineering, RP, Outage Management and General manager Plant Operations.

3. Ineffective Quality Management Systems -

At IPEC quality management is addressed through the use of various tools. Procedural compliance assists in effective quality management of the FAC Program. Personnel qualification and training requirements are specified on an Engineering Qualification Card. Program compliance and effectiveness is assessed through self assessments (SA), audits, inspections and the use of the corrective action process. A SA of the IPEC FAC Program was performed in February, 2006. This was an Entergy focused SA which included participation by the FAC program coordinators from three other plants, including WPO Management. Quality Assurance audits are performed during each refueling outage.

In addition to the compliance and assessment tools above, the quarterly Engineering Program Health Reporting process, detailed in the Entergy procedure ENN-DC-329 "Engineering Programs Control and Oversight" is used to assess quality and performance issues for the FAC Program.

4. Insufficient Penetration of a safety culture -

Program implementation and oversight responsibilities are clearly defined in Section 4.0 of ENN-DC-315. As implemented, the program requires periodic review and re-evaluation of the program in light of new information and operating experience, application of sound engineering judgment, and evaluation of design changes with respect to FAC.

In regards to FAC, it is the responsibility of the FAC Program owner to ensure that any safety concerns identified by component inspections, data analysis,

industry operating experience or field walkdowns are put in the corrective action process, identified to management, and resolved.

Recommended Action -

There are no recommended actions. The current FAC Program and administrative processes that support the program address all the issues identified in IN 2006-08.