Docket No. 50-336

# Environmental Qualification

# of

# Safety Related Electrical Equipment

Northeast Nuclear Energy Company

Millstone Unit No. 2

May 20, 1983

Docket No. 50-336

Northeast Nuclear Energy Company

Millstone Unit No. 2

Attachment 1

Chronology and References

May 20, 1983

# ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT

## MILLSTONE UNIT NO. 2

## CHRONOLOGY AND REFERENCES

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| (1) | February 8, 1979 ..... | B. H. Grier letter to W. G. Counsil transmitting I&E Bulletin No. 79-01. |
| (2) | March 23, 1979 ..... | W. G. Counsil letter to R. W. Reid identifying unqualified SMLS. |
| (3) | April 6, 1979 ..... | W. G. Counsil letter to R. W. Reid identifying qualified SMLS to be installed prior to Cycle 3 startup. |
| (4) | April 18, 1979 ..... | W. G. Counsil letter to R. W. Reid identifying unqualified solenoid operating valves will have qualified solenoids by Cycle 3 startup. |
| (5) | May 8, 1979 ..... | W. G. Counsil letter to R. W. Reid identifying SMLS on Valves S1-G14, G24, G34, and G44 will not be replaced; justification provided. |
| (6) | June 6, 1979 ..... | B. H. Grier letter to W. G. Counsil transmitting I&E Bulletin No. 79-01A, regarding ASCO solenoid valves. |
| (7) | June 6, 1979 ..... | W. G. Counsil letter to N. C. Mosely transmitting response to I&E Bulletin No. 79-01. |
| (8) | September 4, 1979 ..... | W. G. Counsil letter to N. C. Mosely transmitting additional information in response to I&E Bulletin No. 79-01, June 6, 1979 letter. |
| (9) | September 5, 1979 ..... | W. G. Counsil letter to R. W. Reid identifying unqualified RTS's in containment - continued operation justified. |
| (10) | September 19, 1979 .... | W. G. Counsil letter to R. W. Reid submitting followup report on September 5, 1979 letter. |
| (11) | January 9, 1980 ..... | W. G. Counsil letter to B. H. Grier transmitting response to I&E Bulletin No. 79-28/Defective Gaskets in NAMCO SMLS. |

(12) January 14, 1980 ..... B. H. Grier letter to W. G. Counsil transmitting I&E Bulletin No. 79-01B.

(13) January 18, 1980 ..... W. G. Counsil letter to N. C. Mosely transmitting update to original I&E Bulletin No. 79-01 response -additional information.

(14) February 29, 1980 ..... B. H. Grier letter to W. G. Counsil transmitting Supplement to I&E Bulletin No. 79-01B.

(15) March 3, 1980 ..... W. G. Counsil letter to B. H. Grier transmitting response to Items 1 - 3 to I&E Bulletin No. 79-01B.

(16) March 31, 1980 ..... W. G. Counsil letter to B. H. Grier transmitting update to March 3, 1980 letter, Items 1 - 3 of I&E Bulletin No. 79-01B.

(17) April 17, 1980 ..... W. G. Counsil letter to B. H. Grier transmitting update of original response to I&E Bulletin No. 79-01B, March 3, 1980 letter.

(18) May 23, 1980 ..... Commission issues Memorandum and Order requiring SER's by February 1, 1981 and total compliance by June 30, 1982.

(19) July 14, 1980 ..... NNECO representatives attend Region I clarification meeting.

(20) July 16, 1980 ..... W. G. Counsil letter to B. H. Grier update to original response to I&E Bulletin No. 79-01B, March 3, 1980 letter, addressing commitments made in the April 17, 1980 letter.

(21) August 26, 1980 ..... R. T. Carlson letter to W. G. Counsil discussing audit findings on selected components.

(22) August 29, 1980 ..... R. A. Clark letter to W. G. Counsil transmitting the Order for Modification of License requiring a response by November 1, 1980.

(23) September 10, 1980 .... W. G. Counsil letter to B. Wolfe (GE) requesting expedited response regarding qualification documentation.

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| (24) | September 19, 1980 .... | D. G. Eisenhut letter to W. G. Counsil transmitting Revised Order for Modification of License. |
| (25) | September 30,. 1980 .... | NRC issues Supplement 2 to I&E Bulletin No. 79-01B. |
| (26) | October 1, 1980 ..... | D. G. Eisenhut letter to All Licensees of Operating Plants and Applicants for Operating Licenses and Holders of Construction Permits requesting pertinent information relative to environmental qualification testing. |
| (27) | October 9, 1980 ..... | W. G. Counsil letter to J. Blachly (Siemans-Allis, Incorporated) requesting expedited response regarding qualification documentation. |
| (28) | October 14, 1980 ..... | R. T. Carlson letter to W. G. Counsil discussing findings of audit regarding comparison of qualification documentation to plant components. |
| (29) | October 20, 1980 ..... | NNECO representative responds to request of NRC Project Manager to provide status of the response to the Order. |
| (30) | October 24, 1980 ..... | B. H. Grier letter to W. G. Counsil transmitting Supplement 3 to I&E Bulletin No. 79-01B. |
| (31) | October 24, 1980 ..... | R. A. Clark letter to W. G. Counsil transmitting an immediately effective order regarding modifications to the license and Technical Specifications. |
| (32) | October 31, 1980 ..... | W. G. Counsil letter to D. G. Eisenhut providing information, SCEW sheets, and qualification references fulfilling the requirements issued by the Order of Reference (22). |
| (33) | November 26, 1980 ..... | D. G. Eisenhut letter to W. G. Counsil, Generic Clarification of Documentation required which is associated with Central Qualification file. |

(34) December 4, 1980 ..... W. G. Counsil letter to H. R. Denton requesting a hearing on the Order issued by Reference (31).

(35) January 16, 1981 ..... D. G. Eisenhut letter to W. G. Counsil holding hearing request in abeyance.

(36) January 19, 1981 ..... D. G. Eisenhut letter to All Licensees clarifying Bulletin 79-01B requirements.

(37) January 20, 1981 ..... W. G. Counsil letter to D. G. Eisenhut identifying the lack of planned Environmental Qualification testing.

(38) January 30, 1981 ..... W. G. Counsil letter to D. G. Eisenhut concurring with 30 day holding of hearing request.

(39) January 30, 1981 ..... W. G. Counsil letter to D. G. Eisenhut updating October 31, 1980 submittal.

(40) March 10, 1981 ..... D. G. Eisenhut to all plants; staff position that summary qualification reports not adequate.

(41) April 14, 1981 ..... B. H. Grier to W. G. Counsil transmitting Circular 81-06; potential difficiencies in Foxboro transmitters.

(42) April 14, 1981 ..... T. M. Novak to W. G. Counsil; 10 day letter requiring justification of continued operation in light of potential difficiencies.

(43) April 30, 1981 ..... W. G. Counsil to T. M. Novak; providing justification for continued operation in 10-day response.

(44) May 27, 1981 ..... R. A. Clark letter to W. G. Counsil; transmitting the SER, for review and 90 day response.

(45) June 4, 1981 ..... W. G. Counsil to Hendrie requesting extension of June 30, 1982 deadline.

(46) June 12, 1981 ..... D. G. Eisenhut to W. G. Counsil allowing 90 days for hearing request after date of issuance of SER.

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| (47) | June 22, 1981 ..... | Industry Petition for extension of deadline for compliance with CLI-80-21. |
| (48) | June 26, 1981 ..... | W. G. Counsil letter to D. G. Eisenhut, commenting on anticipated usefulness of July 7 - 10 meeting. |
| (49) | June 29, 1981 ..... | NRC response to industry petitions postponing recommendation until July 31, 1981. |
| (50) | July 16, 1981 ..... | W. G. Counsil letter to H. R. Denton providing feedback on July 7 - 10 environmental qualification meeting. |
| (51) | July 31, 1981 ..... | Staff position to the Commission recommending one year extension to the June 30, 1982 deadline. |
| (52) | August 14, 1981 ..... | W. G. Counsil letter to D. G. Eisenhut documenting position on qualification of replacement parts. |
| (53) | August 14, 1981 ..... | D. G. Eisenhut letter to W. G. Counsil proposing additional delay on affirmation or withdrawal of pending requests. |
| (54) | August 20, 1981 ..... | W. G. Counsil letter to D. G. Eisenhut, accepting Staff proposal of Reference (53) regarding pending hearing requests. |
| (55) | August 26, 1981 ..... | W. G. Counsil letter to D. G. Eisenhut, discussing status of SER responses and providing overview of NNECO perspective on environmental qualification. |
| (56) | August 26, 1981 ..... | W. G. Counsil to D. G. Eisenhut submitting the 90-day response to the Staff's SER. |
| (57) | August 27, 1981 ..... | I & E Information Notice 81-29 regarding adverse test results. |
| (58) | September 30, 1981 .... | W. G. Counsil to D. G. Eisenhut providing minor editorial changes to Reference (56). |

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| (59) | December 8, 1981 ..... | W. G. Counsil to R. C. Haynes, fulfilling commitments made in Reference (55) regarding resistance temperature detectors. |
| (60) | January 6, 1982 ..... | R. A. Clark letter to W. G. Counsil requesting that additional information be provided to FRC. |
| (61) | January 20, 1982 ..... | Federal Register notice (47FR2876) on a proposed rule regarding Environmental Qualification of Electrical Equipment. |
| (62) | February 9, 1982 ..... | W. G. Counsil letter to D. M. Crutchfield and R. A. Clark forwarding material requested in Reference (60). |
| (63) | February 10, 1982 ..... | W. G. Counsil letter to the Secretary of the Commission providing schedular comments on the proposed rule of Reference (61). |
| (64) | February 18, 1982 ..... | R. A. Clark letter to W. G. Counsil requesting submittal of certain reference information. |
| (65) | February 22, 1982 ..... | 47FR7782: Proposed Revision I to Reg. Guide 1.89: Environmental Qualfication of Electric Equipment for Nuclear Power Plants. |
| (66) | March 4, 1982 ..... | R. C. Haynes letter to all licensees transmitting Information Notice 82-03: "Environmental Tests of Electrical Terminal Blocks." |
| (67) | March 22, 1982 ..... | W. G. Counsil letter to Secretary of the Commission commenting on the Proposed revision to Reg. Guide 1.89. |
| (68) | May 13, 1982 ..... | W. G. Counsil letter to R. C. DeYoung providing notification of a Substantial Safety Hazard. |
| (69) | June 30, 1982 ..... | Federal Register Notice (28363) suspending the June 30 deadline for completion of Environmental Qualification of Safety Related Electrical Equipment by all operating nuclear power plants. |

(70) July 1, 1982 ..... W. G. Counsil letter to R. A. Clark submitting qualification information requested in Reference (64).

(71) July 12, 1982 ..... C. J. Crane (Franklin Research Center) letter to NRC stating that Millstone Unit No. 2 has provided (via Reference 70)) the information requested by Reference (64).

(72) December 29, 1982 ..... W. G. Counsil to R. A. Clark updating information on TMI Item II.F.1.5.

(73) January, 1983 ..... Union of Concerned Scientists (Petitioner) vs NRC and the USA (Respondents), and NUGEQ (Intervenor), Brief for Respondents on Petition for Review of a Final Rule on the NRC.

(74) January 21, 1983 ..... Federal Register, 48FR2729 issuing final rule on Environmental Qualification.

(75) February 18, 1983..... Union of Concerned Scientists (Petitioner) vs NRC, et. al. (Respondent), NUGEQ (Intervenor), Petition for Review of a Rule of the NRC, Brief for Intervenor Nuclear Utility Group on Equipment Qualification.

(76) February 22, 1983 ..... W. G. Counsil letter to D. G. Eisenhut confirming date by which a determination must be made on a hearing request.

(77) March 7, 1983..... NUGEQ (Petitioner) vs NRC (Respondent), Petition for Review.

(78) March 18, 1983 ..... W. G. Counsil letter to R. A. Clark and D. M. Crutchfield formally advising the Staff of NU's interpretation of the Final Rule on Environmental Qualification.

(79) March 24, 1983 ..... W. G. Counsil letter to D. G. Eisenhut conditionally withdrawing NU's request for a hearing.

(80) March 28, 1983 ..... W. G. Counsil letter to R. A. Clark and D. M. Crutchfield reestablishing a submittal date for certain qualification information.

(81) April 6, 1983 ..... R. A. Clark letter to W. G. Counsil transmitting FRC's Technical Evaluation Report (TER).

(82) April 25, 1983 ..... W. G. Counsil letter to R. A. Clark submitting 30-day response to Reference (74).

(83) April 15, 1983 ..... W. G. Counsil letter to D. G. Eisenhut submitting NNECO's response to items of Generic Letter 82-33, (Supplement 1 to NUREG-0737).

(84) May 18, 1983..... W. G. Counsil letter to R. A. Clark and D. M. Crutchfield, amending operating license DPR-65 incorporating revised Technical Specifications.

## A. INTRODUCTION AND CHRONOLOGY

Northeast Nuclear Energy Company (NNECO) was initially requested to address the issue of environmental qualification of electrical equipment for Millstone Unit No. 2 in the form of a docketed response by Reference (1). In accordance with the provisions of Item 4 of Reference (1), References (2) through (5) were submitted to notify the Commission that certain stem mounted limit switches were lacking the requisite qualification, and identified corrective action and justification for continued operation.

By Reference (6), the NRC issued I&E Bulletin No. 79-01A, regarding ASCO solenoid valves. NNECO's initial response to the provisions of Items 1 through 3 of Reference (1) was docketed by Reference (7) and supplemented by Reference (8). References (9) and (10) were submitted in conformance with Item 4 of Reference (1) and discussed the qualification status of resistance temperature detectors used to monitor containment air temperatures. Justification for continued operation was provided. Reference (11) docketed a response to I&E Bulletin No. 79-28 regarding NAMCO stem-mounted limited switches.

The issue of environmental qualification was escalated to a higher priority status upon issuance of Reference (12). An indication of the magnitude of this task can be obtained by reviewing the attached chronology. It is important to recognize that NNECO resources have been strained significantly, not merely because of the amount of equipment requiring qualification documentation, but also because of the numerous changes and conflicts in NRC guidance documents on this subject. To support this position, the attached chronology is discussed to specify instances where such conflicts have arisen and to identify the applicability of these reference documents as of this writing.

Supplemental information in the form of System Component Evaluation Work Sheets (SCEWS) was provided in Reference (13). For each component, information in the form of component description, description of the accident environment, the environment to which the equipment is qualified, the manner of qualification, and the identification of the specific supporting qualification documentation was provided. Resolution of the issues identified in Reference (6) was also provided by Reference (13).

The first supplement to Reference (1) was issued by Reference (14). The supplemental information was presented in the form of seventeen (17) generic questions and answers. Of particular significance was the response to Question 5, in which the Staff stated that TMI lessons-learned equipment was not to be addressed. The response to Question 9 is also of significance as the Staff states that the requirements and positions in NUREG-0588 are the same as those in NUREG-0578 in relation to

environmental qualification of electrical equipment and components. The response to Question 18 of Reference (25) discusses the differences between NUREG-0588 and NUREG-0578 regarding the calculation of radiation source terms.

By Reference (15), (16), and (17), NNECO responded to the specific provisions of Reference (12). The equipment qualification status, which is superseded by the docketing of Appendix II to this report, was presented to the extent it was available at that time. Reference (15) provided information regarding the radiation service conditions and temperature and pressure profiles which remain applicable as shown in Appendix II.

In Reference (18), the Commissioners issued the Memorandum and Order, and required the NRC Staff to issue Safety Evaluation Reports by February 1, 1981. It is NNECO's intention that the report will be the foundation for a favorable SER.

During the regional meetings on this subject (Reference (19), additional changes in NRC requirements or new interpretations were provided. The Staff explained that there was no longer a need to adddress areas of the plant which remain at ambient conditions. The Staff also discussed the various qualification methods which are acceptable, and these included evaluation, analysis, and similarity considerations. Subsequent to the meeting, NNECO endeavored to restructure the program to respond to the new guidance.

By Reference (20), supplemental information to Reference (17) was provided. Commitments made in Reference (17) were fulfilled or new schedules were established.

The results of a corporate office audit conducted by the Office of Inspection and Enforcement were documented in Reference (21). No items of noncompliance were identified during the 16-hour verification inspection.

In Reference (22), the Staff issued the Order for Modification of License and required a response by November 1, 1980. Although eventually superseded by Reference (24), the principle purpose of this report is to respond to Reference (22).

NNECO has encountered numerous difficulties in obtaining some of the necessary qualification documentation. Several vendors are no longer in business supplying components for nuclear applications, others are no longer in existence, and still others express great reluctance in providing the requested data. Postulated reasons include difficulties in retrieval or commercial considerations. In attempting to deal with this dilemma, NNECO has resorted to letters such as References (23)

and (27) to expedite receipt of the necessary information. Although such efforts have been helpful, they have not resolved a remaining difficulty in obtaining the required qualification documentation.

In Reference (25), the Staff clarified its position on a number of requirements and escalated the scope of the review effort significantly. NNECO's exceptions and positions with respect to the requirements of this document were discussed in the forwarding letter. NNECO reemphasizes that extreme difficulties are encountered when the NRC issues documents which revise the scope of a major effort which are required by order to be submitted merely one month from the issuance of Reference (25).

By Reference (26), The Staff requested pertinent information regarding environmental qualification tests to be conducted within the next two years. We are endeavoring to supply the requested information, but did not receive this document until Tuesday, October 14, 1980. The current work load on individuals involved in environmental qualification will likely preclude a complete response by November 1, 1980, but NNECO intends to respond as soon as possible. No plans for qualification testing for NNECO have been identified as of this writing.

Reference (28) documents the results of a site audit conducted by the Office of Inspection and Enforcement. No items of non-compliance were identified. A response is provided as Appendix III to this report.

Reference (29) identifies a call betwen NNECO representatives and the NRC Project Manager for Millstone Unit No. 2 regarding the status of the response to the Order. The questions posed were suggestive of potential for changes/relaxations in certain portions of NRC requirements. The responses provided by NNECO are intended to demonstrate its continued position that the purpose of this effort is to demonstrate the adequacy of the current qualification status of safety-related electrical equipment, which is possible even if certain provisions of the qualification requirements cannot be fulfilled by documentation.

By Reference (30), the Staff transmitted Supplement 3 to I&E Bulletin No. 79-01B. This document delayed the schedule for submittal of all qualification documentation regarding TMI Action Plan equipment until February 1, 1981. Similarly, the qualification information for equipment required to achieve and maintain a cold shutdown condition is not required until February 1, 1981. NNECO's position regarding these changes is being provided now and will be supplemented by February 1, 1981.

By Reference (31), NNECO received an immediately effective Order which modified the license and the Technical Specifications. June 30, 1982 has been established in the license as the date by

which fully qualified safety-related electrical equipment must be installed. By December 1, 1980, NNECO must establish complete and auditable records and maintain them at central locations. Steps are being taken to comply with these requirements on schedule.

By Reference (32) NNECO provided information requested in Reference (24), consisting of qualfication information for safety-related electrical equipment and accordance with the Commission's guidance in this matter. Where total qualification was not incorporated into this report, justification for continued operation until total conformance could be achieved was provided.

In Reference (33), D. G. Eisenhut addressed clarification of the October 24, 1980 Orders to all Licensees. The provision of the Orders requiring centrally located records did not call for creation of any records, per se, but the existance of a system which contained a complete set of documentation on Environmental Qualification.

Reference (34) requested that a hearing be held ot determine the validity of NUREG-0588 requirements, specifically the requirement of meeting the June 30,1982 deadline for qualification of all safety-related electrical equipment.

Reference (35), D. G. Eisenhut informed W. G. Counsil that the Commission intended to hold the Reference (34) hearing request in abeyance until 30 days after the issuance of the SERs for our facilities, thus, providing the option of reviewing the Safety Evaluations while still preserving our ability to seek a hearing. A response regarding the acceptability of this approach was requested by January 30, 1981.

Reference (36), from D. G. Eisenhut to all Licensees, provided information in response to licensee requests regarding certain requirements of Bulletin 79-01B, the Reference (18) memorandum, and the Reference (30) Order.

In Reference (37), W. G. Counsil informed D. G. Eisenhut that there are no plans for environmental qualification testing that are applicable to Millstone Unit No. 2.

Reference (38) forwarded W. G. Counsil's acceptance of D. G. Eisenhut's proposal to hold our hearing request in abeyance for 30 days following the issuance of the Safety Evaluations for our facilities with the qualification that the 30 days be counted as after the receipt of the last of the Safety Evaluation Reports for the three operating units in the NU System.

Reference (39) updated the Reference (32) submittal, providing updated SCEW sheets, a revised index listing all safety-related electrical equipment, and additional or replacement pages for

the Master Listing of Electrical Components. This submittal focused on equipment required exclusively to achieve cold shutdown, but did not totally reflect the Staff guidance contained in Reference (36).

Reference (40) forwarded D. G. Eisenhut's letter to all licensees, clarifying the NRC Staff requirements for a detailed explanation of test procedures and the results thereof. These detailed reports on Environmental Qualification of Class IE Electrical Equipment would be then considered proprietary.

Reference (41) (Circular 81-06) contained information on certain Foxboro 10-to-50 Milliampere Transmitters. Licensees were advised of the improper use of Teflon wire insulation and an unsuitable capacitor in the amplifier section of these transmitters.

In Reference (42), T. M. Novak transmitted the preliminary results of the Staff review of environmental qualification of safety-related electrical equipment in Millstone Unit No. 2. The Staff review resulted in the alleged identification of a number of potential deficiencies such that conformance to DOE guidelines could not be demonstrated. NNECO was required to respond within ten days, providing justification for continued operation in light of these alleged deficiencies.

Reference (43), W. G. Counsil provided the required justification for continued operation, pointing out a number of specific concerns with the content of Reference (42). NNECO suggested that the current status of the Staff's SER did not accurately reflect the qualification status of electrical equipment at Millstone Unit No. 2 and that the subject concerns should be evaluated in detail prior to the issuance of the final SER.

Reference (44) transmitted the Safety Evaluation Report (SER). The NRC Staff identified the information required, and the actions necessary to comply with Reference (31). NNECO was given the option of presenting alternatives to staff positions, however, all information was requested to be provided within 90 days. NNECO has encountered difficulties in discerning the bases for the alledged deficiencies in many instances.

In Reference (45), W. G. Counsil informed D. J. Hendrie of the substantial amounts of manpower and resources already expended on environmental qualifications, and that licensee evaluations found the NRC Staff requirements for a June 30, 1982 deadline for full compliance neither appropriate, realistic, nor attainable. NNECO requested relief from the June 30, 1982 deadline, in the form of extensions to a minimum of seventeen

months after SER issuance. Other issues mentioned were equipment in mild enviornments, replacement parts, aging requirements, and containment profiles. This document was subsequently appended to Reference (49).

In Reference (46), D. G. Eisenhut informed W. G. Counsil of the Staff's decision to extend the 30-day abeyance period granted in Reference (34) to 90 days. Within 90 days of the issuance of the SER for Millstone Unit No. 2, NNECO was requested to inform the Staff of its intentions regarding the hearing request of Reference (34), and of the specific issues to be raised in the proceeding.

In Reference (47), the law firm of Debevoise and Liberman filed a petition on behalf of 20 licensees seeking a thirteen month extension of the June 30, 1982 deadline established by CLI-80-21. The petition stated that few, if any, licensees could meet the deadline, and that the assumptions upon which CLI-80-21 was based have proven to be significantly understated in terms of the length of time needed for compliance.

Reference (48) informed the Staff that NNECO planned to have representatives present at the July 7 - 10, 1981 meeting on environmental qualification. Based upon speculation regarding the results of the meeting, NNECO also intended to propose dates for licensee-specific meetings on this issue.

Reference (49) informed the 20 petitioning licensees that the NRC Staff intended to postpone its decision on the Reference (47) petition until after the July 7 - 10, 1981 meeting on environmental qualification. Based upon speculation regarding the results of the meeting, NNECO also intended to propose dates for licensee-specific meetings on this issue.

Reference (49) informed the 20 petitioning licensees that the NRC Staff intended to postpone its decision on the Reference (47) petition until after July 7 - 10, 1981 meeting. NNECO had no objection to this course of action.

Reference (50) provided feedback on the July 7 - 10, 1981 meeting on environmental qualification. NNECO had a total of seven representatives in attendance at this meeting. While the meeting was of some benefit, additional dialogue on a plant-specific basis was determined to be necessary to resolve the numberous remaining questions. Specific comments on the meeting were provided as an attachment. General comments regarding resource expenditures adequacy and correctness of the SER, discrepancies between the SER and the TER, mild environments, and the June 30, 1982 deadline were also provided.

In Reference (51), the NRC Staff responded to the Reference (47) petition, recommending a one-year extension of the deadline to the Commission. Other options were discussed, but a one year extension was recommeded. Additional extensions of time could be authorized by the Director, Division of Licensing, on a case-by-case basis for good cause shown.

Reference (52) established a written position on qualification of replacement parts to the provisions of NUREG-0588. NNECO stated that "sound reasons" for use of equipment lacking full qualification existed in numerous instances, and that such reasons are documented in the central qualification file.

Reference (53) forwarded D. G. Eisenhut's letter to W. G. Counsil proposing an additional delay in the Reference (37) hearing request, to allow NNECO to consider all recent or imminent developments. The staff expressed its intention to continue to pursue resolution of disputed technical issues.

In Reference (54), NNECO concurred with the Reference (53) proposal, agreeing to inform the Staff of NNECO's decision on the hearing request within 30 days of Commission disposition of the industry petition.

Reference (55) provided an overview of the environmental qualification issue in light of recent developments. The preferred methods to achieve resolution of disputed technical issues were discussed.

In Reference (56) W. G. Counsil provided a detailed synopsis of progress achieved to date toward meeting Environmental Qualification requirements docketing a detailed response to the Safety Evaluation Report for Millstone Unit No. 2 within the alloted 90 days; and demonstrating conclusively that continued operation of Millstone Unit No. 2 is consistant with public health and safety considerations.

Reference (57) R. C. Haynes to All Licensees, transmitted I&E Information Notice 81-29, which identifies adverse test results from testing of equipment, some of which were related to Environmental Qualification. The Staff does not require reporting of adverse test results, but pointed out that in some cases such results could be reportable under provisions of 10CFR50 or license requirements.

Reference (58) provided minor editiorial changes to Reference (56).

In Reference (59) W. G. Counsil informed R. C. Haynes that NNECO would meet commitments made in Reference (55) by taking action to ensure continued reliable operation of existing RTD's at Millstone Nuclear Power Station No. 2.

In Reference (60), R. A. Clark requested that additional information be forwarded to the NRC's contractor, Franklin Research Center, to facilitate the review of the NNECO 90-day response on Environmental Qualification.

Reference (61) consists of a Federal Register notice (47FR2876) on proposed rulemaking regarding Environmental Qualification. The proposed rule would clarify the Commission's requirements and codify methods of qualification currently contained in national standards, regulatory guides, and certain NRC publications.

Reference (62) provided the material requested in Reference (60) to FRC, noting that much of the information is considered to be proprietary and also that much of it had been provided previously. Compliance with the intent and spirit of the Paperwork Reduction Act was also questioned.

W. G. Counsil submitted comments to the proposed rule on Environmental Qualification in Reference (63). Mr. Counsil supported Chairman Pallidino's concept of a revised deadline, also contending that the second refueling outage commencing after March 31, 1982 constituted an achievable deadline. Commissioner action on the schedule, independent of the technical requirements of the rule, was recommended.

In Reference (64), R. A. Clark requested that additional information on TMI Action Plan items included in NNECO's EQ central file be sent to FRC to facilitate their review of NNECO's 90-day EQ submittal. This information includes identification of all TMI Action Plan equipment installed as of January 1, 1981, all equipment with implementation dates after January 1, 1981, and numerous other items, many of which were previously submitted to the NRC.

Reference (65) consists of a Federal Register Notice (47FR7782) on the proposed Revision 1 to Regulatory Guide 1.89, "Environmental Qualification of Electric Equipment for Nuclear Power Plants." The proposed Revision 1 would describe procedures that would be acceptable to the NRC Staff for complying with the proposed regulations in Reference (61).

Reference (66) R. C. Haynes to all Licensees, transmitted I&E Information Notice 82-03 which reported results from tests conducted on electrical terminal blocks by Sandia Laboratories. The test results indicated that certain terminal blocks exhibited leakage currents when exposed to a chemical/steam environment. Although the Staff did not require action on this topic, it did note that licensees should assure that their preventative maintenance program considers the effect of maintenance activity in the cleanliness and integrity of

electrical terminations and terminal blocks.

Reference (67) submitted W. G. Counsil's comments on the Proposed Revision 1 to Regulatory Guide 1.89 (Reference (65)). Mr. Counsil noted that the proposed revisions did not recognize the adequacy of previously submitted evaluations and documentations. Additionally, the revision would impose new costs and obligations on utilities without establishing a basis for these costs and obligations. The proposed revisions had stated that "... no new costs or obligations ... (would be placed) or utilities."

Reference (68) provided notification to the Staff of the existence of a Substantial Safety Hazard (SSH) at Millstone Units 1 and 2. Two radioactive gas monitors were found to have unacceptable sensitivities in an input range of radioactive energies expected following an accident. The gas monitor supplier (Kaman) stated he will rectify the problem.

Reference (69) consists of a Federal Register Notice (47FR28363) which suspends the previously imposed June 30, 1982, deadline for completion of Environmental Qualification. The rule in 47FR28363 is to remain in effect until the NRC supersedes 10CFR50.49 with the Final Environmental Qualification rule.

Reference (70) provided the environmental qualification and TMI Action Plan information requested by Reference (64). Our submittal identified TMI Action Plan equipment installed as of January 1, 1981, and noted that some of the requested information had been previously submitted to the FRC on numerous occassions.

Reference (71), from the FRC to the NRC, acknowledged that NNECO had provided (via Reference (70) and numerous past submittals) the information requested by Reference (64).

Reference (72) updated the status of qualification testing on TMI item II.F.1.5, and provided NNECO's schedule for submittal of test reports.

In Reference (73) Petitioner, Union of Concerned Scientists, challenges U.S. NRC's Final Rule on Environmental Qualification suspending the June 30, 1982 deadline by which operators of nuclear power plants were to show that certain safety-related electrical equipment would operate under adverse conditions, (47FR28363).

In Reference (74) the NRC issued the Final Rule on Environmental Qualification of safety related electrical equipment, codifying methods and criteria to meet the Commissions requirements in this area.

In Reference (75) NUGEQ (intervenors) statement of support for NRC's position on interim rule on environmental qualification.

In Reference (76), W. G. Counsil re-affirmed Northeast Utilities' intention of making a determination on a hearing request by March 24, 1983.

In Reference (77) NUGEQ (Petitioner) vs NRC (Respondent), petition to review the final rule on Environmental Qualification, 10CFR50.49.

Via Reference (78) W. G. Counsil advised the NRC staff that NNECO interprets the Final Rule on Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants as superseding the 90-day responses requested in Reference (80). Additionally, schedules for the completion of qualification of electric equipment will be submitted by May 20, 1983.

Reference (79) withdraws NNECO's request for a hearing, based on certain interpretations of the final rule.

Reference (80) deferred submittal of documentation of qualification information for several weeks due to a determination that the vendor-supplied information was incomplete.

Reference (81), transmitted the Franklin Research Centers' TER for Millstone Unit 2, and the NRC's SER. Several items required responses on a 30 and/or 90 day schedule.

In Reference (82), NNECO provided responses to several items addressed in the Staff SER for Millstone 2 (Reference (74)). NNECO also stated that the FRC TER contains no proprietary information and it may be released for public disclosure. This submittal fulfilled the 30-day response requirement of Reference (81).

In Reference (83), NNECO provided responses to Supplement I to NUREG-0737, referred to as "basic requirements". Attachment Nos. 2 through 4 describe the current status of each of the five major areas (i.e., SPDS, CRDR, EOPs, Regulatory Guide 1.97, and ERFs) in Supplement I to revise NUREG-0737 for the Haddam Neck Plant, Millstone Unit No. 1, and Millstone Unit No. 2, respectively. Our interpretation of the implementation and qualification schedules of Supplement I to NUREG-0737 and 10CFR50.49 was provided.

In Reference (84), Revisions to the Technical Specifications were made to bring them into conformance with the Final Rule on Environmental Qualification, 10CFR50.49. The changes deleted the June 30, 1982 deadline date, and removed the requirement for a central qualification file.

Docket No. 50-336

Northeast Nuclear Energy Company

Millstone Unit No. 2

Attachment 2

List of Electrical Equipment Important to Safety

May 20, 1983

List of Electrical Equipment Important Safety

| Column No. | Item | Description |
|---|---|---|
| 1 | SCEWS | System Component Evaluation Work Sheets - found in Attachment 4. |
| 2 | T.B. | Terminal block |
| | $H_2$ Recomb. | Hydrogen recombiner |
| | Recir. Fans | Recirculation fans |
| | P.I.R. Fans | Post Incident Recirculation Fans |
| | Limit Sw. | Limit switch |
| | L.S. Conn. | Limit switch connector |
| | SOV | Solenoid operated valve |
| | MOV | Motor operated valve |
| | XMTR | Transmitter |
| | PP Motor | Pump motor |
| | MO Damper | Motor operated damper |
| | MCC | Motor control center |
| | L.S. | Limit switch |
| | P. Sw. | Pressure switch |
| | Vac. Sw. | Vacuum switch |
| | R.T.D. Conn. | Resistance Temperature Detector connector |
| | Pr. Sw. | Pressure switch |
| | Rad. Det. | Radiation detector |
| | Jct. Bx. | Junction Box |
| | $H_2$ Anal. Rad. Mon. | Hydrogen Analyzer radiation monitor |
| 3 | Manufacturer | Self-explanatory |
| 4 | 1983 TER No. | Corresponding Franklin Research Center (FRC) Technical Evaluation Report (TER) reference number |
| 5 | NRC Category | I.A - Equipment Qualified<br>I.B - Equipment Qualification Pending Modification<br>II.A - Equipment Qualification Not Established<br>II.B - Equipment Not Qualified<br>II.C - Equipment Satisfies All Requirements Except Qualified Life or Replacement Schedule Justified<br>III.A - Equipment Exempt from Qualification<br>III.B - Equipment Not in Scope of Review |

| | | |
|---|---|---|
| | | IV - Documentation Not Made Available |
| 6 | NNECO TER Assessment | NNECO's evaluation of FRC TER concerns<br>1. Refer to SER/TER Review Sheet for justification.<br>2. Added qualification reference.<br>3. Equipment not evaluated in 1983 TER.<br>4. Equipment located in a mild environment. |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 2-A | Penetration | Conax | 85 | I.A | X | | | | | |
| 3-A | T.B.'s | GE | 83 | I.A | X | | | | | 1 |
| 4-A | Cable | Anaconda | 79 | II.A | | X | | | | |
| 5-A | Cable | Kerite | 78 | I.A | X | | | | | |
| 6-A | Cable | Cerro | 71 | II.A | | X | | | | 1 |
| 6-Aa | Cable | Kerite | 75 | I.A | X | | | | | |
| 7-A | $H_2$Recomb. | Westinghouse | 86 | I.A | X | | | | | |
| 8-A | Recir.Fans | Westinghouse | 93 | II.A | | | | | | |
| 9-A | P.I.R.Fans | Joy | 92 | II.A | | | | | | |
| 10-A | Limit Sw. | Namco | 63 | II.A | | X | | | | 1 |
| 11-A | Limit Sw. | Namco | 64 | II.A | | X | | | | 2 |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
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BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 12-A | L.S. Conn. | Conax | 42 | I.A | X | | | | | |
| 13-A | Set Screw Conn. | Ideal | 35 | I.A | X | | | | | |
| 14-A | SOV | ASCO | 16 | I.A | X | | | | | |
| 15-A | SOV | ASCO | 28 | II.A | | X | | | | 1,2 |
| 16-A | SOV | ASCO | 16 | I.A | X | | | | | |
| 17-A | SOV | ASCO | - | - | | | | | | 3 |
| 19-A | SOV | ASCO | 30 | I.A | X | | | | | |
| 20-A | SOV | ASCO | 30 | I.A | X | | | | | |
| 21-A | SOV | ASCO | 27 | I.A | X | | | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 23-A | MOV | Limitorque | 95 | III.A | X | | | | | |
| 24-A | MOV | Limitorque | 5 | II.A | | X | | | | 1 |
| 25-A | SOV | ASCO | 30 | I.A | X | | | | | |
| 27.A | XMTR | FOXBORO | 45 | I.B | X | | | X | X | |
| 28-A | XMTR | FOXBORO | 56 | I.B | - - - - - - - - - - - - Deleted - - - - - - - | | | | | 1 |
| 29-A | XMTR | FOXBORO | 56 | I.B | X | | X | | | |
| 30-A | XMTR | FOXBORO | 54 | I.B | X | | | X | X | |
| 31-A | XMTR | FOXBORO | 45 | I.B | X | | X | | | |
| 32-A | XMTR | FOXBORO | 45 | I.B | X | | X | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 34-A | SOV | Valcor | 31 | II.C | | | | | | |
| 35-A | Connector | Litton | 43 | I.A | X | | | | | |
| 36-A | Penetration | Conax | 85 | I.A | X | | | | | |
| 37-A | Cable | Rockbestos | 72 | II.A | | X | | | | 1 |
| 38-A | Term.Blk. | Weidm. | 82 | I.A | X | | | | | |
| 1-B | Term.Blk | GE | 84 | I.A | X | | | | | |
| 2-B | Cable | Gen.Cable | 74 | IV | | X | | | | 1 |
| 3-B | Cable | Kerite | 77 | I.A | X | | | | | |
| 4-B | Cable | Anaconda | 80 | II.A | | X | | | | 1 |
| 5-B | Cable | Cerro | 70 | II.A | | X | | | | 1 |
| 5-Ba | Cable | Kerite | 76 | I.A | X | | | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 7-B | MOV | Limitorque | 1 | II.A | | X | | | | 1 |
| 8-B | MOV | Limitorque | 1 | II.A | | X | | | | 1 |
| 9-B | MOV | Limitorque | 1 | II.A | | X | | | | 1 |
| 10-B | MOV | Limitorque | 10 | II.A | | X | | | | 1 |
| 11-B | MOV | Limitorque | 2 | II.A | | X | | | | 1 |
| 12-B | MOV | Limitorque | 2 | II.A | | X | | | | 1 |
| 13-B | MOV | Limitorque | 4 | II.A | | X | | | | 1 |
| 14-B | MOV | Limitorque | 14 | II.C | | X | | | | 1 |
| 15-B | MOV | Limitorque | 3 | II.A | | X | | | | 1 |
| 16-B | MOV | Limitorque | 8 | II.C | | X | | | | 1 |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 17-B | MOV | Limitorque | 12 | II.C | | X | | | | 1 |
| 18-B | MOV | Limitorque | 12 | II.C | | X | | | | 1 |
| 19-B | MOV | Limitorque | 12 | II.C | | X | | | | 1 |
| 20-B | MOV | Limitorque | 13 | II.C | | X | | | | 1 |
| 21=B | PP Motor | GE | 88 | II.A | | | | | | |
| 23-B | Fan Motor | Joy | 89 | II.A | | | | | | |
| 24-B | MO Damper | Raymond Cont. | - | - | | | | | | 3 |
| 25-B | PP Motor | Siemens/Allis | 90 | II.A | | | | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 26-B | PP Motor | Siemens/Allis | 91 | II.A | | | | | | |
| 29-B | PP Motor | GE | - | - | | | | | | 3 |
| 30-B | MCC | GE | 87 | II.A | - - - - - - - - - - - - Deleted - - - - - - - - | | | | | 4 |
| 31-B | MCC | GE | - | - | - - - - - - - - - - - - Deleted - - - - - - - - | | | | | 4 |
| 35-B | SOV | ASCO | 29 | I.A | X | | | | | |
| 36-B | XMTR | GE/MAC | 48 | I.B | X | | | X | X | |
| 36-Ba | XMTR | GE/MAC | 48 | I.B | X | | | X | X | |
| 40-B | SOV | ASCO | 21 | I.B | X | | X | | | |
| 40-Ba | SOV | ASCO | 24 | I.B | X | | X | | | |
| 43-B | SOV | ASCO | 17 | I.A | X | | | | | |
| 46-B | SOV | ASCO | 15 | I.A | X | | | | | |
| 46-Ba | SOV | ASCO | 15 | I.A | X | | | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 47-B | SOV | ASCO | 17 | I.A | X | | | | | |
| 49-B | L.S. | NAMCO | 66 | I.B | | X | | | | 2 |
| 50-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 51-B | L.S. | NAMCO | 67 | I.B | | X | | | | 1 |
| 52-B | SOV | ASCO | 17 | I.A | X | | | | | |
| 53-B | SOV | ASCO | 25 | II.A | | X | | | | 1 |
| 54-B | L.S. | NAMCO | 65 | I.B | | X | X | | | 2 |
| 55-B | L.S. | NAMCO | 66 | I.B | X | | X | | | |
| 56-B | SOV | ASCO | 20 | I.A | X | | | | | |
| 57-B | L.S. | NAMCO | 67 | I.B | | X | | | | 1 |
| 58-B | SOV | ASCO | 17 | I.A | X | | | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 66-B | SOV | ASCO | 19 | I.B | X | | | X | X | |
| 66-Ba | SOV | ASCO | - | - | | | | | | 3 |
| 67-B | P.Sw. | Custom Comp. | - | - | | | | | | 3 |
| 68-B | SOV | ASCO | 18 | I.A | X | | | | | |
| 68-Ba | SOV | ASCO | 17 | I.A | X | | | | | |
| 69-B | L.S. | NAMCO | 68 | I.B | X | | X | | | |
| 69-Ba | L.S. | NAMCO | 68 | I.B | X | | X | | | |
| 70-B | SOV | ASCO | - | - | | | | X | X | |
| 71-B | L.S. | NAMCO | - | - | | | | X | X | |
| 72-B | SOV | ASCO | 26 | I.B | X | | | X | X | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 83-B | MOV | Limitorque | 11 | II.A | | X | | | | 1 |
| 84-B | MOV | Limitorque | 7 | II.A | | X | | | | 1 |
| 85-B | PP Motor | Westinghouse | 94 | II.A | | | | | | |
| 86-B | Vac.Sw. | Custom Comp. | - | - | | | | X | X | |
| 89-B | MOV | Limitorque | 9 | II.A | | X | | | | 1 |
| 91-B | XMTR | Foxboro | 47 | I.B | X | | X | | | |
| 940B | SOV | ASCO | 23 | I.A | X | | | | | |
| 95-B | SOV | ASCO | 18 | I.A | X | | | | | |
| 96-B | SOV | ASCO | 22 | I.A | X | | | | | |

FACILITY: Millstone Station
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DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 97-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 98-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 99-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 100-B | SOV | ASCO | 18 | I.A | X | | | | | |
| 102-B | SOV | ASCO | 18 | I.A | X | | | | | |
| 106-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 107-B | SOV | ASCO | 22 | I.A | X | | | | | |
| 108-B | SOV | ASCO | 17 | I.A | X | | | | | |
| 110-B | SOV | ASCO | 18 | I.A | X | | | | | |
| 112-B | L.S. | NAMCO | 68 | I.B | X | | X | | | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
QUALIFICATION STATUS OF EQUIPMENT COVERED
BY RULE 10CFR50.49



| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 113-B | L.S | NAMCO | 68 | I.B | X | | X | | | |
| 116-B | L.S | NAMCO | 68 | I.B | X | | X | | | |
| 119-B | L.S. | NAMCO | 68 | I.B | X | | X | | | |
| 120-B | L.S. | NAMCO | 68 | I.B | X | | X | | | |
| 121-B | XMTR | FOXBORO | 46 | I.B | X | | | X | X | |
| 122-B | Cable | Rockbestos | 73 | II.A | | X | | | | 1 |
| 1-C | MOV | Limitorque | 5 | II.A | | X | | | | 1 |
| 2-C | XMTR | Foxboro | 45 | I.B | X | | | X | X | |
| 5-C | R.T.D. Conn. | Rosemount | 81 | I.B | X | | | X | X | |

FACILITY: Millstone Station
UNIT: Two
DOCKET: 50-336

EQUIPMENT ENVIRONMENTAL QUALIFICATION
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| SCEWS | Equipment Type | Manufacturer | 1983 TER No. | NRC Category | NUSCO TER ASSESSMENT Agree | Disagree | Modification Complete | Modification Pending | JCO Provided | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 8-C | XMTR | FOXBORO | 55 | I.B | X | | | X | X | |
| 9-C | XMTR | FOXBORO | - | - | X | | | X | X | |
| 14-C | Pr. Sw. | Cust. Comp | 44 | I.B | - - - - - - - - - - Deleted - - - - - - - - - - - - | | | | | |
| 15-C | Rad. Det. | General At. | 34 | II.A | | | | | | |
| 16-C | XMTR | GEM | 57 | I.B | | X | | | | 2 |
| 17-C | Accelometer | B&W | 33 | I.B | X | | | X | X | |
| 18-C | Cable | B&W | 69 | I.B | X | | | X | X | |
| 19-C | Preamp. | B&W | 32 | I.B | X | | | X | X | |
| 20-C | JCT.BX. | B&W | - | - | | | | X | X | 3 |
| 22-C | $H_2$Anal.Rad. Monitor | BPC | - | - | | | | | | 3 |

Docket No. 50-336

Northeast Nuclear Energy Company

Millstone Unit No. 2

Attachment 3

Index to SCEW Sheet Package

May 20, 1983

REV. 8-21-81

# INDEX

| | |
|---|---|
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| Valve CH515, 516 | 10-A, 16-A |
| Valve CH517 | 10-A, 15-A |
| Valve CH518, 519 | 10-A, 14-A |
| Valve HV2524, 2525 | 10-B, 51-B, 52-B |
| Charging Pumps MP18A, B, C | 85-B |
| Flush Pumps MP97A; B, C | |
| Valve CH192 | |
| Volume Cntl. Tank Controls | |
| Valve CH504 | 25-D |

Feedwater

| | |
|---|---|
| Aux. Feedwater Pumps MP9A, B | |
| Valve HV5275, 5276 | 14-B |
| Valve HV5279 | |
| Valve HV5419, 5420, 5421, 5422 | 46-B, 46-Ba |
| SGFPT - H5A & B | |
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| | |
|---|---|
| Service Water Pumps MP5A, B, C | |
| Valve HV6399 | |
| Valve HV6482 | |
| Valve HV6489 | |
| Valve HV6400 | |
| Valve HV6438, 6439 | 72-B |
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| Service Water Strainer ML1A, B, C | |
| Valve TV6308, 6307A, 6306, 6307B | 70-B, 71-B |

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| | |
|---|---|
| RBCCW Pumps MP11A, B, C | 29-B |
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| Valve HV6002, 6003 | |
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| Valve HV6096, 6095 | 11-B |
| Valve HV6108, 6106 | 12-B |
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Inst. & Sta. Air

| | |
|---|---|
| Valve HV7083 | 99-B |

Main Steam

| | |
|---|---|
| Valve HV4218, 4222 | 17-B, 19-B |
| Valve HV4189, 4191, 4188 | 18-B, 20-B |
| Valve HV4250, 4251 | 57-B, 58-B |
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| Valve HV4223, 4224 & PT-4223, 4224 | 36-B, 36-Ba |
| Valve HV4193, 4209 | 66-B, 66-Ba |

Aux. Bldg. Ventilation

| | |
|---|---|
| Fuel Handling Fan | MF20 |
| Fuel Handling Damper | HV8141, 8275, 8326 |
| E.S.F.G.D. Damper | HV8247, 8133, 8249, |
| D.C. Sw. Gr. Fan | MF54A & B |
| Batt. Rm. Exhaust Fan | MF112A & B |

Ctmt. & Encl. Bldg. Vent

| | | |
|---|---|---|
| Cntmt. Air Fan | MF14A, B, C, D | 8-A |
| Cntmt. Purge Fan | MF23 | |
| Cntmt. Sample Fan | MF39A & B | |
| E.S.F.G.D. Air Unit | MF15A & B | 23-B |
| Encl. Bldg. Fan | MF25A & B | |
| Post Incident Fan | MF18A & B | 9-A |
| Cntmt. Rad. Mon. Valve | HV8121, 8122 | |
| Cntmt. Purge Valve | HV8082 | 10-A |
| Purge Fan Iso-Damper | HV5050 | |
| Cntmt. Purge Damper | HV8150, 8151 | 10-A, 17-A |
| Encl. Bldg. Damper | HV8079 | |
| Encl. Bldg. Damper | HV8074 | |
| Cntmt. Valve | HV8128 | |
| Encl. Bldg. Damper | HV8153 | |
| E.S.F.G.D. Damper | HV8306 | 24B |
| Fuel Handling Damper | HV8062 | |
| E.B. Filt. Damper | HV8254 | |
| E.G. Filt. Htr. | X61A, B | |
| Cntmt. Rad. Mon. Valve | HV8124 | |
| Cntmt. Purge Valve | HV8125, 8080 | 10-A |
| Encl. Bldg. Damper | HV8081 | |
| Cntmt. Purge Damper | HV8126 | |
| Encl. Bldg. Damper | HV8127, 8073, 8070 | |
| Encl. Bldg. Valve | HV8078 | |
| Fuel Handling Damper | HV8143 | |
| Encl. Bldg. Damper | HV8063 | |
| E.S.F.G.D. Damper | HV8312 | 24B |
| $H_2$ Purge Valve | HV8377, 8378, 8379, 8380 | 11-A, 21-A |
| $H_2$ Recombiner | H29A & B | 7-A |
| Steam Jet Damper | HV8654, 8695 | |
| Cntmt. Leak Damper | HV8550, 8651 | |
| Cntmt. Rad. Mon. Valve | HV8656 | |

Aux. HVAC

| | |
|---|---|
| Cntl. Room Fan | MF21A & B |
| Cntl. Room Fan | MF31A & B |
| Cntl. Room Fan | MF32A & B |
| D.G. Room Fan | MF38A & B |
| Cntl. Room Damper Cntl. | |
| Vital Sw. Gr. Rm. Fan | MF51 & 52 |
| Chilled Water Pump | MP122A & B |
| Chilled Water Pump Valves | HV8846, 8847, 8848, 8850 |
| Chilled Water Pump Valves | HV8853, 8854, 8855, 8856 |
| Cntl. Rm. Htrs. | X60A & B |
| Cntl. Rm. Compressor | MF22A & B |
| Cntl. Rm. Condenser | MF36A & B |
| Cntl. Rm. HVAC Ckts. Misc. | |
| Chiller | X169A & B |
| Sw. Gr. Room Valve | PV6925, 6926, 6927 |
| Sw. Gr. Room Fan | MF133 & 134 |

Clean Liquid Radwaste

| | |
|---|---|
| Prim. Drain Tank Valve HV9015, 9016, 9230 | 11-A, 19-A, 100-B, 119-B |

Gas & Aerated Liquid Radwaste

| | |
|---|---|
| Waste Tank Valve HV9125, 9126 | 11-A, 19-A, 68-B, 69-B, 103-B |

Sampling System

| | |
|---|---|
| Valve HV7690 | 68-Ba, 69-Ba |

Encl. & Aux. Bldg. Drains

| | |
|---|---|
| Cntmt. Sump Valve HV9150, 9151 | 11-A, 19-A, 110-B |

Rx Trip Sw. Gear

Diesel Generator

D.G. Power & Cntl.
D.G. Unit Cntl.
D.G. Air Compressors

Boric Acid Heat Tracing

Radiation Monitoring

| | |
|---|---|
| Hi Range Rad Detector RE8240, 8241 | 122-B, 15-C, 37A |
| Hi Range Effluent Monitor Rm 8168 | See Note 1 |
| Hydrogen Monitor | 22C |

NOTE 1: Refer to TMI letter dated April 16, 1982

Instrumentation

| | | |
|---|---|---|
| Pz. Pressure & Level | P100 & L110 | 27-A, 30-A |
| Pz. Pressure | P102 | 32-A |
| Pz. Pressure | P103 & P103-1 | 2-C, 1-D |
| Pz. Level | L103 | 2-D |
| Pz. Temp. | T101 & T109 | 3-D |
| Pz. Relief Valve Monitors | ZS200, 201, 402, 404 | 17-C, 18-C, 19-C, 20-C |
| Pz. Relief Valve Temp. | T106, 107, 108 | |
| Quench Tank Pressure | P116 | |
| Quench Tank Temp. | T116 | |
| Quench Tank Level | L116 | |
| RCP Loop Pressure Diff. | P111 & 121 | |
| RCP Loop Temp. | T112 & 122 | 5-C |
| RCP Loop Temp. | T111, 115, 121 & 125 | 4-D, 5-D |
| RCP Loop Temp. | T103, 104 & 105 | |
| S.G. Pressure | P1013 & 1023 | 31-A |
| S.G. Level | L1113 & 1123 | 29-A, 9-C |
| S.G. Level | L5271, 5272, 5273, 5274 | 28-A |

Note: See pages 192 & 193 for S.G. Atmosphere Press. P-4223 & 4224.

| | | |
|---|---|---|
| Aux. Fd. Flow | F5277 & 5278 | 8-C |
| Cond. Storage TK Level | L5282 | 15-D |
| HPSI Pressure | P301 | |
| LPSI Pressure | P302 | 9-D |
| Cntmt. Spray Pressure | P303 | |
| HPSI & LPSI Flow | F311, 312, 321, 322 | 11-D |
| HPSI & LPSI Flow | F331, 332, 341, 342 | 11-D |
| Cntmt. Spray Flow | F3023 & 3024 | |
| S.I. Tank Pressure | P-311, 321, 331, 341 | |
| S.I. Tank Level | L-311, 321, 331, 341 | |
| S.I. Tank Flow | F305 | |
| Vol. Cntl. Tank Pressure | P225 | 7-D |
| Vol. Cntl. Tank (Letdown Temp.) | T224 & 225 | |
| Vol. Cntl. Tank Level | L226 | 8-D |
| B.A. Tank Level | L206 & 208 | |
| B.A. Pump Pressure | P206 & 208 | |
| Charging Pressure & Flow | P212 & F212 | 6-D |
| Charging Temp. | T229 & 221 | |
| Shutdown Cooling Temp. | T351 | 12-D |
| RWST Level | L-3000 | |
| RBCCW Flow | F6034 & 6035 | 19-D, 20-D |
| Cntmt. Pressure | P8113, 8114, 8115, 8116 | 91-B |
| Cntmt. Pressure | P8117 | |
| Cntmt. Temp. | T8096 | |
| Cntmt. Humidity | H8064 | |
| E.B.F.S. Pressure | P8071 & 8075 | |
| E.B.F.S. Pressure | P8060 | |
| E.B.F.S. Temp. | T8072 & 8076 | |
| Charging Pump Cont. | PS224X, 224Y, 224Z | 86-B |
| Containment Press. | PT8238, 8239 | 121-B |
| Cont. Sump Level | LT8242, 8243 | 16-C |
| RBCCW Pump Pressure | PS6119A, B, C | 67-B |

Reactor Protection

| | |
|---|---|
| Turbine Trip | PS4597A, B, C & D |
| Nuclear Power | |
| S. G. Pressure | (see page 444) |
| Pz Pressure | (see page 420) |
| Pz Thermal Margin | (see page 436) |
| R.C. Lo Flow | (see page 433) |
| S.G. Level | (see page 447) |
| Ctmt. Pressure | (see page 477) |
| Mag Jack MG Ld Shed | |

Control Elem. Assembly

CEDA Fans MF13A, B, C
CRD PWR CEA 1 thru 69
C.R. Reed Switch CEA 1 thru 69

Electrical Penetrations

| | |
|---|---|
| CONAX | 2-A, 36-A |
| Terminal Blocks | 3-A, 1-B |

Cable

| | |
|---|---|
| Low Voltage Power | 4-A, 4-B |
| Control | 5-A, 3-B |
| Instrument (Cerro) | 6-A, 5-B |
| Instrument (Kerite) | 6-Aa, 5-Ba |
| Instrument (Coaxial) | 37-A, 122-B |
| 5000 V Power | 2-B |

Motor Control Centers

| | |
|---|---|
| MCC B52 | 30-B |
| MCC B51, B61 | 31-B |

Misc. Electrical Equipment

| | |
|---|---|
| Terminal Blocks (Elect. Penetration) | 3-A, 1-B |
| PAM (Weidmuller) | 38-A |
| Electric Conductor Seal Assemblies (CONAX) | 12-A |
| Set Screw Connectors (Ideal) | 13-A |

Instrumentation (Cold Shutdown Only)

| | |
|---|---|
| Aux. Fd. PP Speed S4194A | 13-D |
| Aux. Fd. PP Press. P5281,5284,5289 | 14-D, 16-D, 17-D |
| PMW Flow F210X,Y | |
| PMW Level L7277 | |
| RBCCW Sd Htx Flow F6042,6043 | 21-D, 22-D |
| RBCCW Sg Tank Level L6001,6730 | 18-D, 24-D |
| RBCCW Hx Temp Ctl, TIC 6306, 7 & 8 | 23-D |

Docket No. 50-336

Northeast Nuclear Energy Company

Millstone Unit No. 2

Attachment 4

Justifications for Continued Operation

and

System Component Evaluation Work Sheets

May 20, 1983

Unit: Two
Docket: 50-336

SYSTEM COMPONENT EVALUATION WORK SHEET

| EQUIPMENT DESCRIPTION | ENVIRONMENT | | | DOCUMENTATION REF* | | QUAL. METHOD | OUTSTANDING ITEMS |
|---|---|---|---|---|---|---|---|
| | Parameter | Spec. | Qual. | Spec. | Qual. | | |
| **System:** Post Accid. Monit.<br>**Plant ID No.:** LT-8242, 8243<br>**Component:** Level Transmitter<br>**Manufacture:** GEM<br>**Model Number:** XM-54852<br>**Function:** Containment sump level indication<br>**Accuracy:**<br>**Service:** Post accident monitoring<br>**Location:** CTMT elev.(-)22'6"-(-)15'6" | Operating Time | Continuous | Continuous | 1 | 1 | Simultaneous Test | |
| | Temperature ($^{o}$F) | Profile 18 | 381$^{o}$F | D | 1 | Simultaneous Test | |
| | Pressure (PSIA) | Profile 19 | 60 PSIG | D | 1 | Simultaneous Test | |
| | Relative Humidity(%) | 100% | 100% | D | 1 | Simultaneous Test | |
| | Chemical Spray | 2400 PPM Boron | 3000 ppm Boron | F | 1 | Simultaneous Test | |
| | Radiation | 1.5 x $10^{8}$R | 2.0 x $10^{8}$R | K | 1 | Sequential Test | |
| | Aging | 40 Yrs. | 40 Yrs. | PDL | 1 | Sequential Test | |
| **Flood Level Elev:** (-)14'4"<br>**Above Flood Level:** Yes<br>No X | Submergence | 14' 4" | 14' 4" | 78-771-162-GM | | Sequential Test | |

*Documentation References:

1. Wyle Qualification Test Report #45700-2, dated 12/14/82

Notes:

SCEWS No. 16-C

1983 TER No. 57

Date: 5/20/83

# EQUIPMENT ENVIRONMENTAL QUALIFICATION
## SER/TER REVIEW
## Millstone Unit 2
## Docket No. 50-336

I) Summary of new information on SCEW sheet.

Added documentation reference to complete qualification.

II) SER concerns: Equipment in NRC Category I.B

Response:

Same as III

III) TER concerns: Equipment qualification pending modification

Response:

See I above

IV) Proposed corrective action and schedule. N/A

V) Justification for continued operation. N/A

_____ Reaffirmed

_____ Revised

_____ New

SYSTEM COMPONENT E..LUATION WORK SHEET

| EQUIPMENT DESCRIPTION | ENVIRONMENT | | | DOCUMENTATION REF* | | QUAL. METHOD | OUTSTANDING ITEMS |
|---|---|---|---|---|---|---|---|
| | Parameter | Spec. | Qual. | Spec. | Qual. | | |
| **System:** PZR relief valve monitors<br>**Plant ID No.:** ZS200,201, 402,404<br>**Component:** Accelerometer<br>**Manufacture:** Endevco<br>**Model Number:** 2273AM20<br>**Function:** Post accident monitoring<br>**Accuracy:**<br>**Service:** Porv discharge line monitoring<br>**Location:** CTMT C-5 | **Operating Time** | Continuous | Continuous | | | Simulta-neous Test | See Summary Sheet 17-C |
| | **Temperature ($^{o}$F)** | Profile 16,18 | Profile 41 | D | | Simulta-neous Test | See Summary Sheet 17-C |
| | **Pressure (PSIA)** | Profile 16,19 | Profile 42 | D | | Simulta-neous Test | See Summary Sheet 17-C |
| | **Relative Humidity(%)** | 100% | 100% | D | | Simulta-neous Test | See Summary Sheet 17-C |
| | **Chemical Spray** | 2400 PPM Boron | 3000 PPM Boron | F | | Simulta-neous Test | See Summary Sheet 17-C |
| | **Radiation** | 1.5 x $10^{8}$R | 2 x $10^{8}$R | K | | Sequential Test | See Summary Sheet 17-C |
| | **Aging** | 40 yrs. | To Be Determined | Plant Design Life | | Sequential Test | See Summary Sheet 17-C |
| **Flood Level Elev:** (-)14'4"<br>**Above Flood Level:** Yes X No | **Submergence** | | | | | | |

*Documentation References:

Notes:

SUMMARY SHEET NO. 17-C

SCEW SHEET NO. 17-C

# EQUIPMENT ENVIRONMENTAL QUALIFICATION

## DISCREPANT EQUIPMENT SUMMARY

## MILLSTONE UNIT 2

**EQUIPMENT:**

Acoustic Monitor: Accelerometer

**MANUFACTURER:**

Endevco

**QUALIFICATION DISCREPANCY:**

Equipment qualification not established.

**SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:**

See attached.

**SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:**

SUMMARY SHEET NO. 17-C
SCEW SHEET NO. 17-C
Rev. 3 5/20/83

This equipment has been procured on a risk release basis pending completion of vendor qualification testing. To date Babcock & Wilcox (B&W) has gone through several qualification efforts without success. In light of all the various difficulties the B & W testing have encountered, NNECO has decided to install the Technology for Energy Corporation (TEC) Acoustic Valve-Position Indicator System.

The basic design of the systems are identical except for the Charge Amplifier and associated housing. Therefore, NNECO has a high degree of confidence that the present system would perform its safety related function in an accident scenario. The reason being that the actual test profile is much more severe than the plant's design accident profile. There is significant margin between profiles.

The equipment modification and/or change outs will be performed during the 1984 refueling outage. The qualification documentation references will be identified at that time and submitted to the NRC for review if required.

The qualified life for this equipment will be determined in accordance with IEEE 323-1974 guidelines.

The present equipment was installed as part of the TMI Action Plan under Item 2.1.3a and was required to be operational by 1/1/81.

SCEWS No. 17-C

1983 TER No. 33

Date: 5/20/83

# EQUIPMENT ENVIRONMENTAL QUALIFICATION
## SER/TER REVIEW
## Millstone Unit 2
## Docket No. 50-336

I) Summary of new information on SCEW sheet.

None

II) SER concerns: Equipment in NRC Category I.B

Response:

Same as III

III) TER concerns: Equipment qualification pending modification

Response: Justification for continued operation added.

IV) Proposed corrective action and schedule.

Fully qualified equipment will be installed prior to the end of the 1983 refueling outage.

V) Justification for continued operation.

_____ Reaffirmed

_____ Revised

_X_ New

Facility: Millstone Nuclear Station
Unit: Two
Docket: 50-336

SYSTEM COMPONENT EVALUATION WORK SHEET

| EQUIPMENT DESCRIPTION | ENVIRONMENT | | | DOCUMENTATION REF* | | QUAL. METHOD | OUTSTANDING ITEMS |
|---|---|---|---|---|---|---|---|
| | Parameter | Spec. | Qual. | Spec. | Qual. | | |
| System: PZR relief valve monitors<br>Plant ID No.: ZS-200,201, 402,404<br>Component: Cable<br>Manufacture: Harline Cable Endevco<br>Model Number: 3075M6<br>Function: Post accident monitoring<br>Accuracy:<br>Service: Porv discharge line monitoring<br>Location: CTMT C-5 | Operating Time | Continuous | Continuous | | | Simulta-neous Test | See Summary Sheet 18-C |
| | Temperature ($^{o}$F) | Profile 16,18 | Profile 41 | D | | Simulta-neous Test | See Summary Sheet 18-C |
| | Pressure (PSIA) | Profile 16,19 | Profile 42 | D | | Simulta-neous Test | See Summary Sheet 18-C |
| | Relative Humidity(%) | 100% | 100% | D | | Simulta-neous Test | See Summary Sheet 18-C |
| | Chemical Spray | 2400 PPM Boron | 3000 PPM Boron | F | | Simulta-neous Test | See Summary Sheet 18-C |
| | Radiation | $1.5 \times 10^{8}$R | $2 \times 10^{8}$R | K | | Sequential Test | See Summary Sheet 18-C |
| | Aging | 40 yrs. | To Be Determined | Plant Design Life | | Sequential Test | See Summary Sheet 18-C |
| Flood Level Elev: (-)14'4"<br>Above Flood Level: Yes X No | Submergence | | | | | | |

*Documentation References:

1. Babcock & Wilcox, valve monitoring system, test program 3-21-80.

Notes:

5/20/83

SUMMARY SHEET NO. 18-C

SCEW SHEET NO. 18-C

# EQUIPMENT ENVIRONMENTAL QUALIFICATION

## DISCREPANT EQUIPMENT SUMMARY

## MILLSTONE UNIT 2

EQUIPMENT:

Acoustic Monitor: Cable

MANUFACTURER:

Endevco

QUALIFICATION DISCREPANCY:

Equipment qualification not established.

SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:

See attached.

This equipment has been procured on a risk release basis pending completion of vendor qualification testing. To date Babcock & Wilcox (B&W) has gone through several qualification efforts without success. In light of all the various difficulties the B & W testing have encountered, NNECO has decided to install the Technology for Energy Corporation (TEC) Acoustic Valve-Position Indicator System.

The basic design of the systems are identical except for the Charge Amplifier and associated housing. Therefore, NNECO has a high degree of confidence that the present system would perform its safety related function in an accident scenario. The reason being that the actual test profile is much more severe than the plant's design accident profile. There is significant margin between profiles.

The equipment modification and/or change outs will be performed during the 1984 refueling outage. The qualification documentation references will be identified at that time and submitted to the NRC for review if required.

The qualified life for this equipment will be determined in accordance with IEEE 323-1974 guidelines.

The present equipment was installed as part of the TMI Action Plan under Item 2.1.3a and was required to be operational by 1/1/81.

SCEWS No. 18-C

1983 TER No. 69

Date: 5/20/83

# EQUIPMENT ENVIRONMENTAL QUALIFICATION
## SER/TER REVIEW
## Millstone Unit 2
## Docket No. 50-336

I) Summary of new information on SCEW sheet.

None

II) SER concerns: Equipment in NRC Category I.B

Response: Same as III

III) TER concerns: Equipment qualification pending modification.

Response: Justification for continued operation added.

IV) Proposed corrective action and schedule.

Fully qualified equipment will be installed prior to the end of the 1983 refueling outage.

V) Justification for continued operation.

_____ Reaffirmed

_____ Revised

X
_____ New

Docket: 50-336

| EQUIPMENT DESCRIPTION | ENVIRONMENT | | | DOCUMENTATION REF* | | QUAL. METHOD | OUTSTANDING ITEMS |
|---|---|---|---|---|---|---|---|
| | Parameter | Spec. | Qual. | Spec. | Qual. | | |
| **System:** PZR relief valve monitors<br>**Plant ID No.:** ZS-200,201 402,404<br>**Component:** Preamplifier<br>**Manufacture:** Unholtz-Dickie<br>**Model Number:** 22CA-ZTR<br>**Function:** Post accident monitoring<br>**Accuracy:**<br>**Service:** Porv discharge line monitoring<br>**Location:** CTMT C-5 | **Operating Time** | Continuous | Continuous | | | Simulta-neous Test | See Summary Sheet 19-C |
| | **Temperature ($^{o}$F)** | Profile 16,18 | Profile 41 | D | | Simulta-neous Test | See Summary Sheet 19-C |
| | **Pressure (PSIA)** | Profile 16,19 | Profile 42 | D | | Simulta-neous Test | See Summary Sheet 19-C |
| | **Relative Humidity(%)** | 100% | 100% | D | | Simulta-neous Test | See Summary Sheet 19-C |
| | **Chemical Spray** | 2400 PPM Boron | 3000 PPM Boron | F | | Simulta-neous Test | See Summary Sheet 19-C |
| | **Radiation** | $1.5 \times 10^{8}$R | $2 \times 10^{8}$R | K | | Sequential Test | See Summary Sheet 19-C |
| | **Aging** | 40 yrs. | To Be Determined | Plant Design Life | | Sequential Test | See Summary Sheet 19-C |
| **Flood Level Elev:** (-)14'4"<br>**Above Flood Level:** Yes X No | **Submergence** | | | | | | |

*Documentation References:

Notes:

5/20/83

SUMMARY SHEET NO. 19-C

SCEW SHEET NO. 19-C

# EQUIPMENT ENVIRONMENTAL QUALIFICATION

## DISCREPANT EQUIPMENT SUMMARY

## MILLSTONE UNIT 2

**EQUIPMENT:**

Acoustic Monitors: Preamplifier

**MANUFACTURER:**

Unholtz-Dickie

**QUALIFICATION DISCREPANCY:**

Equipment qualification not established.

**SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:**

See attached.

**SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:**

SUMMARY SHEET NO. 19-C
SCEW SHEET NO. 19-C
Rev. 3 5/20/83

This equipment has been procured on a risk release basis pending completion of vendor qualification testing. To date Babcock & Wilcox (B&W) has gone through several qualification efforts without success. In light of all the various difficulties the B & W testing have encountered, NNECO has decided to install the Technology for Energy Corporation (TEC) Acoustic Valve-Position Indicator System.

The basic design of the systems are identical except for the Charge Amplifier and associated housing. Therefore, NNECO has a high degree of confidence that the present system would perform its safety related function in an accident scenario. The reason being that the actual test profile is much more severe than the plant's design accident profile. There is significant margin between profiles.

The equipment modification and/or change outs will be performed during the 1984 refueling outage. The qualification documentation references will be identified at that time and submitted to the NRC for review if required.

The qualified life for this equipment will be determined in accordance with IEEE 323-1974 guidelines.

The present equipment was installed as part of the TMI Action Plan under Item 2.1.3a and was required to be operational by 1/1/81.

SCEWS No. 19-C

1983 TER No. 32

Date: 5/20/83

# EQUIPMENT ENVIRONMENTAL QUALIFICATION
## SER/TER REVIEW
## Millstone Unit 2
## Docket No. 50-336

I) Summary of new information on SCEW sheet.

None

II) SER concerns: Equipment in NRC Category I.B

Response: Same as III

III) TER concerns: Equipment qualification pending modification.

Response: Justification for continued operation added.

IV) Proposed corrective action and schedule.

Fully qualified equipment will be installed prior to the end of the 1983 refueling outage.

V) Justification for continued operation.

_____ Reaffirmed

_____ Revised

__X__ New

Unit: Two
Docket: 50-336

SYSTEM COMPONENT EVALUATION WORK SHEET

| EQUIPMENT DESCRIPTION | ENVIRONMENT | | | DOCUMENTATION REF* | | QUAL. METHOD | OUTSTANDING ITEMS |
|---|---|---|---|---|---|---|---|
| | Parameter | Spec. | Qual. | Spec. | Qual. | | |
| System: PZR relief valve monitors<br>Plant ID No.: ZS-200,201 402,404<br>Component: Junction Box<br>Manufacture: Hoffman<br>Model Number: 8064 CHNESS<br>Function: Post accident monitoring<br>Accuracy:<br>Service: Porv discharge line monitoring<br>Location: CTMT C-5 | Operating Time | Continuous | Continuous | | | Simulta-neous Test | See Summary Sheet 20-C |
| | Temperature ($^{O}$F) | Profile 16,18 | Profile 41 | D | | Simulta-neous Test | See Summary Sheet 20-C |
| | Pressure (PSIA) | Profile 16,19 | Profile 42 | D | | Simulta-neous Test | See Summary Sheet 20-C |
| | Relative Humidity(%) | 100% | 100% | D | | Simulta-neous Test | See Summary Sheet 20-C |
| | Chemical Spray | 2400 PPM Boron | 3000 PPM Boron | F | | Simulta-neous Test | See Summary Sheet 20-C |
| | Radiation | $1.5 \times 10^{8}$R | $2 \times 10^{8}$R | K | | Sequential Test | See Summary Sheet 20-C |
| | Aging | 40 yrs. | To Be Determined | Plant Design Life | | Sequential Test | See Summary Sheet 20-C |
| Flood Level Elev:(-)14'4"<br>Above Flood Level: Yes X No | Submergence | | | | | | |

*Documentation References:

Notes:

5/20/83

SUMMARY SHEET NO. 20-C

SCEW SHEET NO. 20-C

# EQUIPMENT ENVIRONMENTAL QUALIFICATION

## DISCREPANT EQUIPMENT SUMMARY

## MILLSTONE UNIT 2

EQUIPMENT:

Acoustic Monitors: Termination Box

MANUFACTURER:

Hoffman

QUALIFICATION DISCREPANCY:

Equipment qualification not established.

SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:

See attached.

**SAFETY FUNCTION AND JUSTIFICATION FOR CONTINUED OPERATION:**

SUMMARY SHEET NO. 20-C
SCEW SHEET NO. 20-C
Rev. 3 5/20/83

This equipment has been procured on a risk release basis pending completion of vendor qualification testing. To date Babcock & Wilcox (B&W) has gone through several qualification efforts without success. In light of all the various difficulties the B & W testing have encountered, NNECO has decided to install the Technology for Energy Corporation (TEC) Acoustic Valve-Position Indicator System.

The basic design of the systems are identical except for the Charge Amplifier and associated housing. Therefore, NNECO has a high degree of confidence that the present system would perform its safety related function in an accident scenario. The reason being that the actual test profile is much more severe than the plant's design accident profile. There is significant margin between profiles.

The equipment modification and/or change outs will be performed during the 1984 refueling outage. The qualification documentation references will be identified at that time and submitted to the NRC for review if required.

The qualified life for this equipment will be determined in accordance with IEEE 323-1974 guidelines.

The present equipment was installed as part of the TMI Action Plan under Item 2.1.3a andwas required to be operational by 1/1/81.

SCEWS No. 20-C

1983 TER No. -

Date: 5/20/83

EQUIPMENT ENVIRONMENTAL QUALIFICATION

SER/TER REVIEW

Millstone Unit 2

Docket No. 50-336

I) Summary of new information on SCEW sheet.

None

II) SER concerns: None

Response:

III) TER concerns: None

Response:

IV) Proposed corrective action and schedule.

Fully qualified equipment will be installed prior to the end of the 1983 refueling outage.

V) Justification for continued operation.

_____ Reaffirmed

_____ Revised

X
_____ New

Docket No. 50-336

Northeast Nuclear Energy Company

Millstone Unit No. 2

Attachment 5

Qualification References

May 20, 1983

## Qualification References

Qualification references are indicated in Attachment 4 under the corresponding equipment. The completed set of JCOs and SCEW Sheets, and therefore list of qualification references will be submitted by August 18, 1983.