



CONNECTICUT YANKEE ATOMIC POWER COMPANY

BERLIN, CONNECTICUT

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TELEPHONE  
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January 3, 1983

Docket No. 50-213  
A02311

Director of Nuclear Reactor Regulation  
Attn: Mr. Dennis M. Crutchfield, Chief  
Operating Reactors Branch #5  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Reference: (1) D. M. Crutchfield letter to W. G. Council dated  
February 25, 1982.

Gentlemen:

Haddam Neck Plant  
Environmental Qualification of Electrical Equipment

In Reference (1) the Staff requested that certain reference information regarding the TMI Action Plan (NUREG-0737) Items be submitted to the NRC's contractor, Franklin Research Center, to facilitate the review of Connecticut Yankee Atomic Power Company's 90-day responses on Environmental Qualification of Safety-Related Electrical Equipment. This information was requested to be sent directly to Franklin Research Center, with one copy of the cover letter sent to the Operating Reactors Branch. In response to this request, the following information is provided:

QUESTION B.1.a

Identification of all TMI Action Plan equipment installed as of 1/1/81 is requested.

RESPONSE B.1.a

TMI Action Plan equipment installed as of 1/1/81 is identified in the following table which has been arranged in four (4) columns for clarity. The four (4) headings are:

- NUREG-0737 Item Number
- Action Plan Item Description
- Component types involved
- Identification of System Component Evaluation Worksheet (SCEW) previously submitted related to these components

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TABLE A

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>COMPONENT TYPE</u>	<u>SCEW</u>
II.B.1	RCS Vents	Solenoid Valve	A-7-7
II.D.3	Valve Position Indication	Acoustic Monitors	D-1-9 (1)
II.F.1.3	Containment High Range Radiation Monitor	Detector Cable	C-10-16 A-10-55
II.F.2	Instrumentation for Detection of Inadequate Core Cooling	Pressure Transmitter Thermocouples	B-2-1 B-3-9

QUESTION B.1.b

Identification of TMI Action Plan equipment installed with implementation dates after 1/1/81 is requested.

RESPONSE B.1.b

TMI Action Plan equipment installed with implementation dates after 1/1/81 is identified below in Table B, which is arranged similarly to Table A.

TABLE B

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>COMPONENT TYPE</u>	<u>SCEW</u>
II.F.1.1	Noble Gas Monitors	Radiation Detector	None (2)
II.F.1.2	Iodine Particulate Sample Monitor	Radiation Detector	None (2)
II.F.1.5	Containment water level	Level Transmitter	D-4-1 (3)
II.F.1.6	Containment Hydrogen Monitor	Hydrogen Analyzer	(4) (See next page)

- (1) Test Reports pending, refer to SCEW sheet for tentative date.
- (2) The Radiation Detectors (Noble Gas Monitor & Iodine Particulate Sample Monitor) are located in a new sample room. This room is considered a Mild Environment area due to the fact that there are no High Energy Lines and it is accessible during an accident. The total calculated 30 day integrated dose for this area is 230 Rads with a maximum acceptable value of 1000 Rads ( $1 \times 10^3$  Rads) for the equipment.
- (3) Test Report Pending, refer to Discrepant Equipment Summary sheet tentative date.

QUESTION B.1.c

The correlation of these equipment items with the specific sections of NUREG-0737 presented below (as applicable) is requested.

RESPONSE B.1.c

- II.E.1.2            Auxiliary Feedwater System Automatic Initiation and Flow Indicator.  
  
This equipment is located in a mild environment and as such, qualification documentation is not necessary.
- II.E.4.2            Containment Isolation Dependability.  
  
Justification for adequacy of original installation provided in submittal, W. G. Council to D. G. Eisenhut, dated July 1, 1981. A Safety Evaluation Report was issued by the Staff on August 5, 1981.
- II.E.3.1            Emergency Power Supply for Pressurizer Heaters.  
  
Justification for adequacy of original installation provided in submittal, W. G. Council to H. R. Denton, dated December 31, 1979.
- II.G.1              Emergency Power for Pressurizer equipment.  
  
Justification for adequacy of original installation provided in submittal, W. G. Council to H. R. Denton, dated December 31, 1979.
- II.F.2              Instrumentation for Detection of Inadequate Core Cooling.  
  
Addressed in Table A
- II.D.3              Direct indication of Relief and Safety Valve Position.  
  
Addressed in Table A
- II.K.3.12           Confirm existence of Anticipatory Reactor Trip upon Turbine Trip.  
  
Not Applicable to the Haddam Neck Plant
- II.K.3.9            Proportional Integral Derivative Controller Modification.  
  
Not Applicable to the Haddam Neck Plant

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- (4) Comsip-Delphi Hydrogen Analyzers have not been shipped and there have been discussions with the vendor regarding qualification of the units (Test Report Pending). In addition, CYAPCO has not yet determined where this equipment will be physically located within the plant. Once the location has been determined, a SCEW sheet will be generated to summarize compliance with the applicable environmental parameters.

II.K.2.10 Safety Grade Anticipatory Reactor Trip.  
Not Applicable to the Haddam Neck Plant

II.B.3 Post-accident Sampling Capability.  
No requirement exists in NUREG-0737 to environmentally qualify this equipment.

II.E.4.1 Dedicated Hydrogen Penetrations.  
Staff letters dated May 7, 1980 and September 3, 1981 conclude that this item is resolved for the Haddam Neck Plant.

QUESTION B.1.d

For all installed TMI Action Plan equipment identified, a System Component Evaluation Worksheet (SCEW) (in accordance with 79-01B format) is requested.

RESPONSE B.1.d

SCEWs for those installed TMI Action Plan Items identified were included as part of CYAPCO's September 3, 1981 submittal. SCEWs which have been revised, A-10-55, D-1-9, and D-4-1, are provided as Attachment I.

QUESTION B.1.e

The approximate installation date for the TMI Action Plan equipment items is requested so that the appropriate qualification criteria (NUREG-0588 or DOR Guidelines) can be used in the EEQ evaluation.

RESPONSE B.1.e

II.B.1 RCS Vents - July 1980  
II.D.3 Valve Position Indication - July 1980  
II.F.1.1 Noble Gas Monitor - Jan. 1982  
II.F.1.2 Iodine Sampling Monitor - Jan. 1982  
II.F.1.3 Containment High Range Pad. Monitor - Jan. 1982 (5)  
II.F.1.5 Containment Water Level Transmitter - Jan. 1982 (6)  
II.F.1.6 Hydrogen Monitor (7)  
II.F.2 Instrumentation for Detection of Inadequate Core Cooling (8)  
Also refer to Table A.

(5) Monitor is installed and operational; cable to be replaced in early 1983.

(6) See footnote (2) on previous page.

(7) See W. G. Council letter to D. G. Eisenhower June 10, 1982 for current status.

(8) A schedule for installation will be provided in conjunction with CYAPCO's response to Generic Letter 82-28.

QUESTION 2

The qualification documents, e.g., the actual test reports and associated correspondence cited as evidence of qualification listed on the SCEW sheets, for all identified TMI Action Plan equipment are requested. (The identification of those reports considered to be proprietary is requested so that proper control of documents can be maintained.)

RESPONSE 2

All necessary Qualification Reports available were previously submitted. Test Reports for SCEWS D-1-9 & D-4-1 and the Hydrogen Monitor are still pending as indicated in Tables A and B.

New Qualification Reports for SCEWS A-10-55 are included as Attachments III & IV.

Portions of these reports are proprietary and are indicated as such.

QUESTION 3

Where the Licensee has a standard Owner's Group position with respect to a NUREG-0737 technical area or has requested extensions of implementation dates, this information is requested in order to incorporate it into the review.

RESPONSE 3

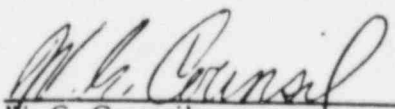
Please refer to CYAPCO's submittals of December 31, 1981, April 16, 1982; June 4, 1982 and June 10, 1982 for the current status of selected TMI Action Plan Items. One copy of these reference documents has been previously supplied directly to FRC in conjunction with similar responses for Millstone Unit Nos. 1 & 2, dated August 31, 1982 and July 1, 1982, respectively.

Included as Attachment II are updated pages from the index of SCEWS from CYAPCO's submittal of August 21, 1981.

It should be noted that much of the information requested in Section B.1 of Reference (1) has been supplied in previous docketed correspondence in response to requests by the Staff regarding the status of TMI Action Plan items.

CYAPCO recognizes that it would have been preferable to supply the requested information on a schedule compatible with inclusion of this information into the recently received SER and TER for the Haddam Neck Plant. Resource limitations precluded us from providing this information on the schedule requested in Reference (1). We trust that this information will be incorporated into the next revision of or supplement to the Environmental Qualification SER for the Haddam Neck Plant.

Very truly yours,  
CONNECTICUT YANKEE ATOMIC POWER COMPANY

  
W. G. Council  
Senior Vice President

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Attachment I

System Component Evaluation Worksheets

(SCEWS)

Revised Since September 3, 1981 Submittal

SCEWS: A-10-55  
D-1-9  
D-4-1

December, 1982



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Attachment II  
Updated List of References  
for  
SCEWS

December, 1982

Facility: Connecticut Yankee  
Unit: Haddam Neck Plant  
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Attachment: November 1, 1980

List of References

For "System Component Evaluation Work Sheets"

1. Letter of 3/6/78 from CYAPCO, D. C. Switzer, to NRC, V. Stello, Jr. plus supplement #1 of July, 1978.
2. Haddam Neck Plant, "Facility Description and Safety Analysis".
3. Crane R & D Laboratory Report E.L. 7828-2, S.O. 952075 dated October 20, 1969.
4. Letter of 12/29/78 from CYAPCO, W. G. Council, to NRC, D. L. Ziemann, "Attachment - Haddam Neck Plant, Systematic Evaluation Program, Electrical Equipment Environment Qualification" dated December, 1978.
5. NUSCO Evaluation (GEE-78-387) dated 7/28/78.
6. NUSCO Evaluation (GEE-78-396) dated 7/28/78.
7. Crane Company letter of 2/1/78.
8. Crane Company letter of 2/2/78.
9. NUSCO Evaluation (GEE-78-382) dated 7/21/78.
10. NUSCO Evaluation (GEE-78-384) dated 7/20/78.
11. NUSCO Evaluation (GEE-79-449) dated 7/30/79.
12. NUSCO Evaluation (GEE-79-10) dated 1/4/79.
13. NUSCO Evaluation (GEE-78-383) dated 7/20/78.
14. Franklin Institute Report F-C2232-01 of November 1968.
15. Limitorque letter of 1/31/78.
16. Limitorque Test Report #600198 dated 1/2/69.



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List of References

For "System Component Evaluation Work Sheets"

17. Franklin Institute Report F-C3441 dated September 1972
18. NUSCO Evaluation (GEE-78-411) dated 8/3/78.
19. Westinghouse Electric letter CY-W-78-518 dated 4/5/78 (with Attachments 1, 2 and 3 plus the Enclosure titled "CYW Containment Fan Cooler Motors Qualification").
20. NUSCO Evaluation (GEE-78-388) dated 7/28/78.
21. Stone & Webster - Report No. 4 dated 9/6/78. (Section A).
22. Amendment 47 to San Onofre FSAR - pages 6A-32, 33, and 6B-17, 18 and 19.
23. NUSCO Evaluation (GEE-79-29) dated 1/11/79.
24. NUSCO Evaluation (GEE-79-340) dated 5/31/79.
25. CYAPCO - Plant Design Change Request No. 270 dated 1/28/78.
26. CYAPCO letter of 2/2/78, Switzer to NRC, A Schwencer.
27. CYAPCO letter of 2/10/78, Switzer to NRC, A. Schwencer.
28. NUSCO Evaluation (GEE-78-127) dated 3/27/78.
29. CYAPCO letter of 3/29/78, Switzer to NRC, Ziemann.
30. NUSCO Evaluation (GEE-79-150) dated 3/9/79.
31. NUSCO internal letter (NEE-80-RA-439) dated 8/12/80.
32. NUSCO Specification 970 dated April 30, 1975, plus Addendum of February 17, 1978.
33. Rockbestos Qualification of "Firewall SR" Class 1E Electrical Cable - dated March 2, 1978. (proprietary)

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Rev. Date: 12/1/82

List of References

For "System Component Evaluation Work Sheets"

34. NUSCO internal letter (NEE-80-RA-527) dated 9/23/80.
35. Containment Temperature Profile (See Item B1, Haddam Neck Submittal) & Addendum #1
36. Containment Pressure Profile (See Item B1, Haddam Neck Submittal)
37. NAMCO Test Report of September 5, 1978. (Proprietary)
38. Valcor Engineering Qualification Test - QR 52600-515. (Proprietary)
39. "Qualification Test Report for Litton Connector and Receptacle" as performed by Litton Precision Products International. QR-5402-1
40. NESCO Specification for QA Category 1 Coax and Triax Cable for Nuclear Power Stations, SP-GEE-34, Rev. 0, 1/8/79.
41. (Rockbestos-Qualification of "Firewall III" Coax Construction Cable dated January 18, 1978-Proprietary)- Deleted
- 41a. Rockbestos-Qualification of Second Generation Solid Dielectric Coaxial Construction, Report #2806 dated April 23, 1982-Proprietary
- 41b. Rockbestos-Qualification of "Firewall III" Coaxial Constructions, Revision 1 dated March 15, 1979- Proprietary
- 41c. (Future Rockbestos 100 Day Report)
42. Automatic Switch Company letter of September 29, 1980 from T. R. Hays to Woodrow C. Saccoccio (NUSCO).
43. Franklin Research Center Report No. F-C4911-3 dated May 1979. (Proprietary)
44. Wyle Laboratory Report No. 17436-1 dated 10/8/80. (Proprietary)
45. NUSCO interoffice memo of 7/24/80 from J. P. Donohue to R. J. DeRosa-"MP-2 Environmental Qualification"
46. Westinghouse - WCAP 7829, April 1972.
47. Franklin Research Center Report No. F-C4911-2 W and G.E. TB's (March 1978).

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List of References

For "System Component Evaluation Work Sheets"

48. Samuel Moore & Company - Performance Capabilities LO-255 (Proprietary)
49. Collyer Insulated Wire Company, Inc. Collyer Technical Report No. 67-2. (Proprietary)
50. Collyer Insulated Wire Company, Inc., Description: PE Insulated/PVC Jacketed 1KV Control Cable LO-193/LO-279. (Proprietary)
51. Northeast Utilities internal letter GEE-80-617 of 9/2/80 from J. S. Nicosia to W. H. Becker - "CY Ambient Temperature Conditions".
52. Wyle Labs. Report No. 17436-3 of 10/23/80.
53. NUSCO Specification, SP-GEE-44, Rev. 2, 7/31/78.
54. NUSCO Specification, SP-GEE-20, Rev. 0, 1/25/80.
55. Brand - Rex Company, Technical Attachment to SP-GEE-20. (Proprietary)
56. The Foxboro Company Test Report No. T3-1068 (Radiation) (Proprietary)
57. The Foxboro Company Test Report No. T3-1097 (Radiation) (Proprietary)
58. The Foxboro Company Test Report No. Q9-6005. Maximum Credible Accident (MCA). (Proprietary)
59. The Foxboro Company Test Report No. T3-1013. Maximum Credible Accident (MCA). (Proprietary)
60. The Foxboro Company Test Report No. T3-1013 (Supplement) Maximum Credible Accident (MCA). (Proprietary)
61. Letter of October 27, 1980 from Kerite Company, S.C. Nelmes to NUSCO, L.D. Davison-Supplemental Qualification Data (Proprietary)
62. NUSCO Specification, SP-GEE-40, Rev. 2, 6/27/80
63. Conax Corporation, Design Qualification Report for Penetration Assemblies IPS-434-1, 2 & 3 (Proprietary) sent to FRC for review in August 1980.
64. General Atomic Company, Test Report E-254-960, Rev. 1, dated 5/1/81, Qualification of Analog High Range Radiation Monitor-in NUSCO file for audit.

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List of References (con't)

65. Conax Corporation, Electric Conductor Seal Assemblies, IPS-412.
66. Conax Corporation, Design Qualification Material Test Report, IPS-325, Rev. C, dated 11/2/79.
67. Westinghouse - WCAP 9003, January 1969
68. Westinghouse letter dated January 17, 1967 on Containment Fan Motors F-17-1, 2, 3, & 4 to Stone & Webster Engineering Corporation.
69. C.A.R. Fan Motor Nameplate Data.
70. Westinghouse - WCAP 8754, June 1976, Environmental Qualification of Class 1E Motors for Nuclear Out-Of-Containment Use.

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Attachment III

Report on Qualification Tests  
for  
Second Generation Solid Dielectric Coaxial  
Constructions and Cellular Dielectric  
Coaxial Constructions  
for  
Class IE Service In Nuclear  
Generating Stations

Rockbestos Report #2806  
PROPRIETARY

December, 1982