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April 11, 1980

Docket No. 50-213

Office of Nuclear Reactor Regulation
Attn: Mr. H. R. Denton, Director
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References:
(1) W. G. Counsil letter to H. R. Denton dated December 31, 1979.
(2) W. G. Counsil letter to H. R. Denton dated January 31, 1980.
(3) W. G. Counsil letter to H. R. Denton dated December 13, 1979.
(4) H. R. Denton letter to W. G. Counsil dated January 2, 1980.
(5) W. G. Counsil letter to H. R. Denton dated January 17, 1980.
(6) W. G. Counsil letter to H. R. Denton dated February 7, 1980.
(7) W. G. Counsil letter to D. L. Ziemann and R. Reid dated March 28, 1980.
(8) W. G. Counsil letter to D. L. Ziemann and R. Reid dated April 1, 1980.
(9) D. L. Ziemann letter to W. G. Counsil dated February 15, 1980.
(10) H. R. Denton letter to All Operating Nuclear Power Plants dated October 30, 1979.
(11) W. G. Counsil letter to D. G. Eisenhut dated February 14, 1980.
(12) W. G. Counsil letter to D. L. Ziemann and R. Reid dated February 8, 1980 (Docket Nos. 50-245 and 50-336).

Gentlemen:

Haddam Neck Plant
TMI-2 Short-Term Lessons-Learned Implementation

By References (1) and (2) or other correspondence referenced in those documents, Connecticut Yankee Atomic Power Company (CYAPCO) provided comprehensive responses to each of the Short-Term Lessons-Learned requirements as they applied to the Haddam Neck Plant. As indicated, implementation had been accomplished for each item with the exception of Item 2.1.4. The status of implementation is as summarized in References (3) through (6), and further details are provided in the Attachment to this letter.

Recent communications with the Staff have identified the need for supplemental clarifying information or additional documentation supporting the conclusions reached in References (1) and (2). Accordingly, Attachment 1, Haddam Neck Plant TMI-2 Short-Term Lessons-Learned Implementation, is provided to address these items. The attached information is intended to clarify or support CYAPCO's conclusion that the Short-Term Lessons-Learned requirements have been fulfilled, and is docketed in a format similar to that used in Reference (1).

As noted in Reference (2), the absence of NRC Staff feedback on certain proposals scheduled for implementation by January 1, 1981 is a concern which continues to escalate in severity. The feasibility of complying with this date continues to deteriorate with the continued delay of the design iteration process between our respective Staffs.

For three of the Short-Term Lessons-Learned requirements, CYAPCO proposed deferral of implementation to the Systematic Evaluation Program and repeated inquiries of the Staff have not yielded any useful information. The subject items are 2.1.3.b, Additional Instrumentation for Detection of Inadequate Core Cooling, 2.1.6, Design Review of Plant Shielding, and 2.1.8.a, Improved Post-Accident Sampling Capability. Additional details regarding CYAPCO's proposals in this regard are provided in the Attachment.

It is noted that the status of Item 2.1.7.a, Automatic Initiation of Auxiliary Feedwater, is being addressed under separate cover.

We trust you find the attached information sufficient to concur in our conclusion that the "Category A" Short-Term Lessons-Learned requirements have been appropriately implemented at the Haddam Neck Plant.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

W. G. Counsil

W. G. Counsil
Vice President

Attachment

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.1

Emergency Power Supplies Pressurizer Heaters

APRIL, 1980

Item 2.1.1 - Emergency Power Supply
Pressurizer Heaters

What assurances are there that the heaters main power and control power interfaces, since they may not meet safety-grade requirements, will not compromise the power system? It is not sufficient to state that it is believed that the devices are qualified to perform their design function.

Response

It is recognized that Position 3.1.4 of Item 2.1.1 of NUREG-0578 recommended that pressurizer heater main power and control power interfaces with emergency buses be accomplished through devices that have been qualified in accordance with safety-grade requirements. As was indicated in Reference (1), both the main and control power supplies for the pressurizer heaters are derived from Class 1E sources. This is the same situation as existed prior to the NUREG-0578 requirements. The only modifications implemented to meet the requirements of NUREG-0578 were the addition of safety injection actuation contacts into the existing control circuits for the pressurizer heaters circuit breakers for backup groups A and E. Therefore, the interfaces between the heaters and their controls and the Class 1E electrical supply buses is achieved with the same devices as those utilized in the original plant design.

Since these existing plant systems and equipments were procured and installed well before any of the current regulatory requirements or industry standards were issued, it is not possible to provide documentation of qualification such as would be required to mee current criteria. The review of environmental qualifications is being expedited as part of the SEP.

In regards to the main power circuit breakers for the pressurizer heaters, The Institute of Electrical and Electronics Engineers Standard 384-1977 for criteria for independence of Class 1E equipment and circuits indicates, in Section 6.1.2.2, that a circuit breaker qualifies as an isolation device if it is automatically tripped by an accident signal. As indicated in Reference (1), both backup groups A and E have had their control circuits rewired so that they now will be tripped upon the occurrence of a safety injection signal. Therefore, credit is taken that the pressurizer heaters will not degrade their Class 1E sources. In addition, conventional electrical system protective devices also provide isolation of potential faults on the circuits fed by these circuit breakers. Both breakers have series over-current tripping devices with long-delay and instantaneous trips.

The isolation devices in the pressurizer heaters control circuitry are fuses in the positive and negative legs of the 125 VDC supplies to the circuit breakers' control circuitry for backup heater groups A and E. Section 6.2.2.3 of the previously referenced IEEE Standard 384 recognizes fuses as isolation devices.

What is the time required for manual reconnection?

Response

It is not clear whether the question on the time required for manual reconnection of the pressurizer heaters onto the diesel is intended to mean the minimum or maximum time. Analyses performed by the Westinghouse Owners' Group recommended that one bank of backup heaters be available to each emergency power train within 60 minutes after a loss of offsite power, as stated in Reference (1). Procedures have been implemented to accomplish this. However, the heaters could also be reenergized as early as five to ten minutes following a loss of offsite power if circumstances so dictate.

A clarification of Reference (1) is in order in regards to the independence of redundant power sources. The earlier submittal indicated bus tie circuit breaker 5T6 had to remain open to insure the independence of redundant divisions. In fact, breaker 5T6 has been removed from its switchgear lineup so that it is impossible for inadvertent cross-connecting of redundant buses via this path.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.3.a

Direct Valve Indication

APRIL, 1980

Item 2.1.3.a - Direct Indication of Power-Operated Relief Valve Valve and Safety Valve Position for PWRs and BWRs

Do you have only one detector for two PORVs and three safety valves? With your single channel, how can you tell which of the three safety valves lifted?

Response

Only one acoustic monitoring device has been installed to date in response to this requirement. The power operated relief valves (AOV-568 and 570) have individual positive position indication via limit switches. Presently, only one detector is used to detect valve position of the safety relief valves (SRV-584, 585, and 586) at their common discharge header, and the detector will also operate for any PORV operation. An alarm of the acoustic channel without a PORV limit switch indication indicates that a safety valve is open. Activation of both devices, which occurred as documented in Reference (11), indicates that a PORV is open.

With the current installation, it is not possible to determine which of the three safety valves has lifted, and this information is of no particular value. All three safety valves discharge to a common header, and cannot be isolated. Recognition of the opening of an individual safety valve would not substantively enhance the ability of the plant operating personnel to cope with abnormal situations.

Independent of which combination of the various indicators may be alarmed, the relevant procedure, ANN 4.5-34, Annunciator Alarm Procedure, would be utilized by plant operators to cope with an event which activated the acoustical monitor. This procedure instructs the operators to "check close or close" as appropriate both PORV's and associated block valves whenever the acoustic monitor alarms.

Provide latest qualification schedule.

Response

The schedule for qualification of the acoustic monitoring channels is provided in Reference (7). Qualification of the PORV limit switches is currently under investigation. The adequacy of qualification of the existing limit switches, or replacement with qualified limit switches, is scheduled for completion by January 1, 1981.

Is the power to the direct valve indicator from one power train?

Response

The power source is from the semi-vital distribution panel, as described in the response to Item 2.1.7.b.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.3.b

Subcooling Meter

APRIL, 1980

Item 2.1.3.b - Instrumentation for Detection of Inadequate Core Cooling
Subcooling Meter

What are the qualifications of your temperature and pressure inputs? What is your schedule to upgrade these qualifications?

Response

The temperature inputs to the SMM are from 5 of the 48 in-core thermocouples. These are standard Westinghouse thermocouples which are terminated in connectors rated for 425°F continuous service. While there is no formal qualification documenting post-LOCA service, the only components of the temperature loop that are inside the containment are the thermocouples and their associated connectors and cabling. The electronic components are all located in the control room.

A review of the failure history of thermocouples at the Haddam Neck Plant has revealed that failures are attributable almost exclusively to physical failures of cabling and connectors damaged during refueling outages and not to actual failure of the thermocouple itself. During the twelve plus years of operation of the Haddam Neck Plant, operability of the thermocouples during power operation has been demonstrated to be highly reliable. In light of lengthy past performance, five thermocouple inputs are judged to be sufficient to ensure operability of the SMM.

At this time, CYAPCO has not finalized a program for qualification upgrading, however, investigation of both the necessity and feasibility of changing the connectors and cabling are in progress. Considerations relating to the recently escalated environmental qualification issue as part of the SEP will be incorporated into the evaluation.

The pressure transmitters presently used are Foxboro E11GH (PT403) and Foxboro G11GH (PT-404). New Foxboro NE11GH transmitters with special modifications to qualify them for post-LOCA service in accordance with IEEE-323 (1971) and IEEE-344 (1975) are on order. Depending on the availability of these transmitters, replacement will occur during the 1980 refueling outage o during a subsequent plant outage. Since the Haddam Neck Plant is a unit being evaluated as part of the SEP, flexibility in implementation schedules must be maintained for installations heavily related to current SEP topic evaluations.

Are the temperature inputs to the meter auctioneered?

Response

The single highest temperature of the five temperature inputs is compared with the saturation temperature of the lowest of the two pressure inputs to provide the actual margin from saturation.

The pressure inputs to the saturation meter are derived from the above-referenced pressure inputs which physically monitor coolant pressure in coolant loop No. 2. These pressure inputs were selected for use because they are physically located at an elevation higher than that of the pressurizer pressure taps. This physical configuration renders this input more conservative (lower) than that of the pressurizer pressure tap.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.3.b

Reactor Vessel Water Level Measurement System

APRIL, 1980

Item 2.1.3.b - Reactor Vessel Water Level Measurement System

What is your proposal for a reactor vessel water level measurement system?

Response

CYAPCO has been reviewing conceptual designs for reactor vessel level measurement (RVLM) and its need in relation to Short-Term Lessons-Learned Item 2.1.3. To date, evaluations indicate that direct RVLM indication is not required as an indication of an inadequate core cooling condition. Nonetheless, it is recognized that such a measurement system potentially offers the ability to measure NSSS inventory in the range between loss of pressurizer level indication and the existence of an inadequate core cooling condition. This would provide additional information on NSSS state and trend system response to corrective actions, such as actuation of safety injection, for analyzed accidents which are not predicted to result in core damage. Such accidents include small break LOCA and main steam line break.

Before committing to installing a RVLM system, CYAPCO has determined the design must be assessed to constitute a reliable proven one, capable of qualitatively accurate (unambiguous) level indication. The design must be shown to:

(1) Not degrade overall plant safety
(2) Not result in ambiguity which could mislead operations personnel
(3) Not reduce plant reliability.

Additional information relevant to assessing the need/appropriateness of this system is expected to result from the analyses associated with Item 2.1.9.

The concepts investigated by CYAPCO in response to this requirement are summarized in Reference (2), under Section 2.1.3.b, for Millstone Unit No. 2, and generic information developed by the Westinghouse Owners' Group. CYAPCO's assessment to date has indicated that the referenced designs are not capable of complying with the CYAPCO requirements noted above.

In summary, the CYAPCO position can be succinctly stated as follows:

(1) Transient and analysis analyses performed to date demonstrate that a RVLM system is not necessary to ensure continued safe plant operation.

(2) Designs available at this time cannot fulfill the above noted CYAPCO requirements.

(3) CYAPCO has no plans to install a RVLM system at this time.

(4) If new analyses and/or RVLM system designs are generated, this matter will be considered further.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.4

Containment Isolation

APRIL, 1980

Item 2.1.4 - Diverse Containment Isolation

Provide a description of all containment isolation changes you have made to meet the NUREG-0578 requirements.

Response

A circuit modification was completed on December 28, 1979 to provide a diverse actuation signal for Containment Isolation. This was accomplished by providing an input from the Safety Injection (SI) actuation logic system. Containment Isolation is, therefore, initiated on either SI (low pressurizer pressure) or high containment pressure.

A circuit modification was completed on March 28, 1980 to preclude inadvertent valve movements upon reset of the CI actuation signal. This was accomplished by requiring the operator to place the control switches for CI valves into the closed position before CI reset is physically possible. This modification is described in Reference (5) and is illustrated on the attached drawings.

Provide a schedule update for the installation of the four control relays referenced in your February 7, 1980 letter.

Response

As stated above, this modification was completed on March 28, 1980, within 30 days of receipt of the control relays as required by Reference (4).

Provide a schedule update for the replacement of five remote pilot solenoid valves which control 16 valves with individual pilot solenoid valves. This modification was referenced in your January 17, 1980 submittal.

Response

As noted in Reference (6), the schedule for this replacement remains as stated in Reference (5). Implementation will be completed prior to plant operation following the 1980 refueling outage. The necessary equipment was not received by April 3, 1980, and the outage is scheduled to begin May 3, 1980.

Your January 17, 1980 submittal indicates that the replacement pilot solenoid valves will be located in an area that would not be accessible assuming a TID-14844 source. Provide a list "potentially beneficial" systems whose operation would be affected by this problem.

Response

In the attachment to Reference (3), the valve number, valve title (system), and valve location for each CI valve, including the 16 PSV's, were provided. The post-accident function of these valves/systems was provided in Reference (2). Using the nomenclature for valve identification given in Reference (2), and the valve sequence given in Reference (3), the subject valves are:

(1) P-12-A - Non-essential
(2) P-14 - Non-essential
(3) P-41 - Non-essential
(4) P-15 - Essential
(5) P-16 - Essential
(6) P-17 - Essential
(7) P-18 - Essential
(8) P-61 - Non-essential
(9) P-28 - Essential
(10) No Penetration associated - Non-essential
(11) With These Valves - Non-essential
(12) P-13 - Non-essential
(13) P-78 - Non-essential
(14) P-4 - Non-essential
(15) P-23-A - Non-essential
(16) P-64 - Essential

A review of the systems associated with the above valves reveals that they are not required during post-accident operations to enable the plant operators to bring the unit to a stable condition. The systems involved are either:

(1) Non-essential, or

(2) Relate to post-accident operation of the RCP's which is not allowed pursuant to the requirements of I&E Bulletin No. 79-06C, or

(3) Relate to postulated post-accident sampling which is not directly related to bringing the plant to a stable condition. In addition, there are alternate means of obtaining samples for the affected systems. For example, the response to Item 2.1.8.b identifies an alternate means of obtaining activity data on the secondary side of the steam generators. In the response to Item 2.1.8.a, the design of a more sophisticated means of obtaining RCS, containment air, and containment sump samples is committed to be provided.

The concern of postulated inaccessibility in the event of a TID-14844 source term is adequately addressed by reviewing the function of the systems involved. Adequate time exists to take alternate measures in the event one or more of these systems is desired to be utilized.

With regard to post-accident operation of the reactor coolant pumps, CYAPCO notes that the issue continues to be the subject of considerable discussion within the industry. One alternative currently being evaluated by CYAPCO is reclassification of the RCP auxiliaries as essential, such that they would not isolate as a result of a SI or CI signal. The potential for subsequent (post-accident) RCP operation would, therefore, be retained, without the need for affecting a reset of the valves. Another alternative under discussion involves the incorporation of a second level of containment isolation, indicative of a more severe condition than that currently resulting in a containment isolation signal. The RCP auxiliaries would then be associated with this "second level" of containment isolation. In light of the uncertainty associated with the desirability/necessity of RCP operation, CYAPCO proposes to address the concern in a comprehensive fashion as additional information becomes available. CYAPCO will further advise the Staff of the results of the above-mentioned investigation before restart from the 1980 refueling outage. It is noted that this outage is scheduled to begin on May 3, 1980.

Provide a typical isolation valve control circuit diagram.

Response

A typical isolation logic and an individual control circuit diagram of CI valve is attached. Drawing Number - 16103-32001 SH 11B and 11BA.

Describe operator actions required to reopen isolation valves closed on an automatic isolation signal.

Response

To accomplish the above, the following three steps are necessary:

(1) Place all 14 recently modified (March 28, 1980) CI valve control switches into the closed (safe) position.

(2) Reset CI signal, which is possible only if containment pressure is below the actuation setpoint.

(3) Reopen the individual valve with the appropriate control switch.

Again, using the nomenclature for valve identification given in Reference (2), and the valve sequence given in Reference (3), the subject valves are:

(1) P-10 - Non-essential
(2) P-10 - Non-essential
(3) P-10 - Non-essential
(4) P-11-A - Essential
(5) P-11-B - Essential
(6) P-11-C - Essential
(7) P-11-D - Essential
(8) P-78 - Non-essential
(9) P-4 - Non-essential
(10) P-34 - Essential
(11) P-67 - Non-essential
(12) P-7 - Essential
(13) P-41 - Non-essential
(14) NOT APPLICABLE
(15) P-7 - Non-essential

Postulation of a failure of one of the hand-switches is not of concern for the same reasons identified above. An additional measure which is available to overcome a failure is that of jumpering. Procedures which delineate the measures to be taken under these circumstances already exist.

Concerning the issue of containment isolation reset logic from a broader perspective, it is extremely disconcerting to note that the Staff is once again requiring further investigations and potential modifications based upon undocumented criteria. Although CYAPCO is taking steps to address these concerns as previously outlined, this technique of imposing new requirements is unacceptable to CYAPCO. In support of this conclusion, the following points re noted:

(1) The modification to the 14 hand-switches was recently completed (March 28, 1980).

(2) The installation is in full compliance with NUREG-0578 requirements.

(3) The installation is in full compliance with the September 13, 1979 D. G. Eisenhut clarification letter.

(4) The installation is in full compliance with the October 30, 1979 H. R. Denton clarification letter.

(5) The installation is in full compliance with the verbal criteria given in December, 1979.

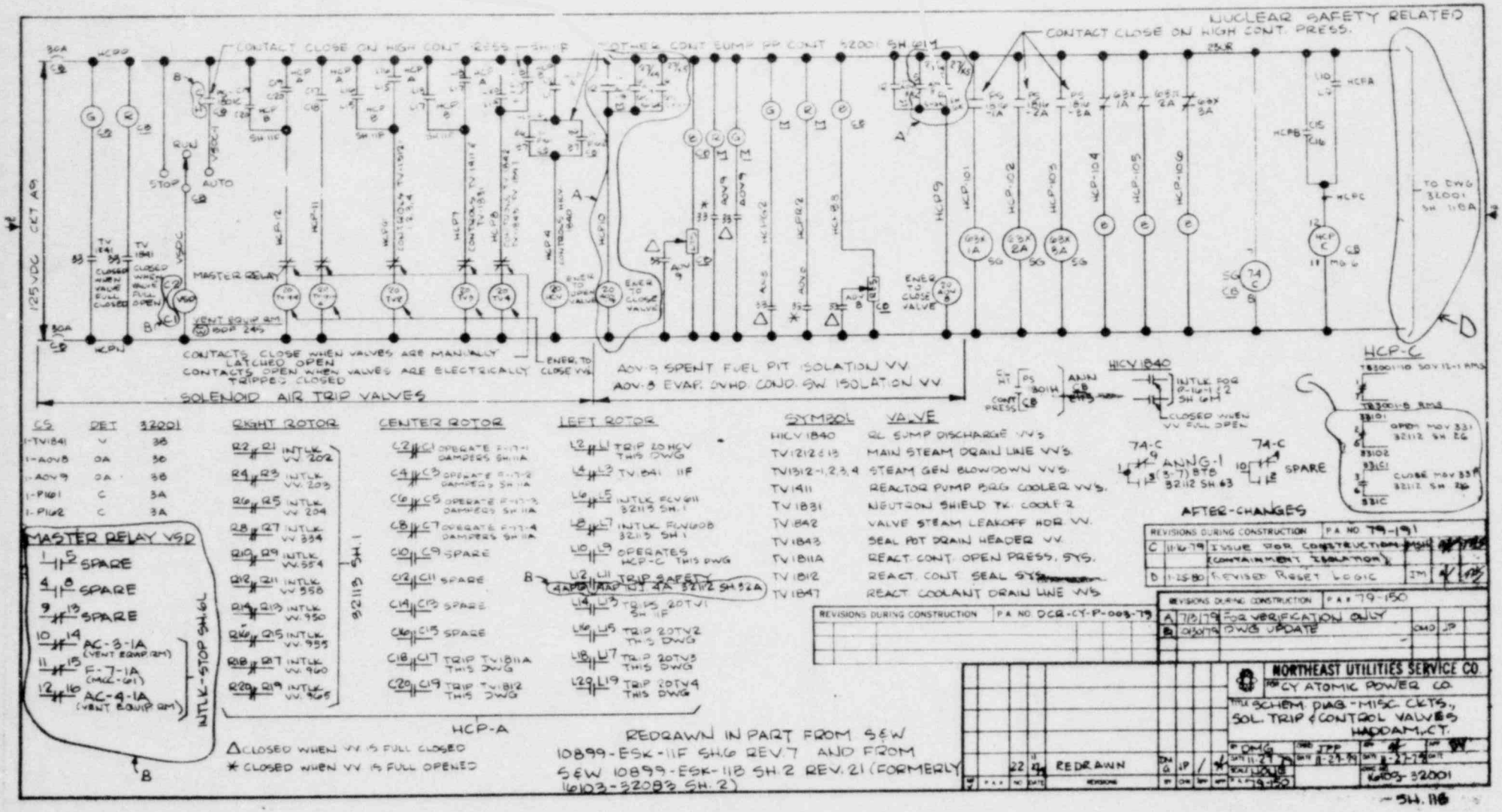
(6) CYAPCO's request for documentation of the requirements of Item (5) above was refused by NRC management.

(7) Our plans for modifying the 14-hand-switches were fully explained in our letters of December 13, 1979 and January 17, 1980.

(8) The NRC required this modification to be completed in the Show-Cause Order dated January 2, 1980.

(9) The NRC approved CYAPCO's response and approach to the Show-Cause Order by letter dated February 1, 1980.

Fully three months after issuance of the Show-Cause Order, the Staff is now inferring that additional changes may be required to satisfy more recent verbal criteria. To complicate matters still further, the Office of Inspection and Enforcement has recently issued I&E Bulletin No. 80-06, which requires action on the same issues. In light of the many demands on our respective organizations, it would appear that resources could be utilized more efficiently. Acceptance criteria must be firmly established before evaluations/modifications can be completed without unnecessary and wasteful expenditure of resources.



CS

1-TV1841	V	3B
1-ADV8	DA	3D
1-ADV9	DA	3B
1-PI61	C	3A
1-PI62	C	3A

RET

V		3B
DA		3D
DA		3B
C		3A
C		3A

32001

3B		
3D		
3B		
3A		
3A		

RIGHT ROTOR

R2 // R1	INTLK VV 202	
R4 // R3	INTLK VV 203	
R6 // R5	INTLK VV 204	
R8 // R7	INTLK VV 854	
R10 // R9	INTLK VV 554	
R12 // R11	INTLK VV 558	
R14 // R13	INTLK VV 950	
R16 // R15	INTLK VV 955	
R18 // R17	INTLK VV 960	
R20 // R19	INTLK VV 965	

CENTER ROTOR

C2 // C1	OPERATE F-17-1 DAMPERS SH 11A
C4 // C3	OPERATE F-17-2 DAMPERS SH 11A
C6 // C5	OPERATE F-17-3 DAMPERS SH 11A
C8 // C7	OPERATE F-17-4 DAMPERS SH 11A
C10 // C9	SPARE
C12 // C11	SPARE
C14 // C13	SPARE
C16 // C15	SPARE
C18 // C17	TRIP TV1811A THIS DWG
C20 // C19	TRIP TV1812 THIS DWG

LEFT ROTOR

L2 // L1	TRIP 20 HCV THIS DWG
L4 // L3	TV 841 11F
L6 // L5	INTLK FCV611 B2115 SH. 1
L8 // L7	INTLK FCV608 B2115 SH 1
L10 // L9	OPERATES HCP-C THIS DWG
L12 // L11	TRIP SAFETY
L14 // L13	TRIP 20TV1 SH 11F
L16 // L15	TRIP 20TV2 THIS DWG
L18 // L17	TRIP 20TV3 THIS DWG
L20 // L19	TRIP 20TV4 THIS DWG

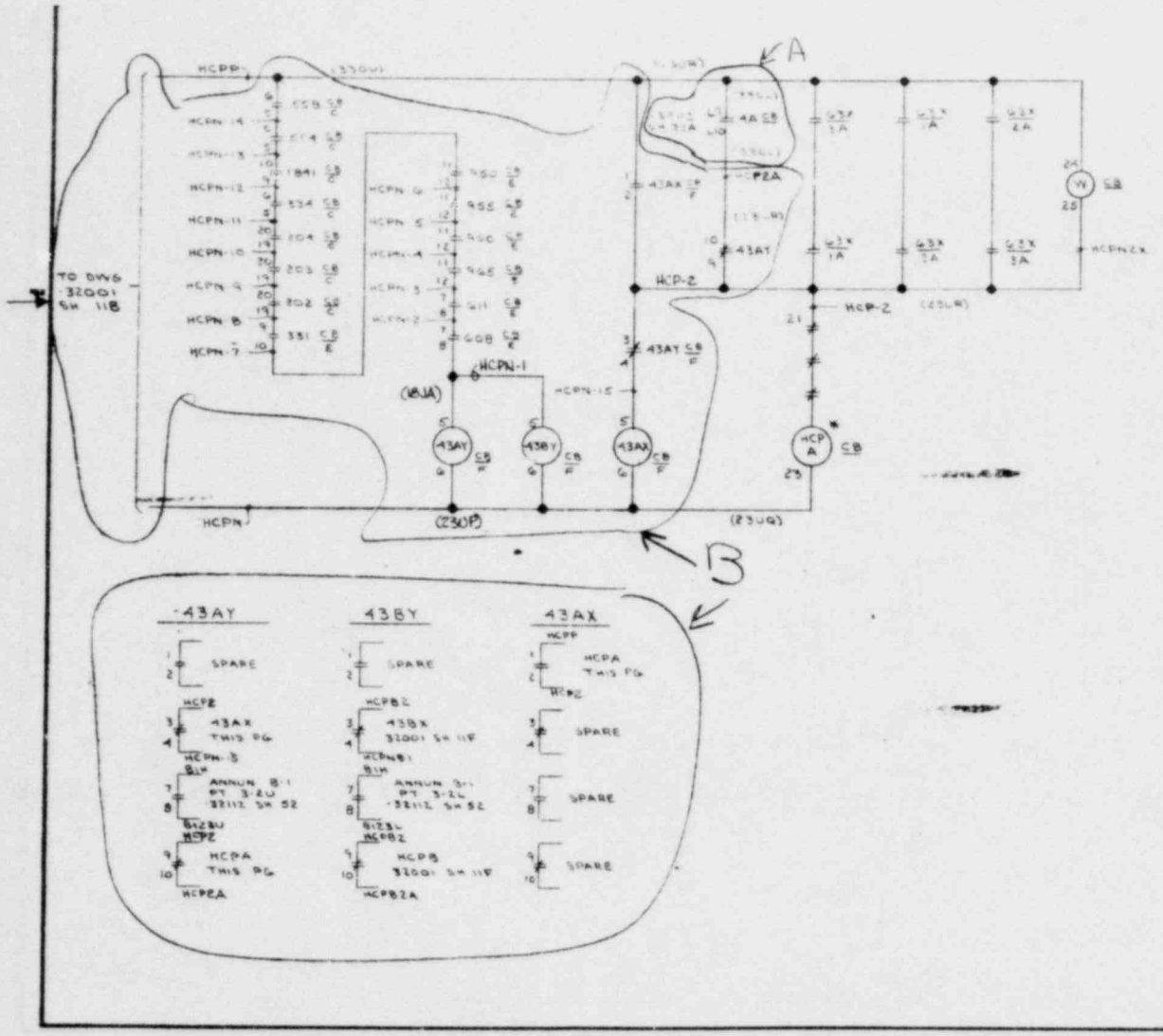
SYMBOL	VALVE
HCV 1840	RC SUMP DISCHARGE VV'S
TV 1212-15	MAIN STEAM DRAIN LINE VV'S
TV 1312-1,2,3,4	STEAM GEN BLOWDOWN VV'S
TV 1411	REACTOR PUMP BRG COOLER VV'S
TV 1831	NEUTRON SHIELD TK. COOLER
TV 842	VALVE STEAM LEAKOFF HDR VV.
TV 1843	SEAL POT DRAIN HEADER VV.
TV 1811A	REACT. CONT. OPEN PRESS. SYS.
TV 1812	REACT. CONT SEAL SYS
TV 1847	REACT COOLANT DRAIN LINE VVS

REVISIONS DURING CONSTRUCTION	P.A. NO. DCR-CY-P-003-79

REVISIONS DURING CONSTRUCTION	P.A. NO. 79-191		
C 11-6-79	ISSUE FOR CONSTRUCTION (CONTAINMENT ISOLATION)		
D 1-25-80	REVISED RESET LOGIC	JM	

REVISIONS DURING CONSTRUCTION	P.A. NO. 79-150		
A 7/8/79	FOR VERIFICATION ONLY		
B 9/20/79	DWG UPDATE	DMD	JP

△ CLOSED WHEN VV IS FULL CLOSED
✱ CLOSED WHEN VV IS FULL OPENED



NOTE:

* CONTACT SCHEDULE FOR HCPA SHOWN ON DWG 32001 SH 11B

AFTER CHANGES

REVISIONS DURING CONSTRUCTION			PAR 79-191		
A	11-16-79	ISSUE FOR CONSTRUCTION (CONTAIN ISOL PROV		JM	
B	1-25-80	REVISED RESET LOGIC		JM	

NORTHEAST UTILITIES SERVICE CO.
FOR CY ATOMIC PWR CO.

TITLE: SCHEM DIAG - MISC CKTS, SOL TRIP + CONTROL VALVES
HADDAM CT

DWG 10103-32001

SH 11BA

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.5a

Dedicated H_2 Control Penetrations

APRIL, 1980

Item 2.1.5.a - Dedicated H_2 Control Penetrations

Is there an alternate means of supplying air to the Haddam Neck containment other than that identified in Item 2.1.5.a of Reference (1).

Response

As part of CYAPCO's response to Dedicated Hydrogen Control Penetrations found in Item 2.1.5.a of Reference (1), CYAPCO related that as an alternative to the Primary Hydrogen Purge System, components of the Main Containment Purge System can be used for the exhaust function. During this mode, plant personnel would normally supply air to the containment structure from the service air compressors. If for some reason the service air compressors were inoperable, the inlet valve portion of the Main Containment Purge System could be utilized. This alternative was not identified in Reference (1).

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.6.a

Integrity of Systems Outside Containment Likely to Contain Radioactive Materials for PWRs and BWRs

APRIL, 1980

Item 2.1.6.a - Integrity of Systems Outside Containment Likely to Contain Radioactive Materials for PWRs and BWRs

The December 31, 1979 submittal (Section 2.1.6.a) indicates that the reactor coolant pump seal water return is not required to run the reactor coolant pumps. However, Section 2.1.4 of the January 31, 1980 response indicates that it is. Explain this contradiction. If the line is required, commit to include it in the leak reduction program. If the line is not needed, assure that procedures specify how the reactor coolant pumps will be run in a post-accident situation without its use.

Justify why the containment atmosphere sampling and hydrogen purge systems are not included in the leak reduction program.

Response

At the time Reference (1) was submitted, RCP Operation was considered non-essential during post-accident operation. This position was consistent with the Haddam Neck Plant design. During the NRC short-term lessons-learned review meeting at Millstone Unit No. 2 on January 15, 1980, members of the Staff identified accident scenarios under which RCP operation may be beneficial. As a result of CYAPCO's review of this information, coupled with Westinghouse Owners' Group information received in the interim, CYAPCO subsequently concluded that post-accident operation of the RCP could indeed be beneficial, thus, necessitating the reclassification of certain RCP auxiliaries as reflected in Reference (2).

The seal water return line is required for RCP operation and as such was re-classified as essential in Reference (2). As part of the Chemical and Volume Control System (CVCS), the seal water return line has been included in the CYAPCO leakage reduction program. CVCS leakage including any leakage from this line was reported to the NRC in Reference (2).

The Containment Atmosphere Sampling System is operational during all phases of plant operation. Sample routing is from Containment Atmosphere through Penetration No. 64, to the monitor, back through Penetration No. 65, thence to the blower suction and back into the Containment Atmosphere. (See Item 2.1.5.a in Reference (1) for system details.) Since the system blower is inside the containment, all portions of the Containment Atmosphere Sampling System are maintained at a negative pressure during operation. If excess leakage were to occur, proper operation would not occur. The system, therefore, is continually monitored for leakage and as such, is assured of leak tightness.

As stated in our response to Item 2.1.5.a in Reference (1), the primary Hydrogen Purge System shares piping with the Containment Atmosphere sampling. The portions of the primary Hydrogen Purge System not maintained at a negative pressure during normal operation will be added to the CYAPCO leak reduction program to assure complete integrity for all operating and accident modes.

Commit to include any other systems which may be identified in your review of Item 2.1.9 as needed in a post-accident situation in the long-term leak reduction program.

Response

Subsequent to receipt of the subject analyses, CYAPCO will review the report to determine if additional systems may be appropriate for inclusion in the long-term leak reduction program.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.6.b

Design Review of Plant Shielding and Environmental
Qualification of Equipment for Spaces/Systems
Which May Be Used in Post-Accident Operations

APRIL, 1980

Item 2.1.6.b - Design Review of Plant Shielding and Environmental Qualification of Equipment for Spaces/Systems Which May Be Used in Post-Accident Operations

Commit to provide the review of equipment qualification by _____. Provide assurance that the review will meet the requirements of Lessons-Learned Item 2.1.6.b with regard to source terms and radioactivity containing systems.

Response

The above request is indicative of the absence of a coordinated NRC Staff position for issues involving multiple parties with review responsibility within the NRC.

In Reference (1), CYAPCO provided the results of the design review, and indicated that the implementation of two modifications, identified to be necessary to carry out post-accident operational functions under the Staff-imposed radiation fields, are appropriately deferred to the SEP.

The Staff has yet to respond to this proposed course of action, despite numerous verbal inquiries from CYAPCO.

By Reference (9), the Staff requested an expedited review of the environmental qualification of safety-related electrical equipment. Furthermore, the Staff explicitly stated that the reviews are to be conducted in accordance with Enclosure 1 of Reference (1), "Guidelines for Evaluating Environmental Qualification of Class 1E Electrical Equipment in Operating Reactors". The above guidance is not identical to that provided in Reference (10). It is CYAPCO's current intention to conduct this review in accordance with the guidance provided in Reference (9), and on a schedule consistent with the program objectives of the SEP. This appears to be consistent with the intent of the Staff as the Reference (9) guidance was purported to be developed exclusively for the SEP plants during our meeting of February 21, 1980. The systems assumed to contain highly radioactive fluids for the purposes of this evaluation were provided in References (1) and (2). Most recently, the Staff has requested CYAPCO to submit the results of the environmental qualification review by June 2, 1980. CYAPCO is endeavoring to comply with this expedited schedular request.

Provide assurance that the Technical Support Center has been included in the design review as a vital area.

Response

In the response to Item 2.1.6.b in Reference (1), it was indicated that six specific vital areas were identified to be areas where personnel would have to go during an accident. One of these was identified to be the control room. In the response to Item 2.2.2.b of Reference (1), the Technical Support Center (TSC) was identified to be the existing operations supervisor's office. It was stated that the TSC has both a common ventilation system and shares

common exterior walls with the control room. The shielding protection from airborne contaminants and direct radiation is comparable to that provided in the control room. Therefore, the response to this question is fully contained in Reference (1).

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.7.b

Auxiliary Feedwater Flow Indication to Steam Generators

APRIL, 1980

Item 2.1.7.b - Auxiliary Feedwater Flow Indication to Steam Generators

What electrical isolation devices are installed between the "control grade" flow instruments and the "semi-vital" power supply?

Response

Fuse protection is utilized until qualified devices can be procured and installed. Installation is currently planned on or before January 1, 1981. The acceptability of this method of isolation for an interim period was confirmed with NRC Staff personnel in the persons of John Olshinski and Matt Chiramal on December 6 and December 7, 1979, respectively.

Please define a "semi-vital" distribution panel.

Response

The Semi Vital power supply is a voltage regulated 120 V AC source located in the Control Room. This source has the capability of being derived from either of the two emergency diesel generators such that it is highly reliable. Semi Vital sources are automatically sequenced onto the diesel generators, however, they do not have the capability of being derived from the station battery systems. Qualification of components and method of installation is consistent with that of vital distribution systems.

Equipment powered from a "semi-vital" distribution panel would be inoperable for the very short interval between a loss of offsite power and the availability of one of the diesel generator units.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.8.a

Post-Accident Sampling Capability

APRIL, 1980

Item 2.1.8.a - Post-Accident Sampling Capability

Procedure ADM 1.1-63 does not provide for a hydrogen or gross gas analysis of the reactor coolant. Either incorporate procedures for this analysis or provide justification for not including them.

Response

Procedure ADM 1.1-63 will be revised to include hydrogen and gross gas analysis of the primary coolant. The procedure revision will be completed by April 30, 1980 and will be available for review at that time.

Procedure ADM 1.1-63 does not provide for noble gas or hydrogen analysis of containment atmosphere. Commit to incorporating the procedures for these analyses into the current procedures.

Response

Procedure ADM 1.1-63 will be revised to include the capability to perform noble gas and hydrogen analysis of the containment atmosphere. The procedure revision will be completed by April 30, 1980 and will be available for review at that time.

Commit to provide the final design modifications necessary to meet the January 1, 1981 requirements by May 1, 1980.

Response

This commitment was provided in Reference (8). The complications associated with plant-specific implementation of a generically designed sampling system are such that installation is proposed to be incorporated into the SEP.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.8.b

Increased Range of Radiation Monitors

APRIL, 1980

Item 2.1.8.b - Increased Range of Radiation Monitors

Provide assurance that all potential release points are monitored (for example: condenser air ejector).

Response

All potential release paths are monitored. Ventilation from the containment, Primary Auxiliary Building, Fuel Handling Building, and radwaste are directed to the Primary Vent Stack. The vent stack is monitored by both the original stack monitor and by the interim, High Range Noble Gas Monitor required by NUREG-0578. No other buildings contain systems which may contain primary coolant or containment gases. Waste gas tank and condenser air ejector releases are not only monitored by the stack monitors, but in addition, each system has an independent monitor on its discharge line to the vent stack. Dedicated instrumentation has been established for monitoring releases from the atmospheric steam dumps. This is discussed further in the second portion of this response. The Steam Generator Blowdown Monitor adequately monitors any releases from the blowdown system.

Neither submittal addresses monitoring of atmospheric steam dump or safety valves. Provide all the information requested in the October 30, 1979 Denton letter for this item. Provide the procedures specifying the method for providing monitoring and estimating release rates from the steam dump valves.

Response

Specific procedures have been developed to estimate release rates from the atmospheric steam dumps. A dedicated portable survey instrument, as described below, has been located in the proximity of the atmospheric steam dump. The procedure requires that this instrument be used to determine the dose rate at a specified location on the steam dump line. Curves are incorporated into the procedure to convert the instrument reading to an estimated Curie/sec. release rate. Readings are required at least once every 15 minutes if releases via this pathway are in progress.

Instrumentation - Information required by H. Denton, October 30, 1979 letter

Eberline Teletector - Model 6112

Range - 0 - 1000 R/Hr

This is sufficient to detect noble gas concentrations up to 10^3 uCi/cc.

Energy Dependence - 80% relative response for Xe-133

Sufficiently accurate for all noble gas gammas.

Calibration - Once every three (3) months per normal

Calibration Procedure PM 9.6-1.5.

Monitoring Location - 3 feet from Steam Dump Muffler

This location is not near any expected high radiation sources.

Power - Battery operated.

Procedures - Procedures for taking and analyzing measurements are as summarized above and are available at the station for review.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.8.c

Improved In-Plant Iodine Instrumentation Under Accident Conditions

APRIL, 1980

Item 2.1.8.c - Improved In-Plant Iodine Instrumentation Under Accident Conditions

Provide a description of the system to be used to monitor the Emergency Operations Center for airborne radioiodine.

Response

Emergency monitoring kits are located in the Emergency Operations Center. For the purpose of monitoring airborne radioiodine, these kits contain a portable air sample pump, particulate filters, silver-loaded silica-gel cartridges, and a portable scaler with an HP-210 probe. The silica-gel cartridges show excellent rejection of noble gas and can, therefore, be used with gross counters for iodine determination. The appropriate procedures and calibration factors have been developed for determination of I-131 levels using the above equipment.

The long-term plans include purchase of a continuous air monitor to be located in the EOC for monitoring particulate, iodine, and noble gas levels. These continuous monitors can be equipped with silver-loaded silica-gel cartridges.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.1.9

Containment Hydrogen Indication

APRIL, 1980

Item 2.1.9 - Containment Hydrogen Indication

CYAPCO and the NRC Staff had previously discussed certain details of the design for this requirement. In the interest of clarifying CYAPCO's position, it is noted that this indication system will not be operable during normal operation, but only following an accident. The system will be manually initiated and will be designed to ensure conformance with containment isolation criteria.

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.2.1.a

Shift Supervisor Responsibilities

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.2.1.b

Shift Technical Advisor

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.2.1.c

Shift and Relief Turnover Procedures

APRIL, 1980

Item 2.2.1.a - Shift Supervisor Responsibilities
Item 2.2.1.b - Shift Technical Advisor
Item 2.2.1.c - Shift Turnover Procedures

Provide specific reference to the management directives, plant operating procedures, logs and checklists that you indicated in your December 31, 1979 submittal satisfy the appropriate NUREG-0578 requirements. Provide a copy of these documents to the Staff.

Response

In response to the above requests, copies of the following documents are hereby provided:

(1) W. G. Counsil memo to All Shift Supervisors, NNECO and CYAPCO, dated December 26, 1979.

(2) Shift Supervisor, APM 1.1-1-C, Rev. 8.

(3) Connecticut Yankee Station Policy, Interim Shift Technical Advisor, CYSP-30-C.

(4) Connecticut Yankee Atomic Power Company, Interim Shift Technical Advisor, Job Description, dated December 31, 1979.

(5) Connecticut Yankee, Administrative Control Procedure, ADM 1.1-44, Shift Relief and Turnover.

(6) Connecticut Yankee, Normal Operating Procedure, NOP 2.2-2, Operation at Power, Steady-State Operation and Surveillance.

file TMI 3.2.1

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC LIGHT COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

December 26, 1979

TO All Shift Supervisors - NNECo & CYAPCo

FROM W. G. Counsil, Vice President
Nuclear Operations & Engineering

SUBJECT Shift Supervisor

You, as an employee of Northeast Utilities and as a shift supervisor, play a very important role in assuring the safe and efficient operation of our nuclear power plants. Three Mile Island accident evaluations have reiterated the importance of leadership, decision making and development of the command function in assuring plant safety.

In light of the social and political climate that exists within and around the nuclear industry today, I find it appropriate to re-emphasize your primary role and responsibility as a nuclear plant shift supervisor.

Your role is that of the "Manager" of your shift operations. This is a command function which entails leadership and decision making responsibilities that go beyond an operator's role. Your responsibilities do not require the personal manipulation of controls nor the personal supervision of one small segment of unit operations. Rather they involve the direction of all unit activities and all personnel assigned to your shift. During all activities, but in particular during abnormal operation, transients or accident conditions your direct command and integrated knowledge of the unit are a necessity. Except for a limited number of incidents, such as fire, the control room is your command post during accident or emergency situations.

Your specific duties are further delineated in various plant administrative procedures. Connecticut Yankee procedure 1.1-1 defines your specific qualifications, normal responsibilities and authority as per the Technical Specifications and your nuclear safety authority. Millstone Administrative Control Procedure No. ACP-QA-1.02 defines similar responsibilities. Some of these responsibilities include:

1. Responsible for the safe and efficient operation of the plant and its supporting systems during assigned periods in accordance with the applicable licenses, governmental regulations and permits, Technical Specifications and procedures.

2. Responsible for approving/disapproving and/or being aware of all work order and testing activities.

3. Responsible for keeping duty officer informed.

4. Responsible for conducting necessary tests and inspections as scheduled.

5. Maintain communications with control room and grants permission for significant operating activities in advance.

6. Responsible for maintaining plant status and insures operating commitments are carried out.

7. Ordering the immediate cessation of any activity in the plant which he determines to be detrimental to the safe and efficient operation of the plant.

8. Order the initiation of the Emergency Plan and development of personnel.

9. Responsible to take action to place systems components in or out of service as required for safe operation.

10. Assure proper administration and turnover of your respective shift.

11. Assure that proper control room procedures are followed.

12. Assures that required records, reports and logs are maintained.

WGC:WJD/gap

SHIFT SUPERVISOR

1.0 QUALIFICATION CRITERIA

At the time of appointment to the active position, a Shift Supervisor shall have a minimum of a high school diploma or equivalent, and four years of responsible power plant experience, of which a minimum of one year shall be nuclear power plant experience. The Shift Supervisor shall also hold a Senior Reactor Operator License.

2.0 NORMAL RESPONSIBILITIES AND DUTIES

The Shift Supervisor:

2.1 Reports to the Operating Supervisor and receives direction from the Duty Officer relative to the operability or status of the plant and its systems.

2.2 Fulfills duties and responsibilities similar to and/or as described in the Position Description.

2.3 Assumes responsibility and has the authority for insuring the safe and efficient operation of the plant and its supporting systems during assigned periods in accordance with applicable licenses, governmental regulations and permits, Technical Specifications, procedures, company orders, rules, instructions and policy requirements.

2.4 Assumes responsibility and authority for approving/disapproving all work and testing activities which may affect the operation of the plant and/or its supporting systems prior to commencement.

2.5 Assumes responsibility for keeping the assigned Duty Officer informed of operational requirements, i.e., plant operating status, safety, license and Technical Specifications commitments with regard to operating status and conditions which affect or may affect plant status or operability and all unusual or abnormal plant conditions.

2.6 Assumes responsibility for the safe and orderly conduct of plant operations during assigned shift.

2.7 Assumes responsibility for carrying out the approved operating schedule and the established operating department programs.

2.8 Assumes responsibility for conducting the necessary tests and inspections as scheduled or otherwise required.

2.9 Maintains communication with the Control Room and grants permission for significant operating activities in advance.

2.10 Assumes responsibility for maintaining plant status and insures that company operating commitments are carried out.

2.11 Assumes responsibility for carrying out other projects that may be assigned by the Operating Supervisor.

3.0 TECHNICAL SPECIFICATIONS AND NUCLEAR SAFETY AUTHORITY

The Shift Supervisor has the following specific authority:

3.1 Order the immediate trip or shutdown of the reactor.

3.2 Order the immediate cessation of any activity in the plant including maintenance, construction or testing.

3.3 Order the initiation of the Emergency Plan and deployment of plant personnel for other emergencies as required.

3.4 Place systems, components and equipment in or out of service as required for safe operation of the plant and as required to meet Technical Specifications.

3.5 Make changes in plant status as required to insure safety of station personnel.

3.6 Act in assigned capacity in accordance with the Site Emergency Plan.

SUPERVISORY, PROFESSIONAL AND ADMINISTRATIVE

PER1184-5 2-72

POSITION DESCRIPTION

POSITION TITLE: SHIFT SUPERVISOR	GROUP: System Operations
EDP CODE: SHSUPV	DEPARTMENT: Production / SECTION:
	LOCATION:
REPORTS TO: Operations Supervisor	DATE: June 1972 / NUMBER:

POSITION SUMMARY

Plan, schedule, coordinate, and supervise the operation of a nuclear steam electric plant during assigned rotating shift. Assume plant responsibility in time of emergency.

Duties

1. Plan, schedule, coordinate, and supervise plant operations during assigned rotating shifts in accordance with AEC rules and regulations; assure compliance with applicable licenses, operating instructions, emergency procedures and safety rules and regulations.

2. Maintain thorough knowledge and understanding of:

   ... duties and responsibilities under the requirements for the AEC Senior Reactor Operators License; must hold AEC Senior Reactor Operators License
   ... conditions and limitations contained in the plant operating license and technical specifications
   ... operating practices for nuclear reactor, steam generator and electric plant.

3. Assure that required records, reports, and logs of plant operations are prepared and maintained for assigned shift. Recognize and promptly inform supervisor of any abnormal plant condition.

4. In the absence of higher supervision, assume responsibility for the plant within authority as granted; be responsible for and initiate the Plant Emergency Plan and evacuation of personnel if conditions so require.

5. Supervise the preparation of plant equipment so that inspections and repairs can be made expeditiously and safely by maintenance personnel. Assure complete and proper equipment tagging associated with the work.

6. Coordinate with Health Physics personnel regarding safety measures in connection with the release as well as the nonrelease of contaminants; insure adequate safety of personnel exposed to radiation and contaminated areas.

7. Supervise, as assigned, personnel engaged in other plant work during fueling and maintenance operations.

8. Recommend changes in operating procedures as considered necessary for safe and efficient operation.

Position Title: SHIFT SUPERVISOR

Duties - Cont.

9. Prepare, as directed, plant operating procedures; submit same for approval.

10. Prepare and maintain, as directed, plant operating records as required by operating policies and regulatory agencies.

11. Confer, cooperate, and provide liaison in connection with inquiries from personnel of regulatory agencies and other authorized bodies in respect to plant operating matters.

12. Train or supervise the training of assigned operating personnel. Instruct personnel in standard operating practices, AEC license and technical specifications requirements, safety rules and regulations.

13. Fulfill responsibilities common to all supervisory positions as stated.

COMMON RESPONSIBILITIES OF SUPERVISORY, PROFESSIONAL AND ADMINISTRATIVE PERSONNEL

The responsibilities listed below are those which are common to employees in Supervisory, Professional and Administrative positions. These common responsibilities, varying only in terms of organization level and authority, form an addendum to the position description covering your classification.

Developing Objectives, Policies, Plans and Procedures

Formulate and submit for approval, or assist in formulating, objectives, policies and plans for the organization unit. Develop, or assist in developing, procedures to carry out approved objectives, policies and practices.

Planning Work and Reporting Progress

Plan and perform work assignments, which require the exercise of independent judgment and discretion; coordinate plans with others concerned. Anticipate problems which may arise and take steps to eliminate sources of problems; revise plans as may be required to meet abnormal conditions or operational difficulties.

Keep immediate supervisor and other interested individuals fully informed about the work, progress and results. Prepare and maintain necessary records and reports related to the performance of assigned duties.

Maintaining Administrative or Professional Status

Keep abreast of latest developments in the field of your assigned responsibilities with the objective of maintaining a high level of administrative or professional competence.

Improving Work Methods and Controlling Costs

Make recommendations or suggestions for changes in, or additions to, established work methods, procedures, operations and cost control in the area of your assigned responsibilities; effect changes as authorized.

Promoting Good Employee and Public Relations

Maintain sound and favorable relations with employees and with customers, suppliers, contractors and others in carrying out assigned responsibilities.

Promoting Safety

Exercise care and foresight in order to prevent accidents or injuries to employees or the public; promote and participate in the Company's safety and accident prevention program. Assure good housekeeping practices. **Nuclear Operations**—Maintain knowledge and awareness of personal radiation exposure history.

Special Assignments

Employees may be assigned special projects, duties or responsibilities to provide a service for the Company or for individual training and development.

ADDITIONAL RESPONSIBILITIES COMMON TO SUPERVISORY PERSONNEL *

Supervise the work of assigned personnel in such a manner as to insure the safe and efficient use of personnel, materials and equipment. **Nuclear Operations:** Maintain knowledge and awareness of radiation exposure history of assigned personnel.

Assign certain clearly defined responsibilities to subordinate personnel and delegate authority sufficient to carry out such responsibilities.

Train and instruct assigned personnel in standard practices, safety rules and regulations, and in the proper performance of their job duties; and encourage them to develop themselves so as to be prepared to assume greater responsibilities.

Discuss with subordinate personnel matters of general or specific interest, such as work status, plans, policies, practices, procedures, method changes, safety, employee relations, customer relations and public relations programs and activities, and assure compliance with Company policies, practices, procedures, rules and regulations as they apply in your assigned area of responsibility.

Maintain sound relations with and good morale among subordinate personnel.

Within the scope of authority delegated by your superior, approve or recommend approval of changes in the status of assigned employee, i.e., hiring, transfer, promotion, wage and salary adjustment, demotion, discipline and discharge within the requirements of Company and Departmental policies; approve the imposition of discipline for just cause; and determine, or assist in determining, the nature and extent of discipline, including suspension and discharge.

NOTE: In cases where the delegated authority is limited to recommending disciplinary action, special situations may arise which require action to be taken immediately. If the conduct, physical conditions, unsafe work practices or performance of a subordinate employee makes it necessary, any supervisor may suspend the employee from work without delay. In such situations, the supervisor should immediately notify his superior and submit a written report giving date and reason for the action.

Render fair and equitable reports on the conduct, job performance and progress of all assigned employees; counsel with employees on these and other related matters.

Within the scope of authority delegated by your superior, verify and approve time and material reports, travel and expense allowances, and purchase requisitions; initiate and/or approve and maintain records of request for supplies, tools and equipment.

* *These additional responsibilities may be assigned, in various degrees, to professional and administrative employees as required.*

Issued: 12/28/79

Effective Date: 12/28/79

INTERIM SHIFT TECHNICAL ADVISOR

1.0 PURPOSE

This policy describes the purpose and the qualifications required of an Interim Shift Technical Advisor (ISTA).

2.0 APPLICABILITY

This policy applies to all personnel designated as ISTA's as shown on Attachment 1, Interim Shift Technical Advisor List.

3.0 REFERENCES

3.1 Emergency Plan

3.2 NUREG- 0578, TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations.

4.0 DEFINITIONS

4.1 Interim Shift Technical Advisor

The Interim Shift Technical Advisor (ISTA) will provide the Shift Supervisor (SS) or his designee with an independent accident assessment capability for off-normal events. The ISTA will analyze off-normal events and, based on this analysis, advise the SS on actions necessary to terminate or mitigate those events whose consequences could jeopardize the safety of the public.

4.2 Operating Experience Assessment Group (NUSCO)

The Operating Experience Assessment Group evaluates plant operations from a safety point of view. Their evaluations will include Licensee Event Reports from other plants, adequacy of emergency and operating procedures, and adequacy of quality assurance.

5.0 RESPONSIBILITIES

5.1 Shift Supervisor

The Shift Supervisor or his designee is responsible for requesting assistance from the ISTA during off-normal events. The SS shall call the ISTA under any off-normal event. The SS may also request ISTA assistance under any circumstances where he feels an off-normal situation exists or is developing.

5.2 Interim Shift Technical Advisor

The responsibilities of the ISTA are as outlined in Section 4.1 of this policy. The ISTA will serve as an advisor only to the SS. The method for analyzing off-normal events need not be limited to control room observation. The ISTA may proceed to whatever areas he feels he can best assess a problem, either on his own information or at the suggestion of the SS. The ISTA will report to the control room first in order to make an initial assessment of the situation.

5.3 Unit Superintendent

The Unit Superintendent is responsible for administering the ISTA program. This responsibility includes maintaining ISTA List Attachment 1, up-to-date. He will assure that the ISTA's are fully aware of their responsibilities and duties and for assuring the ISTA's meet the required qualifications and attend the required training programs.

5.4 Station Services Superintendent

The Station Services Superintendent is responsible for establishing the ISTA's training outlined in Section 6.1 of this policy.

5.5 The Station Superintendent will appoint the Shift Technical Advisors.

5.6 Operating Experience Assessment Group

The Operating Experience Assessment Group is responsible for providing the ISTA's with information concerning plant safety as a result of their evaluations outlined in Section 4.2 of this policy. This group will be assigned to the NUSCO Operations Group.

6.0 POLICY

6.1 Qualifications and Training

6.1.1 The ISTA should have a Bachelor or Associate Degree in science or engineering. Until January 1, 1982, personnel without a degree may be qualified as an ISTA, but they should have a current Senior Reactor Operator (SRO) License or have significant plant experience and have had training equivalent to that required to hold an SRO License.

6.1.2 The ISTA shall have Reactor Operating Experience acquired either by completing the requirements for obtaining an SRO License or through an approved special program, which shall assure the ISTA will know the meaning and significance of instruments readings and the effect of operator control actions on the plant.

6.1.3 The ISTA shall have the Transient and Accident Response training incompassing the following criteria:

6.1.3.1 Instruction on small break and large break loss of coolant accidents.

6.1.3.2 Instruction on emergency procedures that will cover the immediate action, supplementary action, and their basis.

6.1.4 Retraining per Section 6.1.2 and 6.1.3 of this policy will be done annually.

6.2 Administration

6.2.1 The ISTA will be on- site and capable of arriving in the control room within 10 minutes of the SS's request for assistance.

6.2.2 The ISTA will serve in an advisory capacity only; he will have no assigned line function during an off-normal event. The ISTA will be detached from controls manipulation and supervision of operators.

6.2.3 During normal operations, the person designated as ISTA may perform any duties as long as he meets the requirements of Section 6.2.1 of this procedure. While the unit is in any mode but cold shutdown he will remain on duty as ISTA until relieved.
SHOULD A PERSONAL EMERGENCY or illness require the ISTA's absence from the site, the SS should assure that a qualified replacement be on site within two hours.

6.2.4 The ISTA rotation duty schedule will be developed and followed, any changes will be discussed and approved by the Unit Supt.

Station Superintendent

List Of Connecticut Yankee's
Interim Shift Technical Advisor
(Not Rotation List)

ATTACHMENT 1

1. Joe DeRoy
2. Bob Thomas
3. Joe DeLawrence
4. Tom Campbell
5. Gary Bouchard
6. Marshall Morris
7. Pierre L'Heureux
8. John Chunis
9. Ken Burton
10. Roy Brown
11. Bob Eppinger
12. Bob Gracie

CONNECTICUT YANKEE ATOMIC POWER COMPANY

INTERIM SHIFT TECHNICAL ADVISOR

JOB DESCRIPTION

General

Personnel from Northeast Nuclear Energy Company, Connecticut Yankee Atomic Power Company and Northeast Utilities Service Company will be designated as Interim Shift Technical Advisors (ISTA) on a particular unit by the Station Superintendent. Training will be provided. There will be 12 ISTA's designated at Conn. Yankee, they will work on a rotating schedule of 24 hours. The ISTA's will report while in this function to the Unit Superintendent who will be responsible for scheduling and replacement. The Unit Superintendent will be responsible for determining that the ISTA's training meets the requirements and that the ISTA's attend the scheduled training. The Station Services Superintendent is also responsible for assuring that the ISTA's training meets the requirements and for applying the training. ISTA's will be advisory to the shift supervisor and will analyze off normal events and advise on action necessary to mitigate consequences of accidents.

The ISTA will have the following working guidelines and job description:

1. While performing in the ISTA capacity, he will be expected to work a minimum 8 hour day. The majority of this time will normally be spent in performing his normal job assignments.
2. The ISTA will always remain within 10 minutes of the control room and be able to be called if he is needed.
3. The ISTA will be cognizant of the plant status. He will review logs, night orders, etc. He will be aware of safety equipment out-of-service and major maintenance being performed.

4. He will be required onsite whenever the plant is in any mode except refuel or cold shutdown. During refuelings or cold shutdowns the ISTA will be on call (beeper), to be o site within 60 minutes to act as director of onsite technical support center (see Emergency Plan).

5. He will provide an independent accident assessment function of off normal events. These events include but are not limited to those events described by existing Emergency Operating Procedures.

6. He is expected to enter the control room occasionally to observe plant status.

7. The ISTA may be used in other capacities while onsite as long as these other actions do not compromise his accident assessment responsibilities.

8. The ISTA shall be advisory to the shift supervisor.

9. The ISTA will be provided with reports relating to significant operating experiences (LER review, etc.)

10. The ISTA shall report to the control room during plant trips.

11. He may have other duties as assigned by the Unit Superintendent.

PLANT OPERATIONS REVIEW COMMITTEE APPROVAL

D. A. Bouchard J. Burnett

James M. Levine

Michael D. Quinn

E. H. Crow

APPROVED BY STATION SUPERINTENDENT

R. D. Williams

EFFECTIVE DATE 1-1-80

ADM 3827-1 6-79

Connecticut Yankee
Administrative Control Procedure No.
ADM 1.1-44

SHIFT RELIEF AND TURNOVER

1.0 PURPOSE

1.1 The purpose of this procedure is to ensure the proper operation of the plant through adequate transmittal of operating information during a change of shift and to document that this information has been passed on.

2.0 APPLICABILITY

2.1 This procedure applies to all Operating Department personnel.

3.0 REFERENCES

3.1 Regulatory Guide 1.114

4.0 RESPONSIBILITIES

4.1 All members of the Operating Department shall be responsible for carrying out this procedure.

4.2 The shift supervisor on watch shall be responsible for ensuring that all necessary documentation is accomplished.

5.0 PROCEDURE

5.1 The shift turnover sheet shall be filled out each day.

5.2 The 0000-0800 shift supervisor shall ensure that all pertinent information is transfered from the previous days shift turnover sheet to the new one for the next day.

5.3 The shift turnover shall be accomplished at each operators normal day station where practicable.

a. The Shift Supervisor, Supervisory Control Operator and Control Operator shall be relieved in the control room.

b. The primary side auxiliary operator shall be relieved at the desk in the primary auxiliary building.

c. The secondary side auxiliary operator shall be relieved at the desk by the water treatment plant.

5.3 All on-shift personnel shall verbally transmit to their relief all pertinent information concerning operating of the plant, such as power level, problems encountered during their shift, abnormal lineups, night orders, procedures in progress, etc.

5.4 The relieving shift supervisor, supervisory control operator and control operator shall receive the verbal information, read the control room log for the previous 24 hours or back to his last shift. They shall read the shift turnover sheet and sign in the appropriate block, read night orders, check procedures in progress and assure himself that he has all the necessary information prior to assuming the watch.

5.5 The relieving primary auxiliary operator shall receive the verbal information, read the P.A.B. log for the previous 24 hours or back to his last shift and assume the watch when he has received the necessary information. Shortly after assuming the watch he will go to the control room, read and sign the shift turnover sheet.

5.6 The relieving secondary auxiliary operator shall receive the verbal information, read water treatment log for previous 24 hours or back to his last shift and assume the watch when he has received the necessary information. Shortly after assuming the watch he will go to the control room, read and sign the shift turnover sheet.

5.7 The shift supervisor shall check that all operators have signed the shift turnover sheet, inform operators of planned procedures, work items to be done and give any necessary instructions during the early part of the shift. The shift supervisor is also responsible for assuring that all pertinent information is entered on the shift turnover sheet. (Attachment).

ADM 1.1-44
Rev. 1
JAN 0 1 1980

DUTY OFFICER

SHIFT TURN OVER SHEET
PAGE BOY

ATE:

SHIFT	SHIFT SUPERVISOR	S. C. O.	C. O.	A.O.	A.O.
0000-0800					
0800-1600					
1600-2400					

ILLNESS	
DOCUMENT SIGNATURES	
LIQUID RELEASE	
GAS RELEASE	
ADT EVAP	
BORON RECOVERY	
WATER TREATMENT	
EXPENDABLES NEEDED	
INOPERATIVE EQUIPMENT	
COMMENTS	

ATTACHMENT B

The Supervisory Control Operator shall check the following equipment list for availability. If equipment is out of service, the time the equipment was removed from service shall be documented and elapsed time compared with the technical specification limit. The SCO shall promptly report any variances to the Shift Supervisor who will direct that appropriate action be taken.

	0000-0800 SCO	0800-1600 SCO	1600-2400 SCO	TIME/DATE REMOVED FROM SERVICE	T.S. LIMIT
	INITIALS	INITIALS	INITIALS		
HPSI A					72 hrs.
HPSI B					72 hrs.
LPSI A					72 hrs.
LPSI B					72 hrs.
RHR A					72 hrs.
RHR B					72 hrs.
CHARG A					72 hrs.
CHARG B					72 hrs.
EMERG DIESEL A					72 hrs.
EMERG DIESEL B					72 hrs.
SWP A OR					72 hrs.
SWP B OR					72 hrs.
SWP C OR					72 hrs.
SWP D					72 hrs.
CONT RECIRC A					7 days
CONT RECIRC B					7 days
CONT RECIRC C					7 days
CONT RECIRC D					7 days
AUX FEED A					72 hrs.
AUX FEED B					72 hrs.

Revision 8 (MAJOR)

PLANT OPERATIONS REVIEW COMMITTEE APPROVAL

Robin M. Blewitt

Robert L. Grazio

James M. Levine

D. Schmidlin

APPROVED BY STATION SUPERINTENDENT

EFFECTIVE DATE 3-28-80

ADM 3827-1 6-79

Connecticut Yankee
Normal Operating Procedure NOP 2.2-2
Operation at Power

STEADY STATE OPERATION AND
SURVEILLANCE

1.0 OBJECTIVE

1.1 To obtain process data at specified time intervals, regardless of load or plant conditions, in order to monitor the plant operation. This monitoring may be suspended when the plant status is such that Safety Technical Specifications, Section 3.0--Limiting conditions for operation and environmental technical specifications Section 2.0--Limiting conditions for operation are not subject to violation.

2.0 LICENSE OR ADMINISTRATION REQUIREMENTS

2.1 Section 3.0 of Safety Technical Specifications.

2.2 Section 4.0 of Safety Technical Specifications.

2.3 Section 2.0 of Environmental Technical Specifications.

2.4 Section 6.2.2, Technical Specifications.

3.0 REFERENCES

3.1 Operating Department Instruction No. 73 Control Room schedule of Routing Activities, Tests and Checks.

3.2 Administrative Procedure No. 1.1-44, Shift Relief and Turnover.

4.0 PREREQUISITES

4.1 The following plant surveillance forms must be available:

4.1.1 Shift Turnover Sheet

4.1.2 Control Room Part I

4.1.3 Control Room Part II

4.1.4 Primary Side

4.1.5 RHR System Inspection Report

4.1.6 Secondary Side

4.1.7 Containment Leak Monitoring Test Data Sheet

4.1.8 Radiation Monitoring Operators Check

4.1.9 Primary System Leak Data Sheet

4.1.10 RCS Leakage Form

4.1.11 Water Treatment Plant Service Record

4.1.12 CY Generation Sheet

4.1.13 Daily Plan Status Report

4.1.14 Emergency Diesel Check for Inleakage Checkoff

4.1.15 Weekly Operations Test Control List

4.1.16 Radiation Monitoring System Daily Log

4.1.17 Safety Equipment Availability Sheet, ADM 1.1-44

4.2 The plant process computer should be in operation and recording the required process data.

5.0 PRECAUTIONS

5.1 Observe limiting conditions for operations in both Safety and Environmental Technical Specifications.

NOTE: When operating between 75% and 100% full power for prolonged periods of time, power range channel gains shall be adjusted to 100%. When operating between 20% and 75% full power for prolonged periods of time, power range channel gains shall be adjusted to 75%. This is to provide over power trip protection of 9%.

6.0 PROCEDURE

Each shift complete items as listed in Part 7.0 checkoff.

Connecticut Yankee
Normal Operating Procedure NOP 2.2-2
Operation at Power

STEADY STATE OPERATION AND SURVEILLANCE

7.0 CHECKOFF

Complete the items listed below	00-08	08-16	16-24
Shift Turnover Sheet Reviewed and Signed			
Surv. Form Control Room Part I			
Surv. Form Control Room Part II			
Surv. Form Primary Side			
Surv. Form RHR System Inspection			
Surv. Form Secondary Side			
Computer observed for alarms, Delayed Data Points and points in overload			
SUR 5.1-6 Containment Leak Monitoring			
SUR 5.1-11 Radiation Monitoring, Operators Check			
Primary System Leak Rate for previous day			
RCS Leakage Form for previous day			
Water Treatment Record for previous day			
CY Generation Sheet for previous day			
Daily Plant Status Report (except Sat., Sun., and Holiday)			
Demand Printout of all Computer Trend Groups			
Required Data Plotted on Charts			
SUR 5.1-16 Emerg. Diesel Check for Inleakage			
Refer to weekly operations test control list			
Radiation Monitoring System daily log			
Safety Equipment Availability Sheet			
Approved by Shift Supervisor			

REVIEWED BY:_____ DATE:_____
(Department Head)

SECONDARY SIDE

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
MAIN OIL, PUMP SUCTION (PSIG)				10 to 20
MAIN OIL PUMP DISCHARGE (psig)				245 to 380
BEARING OIL PRESSURE (psig)				10 MIN.
GOVERNOR IMPELLER DISCHARGE (psig)				29 to 31
TURBINE END MIC				
AUXILIARY GOVERNOR OIL PRESSURE (psig)				
SMOOTHING OIL PRESSURE (psig)				120 to 140
AUTO STOP OIL--CENTER (psig)				ONE TURN EACH SHIFT
GOVERNOR OIL CUNO FILTER				
HP TURBINE EXHAUST PRESS A (psig)				
B (psig)				175/250
LP TURBINE EXHAUST HOOD TEMP A (^{o}F)				
C MOIST SEP. OUTLET PRESS (psig)				14.5 MAX.
C MOIST SEP. ΔP				
D MOIST SEP. OUTLET PRESS (psig)				14.5 MAX.
D MOIST SEP. ΔP				175/250
LP TURBINE EXHAUST HOOD TEMP B (^{o}F)				
EXCITER DIODE FUSE CHECK				6 to 14 psi >H2 PRESS
GEN SEAL OIL PRESS--EXCITER END				6 to 14 psi > H2 PRESS
GEN. SEAL OIL PRESS--TURBINE END				
B MOIST SEP. OUTLET PRESS (psig)				14.5 MAX.
B MOIST SEP. ΔP				
A MOIST SEP. OUTLET PRESS (psig)				14.5 MAX.
A MOIST SEP. ΔP				
FAN ROOM STATUS				FIRE DOORS CHECKED SHUT
FAN RM TO OUTSIDE FIRE DOORS (2)				FIRE DOORS CHECKED SHUT
FAN RM TO I&C CORRIDOR FIRE DOORS (2)				FIRE DOORS CHECKED SHUT
I&C CORRIDOR TO CAS FIRE DOOR (1)				NONE INDICATED
GROUND INDICATION 480V BUSSES				
SS43 SELECTOR SWITCH POSITION				
XFMR 484: PRESSURE				
LIQUID LEVEL				
TEMPERATURE (^{o}C)				80 MAX.
XFMR 485: PRESSURE				
LIQUID LEVEL				
TEMPERATURE (^{o}C)				80 MAX.
XFMR 496: PRESSURE				
LIQUID LEVEL				
TEMPERATURE (^{o}C)				80 MAX.
XFMR 497: PRESSURE				
LIQUID LEVEL				
TEMPERATURE (^{o}C)				80 MAX.
INVERTER: D VOLTS				
AMPS				
B VOLTS				
AMPS				
A VOLTS				
AMPS				
C VOLTS				
AMPS				
ROD DRIVE MG: A VOLTS				
KILO AMPS				
B VOLTS				
KILO AMPS				

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
BATTERY CHARGER: A VOLTS				123 MIN.
AMPS				
GRND VOLT DIFF				
B VOLTS				
AMPS				
GRND VOLT DIFF				
SWITCHGEAR RM FIRE DOORS (5)				CHECK FIRE DOORS SHUT
4160V RELAY TARGETS (Check)				NONE INDICATED
CLOSED COOLING SURGE TANK LEVEL				25" MIN.
AIR EJECTORS: A ROTOMETER				
STEAM SUPPLY				230 MAX.
B ROTOMETER				
STEAM SUPPLY				230 MAX.
EXCITER KINNEY FILTER ΔP				
EXCITER COOLER VENT				ONCE EACH SHIFT
ISOLATED PHASE DUCT TEMPERATURE (°F)				167 MAX.
GENERATOR H2 CONDITION MONITOR FLOW				ADJUST TO SETPOINT
GEN. END VAPOR EXTRACTOR OPERATING				A OR B
EAST STEAM DUMP HDR TEMP (°F)				
EAST MSRH AREA STATUS				CHECK FOR LEAKS, ETC.
MLO COOLER IN SERVICE				A OR B
MLO INSERVICE COOLER SW ΔP				14 MAX.
NORTH TURB GLND HTG. STM VALVE POS				
SOUTH TURB GLND HTG. STM VALVE POS				
TURBINE OIL RES. LEVEL (inches)				2 to 12
TURBINE OIL RES. VACUUM (in. H20)				6 to 9
LO RES. VAPOR EXTRACTOR IN SERVICE				A OR B
RES. CUMO FILTER				ONE TURN EACH SHIFT
WEST STEAM DUMP HDR TEMP (°F)				
WEST MSRH AREA STATUS				CHECK FOR LEAKS, ETC.
CONDENSER BACK PRESS A (sm. HG)				8.9" MAX.
CONDENSER TUBE SHEET ΔP A				
B				
C				
D				
MAIN XFMR DELUGE SUPV. PRESS (OZ)				12 to 28
GENERATOR HYDROGEN PRESSURE				30 to 60
GENERATOR HYDROGEN PURITY				92 to 100
GAS DENSITY READING				
SEAL OIL FLOAT TANK LEVEL				
AIR SIDE SEAL OIL PRESS				
GLAND SEAL OIL PRESSURE ΔP COLLECTOR END				INCHES OF WATER
TURBINE END				A air/H H_2 5" AIR NORMAL
HYDROGEN COOLER OUTLET TEMP (°F) COLD				114 MAX.
AIR SIDE SEAL OIL TEMP (°F)				100 - 110
HYDROGEN SIDE SEAL OIL TEMP (°F)				100 - 110
HYDROGEN GAS DRYER COLOR INDICATOR				BLUE IS NORMAL
HYDROGEN PANEL PANALARM CHECK				
CONDENSER BACK PRESS B (cm Hg)				8.9" MAX
WEST GEN. MOIST DET DRAINED (AMOUNT)				RECORD AMOUNT DRAINED
CENTER GEN. MOIST. DET. DRAINED (AMOUNT)				
EAST GEN. MOIST. DET. DRAINED (AMOUNT)				
A AUX. BOILER (SD, WLU, OPER. PRESS)				
B AUX. BOILER (SD, WLU, OPER. PRESS)				
HEATING COND, TANK LEVEL				1' 9" to 4' 6"

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
AUX. BOILER HEAD TANK LEVEL				1/4 to 3/4
BOILER RM TO TURBINE HALL FIREDOOR				FIREDOOR CHECKED SHUT
A WT--EXH, STBY, REG, DWST, PWST				
B WT--EXH, STBY, REG, DWST, PWST				
C WT--EXH, STBY, REG, DWST, PWST				
H.T. HEADER COND METER READING				.5 MHO MAX
D.W.S.T. TEMP TIC				90 to 120°F
H.T. BOARD PANALARM CHECKS				
ACID TANK VENT DESICCANT				WHITE
ACID STORAGE TANK LEVEL				150 to 1500
CAUSTIC STORAGE TANK LEVEL				250 to 1500
TURBINE HALL TO RECORD RM FIRE DOOR				FIREDOORS CHECKED SHUT
CLAND WATER SYSTEM PRESSURE (psig)				20 MIN
COND. PUMP MOTOR BRNG TEMPS: A UPPER				200 MAX
LOWER				200 MAX
B UPPER				200 MAX
LOWER				200 MAX
WASH VACUUM PUMP STATUS				A OR B
HYDROPNEUMATIC TANK PRESS (psig)				35 to 100
HYDROPNEUMATIC TANK LEVEL (%)				35 to 60
HOT WATER TANK TEMP (°F)				125°F
CLOSED COOLING SW INLET				
SW OUTLET				THROTTLE SW OUTLET TO MAINTAIN
CC INLET				CC OUTLET TEMP 50° to 90°F
CC OUTLET				
CLOSED COOLING-PUMP PRESS SUCTION				
DISCHARGE				30 PSIG MIN.
CLOSED COOLING PUMP IN SERVICE				A OR B
CLOSED COOLING HX IN SERVICE				A OR B
CHEM LAB EMERGENCY EXIT FIRE DOOR 1				FIRE DOOR CHECKED SHUT
A SGFP: SEAL FILTER ΔP (psig)				20
SEAL WATER CONTROLLER INBOARD ΔP				>15 PSIG
OUTBOARD ΔP				>15 PSIG
SUCTION PRESS (psig)				210 MIN
DISCHARGE PRESS (psig)				970 MIN
HIGH BEARING TEMP (°F)				205 MAX
B SGFP: SEAL FILTER ΔP (psig)				20 MAX
SEAL WATER CONTROLLER INBOARD ΔP				>15 PSIG
OUTBOARD ΔP				>15 PSIG
SUCTION PRESS (psig)				210 MIN
DISCHARGE PRESS (psig)				970 MAN
HIGH BEARING TEMP (°F)				205 MAX
CONTROL AIR DRYER FLOW: A				3-7
B				3-7
"A" AIR DRYER DEW POINT IND				-20°F to -30°F
"B" AIR DRYER DEW POINT IND.				-20°F to -30°F
CONTROL AIR RECEIVER PRESS: A (psig)				80 to 110
B (psig)				80 to 110
CONTROL AIR COMPRESSOR IN SERVICE				
CONTROL AIR COOLING OUTLET TEMP. (RUN)				100 to 120
TOTAL RUN TIME IN SERVICE COMPRESSOR				
TOTAL LOAD TIME IN SERVICE COMPRESS.				
SERVICE AIR RECEIVER PRESS (psig)				55 to 110

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
SERVICE AIR OUTLET COOLING TEMP (°F)				100 to 120
SERVICE WATER HEADER PRESS-EAST				54 MIN
WEST				54 MIN
TURBINE HALL TO LOCKER RM FIRE DOORS (2)				CHECK FIRE DOORS SHUT
1C CONTROL AIR RECEIVER PRESS (psig)				80 to 110
1C CONTROL AIR COOLING OUT. TEMP (°F)				100 to 120
1C CONTROL AIR COMP TOTAL RUN TIME				
1C CONTROL AIR COMP TOTAL LOAD TIME				
1C AIR DRYER DEW POINT IND.				-20°F to -30°F
CENTRIFUGE OIL TEMP(°F)				140 to 180
LUBE OIL CONTROLLER TEMP (°F)				100 to 110
HEATER DRAINS PUMP IN SERVICE				A OR B
UPPER BEARING TEMP				200°F MAX.
LOWER BEARING TEMP				200°F MAX.
WASTE OIL SUMP LEVEL				
CLEAN OIL TANK LEVEL (GAL)				1250 to 12000
DIRTY OIL TANK LEVEL (GAL)				1250 to 12000
WASTE OIL TANK GLASS LEVEL				
OIL ROOM FIRE DOORS (2)				FIRE DOORS CHECKED SHUT
EG2A--PREFERRED AIR START POSITION				
AIR BANK PRESSURE--LEFT (psig)				165 to 210
RIGHT (psig)				165 to 210
FUEL OIL TANK LEVEL TECH. SPEC. 3250 MIN				3250 to 4300
CIRC. OIL SYST TEMP (°F)				115 MIN
ENGINE DAY TANK LEVEL TECH. SPEC. 400 MIN				400 to 500
COOLING WATER SURGE TANK LVL (in)				
ALARM PANEL CHECK				
EG2B-PREFERRED AIR START POSITION				
AIR BANK PRESSURE--LEFT (psig)				165 to 210
AIR BANK PRESSURE--RIGHT (psig)				165 to 210
FUEL OIL TANK LEVEL TECH SPEC 3250 MIM				3250 to 4400
CIRC. OIL SYSTEM TEMP (°F)				115 MIN
ENGINE DAY TANK LEVEL TECH SPEC 400 MIM				400 to 500
COOLING WATER SURGE TANK LEVEL (IN)				
ALARM PANEL CHECK				
EMERGENCY DIESEL ROOM FIRE DOORS (2)				FIRE DOORS CHECKED SHUT
PIPE HANGER SUPPORTS CHECKED				MR LOOSE - BROK ? ETC. HANGE
OFFICE HEATING CIRCULATOR ON/OFF				
OFFICE HEATING SYSTEM PRESS				10 to 30
UPS ROOM STATUS				AMBER LIGHTS ON (4) RED LIGHTS OFF (EXCEPT GROUND LIGHT) 12
SECURITY DIESEL				CONTROL SWITCH IN AUTO, YELLOW LIGHT ON GEN CIRCUIT BREAKER SHUT, RED LIGHT ON

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
DIESEL FIRE PUMP SELECTOR SWITCH IN AUTO				AUTO
DIESEL FIRE PUMP BATT LIGHT A				BLUE LIGHT ON CONTROL
DIELEL FIRE PUMP BATT LIGHT B				PANEL ON
DIESEL FIRE PUMP FUEL OIL TANK LEVEL				50% - 100%
HYPOCHLORINATOR TANK LEVEL (GAL)				
HYPOCHLORINATOR SET TIME				PER CHEMISTRY INSTRUCTIONS
HYPOCHLORINATOR RUN TIME TOTALIZER				TECH SPEC 120 MINUTES/DAY
SCREENHOUSE TO HYPOCHLORITE RM FIRE DOOR				CHECK FIRE DOOR SHUT
WASHED TRAVELING WATER SCREENS				
ESTIMATE FISH COUNT TECH SPEC 3.1-1				1000 FISH MAX. AS PER SUR 5.1-74
AIR SUPPLY TO A & B SCREENS				3 to 8
TRASH PACK ΔP--NORTH				15 MAX
SCREEN ΔP--NORTH				6" MAX
SCREEN ΔP--SOUTH				6" MAX
TRASH RACK ΔP--SOUTH				15 MAX
AIR SUPPLY TO C & D SCREENS				3 to 8
KINNEY FILTER IN SERVICE				
KINNEY FILTER ΔP				
CIRC PUMP GLAND PRESS (PSIG) A				6 to 10
B				6 to 10
C				6 to 10
D				6 to 10
CIRC PUMP DISCHARGE PRESS A				
B				
C				
D				
SERVICE WATER HEADER PRESS (SCREEN HOUSE)				
MAIN XFMR: LIQUID LEVEL				
LIQUID TEMP (^{o}C)				95 MAX
WINDING TEMP (^{o}C)				117 MAX
GAS CYL PRESS (PSIG)				200 MIN
XFMR GAS PRESS (PSIG)				-3.0 to 8.5
309 XFMR: LIQUID LEVEL				
LIQUID TEMP (^{o}C)				
GAS CYL PRESS (PSIG)				250 MIN.
XFMR GAS PRESS (PSIG)				-3.0 to 8.5
FUEL OIL TANK LEVEL (FT)				10.5 to 14 FT
PROPANE TANK LEVEL (%)				
399 XFMR: LIQUID LEVEL				
LIQUID TEMP (^{o}C)				90 MAX
GAS CYL PRESS (PSIG)				250 MIN
XFMR GAS PRESS (PSIG)				-3.0 to 8.5
389 XFMR: LIQUID LEVEL				
LIQUID TEMPLE (c)				90 MAX
GAS CYL PRESS (PSIG				250 MIN
XFMR GAS PRESS (PSIG)				-3.0 to 8.5
389T399 RECEIVER PRESS (PSIG)				150 MIN B/D ONCE A SHIFT
389T399 CYCLE NUMBER				
389T399 LIQUID LEVEL				
HYDROGEN BANK PRESS IN SERVICE				300 MIN
RESERVE				300 MIN
HYDROGEN BANK METER READING				
METER PRESSURE				90 MAX.
HYDROGEN BANK LOW SIDE PRESS.				90 MAX.
RPWST TEMP.				

DATE	00-08	08-16	16-24	REMARKS & LIMITS
CONT. FOUNDATION SUMP PUMP STATUS				
AUX. FEED PUMPS AND ROOM STATUS				
AUX. ELECTRIC FEED PUMP AND ROOM STATUS				
NON RETURN AND TRIP VALVE AREA STATUS				
INSTRUMENT AND RECORDER CHECKS				CHECK FOR CORRECT TIME DATE AND INITIAL CHARTS
OPERATOR INITIAL				OUT OF SPEC ITEMS CIRCLED
CHECKED BY SCO (INITIAL)				OUT OF SPEC ITEMS CIRCLED

SECONDARY SIDE

FEED WATER SYSTEM LEVEL CONTROL VALVE STATUS

DATE _____

VALVE TITLE	MAX. OPENING 00-08
1A FW Heater Normal Level Control	1 1/2
1A FW Heater High Level Dump	1 1/2
1B Heater Normal Level Control	% Open
1B Heater High Level Dump	1 1/2
3A FW Heater Normal Level Control	1 1/2
3A FW Heater High Level Dump	1 1/2
3B FW Heater Normal Level Dump	1 1/2
3B FW Heater High Level Dump	1 1/2
4A FW Heater Normal Level Control	2
4A FW Heater High Level Dump	1 1/2
4B FW Heater Normal Level Control	2
4B FW Heater High Level Dump	1 1/2
5A FW Heater Normal Level Control	2 1/2
5A FW Heater High Level Dump	2
5B FW Heater Normal Level Control	2 1/2
5B FW Heater High Level Dump	2
6A FW Heater Normal Level Control	2 1/2
6A FW Heater High Level Dump	2 1/2
6B FW Heater Normal Level Control	2 1/2
6B FW Heater High Level Dump	2 1/2
East Reheater Drain Tank NLC	1 1/2
East Reheater Drain Tank HLD	1 1/2
West Reheater Drain Tank NLC	1 1/2
West Reheater Drain Tank HLD	1 1/2
F.W. Heater Drain Tank NLC	4
F.W. Heater Drain Tank HLC	2 1/2
Generator Load, MWe	

DATE	00-08	08-16	16-24	REMARKS & LIMITS
FIRE DOOR TO DECON RM (1)				FIRE DOORS CHECKED
PAB CORRIDOR TO YARD FIRE DOOR (1)				SHUT DOORS
CHEM LAB TO CORRIDOR FIRE DOOR				SHUT DOORS
FIRE DOOR TO RESP ISSUE RM (1)				SHUT DOORS
CORRIDOR TO PAB FIRE DOOR (1)				SHUT DOORS
NITROGEN HEADER PRESS				
RIVER EFFLUENT PUMP RUNNING (check)				
BLOWDOWN TO SW PIPE CHECK (DRUM RM.)				NO LEAKAGE ALLOWED
PAB TO DRUMMING RM FIRE DOORS (3)				FIRE DOOR CHECKED SHUT
CCW SUCTION TEMP (^{O}F)				75 to 140
SERV. WATER PRESS. "A" CC. HX OUT				
SERV. WATER TEMP. "A" CC. HX OUT				
SERV. WATER PRESS. "B" CC. HX OUT				
SERV. WATER TEMP. "B" CC. HX OUT				
WASTE GAS PANEL ANNUNCIATOR TEST				
PRIMARY DRAINS TANK LEVEL (gal)				1200 to 3500
PDT PUMP IN SERVICE				A OR B
DEGAS TRANSFER PUMP IN SERVICE				A OR B
WASTE GAS COMPRESSOR IN SERVICE				A OR B
WASTE GAS DECAY TK IN SERVICE				A, B, OR C
WASTE GAS DECAY TK PRESSURE A				15 to 200
WASTE GAS DECAY TK PRESSURE B				15 to 200
WASTE GAS DECAY TK PRESSURE C				15 to 200
PAB PANALARM CHECK				
RECYCLE P.W.S.T. LEVEL				15,800 to 142500
SEAL WATER RETURN TEMP: #1 (^{O}F)				150 MAX.
#2 (^{O}F)				150 MAX.
#3 (^{O}F)				150 MAX.
#4 (^{O}F)				150 MAX.
A RECYCLE TEST TANK LEVEL				14,000 MAX.
B RECYCLE TEST TANK LEVEL				14,000 MAX.
AERATED WASTE HOLD UP TK LEVEL				14,500 to 91,000
TEMP: BWST A (^{O}F)				50 to 120
BWST B (^{O}F)				50 to 120
PDT TEMP (^{O}F)				140 MAX.
NST COOLER TEMP INLET (^{O}F)				115 to 145
OUTLET (^{O}F)				90 to 100
PWST TEMP (^{O}F)				70 to 120
CCW DISCHARGE PRESS (psig)				65 to 84
SERVICE WATER PRESS (psig)				50 to 100
INSTRUMENT AIR PRESS (psig)				80 MIN
BORON RECOVERY FROM				
TO				
FLOW (GPM)				
WASTE TEST TANK LEVEL A (gal)				14,000 MAX.
B (gal)				14,000 MAX.
BWST LEVEL: A (%)				84 MAX
B (%)				84 MAX
AERATED DRAINS TANK LEVEL A (gal)				2,300 MAX
B (gal)				2,300 MAX
EFFLUENT DISCH. FROM				
FLOW (GPM)				AS PER RELEASE PERMIT
WASTE LIQUID PANEL ANNUNCIATOR TEST				

PRIMARY SIDE

DATE	00-08	08-16	16-24	REMARKS & LIMITS
ADT EVAP: FROM				
TO				
GPM				
INLINE COND. METER READING				.8 MAX
BORON RECOVERS HEAT TRACE STATUS				
BORIC ACID LINE HEAT TRACE STATUS				
WASTE DISPOSAL BLDG STATUS				
PAB TO WDB FIRE DOOR LOWER LEVEL (1)				FIRE DOORS CHECKED SHUT
CONTAINMENT FAN SW FLOW: #1 (GPM)*				100 to 670
#2 (GPM)*				100 to 670
#3 (GPM)*				100 to 670
#4 (GPM)*				100 to 670
PIPE HANGERS & SUPPORTS CHECKED				
SEAL WATER SUPPLY FILTER IN SERVICE				A OR B
SEAL WATER SUPPLY FILTER AP				40 MAX
IN SERVICE CHG PUMP A OR B				A OR B
DISCH. PRESS (psig)				2150 to 2800
OIL PRESS (psig)				4 MIN
OIL TEMP (^{O}F)				160 MAX
CCW FLOW TO COOLER				6 MIN
GLAND COOL PRESS				
OIL RESERVOIR LEVEL				1/4 to 3/4 GLASS
DRAIN COOLER CCW FLOW (GPM)				155 to 240
TEMP (^{O}F)				140 MAX
THERMAL BARRIER CCW FLOW (GPM)				80 to 125
TEMP (^{O}F)				120 MAX
BAROMETRIC PRESSURE (in Hg)				
BAROMETRIC AMBIENT TEMP (^{O}F)				
MERCURY MANOMETER (in)				
CLOSED & OPEN BULB DIFF. MANOMETER (in)				
SEAL WATER SUPPLY FLOW: #1 (GPM)				5 to 75
#2 (GPM)				5 to 75
#3 (GPM)				5 to 75
#4 (GPM				5 to 75
SG BLOWDOWN MONITOR FLOW				
LOW PRESS. LETDOWN LINE PRESSURE				180 to 220
PURIFICATION PUMP: FROM				
TO				
PRESS (psig)				90 MIN.
FLOW (GPM)				160 MAX.
SEAL WATER RETURN FILTER ΔP (psig)				60 MAX.
SEAL WATER HX CCW FLOW (GPM)				300 MAX.
RHR PIT AREA STATUS				
FREEZE PROT. HEAT TRACE STATUS				
RWST TEMP (^{O}F)				40 TO 90
DEGASIFIER EFFLUENT TO A OR B BWST				
ION EXCHANGE BLD. TEMP.				40^{O}F MIN.
B.R. EVAP. DIST. FILTER ΔPSI				15 MAX.
ADT EVAP. DIST. FILTER ΔPSI				20 MAX.
DEGAS PRE FILTER ΔPSI				70 MAX.
BR POLISHING DEM ΔP IN H2O				100" H_2O MAX.

PRIMARY SIDE

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
ADT EVAP. POLISH DEMIN ΔP IN. H_2O				100" H_2O MAX.
ADT EVAP. FILTER ΔPSI				30 MAX.
SPENT FUEL PIT ION EXCHANGER ΔPSI				35 MAX.
SPENT FUEL PIT FILTER ΔPSI				20 MAX.
LETDOWN PRE FILTER ΔP IN. H_2O				500" H_2O MAX.
ION EXCHANGER IN SERVICE				
ION EXCHANGER ΔPSI				35 MAX.
R.C. LETDOWN FILTER ΔPSI				30 MAX. 5 MIN.
ADT FILTER ΔPSI				35 MAX. 5 MIN.
ION EXCHANGE SPENT RESIN PIT STATUS				
SPENT FUEL BUILDING SUMP LEVEL				
SPENT FUEL PIT COOL PUMP DISCH PRESS				70 to 95
SPENT FUEL BLDG STATUS - LOWER LEVEL				
SPENT FUEL BLDG STATUS - UPPER LEVEL				
SPENT FUEL PIT TEMP (°F)				120 MAX.
SPENT FUEL PIT ION EXCHANGE FLOW				120 GPM MAX.
SPENT FUEL PIT HX OUTLET TEMP.				
SERV. WATER OUTLET TEMP. SEP HX				
SFP HX SERV. WATER INLET PRESS.				
SFP HX SERV. WATER OUTLET PRESS.				
CABLE VAULT STATUS				
RADIOACTIVE PIPE TRENCH STATUS				
NON RADIOACTIVE PIPE TRENCH STATUS				
CONTAINMENT PURGE LINE DRAINED				
EXACTEL				36 MAX.
EXACTEL VACUUM OIL LEVEL				
CONT. MONITOR ΔP (in of water)				
ADAMS FILTER IN SERVICE				A OR B
CONT. COOLER INLET PRESS #2 (psig)				
#3 (psig)				
#4 (psig)				
#1 (psig)				
CONT. COOLER OUTLET PRESS #1 (psig)				30 MIN.
#4 (psig)				30 MIN.
#3 (psig)				30 MIN.
#2 (psig)				30 MIN.
CONT. COOLER OUTLET TEMP #1 (°F)				
#4 (°F)				
#3 (°F)				
#2 (°F)				
PURGE FAN IN SERVICE				A OR B
NRHX CC FLOW (GPM)				1350 MAX.
BORIC ACID MIX TANK TEMP (°F)				165 TO 180 MAX. 140 MIN.
BORIC ACID MIX TANK LEVEL (%)				TECH. SPEC. MIN. 60%
PAB TO WDB FIRE DOOR UPPER LEVEL				FIRE DOOR CHECKED SHUT
SERVICE WATER INLET TEMP (°F)				
CHECK HI RADIATION AREAS LOCKED				EACH SHIFT
INSTRUMENT & RECORDER CHECK				CHECK FOR CORRECT TIME DATE AND INITIAL CHARTS
OPERATOR INITIALS				OUT OF SPEC. ITEMS CIRCLED
CHECKED BY SCO (INITIAL)				OUT OF SPEC. ITEMS CIRCLED

RESIDUAL HEAT REMOVAL SYSTEM LEAKAGE INSPECTION

7.0 CHECKOFF

7.1 Complete the following RHR leakage inspection checkoff sheet at least once each shift.

Date _____

RHR SYSTEM COMPONENT	SOURCE OF LEAKAGE (Name Particular Item)	MEASURED LEAKAGE RATE (ML/MIN) 00-08	08-16	16-24
1A RHR Pump				
1B RHR Pump				
1A RHR HXGR				
1B HXGR				
VALVES				
PIPING				
	TOTAL LEAKAGE-ML/MIN			
	TIME OF INSPECTION			
RH-FCV-602	Locked closed, air supply isolated when reactor critical and coolant temp. 350°F.			
RH-HCV-796	Valve open and air supply isol. when reactor critical and coolant temp. 350°F.			
RH-MOV-22	Valve locked in open position and circuit breaker locked out during post-LOCA long term cooling			
SI-MOV-24	Valve locked open and breaker locked out whenever reactor is critical			
SI-FCV-875	Valve blocked and locked in open pos. whenever reactor is critical			
RH-MOV-874	Valve locked closed, breaker locked open whenever reactor is critical and reactor coolant temp. 350°F.			
	OPERATOR			
	SHIFT SUPERVISOR			

Reviewed by _____ Date _____

CONTROL ROOM PART II

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
CONTAINMENT RECIRC FAN AMPS: #1				291 MAX.
#2				291 MAX.
#3				291 MAX.
#4				291 MAX.
CCW HEAT EXCHANGER OUTLET TEMP (^{O}F)				100 MAX.
CCW TOTAL FLOW (gpm)				5500 MAX.
CCW PUMP AMPS: 1A				148 MAX.
1B				148 MAX.
1C				148 MAX.
CONTAINMENT TEMPERATURE: A (^{O}F)				120 MAX.
B (^{O}F)				120 MAX.
CONTAINMENT DEW POINT (^{O}F)				
AUX. STM. GEN. FD. PP LINE TEMP.				85 to 200^{O}
S.G.F.P. AMPS: 1A				620 MAX.
1B				620 MAX.
CONDENSATE PUMP AMPS: 1A				215 MAX.
1B				215 MAX.
STEAM FLOW (%) #1				85 to 110
#2				85 to 110
#3				85 to 110
#4				85 to 110
MAIN STEAM HEADER PRESS (psig)				680 to 910
STEAM GEN. WIDE RANGE LEVEL (%) #1				45 to 69
#2				45 to 69
#3				45 to 69
#4				45 to 69
CIRC WATER PUMP AMPS: 1A				110.9 MAX.
1B				110.9 MAX.
1C				110.9 MAX.
1D				110.9 MAX.
SERVICE WATER PUMP AMPS: 1A				297 MAX.
1B				297 MAX.
1C				297 MAX.
1D				297 MAX.
HEATER DRAIN PUMP AMPS: 1A				101.7 MAX.
1B				101.7 MAX.
IMPULSE CHAMBER TEMP (^{O}F)				
FLANGE TEMP (^{O}F)				

Surveillance File: 13.3.5

CONTROL ROOM PART II

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
BASE TEMP (°F)				
CONTROL AIR HEADER PRESS (psig)				80 MIN.
DWST LEVEL (gal)				T.S. 50,000 MIN
HOTWELL LEVEL: A				50 to 85
B				50 to 85
F.W. HEATER DRAIN RECEIVER LEVEL (%)				51 to 100
REHEATER DRAIN RECEIVER LEVEL (%) A				44 to 80
B				44 to 80
HEATER DRAIN PUMP DISCHARGE PRESS				
S.G.F.P. SUCTION PRESS				210 MIN.
S.G.F.P. DISCHARGE PRESS				966 MIN.
CONDENSATE PUMP DISCHARGE PRESS				
REHEATER OUTLET TEMP (°F) 1A				400 MIN.
1B				400 MIN.
1C				400 MIN.
1D				400 MIN
CONDENSER BACKPRESSURE (in Hg) A				3.5 MAX.
B				3.5 MAX.
CONDENSER VACUUM				23.5 MIN.
GLAND STEAM PRESS (psig)				2 to 7
GENERATOR HYDROGEN PRESSURE (psig)				30 to 60
GENERATOR OIL PRESSURE (psig)				
LOAD LIMIT OIL PRESSURE (psig)				3-5# > GOV OIL PRESS
FIRST STAGE PRESSURE (psig)				
GENERATOR: MWe				
REACTIVE (MVAR)				250 MAX.
AMPS (KA)				20,256 MAX.
VOLTS (KV)				
EXCITER FIELD AMPS				
XFMR AMPS--HIGH PHASE: 309				2,080 MAX.
389				1800/2400 MAX.
399				1800/2400 MAX.
484				208.2 MAX.
485				208.2 MAX.
496				208.2 MAX.
497				208.2 MAX.

Surveillance File: 13.3.5

CONTROL ROOM PART II

DATE		00-08	08-16	16-24	REMAKRS & LIMITS
BUS VOLTS--HIGH PHASE:	1-1A				
	1-1B				
	1-2				
	1-3				
BUS VOLTS-HIGH PHASE:	4				EOP 3.1-40 MIN. 423 VOLTS
	5				EOP 3.1-40 MIN. 423 VOLTS
	6				EOP 3.1-40 MIN. 423 VOLTS
	7				EOP 3.1-40 MIN. 423 VOLTS
BATTERY VOLTS:	A				123 MIN.
	B				123 MIN.
BATTERY CHARGER AMPS	"A"				
	"B"				
NEG SEQUENCE					2.5 <7.5
MCC 5 INDICATING LIGHTS (CHECK)					
115 KV LINE 1772:	AMPS				(See Convex Proc. 6707)
	VOLTS (KV)				EOP 3.1-40 106.4 KV MIN.
	REACTIVE (MVAR)				SEE CONVEX PROC. 6707
115 KV LINE 1206:	AMPS				SEE CONVEX PROC. 6707
	VOLTS (KV)				EOP 3.1-40 106.4 KV MIN.
	REACTIVE (MVAR)				SEE CONVEX PROC. 6707
GETAC STATION CHECK COMPLETE (Check)					
EMERGENCY GENERATOR DC POWER AVIL					NO CONT POWER FAILURE ALARM
EMERGENCY BUS VOLTS:	8				
	9				
EG2A CONTROL SWITCH IN NEUTRAL					GREEN LIGHT ON
EG2A AUTO/TEST SWITCH IN AUTO					WHITE LIGHT ON
EG2B CONTROL SWITCH IN NEUTRAL					GREEN LIGHT ON
EG2B AUTO/TEST SWITCH IN AUTO					WHITE LIGHT ON
PYR-A-LARM INDICATING UNITS					NO ALARMS
CHARCOAL FILTER SPRAY VALVES					SHUT
STEAM DUMP BLOWN FUSE CHECK					NONE
EMERGENCY OIL PUMP (AUTO) (OFF) (RUN)					
TURNING GEAR CONTROL (MAN) (AUTO) (OFF)					
TURNING GEAR OIL PUMP (AUTO) (RUN)					
GLAND STEAM EXHAUSTER (A) (B)					1 IN SERVICE
GENERATOR VAPOR EXTRACTOR (RUN) (S/D)					1 IN SERVICE
OIL RESERVOIR VAPOR EXTRACTOR (A) (B)					1 IN SERVICE
TURBINE DRAIN VALVES (OPEN) (CLOSED)					CLOSED ABOVE 120 MWe
RELAY TARGETS - 115 KV					NONE
RELAY TARGETS - 19 KV/345 KV					NONE
CONTROL RM. TO COMPUTER RM. FIRE DOOR					FIRE DOORS CHECKED
OPS. SUPV. TO COMPUTER RM. FIRE DOOR					SHUT
INSTRUMENT & RECORDER CHECK					CHECK FOR CORRECT TIME, DATE AND INITIAL CHARTS
PANALARM CHECK					
OPERATOR (INITIAL)					OUT OF SPEC ITEMS CIRCLED
CHECKED BY SCO (INITIAL)					OUT OF SPEC ITEMS CIRCLED

CONTROL ROOM PART I

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
SUBCOOLED MARGIN MONITOR				
POWER RANGE CHANNEL 32 (DRAWER)				
34 (DRAWER)				
31 (DRAWER)				
33 (DRAWER)				
NUCLEAR INSTR: CH 14/21				
CH 11/22				
CHAN 32 AXIAL OFFSET				NO ALARM
CHAN 34 AXIAL OFFSET				
CHAN 31 AXIAL OFFSET				
CHAN 33 AXIAL OFFSET				
ROD DRIVE GROUND VOLT DIFF.				
ROD POSITION: BANK C (steps)				320 NORMALLY
BANK D (steps)				320 NORMALLY
BANK A (steps)				320 NORMALLY
BANK B (steps)				290-310 NORMALLY
PLANT T AVG °F				
CONTROL ROD DRIVE MECH. TEMP. POS.-1				
POS.-2				
POS.-3				
POS.-4				
PRESSURIZER RELIEF TANK: TEMP °F				125 MAX.
LEVEL %				87 MAX. 77 MIN.
PRESS				15 MAX.
PRESSURIZER (RECORDER PRESSURE) (psig)				2300 MAX. 2000 MIN.
PRESSURIZER PRESS: CHANNEL 1				2300 MAX. 2000 MIN.
CHANNEL 2				2300 MAX. 2000 MIN.
CHANNEL 3				2300 MAX. 2000 MIN.
PRESSURIZER LEVEL (%) CH 1				86 MAX. 5.5 MIN.
CH 2				86 MAX. 5.5 MIN.
CH 3				86 MAX. 5.5 MIN.
CH 4				86 MAX. 5.5 MIN.
STEAM TEMP (°F)				680 MAX.
WATER TEMP (°F)				680 MAX.
SURGE LINE TEMP (°F)				530 MIN.
SPRAY LINE TEMP LOOP #3 (°F)				500 MIN.
LOOP #4 (°F)				500 MIN.
CHARGING PUMP AMPS: 1A				96.2 MAX.
1B				96.2 MAX.
CHARGING HEADER PRESSURE (psig)				2300 MIN.
CHARGING FLOW: LOOP #4 (gpm)				
LOOP #2 (gpm)				
R.V. FLANGE LEAK DET. TEMP (°F)				150 MAX.
L.D. TEMP RHX OUTLET (°F)				380 MAX.
CHARGING TEMP RHX OUTLET (°F)				
BAMT LEVEL (gal)				12,000 MIN.
RWST LEVEL (gal)				230,000 MIN.
VOLUME CONTROL TANK: TEMP (°F)				130 MAX.
LEVEL (%)				87 MAX. 26 MIN.
PRESS (psig)				65 MAX. 15 MIN.
LETDOWN: FLOW (gpm)				
PRESS (psig)				400 MAX. 180 MIN.
TEMP (°F)				140 MAX.
SEAL WATER INLET TEMP (°F)				135 MAX. 70 MIN.

CONTROL ROOM PART I

DATE		00-08	08-16	16-24	REMAKRS & LIMITS
SEAL WATER RETURN FLOW:	#1 gpm				5 MAX. 1 MIN.
	#2 gpm				5 MAX. 1 MIN.
	#3 gpm				5 MAX. 1 MIN.
	#4 gpm				5 MAX. 1 MIN.
LABYBRINTH SEAL D/P:	#1 (in. W.C.)				20 to 50
	#2 (in. W.C.)				20 to 50
	#3 (in. W.C.)				20 to 50
	#4 (in. W.C.)				20 to 50
LOWER BEARING WATER TEMP	#1 (°F)				150 MAX.
	#2 (°F)				150 MAX.
	#3 (°F)				150 MAX.
	#4 (°F)				150 MAX.
RHR DISCHARGE PRESS (psig)					125 to 500
RCP MOTOR CURRENT	#1				440 MAX.
	#2				440 MAX.
	#3				440 MAX.
	#4				440 MAX.
T AVG	LOOP #1 (°F)				560 MAX.
	LOOP #2 (°F)				560 MAX.
	LOOP #3 (°F)				560 MAX.
	LOOP #4 (°F)				560 MAX.
ΔT	LOOP #1 (°F)				47 MAX.
	LOOP #2 (°F)				47 MAX.
	LOOP #3 (°F)				47 MAX.
	LOOP #4 (°F)				47 MAX.
T INLET	LOOP #1 TAVG - ½ LOOP #1 ΔT				540.6 MAX.
	LOOP #2 TAVG - ½ LOOP #2 ΔT				540.6 MAX.
	LOOP #3 TAVG - ½ LOOP #3 ΔT				540.6 MAX.
	LOOP #4 TAVG - ½ LOOP #4 ΔT				540.6 MAX.
RCS FLOW:	LOOP #1 (psi)				12 MIN.
	LOOP #2 (psi)				12 MIN.
	LOOP #3 (psi)				12 MIN.
	LOOP #4 (psi)				12 MIN.
C.C.W. SURGE TANK LEVEL (%)					40 to 60
NST LEVEL (%)					10 to 50
INCORE SUMP LEVEL (%)					0 IS NORMAL
CONTAINMENT SUMP LEVEL					100 to 1000
PWST LEVEL (gal)					T.S. MIN. 80,000
WIND DIRECTION (in degrees)					
WIND SPEED MPH					
OUTSIDE AIR TEMP °F					
DEVIATION + or - °F					
RELIEF LINE TEMPS:	V 584 (°F)				400 MAX.
	V 585 (°F)				400 MAX.
	V 586 (°F)				400 MAX.
	V 586 & 570 (°F)				400 MAX.
	TIA 416 (°F)				165 MAX.
SEMI-VITAL BUS VOLTS:	NORM REGULATED				
	EMERG REGULATED				
LPSC OUTPUT 413 (% Output)					50 MAX.
412 (% Output)					50 MAX.
411 (% Output)					50 MAX.
INSTRUMENT & RECORDER CHECK					CHECK FOR CORRECT TIME, DATE AND INITIAL CHARTS

CONTROL ROOM PART I

DATE	00-08	08-16	16-24	REMAKRS & LIMITS
PANALARM CHECK				--
ROD BOTTOM LIGHT CHECK				--
CONT. RM TO VIEWING ROOM FIRE DOOR				FIRE DOORS CHECKED
CONT. RM. TO I&C CORRIDOR (2 DOORS)				SHUT
CONT. RM. TO KITCHEN FIRE DOOR				
VERIFY WIND DIRECTION				
STATE POLICE RADIO CHECK				
OPERATOR INITIAL				OUT OF SPEC. ITEMS CIRCLED
CHECKED BY SCO (INITIAL)				OUT OF SPEC. ITEMS CIRCLED

NOP 2.2-2
Revision 8 (MAJOR)
MAR 2 8 1980

DATE _____

RADIATION MONITORING SYSTEM DAILY LOG Sheet 1 of 1

SHIFT	0000-0800		0800-1600		1600-2460	
	CHANNEL READING	ALARM SETPOINT	CHANNEL READING	ALARM SETPOINT	CHANNEL READING	ALARM SETPOINT
R-11 Containment Air Particulate						
R-12 Containment Radio Gas						
R-14 Vent Stack						
R-15 Air Ejector Effluent						
R-16 S.G. Blowdown						
R-17 Comp. Cooling Water						
R-18 Service Water Effluent						
R-19 SFP Cooler S.W. Effluent						
RM-2209 CC Ret. From Gas Cmp.						
Test Tank Effluent To River						
R-20 Reactor Coolant Letdown						
R-16B S.G. Blowdown						
R-31 Cont. Manipulator Crane						
R-40 Radwaste Bldg. Gas Str. Area						
R-32 Cont. Chg. Floor						
R-37 Cont. Equipment Hatch						
R-33 SF Bldg. Decon Room (New Fuel Vault)						
R-34 SFP Bridge Crane						
R-39 Radwaste Bldg. Evap. Btms Area						
R-35 RHR Pit Iodine Monitor (PAB Corridor)						
R-38 Radwaste Bldg. Gas Comp. Area						
R-36 Sample Room						
Operator						

ALARM SETPOINT CHANGE			ALARM SUMMARY		
Channel	Time	Reason for Change	Channel	Time	Reason or Corrective Action

REVIEWED BY: _____ (Use Reverse Side if Necessary)

DOCKET NO. 50-213

HADDAM NECK PLANT

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.2.2.b

Onsite Technical Support Center

TMI-2 SHORT-TERM LESSONS-LEARNED ITEM 2.2.2.c

Onsite Operational Support Center

APRIL, 1980

Item 2.2.2.b - Onsite Technical Support Center

Are the dedicated phone lines such that separate conversations between the TSC and each of other areas (control room/NRC/nearsite emergency operations areas) can occur simultaneously?

Response

Communication links have been established such that separate conversations can occur simultaneously from the TSC to the Control Room, NRC, and nearsite EOC via the dedicated phone lines.

Submit details regarding your long-term TSC.

Response

The TSC as established to fulfill the short-term requirements of TMI lessons learned will be maintained to fulfill the long-term (January 1, 1981) requirements. This includes all components as described in the December 31, 1979 submittal including access to the Plant Computer, a black and white video display system, all communications and radiation monitoring equipment, shielding and ventilation systems providing the same degree of habitability as the Control Room, required technical data, etc.

CYAPCO has developed an Emergency Plan that focuses the use of the TSC to personnel solely concerned with bring the Unit to a safe shutdown condition, CYAPCO, based on over 12 years of operating experience, has determined that it is appropriate to remove all other functions from this area. Recognizing this requires the establishment of an additional habitable area to support other key functions, CYAPCO has proposed to establish a habitable near-site EOC capable of supporting 70 people located approximately 1,600 feet from the Control Room. The center would be established with an emergency power supply system, communications and data links, and all other components required to support radiological consequence assessment, external communications, on-site resources, site engineering, site security, and all other necessary response functions not solely concerned with the safe operation of the unit. The conceptual description of this new facility and its relationship to the TSC is comparable to that provided for the Millstone Site in Reference (12). The absence of NRC Staff concurrence in this concept to date has severely impaired CYAPCO's ability to have the new facility functional by the requested date of January 1, 1981.

What is the communication link between the operational support center and the control room?

Response

The OSC has been established within the viewing gallery located outside the Control Room area. The OSC is completely isolated from the Control Room via a security

partition assembly which includes transparent viewing panels. Access to the control area is readily available through a controlled door. A pass-draw also exists to allow documents to be passed by or to the operators or OSC personnel.

Since the Control Room is in full view of the OSC and the operators are able to pass information to the OSC only a few steps from the control board, a physical communication link has been judged to be superfluous and unnecessary.