

NORTHEAST UTILITIES



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December 30, 1980

Docket No. 50-213
50-245
A01260

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

- References:
- (1) D. L. Ziemann letter to W. G. Council dated January 1, 1980.
 - (2) W. G. Council letter to D. L. Ziemann dated February 14, 1980.
 - (3) W. G. Council letter to D. L. Ziemann dated March 14, 1980.
 - (4) W. G. Council letter to D. M. Crutchfield dated June 30, 1980.
(Docket No. 50-245)
 - (5) D. M. Crutchfield letter to W. G. Council dated July 28, 1980.
 - (6) W. G. Council letter to D. M. Crutchfield dated August 5, 1980.
(Docket No. 50-213)
 - (7) W. G. Council letter to D. M. Crutchfield dated August 27, 1980.
 - (8) W. G. Council letter to D. M. Crutchfield dated November 21, 1980.
(Docket No. 50-213)

Gentlemen:

Haddam Neck Plant
Millstone Nuclear Power Station, Unit No. 1
SEP - Anchorage and Support of Safety Related
Electrical Equipment

The NRC Staff requirements regarding the issue of anchorage and support of safety related electrical equipment were first identified in Reference (1). Responses from Connecticut Yankee Atomic Power Company (CYAPCO) and Northeast Nuclear Energy Company (NNECO) were docketed in References (2), (3), (4), (6), (7), and (8).

NRC requirements regarding submittal content and format were further specified by Reference (5). In accordance with that request, Attachment 1, Summary of Investigation of Anchorage and Support of Safety Related Electrical Equipment, is hereby provided for the Haddam Neck Plant.

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The supports of safety related electrical equipment of the type identified in Attachment 1 to Reference (1) have been evaluated for seismic adequacy. Calculations have been performed to demonstrate the adequacy of either the original support configurations or the modified support configurations as appropriate. Components which have been or are being modified, as well as a description of the type of modifications performed, are identified in Attachment 1. As previously stated in Reference (8), CYAPCO anticipates completion of all required modifications by January 31, 1981. All modifications completed to date have been implemented in accordance with the provisions of 10CFR50.59.


Millstone Unit No. 1 is presently in the midst of an extended refueling outage. Return to power is not expected prior to February, 1981. NNECO expects to complete modifications resulting from the ongoing investigation of the anchorage and support of safety related electrical equipment prior to returning to full power operation.

In order to provide a complete summary of the results of the investigation of the anchorage and support of safety related electrical equipment, NNECO intends to forward information in a format similar to Attachment 1 prior to resuming full power operation.

Please advise if you require further clarification on the above information.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Council
Senior Vice President

A T T A C H M E N T 1

Haddam Neck Plant

Summary of Investigation of Anchorage and
Support of Safety Related Electrical
Equipment

December 1980

ATTACHMENT 1

SUMMARY OF INVESTIGATION OF ANCHORAGE
AND SUPPORT OF SAFETY RELATED ELECTRICAL EQUIPMENT

| <u>Component Name</u> | <u>Location - Building & Elevation</u> | <u>Type of Anchorage Originally Existing</u> | <u>Any Modifications To Original Anchorage Required?</u> | <u>Type of Mods. Performed to Anchorage</u> | <u>Modification Drawing Number</u> | <u>Calculation Supporting Adequacy of Existing Anchorage or Modification</u> |
|-----------------------------|---|---|--|--|--------------------------------------|--|
| 4160 Volt Switchgear Bus 8 | Diesel Generator Building Elev. 21'-6" Diesel Generator Room #1 | Welded to Channel Embedded in Concrete Floor Slab | Yes | Additional Weld Added, New Anchor Bolts Added, Bracing Members Added | 16103-34043 Sht. 42 | 79-113-116 GM Section E |
| 4160 Volt Switchgear Bus 9 | Diesel Generator Building Elev. 21'-6" Diesel Generator Room #2 | Welded to Channel Embedded in Concrete Floor Slab | Yes | Additional Weld Added, New Anchor Bolts Added, Bracing Members Added | 16103-34043 Sht. 42 | 79-113-116 GM Section E |
| 480 Volt Switchgear Bus 1-4 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab | Yes | Additional Anchor Bolts Added | 16103-34043 Sht. 43 | 79-113-116 GM Section C |
| 480 Volt Switchgear Bus 1-5 | " | " | " | " | " | " |
| 480 Volt Switchgear Bus 1-6 | " | " | " | " | " | " |
| 480 Volt Switchgear Bus 1-7 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added | 16103-34043 Sht. 43 | 79-113-116 GM Section C |
| Motor Control Center #1 | Screenwell Bldg. Elevation 21'-6" | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base - Bracing Added at Top | 16103-34043 Shts. 81A, 81B, 81C, 81D | 79-113-116 GM Section G |

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AND SUPPORT OF SAFETY RELATED ELECTRICAL EQUIPMENT

| Component Name | Location - Building & Elevation | Type of Anchorage Originally Existing | Any Modifications To Original Anchorage Required? | Type of Mods. Performed to Anchorage | Modification Drawing Number | Calculation Supporting Adequacy of Existing Anchorage or Modification |
|----------------------------|--|---------------------------------------|---|---|--------------------------------------|---|
| Motor Control Center #2 | New and Spent Fuel Building Elevation 21'-6" | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base, Bracing Added at Top | 16103-34043 Shts. 84A, 84B | 79-113-116 GM Section P |
| Motor Control Center #3 | Turbine Building Elevation 35'-6" | Bolted to Structural Steel at Base | Yes | Bracing Added at Top of Unit | 16103-34043 Shts. 80A, 80B | 79-113-116 GM Section H |
| Motor Control Center #5 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base, Bracing Added at Top | 16103-34043 Sht. 35 | 79-113-116 GM Section I |
| Motor Control Center #6 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base, Bracing Added at Top | 16103-34043 Sht. 35 | 79-113-116 GM Section J |
| Motor Control Center #7 | Cable Vault Elevation 21'-6" | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base, Bracing Added at Top | 16103-34043 Sht. 68 | 79-113-116 GM Section K |
| Motor Control Center #8 | Primary Auxiliary Building Elevation 21'-6" | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base, Bracing Added at Top | 16103-34043 Shts. 82A, 82B, 82C, 82D | 79-113-116 GM Section L |
| 480 Volt A.C. Panel No. 2A | Diesel Generator Building - Elevation 21'-6", Diesel Generator Room #1 | Bolted to Concrete Wall | No | N/A | N/A | 79-113-116 GM Section Q |

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AND SUPPORT OF SAFETY RELATED ELECTRICAL EQUIPMENT

| Component Name | Location - Building & Elevation | Type of Anchorage Originally Existing | Any Modifications To Original Anchorage Required? | Type of Mods. Performed to Anchorage | Modification Drawing Number | Calculation Supporting Adequacy of Existing Anchorage or Modification |
|----------------------------|--|---------------------------------------|---|---------------------------------------|-----------------------------|---|
| 480 Volt A.C. Panel No. 2B | Diesel Generator Building - Elevation 21'-6", Diesel Generator Room #2 | Bolted to Concrete Wall | No | N/A | N/A | 79-113-116 GM Section Q |
| 125 Volt D.C. Bus No. 1 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base | 16103-34043 Sht. 41 | 79-113-116 GM Section B |
| 125 Volt D.C. Bus No. 2 | Service Building Elevation 41'-6" Switchgear Room | Bolted to Floor Slab at Base | Yes | Additional Anchor Bolts Added at Base | 16103-34043 Sht. 41 | 79-113-116 GM Section B |
| 125 Volt D.C. Panel DP-A | Service Building Elevation 59'-6" Control Room | Welded to Embedments at Base | Yes | Braced Frame Added at Top | 16103-34043 Shts. 48A, 48B | 79-113-116 GM Section R |
| 125 Volt D.C. Panel DP-B | Service Building Elevation 59'-6" Control Room | " | " | " | " | " |
| 125 Volt D.C. Panel DP-2A | Diesel Generator Building - Elevation 21'-6", Diesel Generator Room 1 | Bolted to Concrete Wall | No | N/A | N/A | 79-113-116 GM Section S |
| 125 Volt D.C. Panel DP-2B | Diesel Generator Building - Elevation 21'-6", Diesel Generator Room 2 | " | " | " | " | " |

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SUMMARY OF INVESTIGATION OF ANCHORAGE
AND SUPPORT OF SAFETY RELATED ELECTRICAL EQUIPMENT

| Component Name | Location - Building & Elevation | Type of Anchorage Originally Existing | Any Modifications To Original Anchorage Required? | Type of Mods. Performed to Anchorage | Modification Drawing Number | Calculation Supporting Adequacy of Existing Anchorage or Modification |
|----------------------------------|---|---------------------------------------|---|---|------------------------------|---|
| 120 Volt A.C. Panel DP-A | Service Building Elevation 59'-6" Control Room | Welded to Embedments at Base | Yes | Braced Frame Added at Top | 16103-34043 Shts. 48A, 48B | 79-113-116 GM Section R |
| 120 Volt A.C. Panel DP-B | " | " | " | " | " | " |
| 120 Volt A.C. Panel DP-C | " | " | " | " | " | " |
| 120 Volt A.C. Panel DP-D | " | " | " | " | " | " |
| 4160/480 Volt Transformer No. 5 | Service Building Elevation 41'-6" Switchgear Room | None | Yes | Added Bolts Through Concrete Floor Slab | 16103-34043 Sht. 36 | 79-113-116 GM Section A |
| 4160/480 Volt Transformer No. 6 | " | " | " | " | " | " |
| 125 Volt Station Battery Rack 1A | Service Building Elevation 41'-6" Switchgear Room | Anchor Bolts to Floor Slab | Yes | Entire Rack Replaced - New Anchor Bolts Added | 16103-34043 Shts. 44, 45, 46 | 79-113-116 GM Section M |
| 125 Volt Station Battery Rack 1B | " | " | " | " | 16103-34043 Shts. 44, 46, 47 | 79-113-116 GM Section N |

ATTACHMENT 1

SUMMARY OF INVESTIGATION OF ANCHORAGE
AND SUPPORT OF SAFETY RELATED ELECTRICAL EQUIPMENT

| Component Name | Location - Building & Elevation | Type of Anchorage Originally Existing | Any Modifications To Original Anchorage Required? | Type of Mods. Performed to Anchorage | Modification Drawing Number | Calculation Supporting Adequacy of Existing Anchorage or Modification |
|---|---|---------------------------------------|---|--|-----------------------------|---|
| 125 Volt D.C. to 120 Volt A.C. Inverter A | Service Building Elevation 41'-6" Switchgear Room | None | Yes | Bracing Added to Existing Frame - New Anchor Bolts Added | 16103-34043 Sht. 37 | 79-113-116 GM Section C |
| 125 Volt D.C. to 120 Volt A.C. Inverter B | " | " | " | " | " | " |
| 125 Volt D.C. to 129 Volt A.C. Inverter C | " | " | " | " | " | " |
| 125 Volt D.C. to 120 Volt A.C. Inverter D | " | " | " | " | " | " |
| 125 Volt D.C. Battery Charger BC-1A | Service Building Elevation 41'-6" Switchgear Room | Anchor Bolts to Floor Slab | Yes | Additional Anchor Bolts Added | 16103-34043 Sht. 41 | 79-113-116 GM Section B |
| 125 Volt D.C. Battery Charger BC-1B | " | " | " | " | " | " |
| Auxiliary Control Panels | Service Building Elevation 59'-6" Control Room | Anchor Bolts to Floor Slab | Yes | " | 16103-34043 Sht. 83 | 79-113-116 GM Section T |