

June 13, 2000

LICENSEE: Entergy Operations, Inc (Entergy)

SUBJECT: SUMMARY OF MAY 23, 2000, MEETING WITH ENTERGY REGARDING
EQUIPMENT QUALIFICATION (EQ) CALCULATIONS REVIEW FOR
ARKANSAS NUCLEAR ONE UNIT 1 (ANO-1)

On May 23, 2000, representative of Entergy met with the Nuclear Regulatory Commission (NRC) staff and its contractor Brookhaven National Laboratory (BNL) representative to review EQ calculations. A list of meeting attendees is attached. The following calculations were reviewed by the staff and the contractor.

1. **4.4.1 Allis Chalmers Motors**

Allis Chalmers Report No. NQ7304852, NUS Calculation 84-EQ0034-01, dated November 21, 1984, and ANO-1 Environment Qualification Report Assessment (EQRA) No. V02-001, Rev. 0, dated July 1, 1996.

2. **4.4.4 Anaconda EPR Insulated Instrumentation, Control/Power Cable**

Franklin Institute Research Laboratories Report F-C4350-4, dated July 1976, and EQRA No. V05-003, Rev. 1, dated October 6, 1998.

3. **4.4.9 Buchanan Terminal Blocks, Inside Reactor Building**

Limitorque Report No. B0119, Rev. 1 dated July 1, 1982, and EQRA No. V11-002, Rev. 0, dated July 1, 1996.

4. **4.4.10 Conax Thermocouples**

Conax Test Report No. IPS-1138, dated January 31, 1985, and EQRA No. V14-001, Rev. 0, dated July 1, 1996.

5. **4.4.11 Conax Resistance Temperature Detectors**

Conax Test Report No. IPS-875, Rev. A, dated March 9, 1983, and EQRA No. V14-002, Rev. 0, dated July 1, 1996.

6. **4.4.13 Conax Electrical Penetration Assemblies**

Franklin Report No. F-C4911-2, dated March 1978, ANO-1 Calculation 87-EQ-0002-29, Rev. 0, dated October 1, 1990, and EQRA No. V14-005, Rev. 0, dated July 1, 1996.

7. **4.4.21 Limitorque Motor Operated Valve Actuators; Alternating Current/Inside Reactor Building (most applications)**

Limitorque Test Report No. B0058, dated January 11, 1980, and EQRA No. V33-001, Rev. 1, dated August 26, 1998.

8 **4.4.31 Okonite 600V Power Cable with Okonite Insulation and an Okolon Jacket (most applications)**

Okonite Report No. NQRN 1A, Rev. 4, dated March 31, 1987, and EQRA No. V38-003, Rev.1, dated October 15, 1998

9 **4.4.35 Raychem Cable Splice and Jacket Repair Tape (type NJRT)**

Raychem Test Reports Nos. EDR-5210, Rev. 1, dated January 9, 1992, EDR-5046, Rev. 1, dated March 4, 1982, and EQRA No. V40-002, Rev. 1, dated September 1, 1999.

10. **4.4.38 Rockbestos Coaxial Cable (most applications)**

Rockbestos Test Report No. QR-6802. dated March 12, 1986, and EQRA No. V42-001, Rev. 1, dated October 6, 1998.

11. **4.4.40 Rockbestos Firezone R Silicone Rubber High Temperature Cable (some applications)**

Rockbestos Test Report No. QR-9801, Rev. 0, dated January 24, 1991, ANO-1 Engineering Report No. 93R-1026-01, Rev. 4, dated September 5, 1997, and EQRA No. V42-003, Rev. 1, dated October 6, 1998.

12. **4.4.58 Brand Rex Cross-Linked Polyethylene Coaxial Cable**

Franklin Institute Research Laboratories Test Report No. F-C5120-2, dated September 2, 1980, Calculation No. 94EQ-0001-01, Rev. 0, dated June 6, 1996, and EQRA No. V55-001, Rev. 2, dated September 3, 1999.

The review of the following EQ calculations are summarized as follows:

1. **4.4.48 Target Rock Solenoid Operated Valves (Reports 2375 and 1827)**

The staff and its contractor reviewed Target Rock Test Report No. 2375, Rev. G, dated May 4, 1983, ANO-1 Calculation 90-EQ-1001-02, Rev. 0, dated June 4, 1990, and EQRA No. V46-007, Rev. 0 dated July 1, 1996, and found that two solenoid valves would have peak temperature of 207°F. The applicant indicated that those two valves had a qualified life of 30 years and would be replaced before 30 years and hence they were excluded from the license renewal application.

2. **4.4.55 Westinghouse Motors, Models TBFC and SBDP**

The staff and its contractor reviewed Test Report No. SCE-ANO-02, Rev. 2, dated July 1986, and EQRA No. V50-004, Rev. 0, dated July 1, 1996, and found that the applicant's analysis did not consider the aging effect of non-operation of the motor at 105°F (motor ambient temperature). These motors are not running during normal operation. The applicant stated that they would address this finding as a RAI response.

/RAI/

Sikhindra K. Mitra, Project Manager
License Renewal and Standardization Branch
Division of Regulatory Improvement Program
Office of Nuclear Reactor Regulation

Docket No. 50-313

Attachment: List of Attendees

cc w/attachment: See next page

2. **4.4.55 Westinghouse Motors, Models TBFC and SBDP**

The staff and its contractor reviewed Test Report No. SCE-ANO-02, Rev. 2, dated July 1986, and EQRA No. V50-004, Rev. 0, dated July 1, 1996, and found that the applicant's analysis did not consider the aging effect of non-operation of the motor at 105°F (motor ambient temperature). These motors are not running during normal operation. The applicant stated that they would address this finding as a RAI response.

/RA/

Sikhindra K. Mitra, Project Manager
License Renewal and Standardization Branch
Division of Regulatory Improvement Program
Office of Nuclear Reactor Regulation

Docket No. 50-313

Attachment: List of Attendees
cc w/attachment: See next page

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NRC MEETING WITH ENTERGY TO REVIEW
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ATTENDANCE LIST
MAY 23, 2000

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Arkansas Nuclear One
Docket No. 50-313

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