

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
PALISADES PLANT	05000255	86	003	00	02	OF	02

TEXT (If more space is required, use additional NRC Form 388A's) (17)

Commonwealth Edison reported in Zion 2 LER 85-018, Revision 1, that undocumented jumper wire, used as part of the limit switch/torque switch interlock wiring, was found in EEQ-Listed motor-operated valve (operator) operators manufactured by Limitorque. As a result of this LER, Palisades reviewed the plant's Limitorque's qualifications. This review surfaced a Bechtel procedure for installation of field splices which exempts the removal of vendor supplied wiring. Since the Zion LER reported this wire as unqualified, an inspection was performed on all thirteen pre-1970 vintage EEQ-Listed Limitorque operators. The limit switch compartment cover on each operator was opened and the internal control wiring was inspected and documented. The wiring, in all cases, was observed to be either LOCA-qualified Firewall III SIS or a white braided wire, which, according to record drawings, was vendor-supplied.

Based on wire identification tags installed between the wire insulation and braided jacket, the vendor-supplied wiring was determined to be of high quality. The tags identified the insulation to be of Type SFF-2; a silicon rubber material. The tags also provided a temperature rating of 150°C (302°F); a value higher than the Palisades LOCA peak temperature of 282°F. Bechtel material analyses show certain silicon rubber insulated wire to have a radiation withstand threshold of 2×10^6 R; the maximum TID for in-containment equipment at Palisades is 2×10^6 R. Although it is very likely that the vendor-supplied wire would have withstood the temperature and radiation effects of a Palisades LOCA, it was decided to replace all of the internal control wire with IEEE 323-1974 environmentally qualified wire with substantiating documentation. This decision was based on the fact that qualification documentation beyond that provided on the tags does not exist.

The four operators that are 1980 vintage equipment and located in containment were checked because of environment and because inspection of other operators in the vicinity was ongoing. These operators were found to be wired with Nuclear Grade Rockbestos Firewall III SIS control wire.

The other twelve 1980 vintage operators are located outside of containment; in environments much less harsh during accident conditions. Given their vintage and location, and the fact that similar vintage valves inside containment all revealed qualified wiring, it was determined that only a sample inspection would be necessary. As such, five of the operators were inspected and all five were found to be wired with nuclear grade Firewall III SIS control wire.

In summary, the undocumented and, therefore, unqualified white braided wire appeared only in the older, pre-1970 vintage operators. The reason for this is that vendors in the past did not typically qualify their equipment by test or specific analysis, but rather, provided the highest quality available off-the-shelf equipment. Today, vendors in the nuclear industry provide equipment rigorously qualified by test and/or analysis. The high-quality undocumented wire would have very likely withstood the effects of a LOCA based on our findings and, therefore, no additional risk to the health and safety of the public resulted.



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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 86-003 - INADEQUATE ENVIRONMENTALLY QUALIFIED VALVE
MOTOR OPERATOR

Licensee Event Report (LER) 86-003 (Inadequate Environmentally Qualified Valve
Motor Operator) is attached. This event is being made as a voluntary report
to the NRC.

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CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

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