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ALEXICH,M.P. Indiana Michigan Power Co.
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SUBJECT: Forwards addl info re potential enforcement items noted during environ qualification audit on 860421-30.

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Power Company
P O Box 16631
Columbus, OH 432

INDIANA MICHIGAN POWER

AEP:NRC:0775AN

Donald C. Cook Nuclear Plant Units 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
DONALD C. COOK NUCLEAR PLANT ENVIRONMENTAL
QUALIFICATION INSPECTION - ADDITIONAL INFORMATION

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Attn: A. B. Davis

June 24, 1988

Dear Mr. Davis:

In response to a request from your staff, we are providing additional information regarding potential enforcement items identified during the Donald C. Cook Nuclear Plant Environmental Qualification Audit conducted during the period April 21-30, 1986 (Inspection Report Nos. 50-315/86015; 50-316/86015 Attachment 1). Also included is information about two recently discovered conditions involving the mixing of greases in Limitorque motor operators and undocumented materials found in Limitorque motor operators.

Some of the enclosed material has been previously provided in our submittal AEP:NRC:0775AE, "Equipment Environmental Qualification Audit," dated May 29, 1986.

Inspection report Item 1 stated that the Environmental Qualification files were not auditable, in that the records were not readily retrievable.

Although we believed that the files were auditable at the time of the inspection, we recognize that independent use of the files did require some indoctrination to the filing system that existed at the time. We have made enhancements to the filing system and now believe that it can be used by an outside auditor with minimal assistance from AEPSC personnel.

The following steps have been taken to enhance our EQ file:

1. Establishment of a Master EQ Computer Data Base.

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2. A change was made to the System Component Evaluation Work (SCEW) Sheet Packages to reference specific file locations for the documentation of Specified and Qualified parameters. Also, a brief description of the referenced document has been included.

3. SCEW sheet packets now include specific primary and supplementary references, and the applicable article in the Surveillance/Maintenance/Replacement (S/M/R) program. The packet also states the level of qualification (DOR Guidelines or NUREG 0588, Category I) and contains a positive statement of the environmental qualification of the subject device.

Inspection report Item 2, qualification of Conax electrical penetrations, Haveg Kapton insulated penetration feedthrough and pigtail extension wire, and Brand Rex triaxial cable, is addressed in Attachment 2. This attachment also contains relevant pages from the Brand Rex test report which were also requested.

It is our understanding that inspection report Item 3 is no longer an issue.

Inspection report Item 4, lack of a T-drain in IMO-54, is addressed in Attachment 3. After review, it was determined that environmental qualification of this valve is not required.

Inspection report Item 5, XSO-122 configuration, concerns a containment ventilation isolation valve located inside containment. It is required to operate for 5 seconds following an accident. It is a fail-closed valve, and its electrical installation does not need to be environmentally qualified. Inadvertent energizing of the circuitry is prevented by the "Double Break" philosophy used for these circuits. Solenoid coil failure as a result of moisture intrusion will also cause the solenoid valve to fail safe.

This was addressed in our previous submittal and reviewed and closed during a followup inspection conducted August 25-28 and September 29 and 30, 1986 (50-315/86033(DRS); 50-316/86033(DRS)).

Inspection report Item 6, Foxboro differential transmitter configuration, was addressed in our previous submittal, and is included here as Attachment 4. This was reviewed and closed during the previously noted followup inspection.

Additional Items

In addition to the preceding items, untested torque switch materials were found in Limitorque motor operators used in the Cook Nuclear Plant. The details are provided in a report submitted by Indiana Michigan Power Company under the provisions of 10 CFR 21 (Attachment 5).

Following the discovery, a plan for corrective action has been established and implementation is in progress. Also justifications for continued operation were prepared and provided to the NRC for review.

A final item concerns contaminated greases found in the limit switch compartment of valve operators supplied by Limitorque. The valve operators were delivered and installed in Cook Nuclear Plant Unit 1 after November 30, 1985.

While disassembling the operators which were to be installed in Unit 2, a small amount of a grease (Mobilgrease 28) different from the bulk grease (Exxon Beacon 325) was discovered. It was determined that the contamination occurred at the vendor's test facility. Since the Unit 1 motor operators were not disassembled prior to installation, it is not known whether their limit switch compartments also contain a small amount of Mobilgrease 28. However, the Unit 1 and 2 operators were delivered at the same time.

The subsequent investigation included calls to Limitorque Corporation, Mobil Corporation and Mr. R. Bolt, an independent consultant. Based on these conversations, we have concluded that the amount of Mobilgrease 28 found in the actuator limit switch compartment does not affect the operation of the limit switches and the environmental qualification of the actuators was not compromised.

Replacement of the torque switches (Units 1 and 2) and regreasing of the limit switch compartments (Unit 1) is to be done during the current Unit 2 outage and during the next Unit 1 refueling outage which is currently anticipated to occur in March 1989.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,

M. P. Alexich
Vice President

MPA/eh

Attachments

cc: D. H. Williams, Jr.
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
A. B. Davis - Region III

Attachment 1 to AEP:NRC:0775AN

Inspection Report 50-315/86015; 50-316/86015

Appendix A - Potential Enforcement/Unresolved Items

Potential Enforcement/Unresolved Items

As a result of the special equipment qualification inspection of April 21-25, and 29-30, 1986, the following items have been referred to NRC Region III as Potential Enforcement/Unresolved Items (paragraph references are to detailed portions of the inspection report).

1. Contrary to paragraph (j) of 10 CFR 50.49, the American Electric Power Service Company (AEPSC) EQ documentation files were not auditable to the extent that the organization of documentation was not readily understandable and traceable to permit independent verification of conclusions (Paragraph 4.F(1), Item 50-315/86015-01; 50-316/86015-01).

2. Contrary to paragraphs (f) and (k) of 10 CFR 50.49, and Section 5.2.5 of the DOR Guidelines, the EQ files for (1) Conax electrical penetration assemblies (600 volt and below), model 2325-8386-01 through 11 and 15; (2) Haveg Kapton insulated penetration feedthrough and pigtail extension wire; and (3) Brand Rex triaxial cable, type RG 11/U, did not adequately demonstrate qualification because of failure to show that the equipment functional performance requirements were satisfied. No analyses were found which address how measured parameters taken during the type test (IR readings as an example) would affect plant circuits, when used in units 1 and 2 (Paragraphs 4.F(2), 4.F(3), 4.F(4), Item 50-315/86015-02; 50-316/86015-02).

3. Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and Section 5.2.2. of the DOR Guidelines, the installed configuration of seven Limitorque motor operators (four in unit 1 and three in unit 2) were not the same as qualified by type test, in that undocumented wire was identified within the limit switch assembly housings (Paragraph 4.F(6)a, Item 50-315/86015-03; 50-316/86015-03).

4. Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and Section 5.2.2. of the DOR Guidelines, the installed configuration of Limitorque motor operator, DC Cook Tag No. IMO-54, located inside the unit 2 containment, was not the same as qualified by type test in that "T" drains (motor housing) and grease relief valves (gearbox housing) had not been installed (Paragraph 4.H(1)a, Item 50-316/86015-04).

5. Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and Section 5.2.2 of the DOR Guidelines, the installed configuration of ASCO solenoid valve, Model NP-8316-54 V, DC Cook Tag No. XSO-122 was not the same as qualified by type test in that moisture seals were not provided at the cable entrance. (Paragraphs 4.H(2)a, Item 50-316/86015-17)

6. Contrary to paragraphs (f) and (k) of 10 CFR 50.49 and Section 5.2.2 of the DOR Guidelines, the installed configuration of Foxboro Differential Transmitters, Model No. NE13-DM-H1H22, DC Cook Tag No. FFC-230 and FCC-241 was not the same as qualified by type test in that no weep hole was installed in the low point of the connecting conduit and the cable termination conduit was not sealed with silicon sealant as alternately permitted by the plant construction drawing. (Paragraph 4.H(3)a, Item 50-315/86015-21)

Attachment 2 to AEP:NRC:0775AN

Cable Insulation Resistances

Potential Enforcement/Unresolved Items

Item 2:

Environmental Qualification of (1) Conax Electrical Penetration assemblies, (2) penetration feedthrough extension wire (Haveg Kapton insulated wire), and (3) Brand Rex Triaxial Cable, type RG 11/u had been reviewed and approved by the electrical cognizant engineer.

The Cognizant engineer approval was documented in the EQ file (file #'s 13 (5/26/78), 138 (6/30/81)). His review, though not explicitly stated, considered Insulation Resistance (IR) and Hi Pot tests values given in the test reports. Also considered during the review was the fact that IR values are greatly influenced by direct blasts of steam and chemical spray solution on the sample cables during the EQ test. Consistently, cable samples that pass the environmental test show greatly improved IR values during the subsequent functional test which is more closely applicable to the protected cable installations.

The Cognizant engineer is also aware that the field installation of cables is always a more protected configuration than the tested configuration. Specifically at Cook Plant the penetration feedthrough and extension wire are protected against direct steam and chemical spray impingement by flood up tubes (file #61 SCEW #1-CI-11). The Brand Rex triaxial cable used to supply power to the Victoreen radiation monitors (the only Brand Rex triaxial in the EQ scope) is also protected by flood up tube installation through all its routing from the containment penetration to the Victoreen instrument. (file #138 SCEW #1-CI-21).

This discussion shows that the electrical installation identified in item 2 was environmentally qualified when approved as such by the cognizant electrical engineer. All the necessary documentation to show that the electrical installation was environmentally qualified was also in the EQ file and could be retrieved with the help of the EQ engineer.

In summary, we believe that the technical assessment of combined worst case IR measurements, although conservative, does not meaningfully address the actual accident performance of the electrical system. Instead, the review of individual tested electrical devices is sufficient and acceptable.