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NARRATIVE REPORT

TMI-1
LER 81-011

Current Activities at the Time of the Occurrence

TMI-1 is shutdown by NRC order dated July 2, 1979.

Leading Circumstances to the Occurrence

While reviewing the catwalk structure for application of additional members and loads, questions arose as to the seismic integrity of the catwalk which supports safety related terminal blocks, cable trays and conduit.

Description of the Occurrence

The catwalk is a structure composed of Unistrut which is located in the Control Building Relay room at El 347' - 5-3/4". It is a crescent shaped structure hanging from the underside of the Control Room floor below the control panels. It supports cable trays, conduit and the terminal blocks which provide take off points for all of the curcuitry in the control consoles.

The seismic adequacy of the catwalk was reviewed against the following criteria.

IEEE Std. 344-1971 IEEE Guide for Seismic Qualification of Class IE Equipment for Nuclear Power Generating Stations.

FSAR Section 5.1

The results of extensive calculations indicate that sixteen members of the structure require either replacement or stiffening to withstand a licensing basis earthquake.

Further investigation (which included the removal of the fire protection insulation around the Unistrut) revealed that the welds which attach the catwalk to the floor steel were improper. The weld integrity with respect to size, length, penetration and capacity is in doubt. A visual inspection uncovered various defects such as, weld spatter, porosity, craters, slag, undercutting of the base metal and weld overrun. The welds in their present condition cannot be verified to resist loads imposed on the catwalk.

Any Significant Events which Happened as a Result of the Original Occurrence

None.

Previous Events of a Similar Nature

None.

Root Cause of the Occurrence

Detailed investigation revealed that no seismic design calculations were performed by the Architect Engineering Firm concerning the structural integrity of the catwalk during unit construction nor were the welds inspected.

Immediate Corrective Action

Since the Unit is in a shutdown condition, immediate corrective action is not required.

Long Term Corrective Action

The required repairs to the catwalk consist of three types. The first is a direct replacement of a single Unistrut with a double Unistrut. The second is the addition of cover plate on two faces of existing Unistrut and on the faces of replacement Unistrut. The third is providing proper attachment of the catwalk to the floor steel. The repairs shall be completed prior to criticality.