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March 7, 1986

Docket No. 50-213 B11917

Office of Nuclear Reactor Regulation Attn: Mr. Christopher I. Grimes, Director Integrated Safety Assessment Project Directorate Division of PWR Licensing - B U.S. Nuclear Regulatory Commission Washington, D.C. 20555

Gentlemen:

Haddam Neck Plant Fire Protection - Schedular Exemption

By letter dated September 16, 1985(1), the Connecticut Yankee Atomic Power Company (CYAPCO) provided a summary description of the status of the Haddam Neck Fire Protection Program, and identified additional modifications required in order to comply with Appendix R and conditions of NRC approved The September 16, 1985 letter also included clarification of exemptions. CYAPCO exemption requests, provided a schedule for implementation of the majority of the Appendix R modifications, and noted that a schedular exemption request would be submitted for specific modifications that could not be completed by the 1986 refueling outage. This letter provides a summary of the modifications that will not be completed in the 1986 refueling outage, provides the basis for the schedule required in order to complete the remaining modifications, and describes the interim fire protection that is in place in order to ensure adequate fire protection safety until these modifications are completed. This information is being submitted as a request for exemption from the schedular requirements of 10 CFR 50.48(c) in accordance with the provisions of 10 CFR 50,12(a).

Switchgear Room Modifications

Background

By letter dated November 14, 1984⁽²⁾, the NRC Staff granted eight exemptions to the prescriptive requirements of Section III.G of Appendix R to OCFR50. The exemptions were granted on the basis that existing systems toge her with specific proposed modifications will provide reasonable assurance that one division of safe shutdown equipment will be free of fire damage and will whieve an acceptable level of fire protection equivalent to that provided by Section iiI.G of Appendix R.

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- (1) J.F. Opeka letter to H.L. Thompson, dated September 16, 1985.
- (2) J.A. Zwolinski letter to W.G. Counsil, dated November 14, 1984 and the accompanying Staff Safety Evaluation Report.

One of the exemptions granted by the November 14, 1984 letter pertained to the Service Building Switchgear Room. The modifications proposed for this room by CYAPCO were accepted by the NRC Staff. A detailed description of the switchgear room modifications proposed in CYAPCO's letter of July 16, 1982⁽³⁾ is provided as Table 1-2 in the Attachment to this letter. This letter also stated that detailed design and construction of all proposed fire protection modifications would not commence until the outcome of the control room exemption request was known. The NRC Staff did not take exception to this course of action as it complied with IOCFR50.48(c)(6). The control room exemption was granted by the November 14, 1984 letter.

By letter dated March 1, 1982⁽⁴⁾, CYAPCO provided a status report for each fire zone and noted whether the zone complied with Appendix R, whether modifications were needed or whether an exemption had been filed. The report also provided an estimate of how long it would require to perform the modifications proposed. For the switchgear room, it was estimated that at least 18 months would be needed to relocate and install the equipment and cabling within the existing room. Since the Haddam Neck Plant normally has fuel cycles of less than eighteen months it is therefore noted that since 1982 the NRC Staff was aware that schedular relief from 10CFR50.48 would be required to implement the proposed modifications for the switchgear room. This fact was noted again in CYAPCO's September 16, 1985 submittal as well as during recent discussions with the NRC Staff.

Discussion

The switchgear room contains the major power distribution elements for the plant except for the two 4160 volt emergency buses (8 and 9) which are located in separate diesel rooms (fire zones D1 and D2).

The two station batteries, battery chargers, and DC distribution panels, four static inverters, motor control center 5, and 480 volt load centers 4, 5, 6, and 7 are located within the switchgear room.

After the eight exemption requests were approved by the NRC Staff in November 1984, CYAPCO contracted with a consultant to perform a revalidation and verification of CYAPCO's compliance with Appendix R in light of the numerous clarifications the Staff had issued regarding Appendix R. NRC guidance up to and including Generic Letter 85-01 was used in the re-review.

During the course of the review it became apparent that the switchgear room modifications should provide an integrated solution to resolve various safety issues including not only fire protection, but also:

⁽³⁾ W. G. Counsil letter to D. G. Eisenhut, dated July 16, 1982.

⁽⁴⁾ W. G. Counsil letter to D. G. Eisenhut, dated March 1, 1982.

- o tornado missiles(5),
- o onsite standby DC power systems(6),
- o internally generated missiles from the M-G sets⁽⁷⁾, and
- the consequences of a high energy pipe break on the west wall of the switchgear room(8),

These additional safety issues were raised in 1983 and 1984 during the Systematic Evaluation Program (SEP) and subsequent Integrated Plant Safety Assessment Report (IPSAR). Our need to develop an integrated safety approach to resolve not only fire protection concerns but various other issues is the fundamental reason why this formal request for schedular relief has not been previously docketed.

In an attempt to resolve the SEP issues and preclude creating potential new issues by using the existing switchgear room, CYAPCO has determined that a new switchgear room represents the optimum approach to resolve these issues.

The scope of work for the switchgear room modification is too large to be completed during a single outage of reasonable duration. This task will be one of the most significant modifications that CYAPCO will ever implement at the Haddam Neck Plant. It is essential to be responsive to both internal and NRC concerns on completing a thorough and detailed design and engineering effort prior to implementing modifications. Caution is especially needed for a modification of this magnitude and complexity. The formulation of the NRC Outage Inspection Program⁽⁹⁾ speaks to the kinds of concerns which must be addressed prior to implementation. These same concerns formulate the bases of our position that the safety of the plant must not be jeopardized to meet schedular restraints unless those constraints raise valid public health and safety issues.

- (5) SEP Topic III-4.A, Tornado Missiles, W. G. Counsil letter to D. M. Crutchfield, dated March 31, 1982: Integrated Plant Safety Assessment Report, June 1983.
- (6) SEP Topic VI-7.C.1, Onsite Standby DC Power Systems, C. I. Grimes letter to J. F. Opeka, dated January 13, 1956: Integrated Plant Safety Assessment Report, June 1983.
- (7) SEP Topic III-4.C, Internally Generated Missiles, W. G. Counsil letter to D. M. Crutchfield, dated February 12, 1982: Integrated Plant Safety Assessment Report, June 1983.
- (8) SEP Topic III-5.B, Pipe Break Outside Containment, D. M. Crutchfield letter to W. G. Counsil, dated May 10, 1982: Integrated Plant Safety Assessment Report, June 1983.
- (9) We understand that Outage Inspection Programs are being conducted on a pilot basis at Dresden 3 and Fort Calhoun.

The key element in our approach to resolve the various issues discussed above is to construct a new building to house the new major components. These components are discussed in the attachment to this letter. NRC approval of this major reconfiguration of safe shutdown equipment is necessary prior to ordering new equipment. Once NRC approval is obtained it is estimated that a lead time of 12 to 14 months is needed to procure critical items for the new building. Once the equipment has been obtained it must be installed and tested prior to a plant outage thereby leaving the cutover activities to occur during the outage. Cutover activities alone will take at least two months to complete. A more detailed schedule is provided in the attachment to this letter.

We also note that fine tuning of the design to address other pressing issues which may result from various sources (e.g. plant-specific PSS insights, new regulatory issues, etc.) will continue for some period of time into the future.

Modifications for Other Fire Areas

Background

CYAPCO's letter of September 16, 1985 noted that certain modifications for the Primary Auxiliary Building, Containment Cable Vault, Reactor Containment, Cable Spreading Area and Turbine Building would also not be completed during the 1986 refueling outage.

Discussion

The specific modifications are discussed in Table 1.1 of the Attachment. As noted in the September 16, 1985 letter, these modifications require rerouting and protecting cabling leading to the new switchgear room. These modifications cannot be implemented until the detailed design and engineering of the new switchgear room components are completed. Therefore, it has been determined that these modifications are inherently tied to the switchgear room modifications and must be implemented during the same time frame since the cables will be connected to the new equipment.

The inclusion of the fire protection modifications in the Integrated Safety Assessment Program (ISAP) has been proposed by us on several occassions. The NRC Staff has repeatedly endorsed, as recently as July 31, 1985,(10) such proposals. As such, it has been our understanding that since remaining fire protection modifications were specifically included in ISAP, that the implementation schedule dictated by 10CFR50.48 would be suspended as authorized by the ISAP Policy Statement for the Haddam Neck Plant with respect to those items included in ISAP, provided good cause was shown. We believe that this document provides the required justification.

In summary, CYAPCO has determined that the modifications required in order to resolve concerns related to the switchgear room, cable spreading room, and certain other areas can be accomplished only through a major modification that essentially requires construction of a new power distribution system for one train of safe shutdown equipment. This will require significant facility construction, additional power distribution components, routing of power, control and

instrumentation cabling, installation of an alternate shutdown instrumentation panel, equipment tie-ins, testing and documentation. With the magnitude of these efforts, we have determined that an installation schedule of the January 1989 refueling outage is required in order to complete these modifications. Additionally, CYAPCO has determined that construction of a new building to house the new power distribution system will require licensing reviews and a subsequent NRC Staff safety evaluation on the resolution of the SEP issues.

It should be noted that CYAPCO has undertaken an aggressive program to complete fire protection modifications. A large number of these modifications were completed in August 1985, or are being completed during the 1986 refueling outage, as noted in our September 16, 1985 letter. The modifications that will be completed during the 1986 refueling outage greatly enhance fire protection safety. These include the protective features such as suppression systems, fire area barriers, curbing, one-half hour rated radiant energy shields, a portion of the one-hour rated wraps or barriers, additional fire protection and administrative controls, as well as system modifications to provide manual operability of components such as the safety system lock-out panel for PORV's and MSIV's, local control of breakers, rerouting of fire pump cables, and completion of emergency lighting modifications. Additionally, areas such as the cable spreading room, switchgear room, and Primary Auxiliary Building open areas, and the containment cable vault are provided with automatic suppression With the existing administrative controls, fire protection and fire systems. brigade capability, automatic suppression systems, and safe shutdown features, significant levels of defense in depth are provided to minimize the potential for a fire affecting safe shutdown capability until modifications to the electrical power distribution system are completed. The Attachment provides a more detailed description of:

- the areas affected by this schedular exemption request,
- conceptual evaluations that have been performed to date,
- milestones and schedules for modifications to be completed after the 1986 refueling outage, and
- o the basis for the required schedule, and interim fire protection features.

Exemption Criteria

On December 12, 1985⁽¹¹⁾, the Commission published a revision to 10CFR50.12(a) regarding standards to be applied in granting exemptions. The revised rule became effective on January 13, 1986.

⁽¹⁰⁾ H. L. Thompson, Jr. letter to J. F. Opeka, dated July 31, 1985. The subject of fire protection (i.e., switchgear room modifications) is specifically identified as ISAP Topic No. 1.14.2 for the Haddam Neck Plant in Enclosure 2 to this letter, which identifies those projects that the NRC Staff believes should be evaluated in ISAP.

⁽¹¹⁾ Federal Register, Vol. 50, December 12, 1985, pg. 50764.

Our request for an exemption is based upon this revised rule. The exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Granting the exemption requests will not violate other applicable laws. The only applicable regulations affected by this request are 10CFR50.48 and Appendix R to 10CFR50 which are under the sole authority of the NRC.

In general, the intent of the Commission's requirements for fire protection as contained in IOCFR50.48 and Appendix R is to provide reasonable assurance that the risk posed by a potential fire will not present an undue risk to the public health and safety. While compliance with the regulations will for the most part, provide reasonable assurance that plant operation does not pose undue risk to the public, temporary noncompliance does not necessarily represent an unacceptable risk.

In this specific case, the existing fire protection features installed in the plant, the interim compensatory measures and the length of time that the exemption would be in effect provide an adequate demonstration that the exemption will not present an undue risk to the public health and safety. Further details on these points are presented in the Attachment to this letter.

The exemption is consistent with the common defense and security in that it does not affect national security and relieves an additional financial burden on the company and the ratepayers. CYAPCO estimates that a minimum of \$10 million will be spent to install the modifications discussed herein. The failure of the NRC to provide a favorable determination on the exemption request will, obviously, substantially increase the cost to comply with Appendix R.

The exemption request falls into the category of temporary relief as codified under 10CFR50.12(a)(2)(v). The relief sought is limited until the 1989 refueling outage when the switchgear room modifications will be completed. CYAPCO has made good faith efforts to comply with the regulation. All other Appendix R modifications have been or are being implemented on a schedule consistent with 10CFR50.48. Overall, the Haddam Neck Plant substantially complies with Appendix R at this time. As discussed above, significant levels of defense in depth are provided to minimize the potential for a fire affecting safe shutdown capability in the interim until the modifications to the electrical power distribution system are completed. Section 3 of the Attachment provides additional discussion on the effort CYAPCO has undertaken to comply with 10CFR50.48 and Appendix R. In addition, the need to integrate the resolution of various other safety issues into this modification is an important factor in our rationale to seek an exemption request.

In summary, we believe that all of these factors demonstrate that CYAPCO has met the conditions required by IOCFR50.12(a) and our request for a exemption from the schedular requirements of IOCFR50.48(c) should be granted.

Pursuant to the requirements of 10 CFR 170.12(c), enclosed with this exemption request is the application fee of \$150.00.

We trust that this submittal provides adequate information to the NRC Staff to allow our extension request to be granted, and that we will be informed if any further information is needed.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

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Senior Vice President

Attachment

ATTACHMENT

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APPENDIX R SCHEDULAR EXEMPTION REQUEST

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1.0 BACKGROUND

This attachment provides the basis for a schedular exemption request for those modifications identified in the CYAPCO September 16, 1985 letter as requiring schedular relief from the 1986 refueling outage implementation date for Appendix R. The intent of the bases provided in this attachment is to comply with the criteria of 10 CFR 50.12 with respect to schedular exemptions, as well as the criteria contained in the NRC staff letter to the Commission of September 17, 1985⁽¹⁾ with respect to criteria for schedular exemptions to Appendix R.

In previous correspondence, the Connecticut Yankee Atomic Power Company (CYAPCO) provided a summary description of the status of the Haddam Neck Fire Protection Program, and identified additional modifications required in order to comply with Appendix R and conditions of NRC approved exemptions.^(2,3) The summary of modifications in Reference 2 also noted that a schedular exemption would be requested for those modifications that could not be completed by the 1986 refueling outage. For reference, Table 1-1 is a summary listing of the Appendix R modifications that will not be completed by the 1986 refueling outage, and for which a schedular exemption is requested. The information contained in Table 1-1 was previously provided in Reference 2. The Switchgear Room modifications listed in Table 1-1 are further described in Table 1-2. The additional description of the Switchgear Room modifications provided in Table 1-2 is a restatement of CYAPCO's July 16, 1982 submittal.(4) Although the discussion of Table 1-2 is somewhat out-of-date, it does show that the extent of the Switchgear Room modifications has remained the same since 1982; only the location has changed.

W. J. Dircks, letter to NRC Commissioners, dated September 17, 1985, Rulemaking Issue: "Staff Recommendations Regarding the Implementation of Appendix R to 10 CFR 50," Secy-85-306.

⁽²⁾ J.F. Opeka letter to H.L. Thompson, dated September 16, 1985.

⁽³⁾ J.A. Zwolinski letter to W.G. Counsil, dated November 14, 1984 and the accompanying Staff Safety Evaluation Report.

⁽⁴⁾ W. G. Counsil letter to D. G. Eisenhut, dated July 16, 1982.

MODIFICATIONS COVERED BY SCHEDULAR EXEMPTION

FIRE AREA	DESCRIPTION	MODIFICATION			
A-1 (Zone A-1A)	Primary Auxiliary Building - General Area	Reroute RHR pump 1B cable outside this fire zone.			
		Reroute cable for BA-MOV-32 outside this fire zone.			
A-1 (Zones A-1B & A-1C)	Primary Auxiliary Building - Charging Pump Cubicles	Valve (BA-MOV-32) and its associated cable(s) will be protected from the effects of a fire in the charging Pump A pit, by 1-hour wrap.			
A-1 (Zone A-1D)	Primary Auxiliary Building - Charging Metering Pump Room	Bottled air will be supplied to the charging metering pump (P-11-1A) and the charging metering pump suction valve (CH-AOV-278).			
		The cable to these components will be rerouted outside of Fire Zone (A-1A) or wrapped.			
R-1	Containment Cable Vault	Two channels of safe shutdown instrumentation will be rerouted to provide physical separation as required by Appendix R, Section III.G.2.b with an exemption from the requirements for no intervening combustibles. The instrumentation circuits involved are pressurizer level, pressurizer pressure, steam generator level, steam generator pressure, reactor coolant system temperature, and source range nuclear instrumentation.			
		Redundant cables (conduit runs) that have a physical separation of less than 20' will be separated by at least 1/2-bour fire barrier in conformance with Section III.G.2.c of Appendix R.			

(continued)

FIRE AREA	DESCRIPTION	MODIFICATION
R-3	Reactor Containment - Lower Annulus	Reroute half the channels of safe shutdown instrumentation to provide physical separation as required by Section III.G.2.d of Appendix R (S/G Pressure, Source Range Nuclear Instrumentation)
S-2	Switchgear Room	Install a new safety-related 480-volt load center.
		Install a new safety-related 480-volt motor control center.
		Relocate one of the station batteries
		Relocate two static inverter vital bus power supplies to two diverse locations.
		Install a battery charger and DC bus to the new switchgear room.
		Reroute two channels (one battery-related division) of safe shutdown instrumentation cable identified for safe shutdown for Appendix R. The cable to be rerouted originates in the control room and terminates in the containment cable vault.
		One division of required cables not in compliance with the 20' separation requirements will be enclosed in a 1-hour fire rated barrier.
		Provide a safe shutdown instrumentation panel remote from the control room.

(continued)

FIRE AREA

DESCRIPTION

S-3

Cable Spreading Area

MODIFICATION

Provide a 1-hour rated barrier around one division of safe shutdown cables. The cables associated with the following components should be protected or relocated.

- a. Charging Pumps/Metering Pump
- b. Volume Control Tank Isolation CH-MOV-257
- c. BA-MOV-32 or 373
- d. Service Water Pumps
- e. RHR Pumps

The cables associated with one division of safe shutdown instrumentation will be protected or rerouted.

Reroute and protect with a 1-hour fire rated raceway, all Appendix R required cables impacted by the addition and relocation of equipment in the switchgear room.

(continued)

FIRE AREA

DESCRIPTION

T-1

Turbine Building

MODIFICATION

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Install a 3-hour fire barrier to protect one source range instrument and one of the four power feeds to the vital AC distribution extending from the Switchgear Room to the Control Room through the Turbine Building.

Table 1-2

To satisfy the requirements of Appendix R, CYAPCO proposed the following in a July 16, 1982 submittal⁽⁴⁾. This information is out of date as to location of the new components but it does show that the extent of the modifications has remained essentially the same since 1982.

- 1. Post-fire shutdown required loads presently powered from Division B Switchgear Bus No. 6 (one of two color coded green) in the existing 480 volt load center line up will be recabled to be powered from a new safety related 480 volt load center. This will result in one service water pump, one residual heat removal pump, and the new motor control center (see Item #2 below) deriving power from the new remotely located load center. Note that one 480 volt load center (Bus No. 7) of the B division remains in its existing position. This is an acceptable situation as in the event of a switchgear room postulated fire no credit is assumed for the Bus 7 supplied service water pump D. Note that for a fire in the screenwell (Fire Zone P-1) A and D (Buses 4 and 7) service water pumps are credited for operation due to their physical separation from each other in the screenwell pump house.
- 2. The existing lineup of switchgear requires MCC No. 5 to be functional at all times. This configuration is recognized to be acceptable to the NRC as described in a Safety Evaluation Report issued by the Atomic Energy Commission dated July 1, 1971. By providing a new MCC (green), all Division B equipment will be powered from it, while Division A equipment continues to utilize MCC No. 5. This new MCC will be located next to the new 480 volt load center on the south side of the switchgear room.
- One station battery, its charger, and DC bus will be relocated to the south end of the switchgear room to provide a physical separation in excess of forty feet from its redundant counterpart.
- 4. The existing four static inverters will be relocated in the switchgear room so a physical distance in excess of forty feet exists between the redundant pairs of inverters.
- 5. The overhead cable tray and conduit system in the switchgear room contains control and instrumentation cable of both safety related divisions. Control cable between the control room and the two emergency diesel generator rooms pass through this area. The cables for Division A travel in tray C1, while the cables for Division B travel in tray C. One of the trays will be enclosed with a one-hour rated fire barrier. The cables affected are control cables for emergency diesel generators, charging pumps, 480 volt load center feeder breakers, room panel (in the control room) to another control room panel by way of tray C in the switchgear room. One division of these interconnecting cables will be recabled and enclosed in a one-hour fire rated raceway.

All cabling associated with new equipment or equipment to be relocated will be in accordance with Section III.G.2.b or III.G.2.c of Appendix R.

2.0 CONCEPTUAL STUDIES

From 1981 through 1984, CYAPCO had numerous discussions with the NRC staff in conjunction with providing numerous submittals related to required Appendix R modifications and proposed exemptions to Section III.G of Appendix R to 10 CFR 50. These included several system related modifications such as relocating power supplies and rerouting of cables. The specifics of the required designs for these system modifications were heavily dependent upon the NRC staff's review and approval of the pending exemption requests, including the disposition of the proposed control room exemption. It was not prudent to proceed with detailed design and modification activities in the areas affected by these exemptions until an NRC Staff Safety Evaluation Report was issued, particularly considering the range of opinions related to the control room exemption. NRC Staff denial of the control room exemption request would have invalidated the proposed safe shutdown approach. The exemptions from the requirements of Section III.G were granted on November 14, 1984.

Following receipt of the NRC Staff Safety Evaluation Report in November, 1984, CYAPCO has undertaken conceptual reviews to establish feasible approaches to 1) achieving the required power distribution separation and protection related to the switchgear room, 2) to achieve related cable separation for other areas of the facility, and 3) to address other safety issues raised in the SEP. These conceptual reviews have determined that an integrated solution to resolve various safety issues including fire protection dictate the need for more significant modifications in order to meet the commitments made by CYAPCO as part of the Appendix R exemptions that were previously granted and as part of the resolution of various SEP issues. CYAPCO has determined that a major modification involving construction of a new power distribution system for one train of safe-shutdown equipment is required. This will require construction of a new switchgear room. Installation of a remote shutdown instrument panel⁽⁵⁾ powered from the new power supplies will also be required that is independent of the control room and cable spreading area. The following discussion summarizes the modifications that are presently required for the switchgear room. A more

⁽⁵⁾ Consistent with the terms of the November 14, 1984 exemption at pages 8 through 11 of the accompanying Safety Evaluation Report.

detailed description of the design criteria will be included as part of a licensing submittal, presently anticipated for submittal in June, 1986.

The power distribution system modification is expected to include the following new equipment:

- 4.16kV/480V transformer;
- 480V load center;
- 480V motor control center;
- o 125V DC battery;
- Battery charger;
- Vital AC inverters;
- 125V DC distribution bus with tie-in for the third station battery;
- Battery charger and distribution bus for third station battery.

In addition, the project is expected to require the following design features:

- Rearrangement of vital bus transfer scheme per SEP Topic VI-7.C.1.
- Ability to operate three CAR fans from one division must be retained.
- Ventilation for the new location (battery may need separate vent).
- Room modifications as necessary to remove hazards or to protect from external hazards.
- 5. Fire detection and suppression.
- 6. Recabling of power and control circuits for affected equipment (cabling should be separated from redundant division by being routed in separate fire areas or by providing fire barriers). This will include, as a minimum, RHR pump P-14-1B, power supply from Bus 9, feeder to new MCC, component cooling pump P-13-1B, service water pump D, BA-MOV-32, charging metering pump P-11-1A, CH-MOV-257, and CH-AOV-278.

- Two access/egress routes (preferably to non-radiation control areas).
- A means to provide speed control of the charging metering pump and operation of CH-AOV-278 upon loss of control air.

Additionally, a new remote shutdown instrumentation panel will be installed in the same fire area as the new division B switchgear. Cabling supplying this instrumentation must be rerouted/protected such that it is independent of redundant instrument cabling in all fire areas from the cable spreading area (R-1) to the control room (S-1). The following instruments will be provided on the remote shutdown instrumentation panel:

- o Pressurizer level
- o Pressurizer pressure
- o Steam generator level
- o Steam generator pressure
- Reactor coolant system temperature (hot leg or in-core thermocouples, and cold leg)
- o Source range neutron monitor.

3.0 LICENSING IMPACT

On December 12, 1985(6), the Commission published a revision to 10CFR50.12(a) regarding standards to be applied in granting exemptions. The revised rule became effective on January 13, 1986.

Our request for an exemption is based upon this revised rule. The exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Granting the exemption requests will not violate other applicable laws. The only applicable regulations affected by this request are 10CFR50.48 and Appendix R to 10CFR50 which are under the sole authority of the NRC.

In general, the intent of the Commission's requirements for fire protection as contained in 10CFR50.48 and Appendix R is to provide reasonable assurance that the risk posed by a potential fire will not present an undue risk to the public health and safety. While compliance with the regulations will for the most part, provide reasonable assurance that plant operation does not pose undue risk to the public, temporary noncompliance does not necessarily represent an unacceptable risk.

In this specific case, the existing fire protection features installed in the plant, the interim compensatory measures and the length of time that the exemption would be in effect provide an adequate demonstration that the exemption will not present an undue risk to the public health and safety. Further details on these points are presented in the Attachment to this letter.

The exemption is consistent with the common defense and security in that it does not affect national security and relieves an additional financial burden on the company and the ratepayers. CYAPCO estimates that at least \$10 million will be spent to install the modifications discussed herein. The failure of the NRC to provide a favorable determination on the exemption request will, obviously, substantially increase the cost to comply with Appendix R.

⁽⁶⁾ Federal Register, Vol. 50, December 12, 1985, pg. 50764.

The exemption request falls into the category of temporary relief as codified under IOCFR50.12(a)(2)(v). The relief sought is limited until the 1989 refueling outage when the switchgear room modifications will be completed. CYAPCO has made good faith efforts to comply with the regulation. All other Appendix R modifications have been or are being implemented on a schedule consistent with IOCFR50.48. Overall, the Haddam Neck Plant substantially complies with Appendix R at this time. As discussed above, significant levels of defense in depth are provided to minimize the potential for a fire affecting safe shutdown capability in the interim until the modifications to the electrical power distribution system are completed. Section 3 of the Attachment provides additional discussion on the effort CYAPCO has undertaken to comply with IOCFR50.48 and Appendix R. In addition, the need to integrate the resolution of various other safety issues into this modification is an important factor in our rationale to seek an exemption request.

The NRC staff provided further guidance specifically addressing Appendix R exemptions in a recent Commission paper.⁽¹⁾ The guidance contained in SECY-85-306 stip 'ated that the following four items must be considered in order to obtain schedular exemptions for Appendix R under 10 CFR 50.12(a):

- The utility has, since the promulgation of Appendix R in 1980, proceeded expeditiously to meet the Commission's requirements.
- The delay is caused by circumstances beyond the utility's control.
- The proposed schedule for completion represents a best effort under the circumstances.
- Adequate interim compensatory measures will be taken until compliance is achieved.

It should also be noted that 10 CFR 50.48(c)(4) requires that dedicated shutdown systems be installed within 30 months after NRC approval of the dedicated shutdown system. Although the proposed modifications by CYAPCO that are described in Sections 1.0 and 2.0 above are not literally a "dedicated shutdown system," the scope of the modifications is such that a similar lead time for completion of the CY modifications is required as compared to the required lead

time for installation of a typical "dedicated shutdown system." The proposed modifications include significant structural construction and modifications; installation of components; new power, control and instrumentation; and equipment tie-ins similar to the extent of modifications required for a dedicated shutdown system. Although a dedicated shutdown system may include installation of pumps and connection of piping, it should be noted that such modifications can typically be performed in parallel with electrical equipment installation; additionally, these proposed modifications will include significantly more cable routing throughout the plant than would be experienced with a dedicated shutdown system. Based on the above, it is judged that the 30 month installation cycle that is considered acceptable for a dedicated shutdown system should be considered as a similarly appropriate installation schedule for the power distribution system installation following NRC approval. (See section 4.0 for a detailed discussion of the schedule).

The extent of the electrical distribution and safe shutdown instrument panel modificatio , will significantly impact the electrical distribution of the facility. It is anticipated that a licensing submittal addressing the new switchgear room will be provided to the NRC Staff during June, 1986. To allow installation of the modifications described in Sections 1.0 and 2.0 above by the 1989 refueling outage, an NRC staff SER would be required by December 1, 1986. With an SER on that date, installation (by the 1989 refueling outage) would be approximately 28 months after the SER. This lead time is consistent with the 30-month precedent for a dedicated shutdown system. Section 4.0 provides a more detailed description of the modification milestones and schedules.

The following provides a summary of the basis for satisfying the four criteria contained in SECY-85-306 related to schedular exemptions for Appendix R under 10 CFR 50.12:(1)

 <u>Expeditious effort to meet Appendix R</u> - Since the issuance of 10 CFR 50 Appendix R, CYAPCO has undertaken a number of reviews and evaluations, and implementation of modifications. On March 19, 1981, CYAPCO provided to the NRC the results of an initial comparison to Appendix R.⁽⁷⁾ The initial comparison to

⁽⁷⁾ W. G. Counsil letter to D. G. Eisenhut, dated March 19, 1981, providing the first comparison to Appendix R.

Appendix R and subsequent submittals resulted in numerous meetings on the control room exemption with the Staff during the period of 1981 through 1984. Numerous Staff clarifications during this period required additional submittals which culminated in a favorable resolution of the control room exemption request by NRC letter dated Noember 14, 1984.

Since the submittal of the documentation discussed above, substantial additional clarifications and interpretations have been agreed upon between the NRC and the industry. Additional clarity regarding the proper interpretation and application of the regulation has been achieved via issuance of NRC generic letters, I&E Information Notices, Nuclear Industry Fire Protection Seminars, NRC Regional Workshops, and numerous other informal meetings and discussions.

To ensure that the Haddam Neck Plant's Appendix R evaluations are still valid, CYAPCO performed a review of CYAPCO's position relative to the Systematic Evaluation Program (SEP) and Sections III.G, J and L of Appendix R to 10CFR50. NRC guidance received up to and including the Region I Appendix R Workshop and I&E Information Notice 84-09, Revision 1 was used in this re-review. The evaluation was comprehensive in nature and was intended to revalidate and verify the completeness and accuracy of our previous submittals. The review was also intended to ensure that all pertinent information received and agreements realized are reflected in our documentation addressing Appendix R. This effort culminated in the September 16, 1985 letter which summarized the modifications required in order to meet Appendix R.(2) Reference 2 identified the large number of fire protection modifications that have already been completed, or will be completed by the 1986 refueling outage. Reference 2 also provided the results of further reviews performed by CYAPCO in a conscientious effort to confirm compliance with more recent NRC guidance contained in NRC Generic Letters, I&E Information Notices, Nuclear Industry Fire Protection Seminars, NRC Regional Workshops, and numerous other informal meetings and discussions. The Appendix R evaluations and modifications that have been completed for the Haddam Neck Plant to date, demonstrate the

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expeditious and conscientious effort that has been undertaken by CYAPCO.

- O <u>Circumstances beyond the utility's control</u> Three major factors beyond CYAPCO's control have resulted in various delays. The first factor resulted from delays in the NRC staff's review of proposed exemptions from the requirements of Section III.G, due largely to the range of opinions related to the Control Room exemption request for Connecticut Yankee and due to the additional Staff clarifications and interpretations. These concerns were not resolved until issuance of an NRC Staff Safety Evaluation Report on November 14, 1984. The second major factor resulted from the need to provide an integrated solution to resolve various safety issues including not only fire protection, but also:
 - o tornado missiles,
 - onsite standby DC power systems
 - o internally generated missiles com the M-G sets, and
 - the consequences of a high energy pipe break on the west wall of the switchgear room.

These additional safety issues were raised in 1983 and 1984 during the SEP and subsequent Integrated Plant Safety Assessment Report (IPSAR). Our need to develop an integrated safety approach to resolve not only fire protection concerns but various other issues is the fundamental reason why this formal request for schedular relief has not bee previously docketed.

The third major factor requiring a lead time to the 1989 refueling outage is the need for NRC staff review of the new power distribution system and associated structural modifications. This factor resulted from the need to integrate the resolution of various other safety issues into this modification.

 <u>Best effort under the circumstances</u> - The following section provides a more specific basis for the milestones and schedule for the power distribution and remote shutdown instrument panel modifications. The information contained in Section 4.0 demonstrates the need for the length of time required for this modification, and demonstrates that the schedule represents a best effort under the circumstances. This is additionally supported by the precedent established for lead times for dedicated shutdown facilities.

 Interim compensatory measures - Section 5.0 describes the fire protection that will be in place for the interim period between the 1986 and 1989 refueling outages. With the automatic detection and suppression or restricted access to areas affected by the switchgear room modifications, these features provide adequate compensatory measures.

4.0 MODIFICATION MILESTONES AND SCHEDULE

The CYAPCO commitment for completion of the new switchgear room and remote instrumentation panel by the 1989 refueling outage is based on a consideration of the significant activities required in order to complete these projects. Figure 4-1 provides a schedule for the major milestones for these projects. Major activities in these projects include the licensing review prior to proceeding with these major modifications (6 months); selection of vendors to provide equipment on construction efforts (5 months); lead time for fabrication and delivery of a new load center, motor control center, transformer, battery charger, inverter, and DC bus (12 months); equipment installation, cable routing, and cable wraps (4.5 months after delivery of new load center); install conduit and load center (4.5. months after delivery); and cutover activities during the outage (2 months). Construction and testing activities will occur prior to the cutover activities. The lead times for these activities and the other milestones contained in Figure 4-1 represent an expeditious and best effort under the circumstances in order to complete the modifications required.

The present outage schedules for CY are as follows: January through mid-April for the 1986 refueling outage, July through early September for the 1987 refueling outage, and February through early April for the 1989 refueling outage. With these outage schedules, it is clear that these modifications could not feasibly be installed by the 1987 refueling outage. The modification preparation, equipment installation, and major cable routing activities will be completed in an expeditious manner. As noted in Figure 4-1, it is anticipated that these will be completed a few months prior to the 1989 refueling outage. This allows some margin to assure that difficulties experienced in the design, procurement, or installation phases will not impact the ability to complete the modifications by the 1989 refueling outage. The final equipment and system tie-ins will be completed, along with final testing, during the 1989 refueling outage. As noted below, it is not possible to perform these tie-ins on a system-by-system basis during operation since this would require intentionally entering the Technical Specification Limiting Condition for Operations (LCOs) and result in operating with only one train of safety-related equipment. This approach is not a prudent alternative to achieving implementation.

4-1

The schedule proposed for these modifications represents a balanced effort to provide adequate resources for the project, while attaining the desired quality and reliability for the modifications. Placing additional resources on the project could not shorten the schedule enough to be able to perform the modifications in the 1987 outage (See Figure 4.1). Further, placing additional resources on the project may have adverse effects due to greater difficulties in managing the resources. It should be noted that other major activities are also taking place between 1986 and 1989 for the Haddam Neck Plant as well as other operating facilities of Northeast Utilities. Northeast Utilities' management and engineering resources are required for supporting and directing these other activities in addition to the modification to the power distribution system and remote instrumentation panel. Table 4-1 provides a summary of the major 1986 activities, many of which include modifications to be installed during the 1986 refueling outage. Figure 4-2 summarizes additional major projects underway for the facility, many of which will be resulting in modifications to be installed during the 1987 refueling outage; the activities listed in Table 4-2 are presently being addressed under the ISAP program (Integrated Safety Assessment Program). Based on the ISAP program, more specific schedules for the items in Figure 4-2 will be developed as part of the overall evaluation process.

As another indication of the magnitude of the power distribution and instrumentation modification, CYAPCO estimates that the costs for these modifications will be on the order of \$10 million. The power distribution system and remote instrumentation panel modifications will require preparation and processing of numerous modification packages. It is estimated that on the order of 40-50 PDCRs (Plant Design Change Requests) will be required. This compares to approximately 120 per year that are normally processed for the unit. If we consider that the PDCRs for the power distribution system and remote instrumentation panel modifications are prepared and processed over an approximately 2-year period (late 1986 through late 1988), it can be seen that this results in a substantial increase in the workload for CYAPCO personnel in processing these modifications. There are many other factors that influence the need and prudency for the schedule reflected in Figure 4-1. These include:

- Although contrary to CYAPCO operating philosophy, an 0 equipment tie-in could be performed for a piece of equipment during plant operation by declaring the equipment inoperable and instituting the Technical Specification LCO until the tie-in and system test is completed. For the large number of equipment tie-ins that are required, this would result in deactivating various pieces of equipment on a rotating basis. Since all of this equipment would be related to one train of safety-related equipment, the net effect would be operating for a significant period of time with one train of safety-related equipment. Any small increase in safety due to a slightly earlier completion of the power distribution and remote instrumentation panel modifications by performing equipment tie-ins during operation will not offset the less desirable situation of operating with only one train of safety-related equipment. Accordingly, CYAPCO will not intentionally render equipment inoperable.
- o Certain equipment modifications such as cable rerouting can be performed with lower radiation exposure levels if performed with smaller, well-trained crews that are more efficient than many work crews that are less proficient in performing their activities. Additionally, exposure levels would be reduced by allowing certain final steps in the modifications to be completed during a plant outage, such as final tie-ins to a charging pump. Accordingly, ALARA considerations would be better satisfied under a more orderly design and completion schedule as reflected in Figure 4-1, rather than an accelerated schedule that relies on significantly more work crews to complete more modifications and tie-ins during plant operations.
- With the magnitude of the new power distribution system and remote instrumentation panel modifications, the proposed schedule allows for smoother management of internal resources and monitoring of outside support for these modifications as well as other Haddam Neck Plant and operating facility projects.
- A decreasing number of nuclear equipment vendors has been experienced over recent years by the industry. This has resulted in delays for procurement of safety-related and Class 1E equipment, with resultant lead times of 1 year or longer for electrical gear such as motor control centers and switchgear.
- Since the new power distribution system modification involves safety-related equipment, seismic and EEQ requirements will have an impact on engineering and

qualification as well as procurement phases for this project.

The modifications that will be completed during the 1986 0 refueling outage greatly enhance fire protection safety. These include the protective features such as suppression systems, fire area barriers, curbing, a portion of the 1-hour rated wraps and nost of the one-half hour rated barriers, additional fire protection and administrative controls, as well as system modifications such as providing manual operability of components, a safety system lock-out panel for PORVs and MSIVs, local control of breakers, rerouting of fire pump cables, and completion of emergency lighting modifications. These modifications have been pursued expeditiously and will provide a significant increase in plant safety relative to fire protection. The power distribution system and remote instrumentation panel modifications provide an enhancement in terms of fire protection safety beyond the installed defense-in-depth fire protection.

PLOT 83117	CY CT	PRELIMINARY SCHEDULES FOR APPENDIX-R PROJECTS	MODE O/FE		PR BA PO	OJECT/2 8481 R CHART GRAPHICS				
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FINISH BA	PR89	A89 SOBT NODES								
			1985 1988 MDJFMRMJJR50NDJF	1987 M A A J J A S O N D J F	19 19 19 19 19 19 19 19 19 19 19	09 				
ZONE 1 PA 83-117 480 VOLT LOAD CENTER	DETER PREPR	MINE LOCATION OF LOAD CENTER 1 RE CONCEPTUAL DESIGN RE LICENSING SUBMITTAL	NOV85 31DEC85 1 JAN66 30APR86 1 MAT86 30MAT86							
	NRC	APPROVAL	38V0/85 38/ULS							
	WRITE	SPEC & ISSUE BID - LORDCENTER	25EP86 31DEC	86 11 MAR67						
	VENDO	R SUBMIT BIDS - LOADCENTER	IRPR87	30APR87						
	FAB 4	DELIVER LOADCENTER		MATET 28APE	188					
	DETAI	ETAIL ELECTRICAL DESIGN								
	DETAL	L CIVIL DESIGN	IUCCOO	230101						
	PREL	N CONDUIT & FLOOR PLANS AVAIL FOR PA 83-119		1MAT87						
	STRUC	TURL MODS TO LORDCENTER AREA		6JUL87 30NOV8	7					
ZONE 2	INSTR	LL CONDUIT & LOAD CENTER (NON-OUTAGE)			<u>18 65E</u> P88					
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new rate	PROCU	RE REMOTE INSTRUMENTION PANEL		2FERRR	3.0006					
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ZONE 4 OUTAGES	1986	CT OUTAGE	4JRN86 2 J2APR86							
	1987	CY OUTAGE	4 JUL	.87 12SEP8	7					
	1989	CT DUTHGE			28JAN69	BAPA89				

TABLE 4-1

CY-1986 REFUELING OUTAGE CONSTRUCTION ACTIVITIES

S/G Feedwater Nozzle Inspection

Rev Control Air System

Process Computer (UPS)

Inadequate Core Cooling Instrumentation

Replacement of Crane Teledyne Motor Operator

Replacement of RCS Loop Temp. Elements

Reevaluation of Safety Related PPG

DWST Oxygen Reduction

Plant Paging System

S/G Recirculation System

RCS RTD Study

Curbs, Ramps, Water Control Structure (Appendix R)

Fire Prot. Improvements Area S-1 (Appendix R)

Fire Prot. Improvements Area A-3/A-4 (Appendix R)

FWH 4B, 5B, 6A, 6B Replacement Installation f New Cavity Pool Seal Design

Cavity Drain Piping Upgrade

Waterbox "A" Tube Replace

Emergency Lighting (Appendix R)

S/G Tube Sleeving and Plugging

S/G Channel Head Chemical Decontamination

S/G Support Services

Emergency Diesel Gen Trip and Lockout

Documentation & Coordination Protective Relays

S/G Manway Handling Device

MOV Overload Setting

4.16KV Control Circuit Mods (Appendix R)

Upgrade Diesel Air Start System

Replace Main Generator Grounding XFMR

Replace MCB Cat IE Relays

TABLE 4-2

ADDITIONAL PROJECTS ONGOING WITH COMPLETION FOR 1987 OUTAGE OR LATER AS DETERMINED BY ISAP

Switchgear Room Cooling Modifications High/Low Pressure Valve Interlocks **Containment Penetration Evaluations** Seismic Qualification of Safety Related Piping Seismic Structural Modifications Wind and Tornado Loadings/Tornado Missiles Vital Bus Feed Realignment Modifications Seismic Modifications to Reactor Coolant System Design Codes, Design, Criteria, Load Combinations **Torque Switch Modifications** PAB Ventilation System Modifications Control Room Habitability Appendix R Modifications Anticipated Transients Without Scram RCP Seal Cooling Modifications Control Room Design Review Safety Parameter Display System **RG 1.97 Instrumentation** Emergency Response Facilities Instrumentation Post-Accident Hydrogen Monitor (RG 1.97) TS Surveillance for Hydraulic Snubbers TS Surveillance for Mechanical Snubbers **DWST** Oxygen Reduction Additional Atmospheric Steam Dump Modernize Reactor Protection and Control Systems Process Computer Replacement Evaluation of RCS Loop Isolation Valves to Mitigate SGTR Auxiliary Pressurizer Spray Nozzle Loss of DC Power RCP Vibration Monitoring System Upgrade Administration Building Upgrade Main Steam System Evaluation Turbine-Generator Trip Logic **RV** and **SV** Testing Compliance with 50.46 (ECCS) **RCP** Trip Flooding Evaluation

RPS Isolation **Pipe Breaks** GL 83-28 Item 2.1 - Equipment Classification/Vendor Inter. GL 83-28 Items 3.1.11.2 - Post Maintenance Testing GL 83-28 Item 3.1.3 - Post Maintenance Testing TS Changes GL 83-28 Reactor Trip System Reliability - Vendor GL 83-28 Item 2.2 - Equip. Classification/Vendor Interface GL 83-28 Items 3.2.1&2 - Post Maintenance Testing Procedures GL 83-28 Item 3.2.3 - Post Maintenance Testing Changes to TS GL 83-28 Items 4.2.3&4 - Prev. Maintenance Proc. for Rx Trip GL 83-28 Items 4.5.2&3 - Rx Trip System Functional Testing GL 83-28 Item 4.5.1 - Reactor System Function Testing **RCS Vents TS** TS from GL 83-36 & 83-37 **Diesel Generator Reliability** ISI Update to 1980 Code IST for Diesel Generator Auxiliaries Reliability Engineering Seismic Qualification of Equipment Steam Generator Tube Integrity Fracture Toughness of Supports Systems Interactions Pressure Transient Protection Containment Emergency Sump Performance Safety Implications of Control Systems Radiation Protection Plans Bolting Degradation Flooding of Safety Equipment by Backflow Steam Binding of Auxiliary Feed Pumps

5.0 INTERIM PROTECTION

In the interim period until modifications identified in Sections 1.0 and 2.0 are completed, significant existing fire protection is provided to minimize the potential for a fire that affects safe shutdown capability. Additionally, certain special compensatory actions will be taken, as described below, in this interim period to further reduce the potential for fires that could affect safe shutdown capability.

5.1 PRESENT PROTECTION

The following summarize the present fire protection as well as fire protection that will be installed by the end of 1986 refueling outage for areas affected by the schedular exemption.

PAB, New Zone A-1A, Primary Auxiliary Building - General Areas:

- An automatic water suppression system is installed for cable tray protection.
- Smoke detection is installed over selected cable trays and over component cooling pumps to alarm locally and in the Control Room.
- A hose station is installed in this zone. Portable extinguishers are provided in the zone.

PAB, New Zone A-1B, Charging Pump Cubicle

- A hose station is located in adjacent Fire Zone A-IA.
- Dry chemical portable extinguishers are located just outside the cubicle.
- o Ionization smoke detection exists in the adjacent hallway.

PAB, New Zone A-IC, Charging Pump Cubicle

- A hose station is located in adjacent Fire Zone A-IA.
- Dry chemical portable extinguishers are located just outside the cubicle.
- Ionization smoke detection exists in the adjacent hallway.

PAB, New Zone A-1D, Charging Pump Cubicle

- A hose station is located in adjacent Fire Zone A-IA.
- Dry chemical portable extinguishers are located just outside the cubicle.
- o Ionization smoke detection exists in the adjacent hallway.

Contaiment Area Cable Vault - Fire Area R-1

- o An automatic total-flooding carbon dioxide system is installed.
- Smoke detection equipment is provided for both levels that alarms in the Control Room.
- Intake and exhaust fans shut down on actuation of the carbon dioxide total-flooding system.
- The automatic fire damper in the intake duct closes on actuation of the carbon dioxide total-flooding system.
- A dry chemical extinguisher is located near the door in the upper level.
- A hose station in the service building can be used as a backup.

Containment Lower Annulus - Fire Area R-3

- Dry chemical and carbon dioxide extinguishers are provided in the area.
- o Radiant Energy Shields

Service Building Switchgear Room - Fire Area S-2

- An automatic total-flooding Halon 1301 suppression system is provided.
- Ionization smoke detection is throughout the room.
- o One (1) hose station is adjacent to the west entrance (double doors).
- A wheeled dry chemical unit is provided adjacent to the northwest entrance.
- Four (4) carbon dioxide extinguishers are provided.

- o Two (2) Halon 1211 portable extinguishers
- o Hose station and portable extinguishers are also located in the Turbine Building.
- Cables are coated with fire retardant material (flamemastic) or conform to IEEE-383 standards.

Service Building Cable Spreading Room - Fire Area S-3

- o Automatic sprinkler protection in cable trays.
- A directional water spray curtain is installed in the hallway passage area of this zone.
- Smoke detection is installed in both adjacent Fire Areas S-18 and S-19.
- o Dry chemical portable extinguishers are provided.
- One (1) carbon dioxide portable extinguisher.
- Hose stations and additional portable extinguishers are located in the 21'6" elevation portion of this area.

Turbine Building - Fire Area T-1

1.0

- Automatic sprinkler systems are installed in several locations throughout the T-1 area. An automatic sprinkler system has been installed around needed NI cables.
- o There are hose reel stations at all levels.
- Dry chemical and carbon dioxide extinguishers are strategically located at all levels.
- The clean and used Oil Storage Room is equipped with a separate sprinkler system.
- o The Turbine Wide il Reservoir Area is equipped with heat detectors and separation and I deluge water spray systems.
- Spray nozzles of Geluge systems direct water onto cable trays that are in proximity to the Turbine Lube Oil Reservoir Area.
- Automatic water spray, general area coverage in Area T-1, with heads providing coverage of structural steel columns supporting the Control Room.

5.2 COMPENSATORY MEASURES

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Plant tours are routinely performed by plant operations personnel for various plant areas. For areas such as the switchgear room, cable spreading room, general areas of the Primary Auxiliary Building and Turbine Building, these tours are performed on a once-per-shift basis. These tours include a housekeeping check that would identify accumulation of combustible material. The containment cable vault, switchgear room, cable spreading room, and cable trays and major hazards in the Turbine Building and Primary Auxiliary Building are provided with automatic detection and suppression systems. These automatic detection features described in Section 5.1 above, and the plant shift tours provide adequate compensatory measures in the interim period until completion of modifications.

In order to provide an additional level of interim fire protection, CYAPCO will provide fire watch patrols every two hours for the areas described above. This additional compensatory measure minimizes the possibility that a fire combined with a failure of the automatic detection or suppression systems will result in a failure of the safe shutdown systems protected. The fire watch patrol will immediately contact the control room if a fire is detected. The fire watch patrol will be utilized as an interim compensatory measure during periods of plant operation in Modes 1 through 4. This additional level of fire protection combined with the existing fire protection features provides sufficient compensatory measures in the interim period.

Since the reactor containment lower annulus area is not readily accessible during plant operations, there is minimal potential for transient combustibles or fire hazards to result from activities during plant operations. A portion of the safe shutdown instrumentation (pressurizer level, pressurizer pressure, and steam generator level indicators) will be protected by radiant energy shields. In addition, some of the cabling will be replaced with fire-rated mineral insulated cable. These modifications will be completed during the 1986 refueling outage. Operator tours presently include a once-per-month tour in areas of containment during plant operations. As noted above, the tours include a housekeeping check that would identify accumulation of combustible materials. With the limited access to containment during plant operations, the provision of an automatic suppression system for the containment cable vault, and the other fire protection features for containment as described in Section 5.1 above, it is judged that these provide sufficient compensatory measures in the interim period until modifications for the power distribution system and remote instrumentation panel are completed.

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6.0 CONCLUSION

CYAPCO has undertaken an aggressive program to complete fire protection modifications. A large number of these modifications are being completed by the 1986 refueling outage. With the completion of the modifications for the 1986 refueling outage, a significant level of fire protection will be provided for the Haddam Neck Plant. The extent of modifications for the Haddam Neck Plant and the acceptability of approaches for fire protection for various areas was delayed due to circumstances that were largely outside of CYAPCO's control. The acceptability of approaches and proposed modifications was not received until the NRC Staff Safety Evaluation Report of November 14, 1984. Since receipt of that SER, CYAPCO has 1) made a best effort to complete modifications that can be completed by the 1986 refueling outage, 2) is providing an integrated resolution of not only fire protection but also various SEP topics, and 3) is demonstrating a best effort for completion of the power distribution system and remote instrumentation panel modifications. Finally, with the completion of the 1986 refueling outage Appendix R modifications, a significant level of defense-in-depth fire protection will be in place for the Haddam Neck Plant in the interim period until completion of the power distribution and remote instrumentation panel modifications. These include automatic suppression and detection systems and fire watch patrols for areas affected by the power distribution system and remote instrumentation panel modifications. This level of fire protection will assure a minimal potential for fires to occur that could affect safe shutdown capability.

Accordingly, we believe that pursuant to 10 CFR 50.12(a) an exemption from the schedular requirements of 10 CFR 50.48(c) will not endanger life or property or the common defense and security and is otherwise in the public interest. Additionally, the proposed extension satisfies staff guidance contained in SECY-85-306 and in the requirements of 10 CFR 50.12(a).(1,4)