

SAFETY EVALUATION REPORT ISSUED TO
WISCONSIN ELECTRIC POWER COMPANY ET.AL.
PERTAINING TO THE CONDUIT FIRE PROTECTION
RESEARCH PROGRAM

Introduction

By letter dated November 4, 1987 Wisconsin Electric Power Company submitted to the NRC for review a report detailing the results of an internal conduit seal research program, "Conduit Fire Protection Research Program-Final Report." The research program is intended to support the implementation of revised criteria for sealing conduit penetrations of fire barriers. As a result of the preliminary review of this report a request for additional information (RAI) was sent to the Licensee on May 18, 1988. The Licensee responded to the RAI by letter dated June 15, 1988. A meeting was then held with the staff on July 12, 1988 with report sponsors to discuss areas of concern.

Discussion

The research program included a review of available test data and survey information from participating utilities. The survey attempted to establish the important parameters affecting conduit seal performance. The results of the information collected indicated that variables which may contribute to conduit seal performance include termination distance from the fire barrier, conduit diameter, conduit cable fill, type of conduit termination, and type of conduit.

A test was designed in an attempt to determine the impact of these variables on seal performance. The test, conducted at the Construction Technology Laboratories of the Portland Cement Association, incorporated 101 conduit penetrations into a test slab. The test slab was then exposed to the ASTM E-119 standard fire exposure for three hours. Based on data gathered during the test, the sponsors formulated a set of criteria that is being proposed for conduit sealing.

Evaluation

The staff evaluated the report with the aid of our technical assistance contractor, Science Applications International Corporation. The staff initially expressed a number of questions and concerns regarding the proposed criteria. However, based on the information provided by the licensee, these issues have been resolved. SAIC issued their technical evaluation report on February 7, 1989 (copy attached). The staff agrees with its conclusions.

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Conclusion

Based on its review, the staff concludes that the subject research program justifies the implementation of revised conduit fire criteria.