



CONNECTICUT YANKEE

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July 27, 1978

Docket No. 50-213

Director of Nuclear Regulatory Regulation
ATTENTION: Mr. D. L. Ziemann, Chief
Operating Reactors Branch #2
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

- References: (1) D. C. Switzer letter to V. Stello, Jr.,
dated March 6, 1978
- (2) D. L. Ziemann letter to W. G. Council,
dated June 23, 1978

Gentlemen:

Haddam Neck Plant
Environmental Qualification of Electrical Equipment

In Reference (2), the NRC Staff requested that CYAPCO supplement Table A-1 in the Attachment to Reference (1) with additional information. As a result of follow-up efforts conducted by CYAPCO and Northeast Utilities Service Company (NUSCO) and, in response to Reference (2), the attached information is provided.

The Attachment updates and supplements Table A-1 with specific information requested by the NRC Staff. Information regarding the specific equipment types, the specific environmental conditions to which they were qualified, the method of qualification, and references to qualification documentation are provided therein. As indicated in Reference (2), the referenced documentation is not being submitted but is available for NRC Staff review. In addition, efforts are continuing at CYAPCO and NUSCO to ensure the availability of appropriate documentation of environmental qualification of safety related electrical equipment.

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We trust this information is responsive to the NRC Staff requests.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

W. G. Council

W. G. Council
Vice President

Attachment

ATTACHMENT

DOCKET NO. 50-213

CONNECTICUT YANKEE ATOMIC POWER COMPANY

HADDAM NECK PLANT

ENVIRONMENTAL QUALIFICATION OF SAFETY-RELATED

ELECTRICAL EQUIPMENT

SUPPLEMENT #1

July, 1978

TABLE A-2

PEAK CONTAINMENT TEMPERATURE*
MAIN STEAM LINE BREAK INSIDE CONTAINMENT

	Containment Initially At <u>109°F, 50% R.H.</u>	Contamination At <u>120°F, 100% R.H.</u>
50% Liquid Inventory In S/G After Feedwater Valve Closes	245.1 °F	251.7 °F
70%	252.0 °F	258.4 °F
100%	261.3 °F	267.3 °F

* Using Conservative S/G Flow Rates and Enthalpies.

TABLE A-3
Realistic Containment Radiation
Qualification Criteria⁽¹⁾
(RADS)

#	Location	TOTAL DOSE					
		1 Hour		24 Hour		30 Days	
		Exposed ⁽²⁾	Covered ⁽²⁾	Exposed	Covered	Exposed	Covered
1	Reactor Cavity Area	1.3E+6	1.2E+6	1.8E+6	1.3E+6	2.9E+6	1.4E+6
2	Refueling Floor Area	3.0E+5	2.2E+5	8.3E+5	3.1E+5	1.9E+6	4.4E+5
3	Electrical Penetration Area	8.8E+4	1.8E+4	5.9E+5	7.4E+4	1.9E+6	4.5E+5
4	CAR Fan ⁽³⁾ Motor	-	5.9E+4	-	6.9E+5	-	1.6E+6
5	Lower ⁽⁴⁾ Annulus Region	8.8E+4	1.8E+4	5.9E+5	7.4E+4	1.9E+6	4.5E+5
6	Upper ⁽⁵⁾ Annulus Region	1.4E+5	5.9E+4	1.2E+6	6.9E+5	3.1E+6	1.6E+6

(1) A) Includes 30 year and post LOCA dose.

B) Post LOCA dose assume 2% Core Inventory Released per NRC Reg. Guide 4.2, Proposed Annex to Appendix D, 10CFR50, Class B accident.

(2) Exposed = Beta + Gamma Dose + Neutron Dose.

Covered = Gammas + Neutron

(3) Includes an additional 10% dose from fan F-17-3 (Stone & Webster conversation of 2/24/78).

(4) Assuming no doorway exists in inner annulus wall near equipment.

(5) Assuming equipment is at least as far from the CAR fan filter as the motor.

REFERENCES

- (1) V. Stello letter to D. C. Switzer dated December 23, 1977.
- (2) D. C. Switzer letter to K. R. Goller dated February 5, 1975.
- (3) D. C. Switzer letter to K. R. Goller dated December 18, 1974.
- (4) D. C. Switzer letter to A. Giambusso dated June 29, 1973.
- (5) D. J. Skovholt letter to D. C. Switzer dated March 29, 1974.
- (6) A. Schwencer letter to D. C. Switzer dated July 14, 1977.
- (7) NRC General Design Criterion 4 - Environmental and missile design bases. Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. These structures, systems, and components shall be appropriately protected against dynamic effects, including the effects of missiles, pipe whipping, and discharging fluids, that may result from equipment failures and from events and conditions outside the nuclear power unit.
- (8) D. C. Switzer letter to P. A. Morris dated December 30, 1971, as supplemented on May 19, 1972, December 5, 1972, and May 2, 1977.
- (9) D. C. Switzer letter to R. A. Purple dated September 29, 1975.
- (10) A. Schwencer letter to D. C. Switzer dated June 30, 1976.
- (11) D. C. Switzer letter to A. Schwencer dated February 2, 1978.
- (12) D. C. Switzer letter to B. H. Grier, dated January 13, 1978.
- (13) D. C. Switzer letters to A. Schwencer, dated February 2 and 10, 1978.
- (14) D. C. Switzer letter to E. G. Case dated February 13, 1978.
- (15) D. C. Switzer letter to E. G. Case dated December 12, 1977.