

February 11, 2005

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

Before the Atomic Safety and Licensing Board

February 11, 2005 (4:28pm)

In the Matter of)

ENTERGY NUCLEAR VERMONT)
YANKEE, LLC and ENTERGY)
NUCLEAR OPERATIONS, INC.)
(Vermont Yankee Nuclear Power Station))

) Docket No. 50-271

) ASLBP No. 04-832-02-OLA
) (Operating License Amendment)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

**ENTERGY'S MOTION TO DISMISS AS MOOT, OR IN THE ALTERNATIVE,
FOR SUMMARY DISPOSITION OF
DEPARTMENT OF PUBLIC SERVICE CONTENTION 6**

Applicants Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (collectively "Entergy") file this motion, pursuant to 10 C.F.R. §2.323 and the Atomic Safety and Licensing Board's ("Board") February 1, 2005 order,¹ to seek dismissal of the Vermont Department of Public Service ("DPS") contention admitted by the Board's Order dated January 11, 2005 ("DPS Contention 6").² Dismissal of DPS Contention 6 is warranted because Entergy has completed the actions whose absence served as the basis for the contention. In the alternative, Entergy seeks summary disposition of the contention on the grounds that no genuine issue as to any material fact exists and Entergy is entitled to a decision as a matter of law. This motion is supported by a Statement of Material Facts as to which Entergy asserts there is no genuine dispute.

¹ Order (Granting Entergy's Unopposed Motion to Stay Discovery on State Contention 6) (Feb. 1, 2005) at 1-2.

² Memorandum and Order (Admitting Intervenor's New Contention) (Jan. 11, 2005) ("Order").

I. STATEMENT OF FACTS

On September 30, 2004 Entergy responded to inquiries by the NRC staff regarding Vermont Yankee's continued capability of responding, under extended power uprate ("EPU") conditions, to a 10 C.F.R. Part 50 Appendix R event by, *inter alia*, bringing the Reactor Core Isolation Cooling ("RCIC") system into a service condition in approximately 15 minutes.³ In its September 30, 2004 letter to the NRC, Entergy committed to (1) verifying by December 1, 2004 the ability to perform this task within the assumed time, and (2) completing training of the VY operators on a revised procedure governing the required operator actions.⁴ The revised procedure became effective on September 30, 2004.⁵

On October 18, 2004, the DPS submitted its request for leave to file a new contention that challenged Entergy's EPU application by asserting:

The application for amendment, including all supplements thereto, fails to comply with 10 CFR Appendix R, specific requirements, paragraph L(2)(b) because it does not verify the assumption, used for purposes of the safe shutdown capability analysis (SSCA) that the reactor core isolation cooling (RCIC) system can be made operable in sufficient time to permit the operator to perform the required actions before core uncover.

Vermont Department of Public Service Request for Leave to File a New Contention (Oct. 18, 2004) ("DPS Request") at 1.

In the meantime, Entergy had set out to perform the verification it had committed to conduct. Entergy developed a training program guide to instruct the plant operators on the revised

³ Letter from Robert J. Wanczyk, VY Director, Nuclear Assurance to U.S.N.R.C., "Vermont Yankee Nuclear Power Station Technical Specification Proposed Change No. 263 – Supplement No. 17 Extended Power Uprate – Response to Request for Additional Information Related to the 10 CFR 50 Appendix R Timeline" BVY 04-107 (Sep. 30, 2004) (Exhibit 1 hereto).

⁴ *Id.*

⁵ September 30, 2004 VY Operating Procedure OP 3126 (Rev. 17), "Shutdown Using Alternate Shutdown Methods" (Exhibit 2 hereto).

procedures.⁶ All six crews of VY licensed operators received training on the revised procedures between October 18 and November 24, 2004.⁷ After training, each crew conducted a timed walkthrough of the actions needed to bring the RCIC system into service to demonstrate that the crew was able to carry out the revised procedures within the time allowed.⁸ The walkthroughs confirmed the ability of each of the six crews to start injection using the RCIC system within approximately fifteen minutes.⁹ Entergy reported compliance with the verification commitment to the NRC by letter dated December 8, 2004.¹⁰

On January 11, 2005, the Board admitted DPS Contention 6. In admitting the contention, the Board noted “that the contention is narrow” because the contention merely “challenges the absence of the verification, not its quality.” *Id.* at 7. Thus, the Board stated “when Entergy performs the verifications showing compliance, and duly submits them to NRC, this contention will be moot.” *Id.* Entergy has performed the verification and submitted the results to NRC. The contention is, therefore, moot, or in the alternative, should be dismissed via summary disposition.

II. THE CONTENTION SHOULD BE DISMISSED AS MOOT

Entergy completed the verification sought in DPS Contention 6 within the timeframe committed to the NRC (December 1, 2004). VY Verification Letter, Exhibit 7 hereto, at 1. En-

⁶ VY License Operator Requal Training Program Instructor Guide, LOR-24-405-2, Rev. 0, October, 2004 (Exhibit 3 hereto).

⁷ Daily Attendance Records for Classroom Review of 10 CFR 50 App. R and OP 3126 and Plant Walkthrough of the Time Critical Steps of OP 3126 (six sets of records, crews “A” through “F,” dated October 18 through November 24, 2004) (Exhibit 4 hereto).

⁸ Narrative descriptions of timed walkthroughs of actions required by OP 3126 (six narratives, crews “A” through “F,” dated October 20, 2004 through November 22, 2004) (Exhibit 5 hereto).

⁹ *Id.* A summary of the walkthrough results is contained in a December 7, 2004 internal Entergy memorandum. Memorandum from John Twarog to Chris Wamser, dated December 7, 2004, re Response to BVY 04-107 “Additional Information Related to the 10 CFR 50 Appendix R Timeline” (Exhibit 6 hereto).

¹⁰ Letter from Jay Thayer, VY Site Vice President, to U.S.N.R.C., “Vermont Yankee Nuclear Power Station Technical Specification Proposed Change No. 263 – Supplement No. 22 Extended Power Uprate – 10 CFR 50 Appendix R Timeline Verification” BVY 04-131 (Dec. 8, 2004) (“VY Verification Letter”), Exhibit 7 hereto. The VY Verification Letter is available on ADAMS with Accession Number ML043510227.

tergy submitted the verification results to NRC by letter dated December 8, 2004, and a copy of the letter was simultaneously sent to DPS. *Id.*

As the VY Verification Letter indicates, all six VY operating crews were retrained and demonstrated their ability to bring the RCIC system into service within the specified time of approximately 15 minutes in the event that the control room had to be evacuated. The results of the walkthroughs confirmed the assumption in the Safe Shutdown Capability Analysis that the RCIC system can start injection in approximately 15 minutes and showed that sufficient margin exists to allow operator action to manually start the RCIC system prior to the calculated time in which reactor water level would reach the top of the active fuel. VY Verification Letter at 1-2. The documentation of this verification process, which Entergy has provided to DPS¹¹ and is attached as Exhibits 2-6 to this Motion, includes a description of the procedures used, the training conducted, and the confirmatory walkthroughs.

Thus, Entergy has cured the condition that was the subject of DPS Contention 6 and has rendered it moot. The Board, therefore, should dismiss the contention.

III. ENTERGY IS ENTITLED TO SUMMARY DISPOSITION

A. Legal Standards for Summary Disposition

Commission regulations provide for summary disposition. Motions for summary disposition in a 10 C.F.R. Part 2, Subpart L, proceeding may be submitted up to 45 days before the commencement of a hearing, unless the presiding officer orders otherwise. 10 C.F.R.

§ 2.1205(a).¹² In ruling on motions for summary disposition, the Board is to apply the standards

¹¹ Letter dated January 27, 2005 from Jay E. Silberg, Esq. (Entergy counsel) to Sarah Hofmann, Esq. (DPS counsel) (Exhibit 8 hereto).

¹² The Board's February 1 Order gives Entergy until February 15, 2005 to file a summary disposition motion on this contention. More generally, the Board has set 30 days after issuance by the Staff of the draft Safety Evaluation Report as the deadline in this proceeding for filing motions for summary disposition pursuant to 10 C.F.R. § 2.1205. Initial Scheduling Order (Feb. 1, 2005) at 3.

for summary disposition set forth in subpart G. *Id.* § 2.1205(c). The standards for summary disposition under Subpart G are set forth in 10 C.F.R. § 2.710, which states that the “presiding officer shall render the decision sought if . . . there is no genuine issue as to any material fact and . . . the moving party is entitled to a decision as a matter of law.” *Id.* § 2.710(d)(2). Entergy satisfies the Commission’s requirements for summary disposition of DPS Contention 6 because there is no genuine issue of disputed fact that would require a hearing and Entergy is entitled to a favorable decision as a matter of law.

NRC rules “long have allowed summary disposition in cases where there is no genuine issue as to any material fact and where the moving party is entitled to a decision as a matter of law.” *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), CLI-01-11, 53 NRC 370, 384 (2001) (internal quotations omitted). Commission case law is clear that for there to be a genuine issue, “the factual record, considered in its entirety, must be enough in doubt so that there is a reason to hold a hearing to resolve the issue.” *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), LBP-83-46, 18 NRC 218, 223 (1983). Summary disposition “is a useful tool for resolving contentions that . . . are shown by undisputed facts to have nothing to commend them.” *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-01-39, 54 NRC 497, 509 (2001). Lacking any genuine factual dispute, DPS Contention 6 clearly has “nothing to commend” it for further litigation in this proceeding.

B. There Is No Factual Dispute Requiring Litigation

There remains no genuine issue as to any material fact relevant to DPS Contention 6. DPS asserted as the sole factual basis for the contention that Entergy had failed to “verify the assumption, used for purposes of the safe shutdown capability analysis, that the reactor core isolation system can be made operable in sufficient time to permit the operator to perform the required actions before core uncover .” DPS Request at 1. The scope of DPS Contention 6 was properly limited by the Board to whether (1) Entergy had performed the verification and whether

(2) Entergy had submitted the results of the verification to NRC. Order at 7.¹³ Neither issue presents a genuine factual dispute.

As discussed above, Entergy completed the verification by individually training its six VY operator crews, and then having each of the crews perform the required actions, all in accordance with documented procedures. See Exhibits 2-6 hereto. Entergy submitted the verification results to NRC by letter dated December 8, 2004. VY Verification Letter, Exhibit 7 hereto, at 1. Entergy has thus demonstrated that the factual bases underpinning DPS Contention 6 no longer present a genuine factual dispute requiring further litigation to resolve.

C. Entergy is Entitled to a Favorable Decision as a Matter of Law

It is well established that, when an intervenor's contention in an NRC proceeding has been rendered moot, a party moving for the dismissal of that contention is entitled to judgment in its favor as a matter of law. *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-99-23, *supra*, 49 NRC at 494 (1999). The same result should apply here. There is nothing left to litigate with respect to DPS Contention 6, and there are no facts in controversy regarding the contention that could result in the denial of Entergy's application. The contention claimed that the verification had not taken place; now it has. Accordingly, Entergy is entitled to summary disposition of DPS Contention 6 as a matter of law.

IV. CONCLUSION

DPS' assertion that Entergy's license amendment request rests on an unverified assumption has no factual basis, for the assumption has been verified. DPS Contention 6, which is

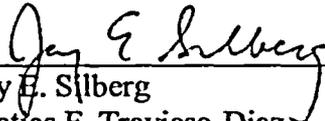
¹³ The Board "reject[ed] the State's attempt to expand the scope of this contention" beyond that "narrow" scope. Order at 7 (citing [DPS] Reply to Answer of Applicant to [DPS Request] (Nov. 17, 2004) at 4). The Board's ruling is consistent with long-standing Commission case law. Allowing DPS to broaden DPS Contention 6 at this point would be contrary to the explicit prohibition against changing the focus of an admitted contention during its litigation. See, e.g., *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28 NRC 93, 97 n.11 (1988); *Private Fuel Storage, L.L.C.* (Independent Fuel Storage Installation), LBP-99-23, 49 NRC 485, 493 (1999). DPS Contention 6, therefore, must stand and be evaluated as admitted.

based solely on that factual assertion, is therefore moot. In any event, there is no genuine dispute of material fact remaining to litigate and Entergy is entitled to a decision as a matter of law.

CERTIFICATION

In accordance with 10 C.F.R. § 2.323(b), counsel for Entergy has discussed this motion with counsel for the other parties in this proceeding in an attempt to resolve this issue.

Respectfully submitted,



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Counsel for Entergy Nuclear Vermont Yankee,
LLC and Entergy Nuclear Operations, Inc.

Dated: February 11, 2005

February 11, 2005

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of)	
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)	Docket No. 50-271
ENTERGY NUCLEAR VERMONT)	
YANKEE, LLC and ENTERGY)	ASLBP No. 04-832-02-OLA
NUCLEAR OPERATIONS, INC.)	(Operating License Amendment)
(Vermont Yankee Nuclear Power Station))	
)	

**STATEMENT OF MATERIAL FACTS
ON WHICH NO GENUINE DISPUTE EXISTS**

Applicants Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. submit, in support of their motion for summary disposition of DPS Contention 6, that there is no genuine issue to be heard with respect to the following material facts.

1. On October 18, 2004, the Vermont Department of Public Service (“DPS”) submitted its request for leave to file a new contention (“DPS Contention 6”). Vermont Department of Public Service Request for Leave to File a New Contention (Oct. 18, 2004).
2. In DPS Contention 6, DPS asserted a failure by Entergy to verify the assumption, used for purposes of the safe shutdown capability analysis (SSCA) in a 10 CFR Part 50 Appendix R event, that the reactor core isolation (“RCIC”) system can be brought into service in sufficient time to permit the operator to perform the required actions before core uncover. *Id.* at 1.
3. The scope of DPS Contention 6 is a challenge to Entergy’s failure to perform the verification and submit the verification results to NRC. Memorandum and Order (Admitting Intervenor’s New Contention) (Jan. 11, 2005) at 7.
4. Entergy developed revised procedure governing the operator actions required to bring the RCIC system into service within approximately fifteen minutes in a 10 CFR Part 50 Appendix R event. September 30, 2004 VY Operating Procedure OP 3126 (Rev. 17), “Shutdown Using Alternate Shutdown Methods” (Exhibit 2).

5. Entergy developed a training program guide to instruct the plant operators on the revised procedures. VY License Operator Requal Training Program Instructor Guide, LOR-24-405-2, Rev. 0, October, 2004 (Exhibit 3).
6. All six crews of VY licensed operators received training on the revised procedures between October 18 and November 24, 2004. Daily Attendance Records for Classroom Review of 10 CFR 50 App. R and OP 3126 and Plant Walkthrough of the Time Critical Steps of OP 3126 (six sets of records, crews "A" through "F," dated October 18 through November 24, 2004) (Exhibit 4).
7. After training, each crew conducted a timed walkthrough of the actions needed to bring the RCIC system into service to demonstrate that the crew was able to carry out the revised procedures within the time allowed. Narrative descriptions of timed walkthroughs of actions required by OP 3126 (six narratives, crews "A" through "F," dated October 20, 2004 through November 22, 2004) (Exhibit 5).
8. The walkthroughs confirmed the ability of each of the six crews to start injection using the RCIC system within approximately fifteen minutes. *Id.*; Memorandum from John Twarog to Chris Wamsler, dated December 7, 2004, re Response to BVY 04-107 "Additional Information Related to the 10 CFR 50 Appendix R Timeline" (Exhibit 6).
9. Entergy completed the verification program by the December 1, 2004 deadline it had committed to the NRC. Letter from Jay Thayer, Site Vice President, to U.S.N.R.C., "Vermont Yankee Nuclear Power Station Technical Specification Proposed Change No. 263 – Supplement No. 22 Extended Power Uprate – 10 CFR 50 Appendix R Timeline Verification" BVY 04-131 (Dec. 8, 2004) at 1 (Exhibit 7).
10. On December 8, 2004, Entergy notified NRC by letter of the completion and the results of the verification. *Id.*
11. The December 8, 2004, Entergy letter to the NRC is available on ADAMS at Accession Number ML043510227.

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NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

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ENTERGY NUCLEAR VERMONT)	Docket No. 50-271
YANKEE, LLC and ENTERGY)	
NUCLEAR OPERATIONS, INC.)	ASLBP No. 04-832-02-OLA
(Vermont Yankee Nuclear Power Station))	(Operating License Amendment)
)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "Entergy's Motion to Dismiss as Moot, or in the Alternative, for Summary Disposition of Department of Public Service Contention 6" and "Statement of Material Facts on Which no Genuine Dispute Exists" were served on the persons listed below by deposit in the U.S. Mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 11th day of February, 2005.

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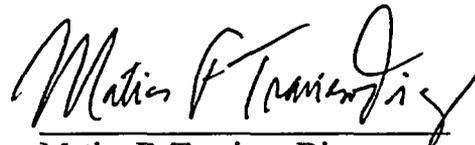

Matias F. Travieso-Diaz

Exhibit 1



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Oct 11 3 17 PM '04

September 30, 2004

Docket No. 50-271
BVY 04-107
TAC MC0761

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**Subject: Vermont Yankee Nuclear Power Station
Technical Specification Proposed Change No. 263 – Supplement No. 17
Extended Power Uprate – Response to Request for Additional Information
related to the 10 CFR 50 Appendix R Timeline.**

Reference: 1) Vermont Yankee Nuclear Power Station, "Technical Specification Proposed Change No. 263 – Extended Power Uprate," BVY 03-80, September 10, 2003

This letter provides additional information in support of the application by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy) for a license amendment to increase the maximum authorized power level of the Vermont Yankee Nuclear Power Station (VYNPS) from 1593 megawatts thermal (MWT) to 1912 MWT.

Based on telecoms with NRC staff, additional information related to Vermont Yankee's (VY) capability to mitigate a 10 CFR50 Appendix R fire event as discussed in Attachment 4 to Reference 1) was requested.

The additional information is as follows.

VY's EPU submittal documented that the time to core uncover as a result of EPU was changed from 25.3 minutes to 21.3 minutes and stated that there is sufficient time available for the operator to perform the required actions. This statement is based on the current Safe Shutdown Capability Analysis (SSCA) assumption that the Reactor Core Isolation Cooling (RCIC) system can be made operable in approximately 15 minutes. VY has revised the procedure governing operator actions and is in the process of verifying this assumption. This verification as well as training of operations crews will be completed by December 1, 2004.

This letter provides a commitment to verify the time assumed in the SSCA and complete operator training by December 1, 2004.

NRC Docket No. 50-271
ASLBP No. 04-832-02-OLA

DPS Exhibit 38
3 Pages

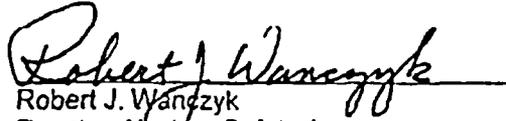
This supplement to the license amendment request provides additional information to update Entergy's application for a license amendment and does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

If you have any questions or require additional information, please contact Mr. James M. DeVincentis at (802) 258-4236.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 30, 2004.

Sincerely,


Robert J. Wanczyk
Director, Nuclear Safety Assurance
Vermont Yankee Nuclear Power Station

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VT Department of Public Service
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Exhibit 2

VERMONT YANKEE NUCLEAR POWER STATION

OPERATING PROCEDURE

OP 3126

REVISION 17

SHUTDOWN USING ALTERNATE SHUTDOWN METHODS

USE CLASSIFICATION: CONTINUOUS

RESPONSIBLE PROCEDURE OWNER: Manager, Operations

REQUIRED REVIEWS		Yes/No
E-Plan	10CFR50.54(g)	No
Security	10CFR50.54(p)	No
Probable Risk Analysis (PRA)		No
Reactivity Management		No

LPC No.	Effective Date	Affected Pages
1	12/17/04	App C Pgs 2 & 3 of 9
2	12/20/04	App C Pg 4 of 9

Implementation Statement: N/A

Effective Date: 09/30/04

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PURPOSE

The purpose of this procedure is to outline those actions necessary to safely shutdown the plant in the event that the Control Room must be evacuated, or there is a fire in the cable vault or other plant area affecting the operation of equipment needed for a safe shutdown.

DISCUSSION

The Shift Manager is authorized to implement this procedure if it is determined the reactor must be shut down from outside the Control Room. This determination is based upon actual or possible events that have occurred or could occur. Events such as a fire in the Cable Vault or the Control Room, that affect equipment control, toxic gas intrusion that affects Control Room habitability, or threat of a bomb in the Control Room, could require entry into this procedure. Since implementation of this procedure ultimately will result in a Site Area Emergency it should be declared concurrently with implementation.

If a sufficient amount of time exists in an emergency, actions should be taken by Control Room personnel to mitigate the emergency prior to abandoning the Control Room by proceeding as far as possible in achieving a cold shutdown using OP 0105.

The three basic objectives of this procedure are the following:

- a. Scram and isolate the reactor.
- b. Use RCIC and SRVs or LPCI and SRV-71A and/or 71B to control reactor level and pressure after the initial transient.
- c. Use the RHR system to cool the Torus and, when possible, for shutdown cooling.

Should the Control Room or cable vault be inaccessible for an extended period of time, this procedure provides direction for a complete plant cooldown. Switches, local control panels, and alternate power sources have been provided to permit the reactor to be shut down without reliance on the Control Room or the cable vault. The resources available to accomplish a reactor shutdown by alternate means include the RCIC system (with its alternate shutdown panels), the A RHR system (with its alternate shutdown panel), the Vernon Tie and "A" Diesel Generator, and the support equipment for these systems. The Vernon Tie is the preferred power source. The Appendices to this procedure contain supplements which provide instructions for non-routine events.

The alternate shutdown panels for RCIC are located on the 252' level of the reactor building (by RCIC door) and on the 213' level in the RCIC corner room. The RHR alternate shutdown panel is located on the 280' level of the reactor building. The Vernon Tie is controlled from the Switchgear Rooms during alternate shutdown. The "A" Diesel Generator is controlled from the "A" Diesel Generator Room. The location of other components used for alternate shutdown are identified in the appendices.

The alternate shutdown system is designed with the intent that either the RCIC alternate shutdown subsystem is used to control reactor water level with the aid of the SRVs for reactor pressure control, or the reactor depressurized using the SRVs and the RHR system used to control reactor level. The RHR alternate shutdown system can be utilized for Torus cooling, shutdown cooling and for reactor level control. The Vernon Tie is used to provide power to Bus 4 after the bus has been isolated from outside power sources.

This procedure is designed to be implemented with a minimum shift complement to safely shutdown the plant from outside the Control Room. However, during such an event all possible courses of the event can not be described in a procedure. Shift personnel are expected to use this procedure to the extent possible to reach a safe shutdown condition. Those actions that, in the opinion of the Shift Manager, are not needed do not have to be accomplished. Personnel assignments and procedural steps may be combined at the discretion of the Shift Manager.

ATTACHMENTS

- | | | |
|----|------------|--|
| 1. | Appendix A | Amplifying Information for Operator #1 |
| 2. | Appendix B | Amplifying Information for Operator #2 |
| 3. | Appendix C | Amplifying Information for Operator #3 |
| 4. | Appendix D | Amplifying Information for Operator #4 |
| 5. | Appendix E | Amplifying Information - Miscellaneous |
| 6. | Appendix F | Instructions for RHR-18 Alternate Power Connection |

QA REQUIREMENTS CROSS REFERENCE

1. None

REFERENCES AND COMMITMENTS

1. Technical Specifications and Site Documents
 - a. None
2. Codes, Standards, and Regulations
 - a. None

3. Commitments

- a. EPC_9502, Assess Memo RLS to DCP, "Review of Service Water System As It Pertains To Appendix R", dated 12/20/94
- b. NVY94084_03, "RE: BVY 94-90, Encl. A; Thermal Hydraulic Stability - Develop Procedures to Provide Operators Guidance"
- c. PFI 9409102, Revise Procedures To Reflect The Need To Monitor Diesel Generator Fuel Usage As The Site Does Not Have Enough Fuel Oil On Site To Run The Diesels For Seven Days At 2750KW
- d. VYC0706R01_04, Revise Appendix C to Transfer RCIC Suction at >7% CST Level

4. Supplemental References

- a. DWG G-191376, Sound Powered Telephone Drawing
- b. ER 99-0548, OP 3126 Procedure Different than App. R Analysis
- c. Memo, P.A.R to J.D., VYS 83/97, "Proposed Response For Resolving NRC RAI On RHR/CS Pump Minimum Flow", dated 8/6/97
- d. Memo, P.A.R to S.R.M, VYS 21/94, "Service Water System Water Hammer", dated 2/18/94
- e. NRC Letter to D.A. Reid, VYNPS Appendix R Exemptions, dated 8/12/97
- f. VYC-1507, Appendix R Safe Shutdown Analysis for Vermont Yankee Nuclear Power Station
- g. VYC-1522 Rev. 0, "Drywell Spray Initiation Limits for Containment Temperature Control for Appendix R Alternate Shutdown"
- h. OP 0105, Reactor Operations
- i. OP 0109, Plant Restoration
- j. OP 2126, Diesel Generators
- k. OT 3122, Loss of Normal Power
- l. OP 3504, Emergency Communications
- m. OP 3540, Control Room Actions During an Emergency

PRECAUTIONS/LIMITATIONS

- 1. Placing the RCIC, RHR, 4KV/480V Switchgear, or the DG transfer switches in EMER removes control function from the Control Room and defeats most automatic functions and system interlocks.
- 2. The Vernon Tie should be placed in service or the "A" Diesel Generator should be started as soon as possible to provide LPCI capability in the event an SRV opens.
- 3. RHR pump operation in the minimum flow mode should be minimized. (Memo VYS 83/97)

4. The ability to communicate is necessary for the performance of this procedure. It is possible that no one communications method will be successful in all situations. Listed below in order of preference are the methods available to the shutdown crew:
 - a. Radios
 - b. Sound-powered phones
 - c. Gai-Tronics
 - d. Runners
5. A Cardox system actuation due to a fire in the Cable Vault will result in an evacuation of the Administration Building lower level per OP 3020. Operators may safely transit from the Control Room to the Switchgear Rooms to implement this procedure. Operators exiting the Switchgear Rooms during the performance of this procedure shall exit through either the double doors to the Turbine Building or East (outside) door of the East Switchgear Room until such time that the habitability of the Administration Building has been determined to be acceptable for re-entry.
6. If normal shutdown cooling is not available within 72 hours, it will be necessary to establish a shutdown cooling flowpath using LPCI mode through the "A" SRV.

PROCEDURE

1. Assignment of Fire Emergency Responsibilities
 - a. Fire Emergency declared:
 - ? Operator #1 SSM
 - ? Operator #2 SCRO
 - ? Operator #3 CRO
 - ? Operator #4 ACRO

2. **Automatic Actions**

- a. In the event of a fire in the cable vault, the Cardox system in that room should initiate.
- b. Depending on the casualty, the sections of the plant affected and the manner in which the casualty progresses, various automatic actions may or may not occur as intended or they may occur inadvertently.

3. **Initial Actions**

- a. **Using the Gai-Tronics paging mode, declare a Site Area Emergency due to evacuation of the Control Room and shutdown by alternate shutdown methods.**
- b. **Request the Chemistry Technician to implement the initial State and NRC notification requirements of the E-Plan from the TSC per OP 3540, Appendix A, States and NRC Notification For a Control Room Evacuation Event.**
- c. **Perform the following before leaving the Control Room:**
 - 1) **Manually scram the reactor**
 - 2) **Trip the "A" and "B" Recirc Pumps.**
 - 3) **Close all the MSIVs.**
 - 4) **Place ADS bypass switch to "BYPASS".**
 - 5) **Place the "A" RHR Pump control switch in Pull-to-Lock**
 - 6) **Place the HPCI Aux Oil Pump control switch in Pull-to lock**
 - 7) **Place the Reactor Feed Pump control switches in Pull-to-Lock**
 - 8) **Take the portable radios and keyrings when the Control Room is abandoned.**

4. **Subsequent Actions**

- a. Perform the appropriate actions on the alternate shutdown methods appendices.
- b. Monitor Fuel Oil Storage Tank level and make arrangements for fuel oil deliveries as necessary. (PFI9409102)

FINAL CONDITIONS

1. Reactor level 175-185 inches.
2. Reactor temperature 100-212°F.

APPENDIX A

AMPLIFYING INFORMATION FOR OPERATOR #1

NOTE

Peer checking is not required while performing this appendix.

1. **At 4KV Bus 1:**
 - a. **Remove the "CLOSE" fuses for and open/check open REACTOR FEED WATER PUMP P-1-1A breakers (Bus-1-4).**
 - b. **Remove the "CLOSE" fuses for and open/check open REACTOR RECIRC MG SET MG-1-1A breakers (Bus-1-5).**
 - c. **Remove the "CLOSE" fuses for and open/check open REACTOR FEED WATER PUMP P-1-1B breakers (Bus-1-6).**
2. **At 4KV Bus 2:**
 - a. **Remove the "CLOSE" fuses for and open/check open REACTOR RECIRC MG SET MG-1-1B DRIVE breaker (Bus-2-5).**
 - b. **Remove the "CLOSE" fuses for and open/check open REACTOR FEED WATER PUMP P-1-1C breaker (Bus-2-4).**
3. **Assist Operator #4 in restoring power to 4KV Bus 4 and 480V Bus 9 per Appendix D.**
4. **Exit Switchgear Room through the double doors to the Turbine Building.**
5. **At CP-82-3:**
 - a. **Open/check open RCIC-15**
 - b. **Open/check open RCIC-16**

APPENDIX A (Continued)

WARNING

IF THE CARDOX SYSTEM FOR THE CABLE VAULT HAS ACTUATED, EXIT THE SWITCHGEAR ROOMS THROUGH EITHER THE DOUBLE DOORS INTO THE TURBINE BUILDING, OR OUT THE EAST (OUTSIDE) DOOR OF THE EAST SWITCHGEAR ROOM UNTIL SUCH TIME THAT THE HABITABILITY OF THE ADMINISTRATION BUILDING HAS BEEN DETERMINED TO BE ACCEPTABLE FOR RE-ENTRY.

6. Contact Operator #2 and determine that all Appendix R transfer switches at CP-82-2 have been transferred to the EMERGENCY position.
7. At ECCS 24VDC DISTRIBUTION PANEL B (located directly outside FPC Heat Exchanger Room):
 - a. Open the circuit breaker from ECCS POWER SUPPLY ES-24DC-2 at 24VDC-7.
 - b. Close the APPENDIX R POWER SUPPLY ES-24DC-3 at 24VDC-6.
8. Establish a Command and Control Center at the RHR ALTERNATE CONTROL SYSTEM CP-82-2.
9. Contact Operator #3 for operation status of RCIC, and for initial Reactor and Containment parameters.
10. Direct Operator #2 to place "A" RHR in Torus Cooling per Appendix B.
11. Once Plant conditions are stable, direct Operator #3 to commence a plant cooldown at a rate of 80 to 100°F/Hr using SRV-71A or SRV-71B per Appendix C.
12. If nitrogen was lost to the Containment Air System, direct Operator #4 restore nitrogen per OP 2191.
13. When reactor pressure reaches 650-700 psig as read on PT-2-3-56A(M) on CP-25-6B, direct Operator #4 in the Switchgear Room to open/verify open all Condensate Pump breakers.
14. When Reactor Pressure is reduced to less than 100 psig as read on PT-2-3-56A(M) ON CP-25-6B, direct Operator #2 to establish shutdown cooling per Appendix B.
15. Monitor Reactor Water Level on LT-2-3-73A(M) on CP-25-6B.

APPENDIX A (Continued)

16. If vessel level is at or below TAF, perform the following:
 - a. Verify with Operator #2 that "A" RHR is operating in the Torus Cooling Mode.
 - b. Direct Operator #3 to open SRV-71A and SRV-71B.
 - c. When Reactor Pressure decreases below 280 psig as read on PT-2-3-56A(M) on CP-25-6B, direct Operator #2 to, perform the following:
 - 1) Open/check open RHR V10-25A INBOARD INJECTION VALVE.
 - 2) Open RHR V10-27A OUTBOARD INJECTION VALVE.
 - 3) Close RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 4) Restore Reactor water level to 130" to 170" as indicated by LT-2-3-73A(M) on CP-25-6B.
 - 5) Open RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 6) Close RHR V10-27A OUTBOARD INJECTION VALVE.
 - d. Maintain vessel level 130" to 170" by operating RHR-34A and RHR-27A to inject to the vessel.
 - e. Direct Operator #2 to establish shutdown cooling per Appendix B.
17. If elevated Torus pressure affects RCIC operation, then:
 - a. Direct Operator #2 to start the "A" RHR system in the Torus Cooling Mode.
 - b. Direct Operator #3 to open SRV-71A and SRV-71B.

APPENDIX A (Continued)

- c. When reactor pressure decreases below 280 psig as read on PT-2-3-56A(M) on CP-25-6B, direct Operator #2 to perform the following:
 - 1) Open/check open RHR V10-25A INBOARD INJECTION VALVE.
 - 2) Open RHR V10-27A OUTBOARD INJECTION VALVE.
 - 3) Close RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 4) Restore Reactor water level to 130" to 170" as indicated by LT-2-3-73A(M) on CP-25-6B.
 - 5) Open RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 6) Close RHR V10-27A OUTBOARD INJECTION VALVE.
 - d. Maintain vessel level 130" to 170" by operating RHR-34A and RHR-27A to inject to the vessel.
 - e. Direct Operator #2 to establish shutdown cooling per Appendix B.
18. If Drywell air space temperature exceeds 325°F as read on TI-16-19-42A (CP-82-1), then:
- a. Direct Operator #2 to start the "A" RHR system in the Torus Cooling Mode.
 - b. Direct Operator #3 open SRV-71A and SRV-71B.
 - c. When reactor pressure decreases to less than 280 psig as read on PT-2-3-56A(M) on CP-25-6B, direct Operator #2 to perform the following:
 - 1) Open/check open RHR V10-25A INBOARD INJECTION VALVE.
 - 2) Open RHR V10-27A OUTBOARD INJECTION VALVE.
 - 3) Close RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 4) Restore Reactor water level to 130" to 170" as indicated by LT-2-3-73A(M) on CP-25-6B.
 - 5) Open RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 6) Close RHR V10-27A OUTBOARD INJECTION VALVE.

APPENDIX A (Continued)

- d. Maintain vessel level 130" to 170" by operating RHR-34A and RHR-27A to inject to the vessel.
 - e. Direct Operator #2 to establish shutdown cooling per Appendix B.
19. Once the plant is in a stable condition, direct available personnel to perform the following:
- a. Close SW-261, SW supply to SFPC, 303' level north of RBCCW HXs.
 - b. Isolate instrument air to Drywell ventilation valves:
 - 1) Close IA-24E (Rx Bldg 303' level east of RBCCW HXs).
 - 2) Close IA-24F (Rx Bldg 303' level east of RBCCW HXs).
 - c. Open IA V72-126, IA accumulator #11 drain, Rx Bldg 303' level near RBCCW pumps.
 - d. Close VG-8A, CAD vent from the Drywell, Rx Bldg 303' level near RBCCW pumps.
 - e. Close CU V12-73A, "A" RCU Pump suction valve, "A" CU Pump Room 280' level.
 - f. Close CU V12-73B, "B" RCU Pump suction valve, "B" CU Pump Room 280' level.
 - g. Close VNP V-16-19-63, N2 makeup to Drywell/Torus, Rx Bldg 252' level Makeup Trim Heater.
 - h. Close RHR-192B, "B" RHR HX service water outlet, SE Corner Room 232' level.
 - i. Isolate instrument air to the Torus ventilation valves:
 - 1) Close IA-66C (Torus Catwalk north).
 - 2) Close IA-66D (Torus Catwalk north).
 - j. Open IA-127, IA accumulator #12 drain, Torus Catwalk north.
 - k. Close VG-8B, CAD vent from the Torus, Torus Catwalk north.
 - l. Isolate instrument air to containment ventilation valves:
 - 1) Close IA-66A (Torus Catwalk south).
 - 2) Close IA-66B (Torus Catwalk south).
 - m. Open IA-128, IA accumulator #13 drain, Torus Catwalk south.

APPENDIX A (Continued)

- n. Close/check closed RHR V10-183, RHRSW-RHR Emergency Fill, NE Corner Room 232' level.
 - o. Close/check closed RHR V10-184, RHRSW-RHR Emergency Fill, NE Corner Room 232' level.
 - p. Open the ACB for HPCI MINIMUM FLOW VALVE 23-25 (MCC-DC-1B).
 - q. Manually close/check closed HPCI V23-25 HPCI Minimum Flow Valve, HPCI Corner Room 213' level.
20. When additional personnel are available, restore Fuel Pool Cooling by performing the following:
- a. Obtain permission from the Shift Manager to perform the wiring change.
 - b. Have Maintenance personnel perform the following:

	/	
_____	_____	_____
Authorized By		Date

- 1) At 480V MCC-9B compartment 1M, open the ACB for SFPC PUMP P-19-2A.
- | | | |
|--------------|-------|-------------|
| | _____ | |
| _____ | _____ | _____ |
| Performed by | | Verified by |
- 2) Disconnect cable C11223CSII in P-19-2A breaker cubicle (see CWD 1223).
- | | | |
|--------------|-------|-------------|
| | _____ | |
| _____ | _____ | _____ |
| Performed by | | Verified by |
- 3) Install jumper between terminals 3 and 5 on the terminal block.
- | | | |
|--------------|-------|-------------|
| | _____ | |
| _____ | _____ | _____ |
| Performed by | | Verified by |
- 4) If necessary, replace 3 amp control circuit fuse.

- c. Open/check open SW ISOL TO SFPCS SW-261, Rx Bldg 303' level north of RBCCW HXs.
- d. Open SFPC Hx 2A SW Outlet SW-257A, (Maintenance assistance may be required to operate this valve).
- e. At 480V MCC-9B, close the SFPC PUMP P-19-2A ACB.

APPENDIX A (Continued)

NOTE

The restoration of Drywell ventilation will be dependent upon plant conditions. It is expected that the TSC will support this and other plant restoration activities as required.

21. Perform the following and maintain the conditions established until normal shutdown cooling is available and a Drywell ventilation flow path has been restored.
 - a. Direct Operator #2 to start the "A" RHR system in the Torus Cooling Mode.
 - b. Direct Operator #3 to open SRV-71A and SRV-71B.
 - c. Maintain vessel level 130" to 170" by operating RHR-34A and RHR-27A to inject into the vessel as follows:
 - 1) Open/check open RHR V10-25A INBOARD INJECTION VALVE.
 - 2) Open RHR V10-27A OUTBOARD INJECTION VALVE.
 - 3) Close RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 4) Restore Reactor water level to 130" - 170" as indicated by LT-2-3-73A(M) on CP-25-6B.
 - 5) Open RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - 6) Close RHR V10-27A OUTBOARD INJECTION VALVE.

NOTE

A rapid decrease in pressure and temperature is anticipated when Drywell sprays are initiated. Expect the Reactor Building to Torus vacuum breakers to open under these conditions.

- d. If Drywell temperature exceeds 260°F as read on TI-16-19-42A, perform the following:
 - 1) Direct Operator #2 to place the "A" RHR system in the Torus Cooling Mode.
 - 2) Manually open RHR V10-26A
 - 3) Manually open RHR V10-31A.

APPENDIX A (Continued)

- 4) When Drywell temperature is reduced below 200°F as read on TI-16-19-42A,
 - a) Manually close RHR V10-26A
 - b) Manually close RHR V10-31A.
- 5) Repeat Steps d.1) through d.4) above as necessary until shutdown cooling is established and Drywell temperature remains less than 260°F.

APPENDIX B

AMPLIFYING INFORMATION FOR OPERATOR #2

NOTE

Peer checking is not required while performing this appendix.

1. On the mezzanine above TIP Room:
 - a. Close air supply valves:
 - ? IA-28A
 - ? IA-28B
 - b. Open air header vent valves:
 - ? IA-28D
 - ? IA-28E
2. At the CRD flow control station:
 - a. Close CRD CHARGING WATER HEADER SUPPLY CRD-56.
3. On IAC panel A:
 - a. Open ckt. #4 (Rx Bldg 252' behind elevator).
4. At CP-82-2, RHR ALTERNATE SHUTDOWN SYSTEM:
 - a. Position the four RHR ALTERNATE SHUTDOWN TRANSFER switches to EMER in the following sequence.
 - 1) SS1315A
 - 2) SS1315B
 - 3) SS1315C
 - 4) SS1315D
 - 5) If power is not available on the panel or to some valves, replace the fuses as described in Appendix E.

APPENDIX B (Continued)

5. At the Recirc MG foam system:
 - a. Close RECIRC MG FOAM DELUGE ISOL FP V76-312.
6. At MCC-8B:
 - a. Open V10-66 RHR DISCHARGE TO RADWASTE ISOL. VALVE breaker (MCC-8B-1C).
 - b. Open EMERG. INTERTIE VALVE V10-183 breaker (MCC-8B-2F).
 - c. Open MAIN STEAM DRAIN INBOARD VALVE V2-74 breaker (MCC-8B-6G).
7. At MCC-7A:
 - a. Open CLEANUP RECIRC PUMP P49-1A breaker (MCC-7A-1M).
8. At MCC-DC-2A:
 - a. Open MAIN STEAM LINE DRAIN VALVE V2-77 breaker (DC-2A-4K).
9. At MCC-9B:
 - a. Open CONT. SPRAY OUTBOARD INJECT VALVE V10-26A breaker (MCC-9B-4J).
 - b. Open EMERG. INTERTIE VALVE V10-184 breaker (MCC-9B-10M).
10. At MCC-6A:
 - a. Open CLEANUP RECIRC PUMP P49-1B breaker (MCC-6A-3G).
11. On Torus catwalk NE:
 - a. Close/check closed RHR V10-66.
12. At Rx Bldg 252' level by North HCUs:
 - a. Close/check closed RHR V10-26A.
13. At MCC-89A, in the following sequence:
 - a. Open FEED FROM UPS 1-A breaker (MCC-89A-4A).
 - b. Close FEED FROM MCC-9B breaker (MCC-89A-1A).

APPENDIX B (Continued)

14. Return to the RHR ALTERNATE CONTROL SYSTEM CP-82-2 and notify Shift Manager of completion to this point.
15. Operate RHR in the required mode per Shift Manager direction.

CAUTION

Opening RHR-89A beyond 40 secs. may result in excessive service water flow through the RHR heat exchanger.

- a. Torus Cooling Mode/LPCI Mode
 - 1) Close/check closed RHR-192B, RHR Hx "B" SW outlet, (SE Corner Room 232' level).
 - 2) Establish the following valve line-up on CP-82-2:
 - a) Close/verify closed the following:
 - ? RECIRC V2-43A RECIRC PUMP A SUCTION VALVE (ER990548)
 - ? RHR V10-27A OUTBOARD INJECTION VALVE
 - ? RHR V10-15A RECIRC SUPPLY TO PUMP SUCTION VALVE
 - ? SERVICE WATER V70-20 TURB. BLDG. CLG. WTR. VALVE
 - b) Open/verify open the following:
 - ? RHR V10-39A SUPP. CHAMBER SPRAY UPSTREAM VALVE
 - ? RHR V10-65A HT. EXCHANGE BYPASS VALVE
 - ? RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE
 - ? RHR V10-89A SERVICE WATER DISCHARGE VALVE (Throttle open for 30 to 40 seconds)
 - ? RHR V10-13A TORUS TO PUMP SUCTION VALVE

APPENDIX B (Continued)

NOTE

If Buses 4 and 9 are energized from "A" Diesel Generator or the Vernon Tie, Torus cooling may commence using the RHR alternate shutdown panel.

- 3) Request Operator #4 start the following pumps from the Switchgear Room:
 - a) STATION SERVICE WATER PUMP P-7-1A (4KV Bus 4-10).
 - b) STATION SERVICE WATER PUMP P-7-1C (4KV Bus 4-2).
 - c) RHR SERVICE WATER PUMP P-8-1A or P-8-1C (4KV Bus 4-11 or 4-7).
 - d) RH REMOVAL PUMP P-10-1A (4KV Bus 4-5).
- 4) Adjust RHR V10-89A SERVICE WATER DISCHARGE VALVE to maintain >20 psid across the RHR heat exchanger as read on PI-10-91C.

NOTE

Torus temperature is monitored at CP-82-1 RCIC ALTERNATE SHUTDOWN SYSTEM.

- 5) Throttle RHR V10-65A HT. EXCHANGE BYPASS VALVE as necessary to control Torus cooling.
- 6) When directed by the Shift Manager, inject to the reactor vessel:
 - a) Open/check open RHR V10-25A INBOARD INJECTION VALVE.
 - b) Open RHR V10-27A OUTBOARD INJECTION VALVE.
 - c) Close RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
- 7) Restore vessel level to 130" to 170" as indicated by LT-2-3-73A(M) on CP-25-6B.

APPENDIX B (Continued)

- 8) Re-establish Torus cooling as follows:
 - a) Open RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - b) Close RHR V10-27A OUTBOARD INJECTION VALVE.
- 9) Maintain vessel level 130" - 170" or establish Torus cooling as follows:
 - a) Use RHR V10-27A OUTBOARD INJECTION VALVE for injection.
 - b) Use RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE for Torus cooling.
- 10) When directed by the Shift Manager to establish shutdown cooling:
 - a) Raise reactor water level using the LPCI mode until level reaches 180" to 190" as read on LT-2-3-73A(M) on CP-25-6B.
 - b) Close/check closed RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE.
 - c) Close/check closed RHR V10-27A OUTBOARD INJECTION VALVE.
 - d) Request Operator #4 in Switchgear Room to Secure RH REMOVAL PUMP P-10-1A.
 - e) Proceed to Step 15.b for Shutdown Cooling mode.

APPENDIX B (Continued)

b. Shutdown Cooling Mode

NOTE

If necessary, RHR-18 may be energized by cable connection from MCC-9B to MCC-8B per Appendix F. The required cable for this connection is located in a junction box above MCC-8B on the 280' level. A ladder will be required to reach this junction box. This task should only be performed by qualified maintenance personnel.

- 1) Establish shutdown cooling by performing one of the following:
 - a) If RHR-18 is operable or power can be restored to RHR-18, proceed to Step 15.b.2).
 - b) If power cannot be restored to RHR-18 within 72 hours, proceed to Step 15.b.19).
- 2) Open the following ACBs:
 - a) RHR PUMPS P10-1A & 1C MIN FL BYPASS VA V10-16A (MCC-9B-10J)
 - b) RECIRC SUPPLY TO PUMP P10-1C SUCT VA V10-15C (MCC-9B-7J)
 - c) RECIRC. SUPPLY TO PUMP P10-1B SUCT VALVE V10-15B (MCC-8B-5C)
 - d) RECIRC. SUPPLY TO PUMP P10-1D SUCT VALVE V10-15D (MCC-8B-5F)
- 3) Close/check closed the following valves:
 - a) RHR V10-16A (NE Corner Room 213' level)
 - b) RHR V10-15C (NE Corner Room 213' level)
 - c) RHR V10-15B (SE Corner Room 213' level)
 - d) RHR V10-15D (SE Corner Room 213' level)

APPENDIX B (Continued)

- 4) If RBCCW is not operating, line up alternate cooling to "A" RHR Pump by performing the following:
 - a) Close RCW V70-32A RBCCW CLG TO RADWASTE AND A/C RHR PUMPS (Torus area east, 213' level).
 - b) Open SW V70-32B ALT CLG TO RADWASTE AND A/C RHR PUMPS (Torus area east, 213' level).
 - c) Close/check closed RCW V70-28 RCW-28A BYPASS (Torus catwalk east).
 - d) Close RCW V70-28A RHR/CRD PUMP COOLERS AND RADWASTE RETURN (Torus catwalk east).
 - e) Open SW V70-29 RBCCW ALT CLG SW RETURN TO COOLING TOWER (Torus catwalk east).
 - f) Open RCW-29A (Torus catwalk east).
 - g) Throttle open 2 turns SW V70-36B SW LOOP B CROSS CONN TO ALT COOLING (Torus catwalk east).
- 5) Verify reactor pressure is less than 100 psig as read on PT-2-3-56A(M) on CP-25-6B.
- 6) If necessary, have Maintenance personnel install cable connection from junction box to MCC-8B at RHR-18 valve compartment per Appendix F.
- 7) Using a #50 key, unlock and reposition RHR REACTOR S/D COOLING ISOLATION VALVES OPEN PERMISSIVE RHR-17 RHR-18 (CS1308) to "OPEN PERM". (Radwaste Corridor)
- 8) Open the ACB for RHR REACTOR SHUTDOWN COOLING ISOL VALVE V10-17 (MCC-DC-2A).
- 9) In the Drywell Ante-room, bleed the pressure off the bonnet on RHR-17 as follows:
 - a) Remove the pipe cap and open RHR-17A1.
 - b) Allow pressure to bleed off.
 - c) Shut RHR-17A1 and install the pipe cap.
- 10) Manually open RHR-17.

APPENDIX B (Continued)

- 11) Establish the following valve lineup on CP-82-2:
 - a) Close/verify closed the following:
 - ? RECIRC V2-43A RECIRC PUMP A SUCTION VALVE (ER990548)
 - ? RHR V10-27A OUTBOARD INJECTION VALVE
 - ? SERVICE WATER V70-20 TURB. BLDG. CLG. WTR. VALVE
 - ? RHR V10-39A SUPP. CHAMBER SPRAY UPSTREAM VALVE
 - ? RHR V10-13A TORUS TO PUMP SUCTION VALVE
 - ? RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE
 - b) Open/verify open the following:
 - ? RHR V10-65A HT. EXCHANGE BYPASS VALVE
 - ? RHR V10-89A SERVICE WATER DISCHARGE VALVE (Throttle open for 30 to 40 seconds)
 - ? RHR V10-25A INBOARD INJECTION VALVE
 - ? RHR V10-18 REACTOR SHUTDOWN COOLING INBOARD ISOL VALVE
 - ? RHR V10-15A RECIRC SUPPLY TO PUMP SUCTION VALVE
- 12) Open the ACB for SUPPRESS CHAMB SPRAY UPSTR. ISOL. VALVE V10-39A (MCC-9B-5J).
- 13) Request Operator #4 start the following pumps in the SWGR Room:
 - a) STATION SERVICE WATER PUMP P-7-1A (4KV Bus 4-10).
 - b) STATION SERVICE WATER PUMP P-7-1C (4KV Bus 4-2).
 - c) RHR SERVICE WATER PUMP P-8-1A or P-8-1C (4KV Bus 4-11 or 4-7).
- 14) When ready, request Operator #4 to start RH REMOVAL PUMP P-10-1A (4KV Bus 4-5).
- 15) Slowly fully open RHR V10-27A OUTBOARD INJECTION VALVE.

APPENDIX B (Continued)

NOTE

Local reactor water temperature indication is not available. TSC assistance can help determine cooldown rate.

- 16) Throttle RHR V10-65A HT. EXCHANGE BYPASS VALVE as necessary to control the cooldown rate.
 - a) If RHR V10-65A HT. EXCHANGE BYPASS VALVE is fully open and additional control of the cooldown rate is desired, unlock and throttle HX INLET VALVE RHR V10-23A as necessary (NE Corner Room. 213' level).
- 17) Once cold shutdown is achieved, maintain reactor coolant temperature between 100 – 212°F.
- 18) If it is necessary to provide makeup water to the vessel during cooldown, request assistance from the TSC to determine the sources and flowpaths available.
- 19) If power to RHR-18 is not available and shutdown cooling is required then perform the following:
 - a) Request Operator #3 at RCIC place the control switch for SRV-71A to OPEN.
 - b) Establish the following valve line-up on CP-82-2:
 - (1) Close/verify closed the following:
 - ? RECIRC V2-43A RECIRC PUMP A SUCTION VALVE (ER990548)
 - ? RHR V10-27A OUTBOARD INJECTION VALVE
 - ? SERVICE WATER V70-20 TURB. BLDG. CLG. WTR. VALVE
 - ? RHR V10 39A SUPP. CHAMBER SPRAY UPSTREAM VALVE
 - ? RHR V10-34A SUPP. CHAMBER SPRAY BYPASS VALVE
 - ? RHR V10-15A RECIRC SUPPLY TO PUMP SUCTION VALVE

APPENDIX B (Continued)

- (2) Open/verify open the following:
 - ? RHR V10-65A HT. EXCHANGE BYPASS VALVE
 - ? RHR V10-89A SERVICE WATER DISCHARGE VALVE
(Throttle open for 30 to 40 seconds)
 - ? RHR V10-25A INBOARD INJECTION VALVE
 - ? RHR V10-13A TORUS TO PUMP SUCTION VALVE

- c) Request Operator #4 start the following pumps from the Switchgear Room:
 - (1) STATION SERVICE WATER PUMP P-7-1A (4KV Bus 4-10).
 - (2) STATION SERVICE WATER PUMP P-7-1C (4KV Bus 4-2).
 - (3) RHR SERVICE WATER PUMP P-8-1A or P-8-1C (4KV Bus 4-11 or 4-7).
 - (4) RH REMOVAL PUMP P-10-1A (4KV Bus 4-5).

- d) Once injection has commenced, use Figure 1 of Appendix C to determine the cooldown rate by monitoring the pressure drop versus time.

- e) Throttle RHR V10-27A OUTBOARD INJECTION VALVE as necessary to establish the following conditions:
 - (1) Reactor Pressure 100 - 230 psig using PT-2-3-56A(M) (CP-25-6B).
 - (2) If Reactor pressure does not stabilize below 230 psig, request Operator #3 place the control switch for SRV-71B to OPEN.

APPENDIX B (Continued)

NOTE

Local reactor water temperature indication is not available. TSC assistance can help determine cooldown rate.

- f) Throttle RHR V10-65A HT. EXCHANGE BYPASS VALVE as necessary to control the cooldown rate at <100°F/hour.
 - (1) If RHR V10-65A HT. EXCHANGE BYPASS VALVE is fully open and additional control of the cooldown rate is desired, unlock and throttle HX INLET VALVE RHR V10-23A as necessary (NE Corner Rm. 213' level).
- g) Once Cold Shutdown is achieved, maintain Reactor coolant temperature 100-160°F.

APPENDIX C

AMPLIFYING INFORMATION FOR OPERATOR #3

NOTE

Peer checking is not required while performing this appendix.

1. **If directed by the Shift Manager, scram the reactor by performing the following:**
 - a. **Isolate the air supply to the scram air filters:**
 - 1) **Close CRD AIR FILTER S-3-27 INLET CRD-A1.**
 - 2) **Close CRD AIR FILTER S-3-27A INLET CRD-A4.**
 - b. **Open/check open CRD AIR FILTER S-3-27 OUTLET CRD-A2.**
 - c. **Open/check open CRD AIR FILTER S-3-27A OUTLET CRD-A3.**
 - d. **Depressurize the scram air header as follows (scrams the reactor only):**
 - 1) **Open CRD AIR FILTER S-3-27 DRAIN CRD-A12.**
 - 2) **Open CRD AIR FILTER S-3-27A DRAIN CRD-A13.**

NOTE

When MTS-13-1 or MTS-13-2 is positioned to EMERGENCY, the normal power supply breaker opens before the emergency power supply breaker closes.

2. **At MTS-13-2 (Rx Bldg 252' by RCIC door), perform the following:**
 - a. **Transfer 125V DC MANUAL RCIC TRANSFER SWITCH MTS-13-2 to "EMERGENCY" by turning counter-clockwise.**
 - b. **Place RCIC V13-15 STEAM SUPPLY LINE ISOL VA SHUTDOWN TRANSFER (SS1188) to "EMER" (CP-82-3).**
 - c. **Place RCIC V13-16 STEAM SUPPLY LINE ISOL VA SHUTDOWN TRANSFER (SS1189) to "EMER" (CP-82-3).**

APPENDIX C (Continued)

NOTE

At this time, power may not be available to RCIC-15. If RCIC-15 position can not be determined, continue with this procedure and verify RCIC-15 position once AC power is restored.

- d. **Open/check open RCIC V13-15 STEAM SUPPLY LINE ISOL VALVE.**
- e. **Open/check open RCIC V13-16 STEAM SUPPLY LINE ISOL VALVE.**
3. **In the HPCI Room, perform the following:**
 - a. **Open the ACB for HPCI AUX OIL PUMP P85-1A (MCC-DC-1B-4L).**
4. **At the RCIC Corner Room (Rx Bldg. 213' level) on ALTERNATE SHUTDOWN STATION ADS SAFETY RELIEF VALVES panel B1300SII perform the following:**
 - a. **Check/place SAFETY RELIEF VALVE RV2-71A control switch to CLOSE.**
 - b. **Check/place SAFETY RELIEF VALVE RV2-71B control switch to CLOSE.**
5. **At the APPENDIX R SRV ALT SHUTDOWN PANEL (RCIC Corner Room 232' level), place ADS TRANSFER, SS-752, switch to EMER.**
6. **At the RCIC Corner Room (Rx Bldg. 213' level) perform the following:**
 - a. **Transfer 125V DC MANUAL RCIC TRANSFER SWITCH MTS-13-1 to "EMERGENCY" by turning counter-clockwise.**
 - b. **At CP-82-1 RCIC ALTERNATE SHUTDOWN SYSTEM, place the three RCIC ALTERNATE SHUTDOWN TRANSFER switches to EMER in the following sequence:**
 - 1) **SS1178A**
 - 2) **SS1178B**
 - 3) **SS1178C**
 - c. **In panel B1300SII, transfer the SRV control power kniveswitch to EMER.**

CAUTION

Reactor vessel water level, CST level, Torus water level and Torus temperature indication may be unavailable until ECCS 24VDC DISTRIBUTION PANEL B power is transferred to its Appendix R power supply.

7. **If the power is not available on the panel, or to some valves, replace the fuses as described in Appendix E.**

APPENDIX C (Continued)

CAUTION

Except for mechanical overspeed, all trips, isolations, and auto initiations are bypassed when the transfer switches on CP-82-3 and CP-82-1 are in the Emergency positions.

8. On CP-82-1, RCIC ALTERNATE SHUTDOWN SYSTEM operate RCIC as follows:

a. Close/check closed the following valves:

- ? RCIC V13-30 TEST BYPASS TO COND. STG. TANK
- ? RCIC V13-131 STEAM TO TURBINE
- ? RCIC V13-27 MINIMUM FLOW BYPASS TO SUPP. CHAMBER
- ? RCIC V13-41 PUMP SUCTION FROM SUPP. CHAMBER
- ? RCIC V13-39 PUMP SUCTION FROM SUPP. CHAMBER

b. Open/check open the following valves:

- ? RCIC V13-132 TURBINE COOLING WATER SUPPLY
- ? RCIC V13-18 PUMP SUCTION FROM COND. STG. TANK
- ? RCIC V13-20 PUMP DISCHARGE VALVE
- ? RCIC V13-21 PUMP DISCHARGE VALVE
- ? RCIC TURBINE TRIP THROTTLE VALVE
- ? RCIC V13-15 STEAM SUPPLY LINE ISOL VALVE
- ? RCIC V13-16 STEAM SUPPLY LINE ISOL VALVE

c. Start the RCIC GLAND SEAL VACUUM PUMP.

NOTE

While in Alt Shutdown Mode, the RCIC condensate pump is required to be manually started and stopped to prevent damage to the pump or exhauster. The sight glass on the condensate receiver may be used to determine when to operate the RCIC condensate pump.

d. Operate the RCIC GLAND SEAL VAC. TANK CONDENSATE PUMP as necessary to maintain vacuum tank level within the sightglass.

CAUTION

If instrument air pressure is lost RCIC gland condenser relief valve may lift due to PCV13-23 failure until instrument air is restored. Continue with this procedure.

e. Set the RCIC TURBINE SPEED potentiometer to zero by turning counter-clockwise.

APPENDIX C (Continued)

CAUTION

Opening RCIC-27 will create a drain path between the CST and the Torus. Monitor CST and Torus level whenever RCIC-27 is open.

- f. **Open RCIC V13-27 MINIMUM FLOW BYPASS TO SUPP. CHAMBER.**
 - 1) **Monitor CST level on CONDENSATE STORAGE TANK LEVEL LI-107-12A.**
 - 2) **Monitor Torus level on TORUS WATER LEVEL LI-16-19-10A.**

CAUTIONS

- ? **To avoid overspeeding the turbine, always open the desired flow path before closing the undesired flow path.**
- ? **To prevent RCIC turbine trip on low oil pressure, do not reduce turbine speed below 2000 rpm. To limit turbine vibration, maintain turbine speed at ? 4500 rpm.**

- g. **Start the RCIC turbine by opening RCIC V13-131 STEAM TO TURBINE and increasing the RCIC potentiometer so turbine accelerates to greater than 2000 rpm immediately.**
 - h. **Adjust the RCIC potentiometer to obtain 400 gpm at ? 4500 rpm as indicated on local instrument dpis/FI-13-61.**
 - i. **When RCIC flow increases above 80 gpm, close RCIC V13-27 MINIMUM FLOW BYPASS TO SUPP. CHAMBER.**
 - j. **Maintain RCIC turbine speed ?4500 rpm.**
9. **Adjust RCIC flow with the potentiometer as necessary to maintain Reactor Water level 137" and 167" as read on RPV WATER LEVEL LI-2-3-72C.**
- a. **If level is offscale, obtain a level reading from Operator #2 using LT-2-3-73A.**
 - b. **Periodically monitor RCIC pump discharge pressure and adjust cooling water valve RCIC-PCV-23 for changes in RCIC pump discharge pressure as follows:**
 - ? **If operating RCIC pump discharge pressure at approximately 1100 psig, then verify set/set RCIC-PCV-23 to zero.**
 - ? **When operating with pump discharge pressure greater than 600 psig, verify set/set RCIC-PCV-23 setpoint as necessary to keep cooling water pressure less than 100 psig.**
 - ? **When operating with pump discharge pressure less than 600 psig, verify set/set RCIC-PCV-23 at 40.**

APPENDIX C (Continued)

CAUTION

In this mode of operation, the automatic suction path transfer on low CST level will not occur.

10. Monitor CST level; if CST level decreases to 8% (LI-107-12A), shift suction path to the Torus as follows: (VYC0706R01_04)
 - a. Open RCIC V13-41 PUMP SUCTION FROM SUPP. CHAMBER
 - b. Open RCIC V13-39 PUMP SUCTION FROM SUPP. CHAMBER
 - c. Close RCIC V13-18 PUMP SUCTION FROM COND. STG. TANK
11. Notify the Shift Manager of each 5 inch change in reactor level.

CAUTION

Elevated Torus pressure could adversely affect RCIC operation.

12. Select position 1 or 2 for the Torus water temperature indicator and monitor Torus temperature changes.
13. Monitor Drywell air space temperature on APPENDIX R DRYWELL TEMPERATURE TI-16-19-42A.
 - a. Notify the Shift Manager if this temperature exceeds 325°F.
14. Monitor Barometric Condenser Vacuum Tank vacuum.
 - a. If PI-13-46 indicates 0 or a positive pressure, notify the Shift Manager.
15. When supporting manpower is available, and the use of the RCIC full flow test line is desired to aid in Reactor level control, proceed as follows:
 - a. If RCIC suction is being supplied from the Torus, exit this step and continue at Step 16.

APPENDIX C (Continued)

- b. On panel CP-82-1, RCIC ALTERNATE SHUTDOWN SYSTEM:
 - 1) Verify open RCIC V13-18 PUMP SUCTION FROM COND. STG. TANK.
 - 2) Verify closed RCIC V13-41 PUMP SUCTION FROM SUPP. CHAMBER.
 - 3) Verify closed RCIC V13-39 PUMP SUCTION FROM SUPP. CHAMBER.
 - c. In the HPCI Room, open the ACB for HPCI TEST LINE TO CST VALVE V23-24.
 - d. At CP-82-1, hold the control switch for RCIC V13-30 TEST BYPASS TO COND. STG. TANK to "CLOSE" for 15 seconds.
 - e. In the HPCI Room, manually open HPCI V23-24 HPCI FULL FLOW TEST LINE CST INLET.
 - f. At CP-82-1, throttle RCIC V13-30 TEST BYPASS TO COND. STG. TANK as desired.
 - g. Use a combination of turbine speed and RCIC V13-30 TEST BYPASS TO COND. STG. TANK valve position to control Reactor level.
 - h. If RCIC suction must be aligned to the Torus, immediately close RCIC V13-30 TEST BYPASS TO COND. STG. TANK.
16. When directed by the Shift Manager, commence a cooldown by performing the following:
- a. Determine the reactor water temperature for the existing reactor pressure using the saturation curve (figure 1 of Appendix C).
 - 1) Record the pressure and temperature on Appendix C "Reactor Cooldown Log".
 - b. Subtract 90 degrees from the present saturation temperature and determine the corresponding reactor pressure.
 - 1) Record this value on the "Reactor Cooldown Log".
 - c. Open SAFETY RELIEF VALVE RV2-71A or RV2-71B to reduce reactor pressure to that calculated in Step 16.b.
 - d. Log the time when the desired pressure is reached.
 - e. Operate the SRV as necessary to maintain pressure within +100/-0 psig of the desired pressure.

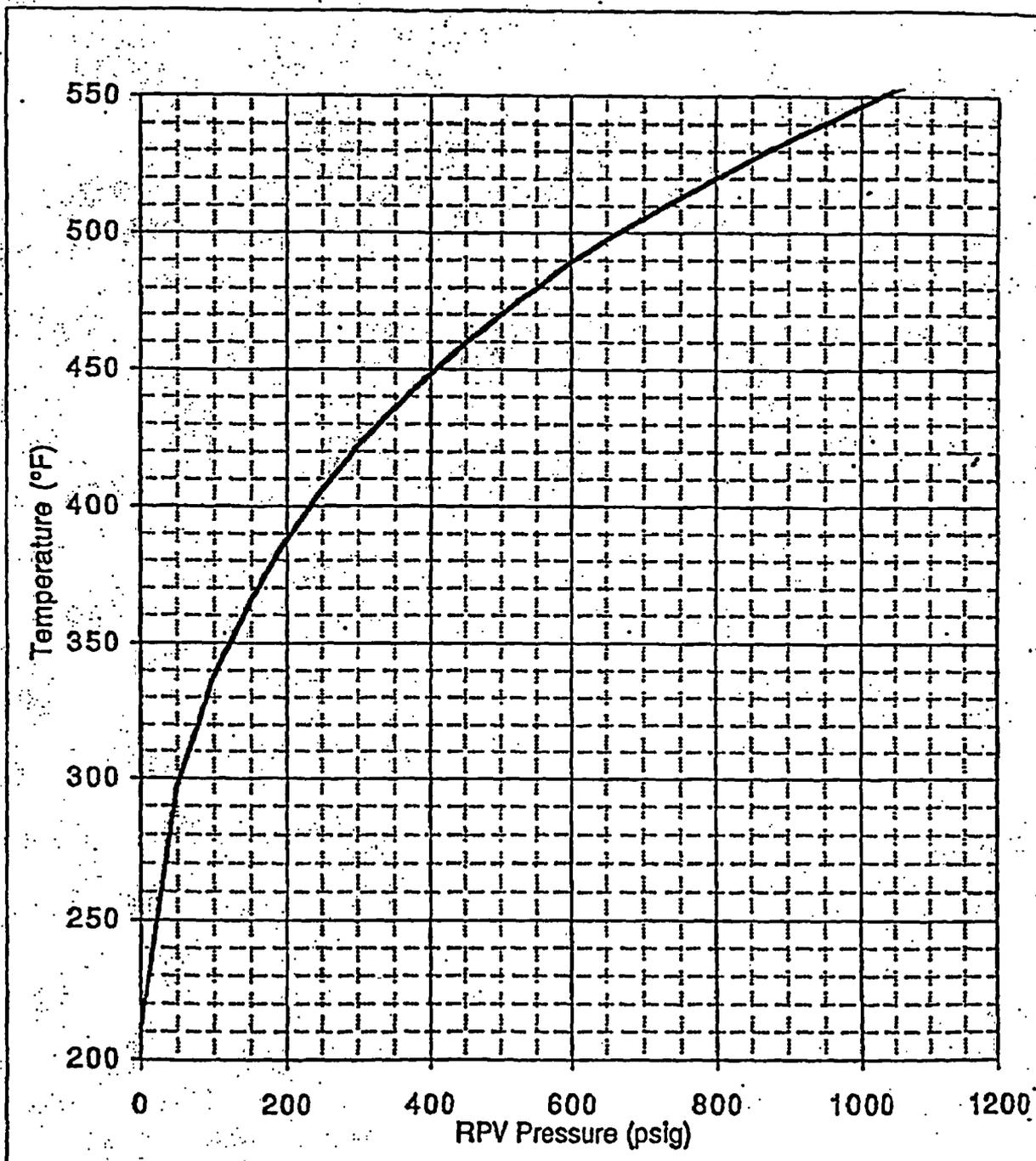
APPENDIX C (Continued)

- f. After one hour repeat Steps 16.a. through 16.e.
 - g. Repeat Steps 16.a. through 16.f. until reactor pressure reaches 100 psig.
17. If normal RCIC Room ventilation is not available, perform the following:
- a. Inform Security that RCIC Room doors will be blocked open.
 - b. Obtain door wedges from the Appendix R tool box in the RCIC Room.
 - c. Block open the doors on the 213', 232', and 252' level.
18. When directed by the Shift Manager, secure RCIC as follows:
- a. Close RCIC V13-131 STEAM TO TURBINE.
 - b. When the shaft has completely stopped:
 - 1) Stop RCIC SEAL GLAND VACUUM PUMP
 - 2) Stop RCIC GLAND SEAL VAC. TANK CONDENSATE PUMP.
 - c. Close/check closed the following:
 - ? RCIC V13-132 TURBINE COOLING WATER SUPPLY
 - ? RCIC V13-21 PUMP DISCHARGE VALVE
 - ? RCIC V13-30 TEST BYPASS TO COND. STG. TANK
 - ? RCIC V13-27 MINIMUM FLOW BYPASS TO SUPP. CHAMBER
 - d. Set RCIC TURBINE SPEED potentiometer to zero by turning counter-clockwise.

APPENDIX C (Continued)

FIGURE 1

RPV SATURATION CURVE



APPENDIX C (Continued)

REACTOR (RX) COOLDOWN LOG

TIME	PRESENT RX PRESS	PRESENT SAT TEMP	(SAT TEMP) - (90°F)	TARGET RX PRESS

APPENDIX D

AMPLIFYING INFORMATION FOR OPERATOR #4

NOTE

Peer checking is not required while performing this appendix.

WARNING

IF THE CARDOX SYSTEM FOR THE CABLE VAULT HAS ACTUATED, EXIT THE SWITCHGEAR ROOMS THROUGH EITHER THE DOUBLE DOORS INTO THE TURBINE BUILDING, OR OUT THE EAST (OUTSIDE) DOOR OF THE EAST SWITCHGEAR ROOM UNTIL SUCH TIME THAT THE HABITABILITY OF THE ADMINISTRATION BUILDING HAS BEEN DETERMINED TO BE ACCEPTABLE FOR RE-ENTRY.

1. In the Switchgear Room, perform the following:
 - a. Bus-3-1 Remove the normal "CLOSE" fuses for breaker 3V.
(TIE TO 4KV BUS NO. 4).
 - b. Bus-3-1 Open/check open breaker 3V.
(TIE TO 4KV BUS NO. 4).
 - c. Bus-3-2 Remove the normal "CLOSE" fuses for breaker 3V4.
(4KV LINE FROM VERNON STATION).
 - d. Bus-3-2 Open/check open breaker 3V4.
(4KV LINE FROM VERNON STATION).
 - e. Bus-4-9 Remove the normal "CLOSE" fuses for breaker 4V.
(TIE FROM 4KV BUS NO. 3).
 - f. Bus-4-9 Open/check open breaker 4V.
(TIE FROM 4KV BUS NO. 3).

APPENDIX D (Continued)

NOTE

Removing the "CLOSE" fuses from "A" DG breaker disables Bus 4 Load Shed and Under Voltage Protection.

- g. **Bus-4-8 Remove the normal "CLOSE" fuses for DIESEL GENERATOR DG-1-1A breaker.**
 - h. **Bus-4-8 Open/check open DIESEL GENERATOR DG-1-1A breaker.**
 - i. **Bus-4-1 Remove the normal "CLOSE" fuses for breaker 4T2.
(TIE FROM 4KV BUS 2)**
 - j. **Bus-4-1 Open/check open breaker 4T2.
(TIE FROM 4KV BUS 2)**
2. **Remove the normal "CLOSE" fuses and open/check open all breakers on 4KV Bus 4.**
3. **Isolate the current transformers for the following 4KV Bus 4 breakers by performing the following:**
- a. **Remove the "Test Knifedswitch Enclosure" covers located on the inside middle of the breaker cubicle door.**
 - b. **Open WHITE knifedswitch (second from right) for the following breakers:**
 - 1) **Bus-4-2 STATION SERVICE WATER PUMP P-7-1C**
 - 2) **Bus-4-3 STATION SERVICE TRANSF T-9-1A (49)**
 - 3) **Bus-4-5 RH REMOVAL PUMP P-10-1A**
 - 4) **Bus-4-7 RHR SERVICE WATER PUMP P-8-1C**
 - 5) **Bus-4-10 STATION SERVICE WATER PUMP P-7-1A**
 - 6) **Bus-4-11 RHR SERVICE WATER PUMP P-8-1A**
4. **Open/check open TIE FROM 480 BUS 8 (9T8) breaker on 480V Bus 9-4C.**

APPENDIX D (Continued)

NOTE

Fire damage may cause control circuit fuses to blow prior to operating transfer switches. Moving the Alternate Shutdown Switches to "EMER" place reserve sets of fuses into service. If control power to some components, is still not available, fuse replacement per Appendix E may be required.

5. If necessary use a step stool and place the ALTERNATE/NORMAL control power knife switch for 480V Bus 9 (located inside the upper left-hand compartment of Bus 9) to ALTERNATE.
6. If necessary use a step stool and place the ALTERNATE/NORMAL control power knife switch for 4KV Bus 4 (located inside the box behind Bus 4) to ALTERNATE.
7. At 480V Bus 9, place ALTERNATE SHUTDOWN TRANSFER (SS343) switch to "EMER".
8. At 4KV Bus 4, place the following 8 ALTERNATE SHUTDOWN TRANSFER switches to "EMER".
 - ? P7-1C ALTERNATE SHUTDOWN TRANSFER (SS427)
 - ? T-9-1A ALTERNATE SHUTDOWN TRANSFER (SS330)
 - ? P-10-1A ALTERNATE SHUTDOWN TRANSFER (SS1301)
 - ? P-10-1B ALTERNATE SHUTDOWN TRANSFER (SS1303)
 - ? P8-1C ALTERNATE SHUTDOWN TRANSFER (SS1307)
 - ? DIESEL GEN 1-1A ALTERNATE SHUTDOWN TRANSFER (SS331)
 - ? P7-1A & BKR 4V ALTERNATE SHUTDOWN TRANSFER (SS425)
 - ? P8-1A ALTERNATE SHUTDOWN TRANSFER (SS1305)
9. At 4KV Bus-3-2, place BKR 3V4 ALTERNATE SHUTDOWN TRANSFER (SS325) to "EMER".
10. Bus-3-2 Close breaker 3V4 by placing the EMERGENCY BREAKER CONTROL switch to "CLOSE".

APPENDIX D (Continued)

11. When directed by the Shift Manager, close breaker 4V on Bus 4 by placing the EMERGENCY BREAKER CONTROL switch to "CLOSE".

a. Check for normal voltage indication (3900-4500 volts) on 4KV Bus 4.

NOTE

Normal breaker interlocks are still in effect. To close Breaker 99, Breaker 9T8 must be open and Breaker 49 must be closed.

1) If voltage is in the required range, perform the following.

a) Close the STATION SERVICE TRANSF T-9-1A (49) breaker by placing the EMERGENCY BREAKER CONTROL switch to "CLOSE" (4KV Bus 4-3).

b) Close the MAIN (99) Breaker by placing the EMERGENCY BREAKER 99 CTRL pushbutton to "CLOSE" for ~5 seconds (480V Bus 9-4B)

c) Continue with Step 13.

2) If voltage is NOT within the required range continue with Step 12.

12. If the Vernon Tie is unavailable:

a. Bus-3-2 Open/check open 4KV LINE FROM VERNON STATION (3V4).

b. Bus-4-9 Open/check open TIE FROM 4KV BUS NO. 3 (4V)

c. Establish the following conditions at the DG-1-1A GENERATOR PANEL:

NOTE

When switch 611A is in EMERG, the local lights which indicate which DG voltage regulator is in control will not be lit.

1) DIESEL GEN ALTERNATE SHUTDOWN TRANSFER SS611A in "EMERG".

2) DIESEL GEN ALTERNATE SHUTDOWN TRANSFER SS611B in "EMERG".

3) SS 611 MAN/AUTO CNTRL SW FOR ALT SHUTDOWN in AUTO.

APPENDIX D (Continued)

NOTE

Fire damage may cause control circuit fuses to blow prior to operating, transfer switches. Moving the Alternate Shutdown Switches to "EMER" place reserve sets of fuses into service. If control power to some components is still not available, fuse replacement per Appendix E, may be required.

- d. Request Operator #1 to perform the following:
- 1) If available, close STATION SERVICE WATER PUMP P-7-1C breaker 4KV Bus 4-2.
 - 2) If "C" Service Water Pump is not available, close STATION SERVICE WATER PUMP P-7-1A breaker 4KV Bus-4-10.
 - 3) Close the STATION SERVICE TRANSF T-9-1A (49) breaker (4KV Bus 4-3).
 - 4) Close the MAIN (99) breaker (480V Bus 9). Hold in pushbutton for ~5 seconds.
- e. Request Operator #1 install/check installed the "TRIP" and "CLOSE" fuses for DIESEL GENERATOR DG-1-1A breaker (4KV Bus 4-8).
- f. Verify the following occur:
- ? "A" Diesel Generator starts.
 - ? "A" Diesel Generator accelerates to operating speed.
 - ? "A" Diesel Generator frequency increases to approximately 60 Hz.
 - ? "A" Diesel Generator voltage increases to approximately 4160 volts.
- g. If the Diesel starts but the output breaker fails to close, at DG-1-1A GENERATOR PANEL:
- 1) Place synchronizing switch to the ON position.
 - 2) Close the DG-1-1A breaker.
- h. Verify that DIESEL GEN ROOM EXHAUST FAN TEF-2 operates as required.
- i. Adjust generator voltage as necessary to maintain between 4000 to 4200 volts.

APPENDIX D (Continued)

- j. If DG-1-1A fails to auto start, manually start DG-1-1A as follows:
- 1) Check DG-1-1A GENERATOR PANEL for start failure annunciators.
 - 2) Report the status of annunciators to the Shift Manager.
 - 3) At the DG-1-1A INSTRUMENT PANEL place the REMOTE/AT ENGINE control switch to "AT ENGINE" position to remove auto start capabilities.
 - 4) Assist in resolving the cause for the failure to start.
 - 5) Reset any lockouts.
 - 6) Depress the SHUTDOWN RELAY RESET pushbutton to reset the shutdown relay (DG-1-1A INSTRUMENT PANEL).
 - 7) Wait approximately 100 seconds for the Shutdown Relay to time out.
 - 8) At the DG-1-1A INSTRUMENT PANEL, auto start the diesel by placing REMOTE/AT ENGINE control switch to "REMOTE" position.
 - 9) If the diesel does not roll, open AS-2A air start solenoid as follows:
 - a) Rotate manual operator stem clockwise 180°.
 - b) Leave manual override engaged for at least 15 seconds OR until the diesel starts.
 - c) Rotate manual operator stem counterclockwise 180°.
 - 10) Report the status of the diesel to the Shift Manager.
 - 11) Verify auto closure of the DG-1-1A output breaker.
 - 12) If the Diesel starts but the output breaker fails to close, at DG-1-1A GENERATOR PANEL:
 - a) Place synchronizing switch to the ON position.
 - b) Close DG-1-1A breaker.
 - 13) Verify that DIESEL GEN ROOM EXHAUST FAN TEF-2 operates as required.
 - 14) Adjust generator voltage as necessary to maintain between 4000 to 4200 volts.
- k. Monitor the diesel engine and generator temperatures periodically as conditions warrant.

APPENDIX D (Continued)

CAUTION

If DLO-10A is left open during operation, normal vibrations can cause excessive make up.

- l. Open DLO-10A only as necessary to make up oil to the engine sump.
 - m. Monitor the diesel day tank level and refill as necessary.
 - n. If additional Service Water Pumps are required, request Operator #1 start STATION SERVICE WATER PUMP P-7-1A(C) (4KV Bus 4).
 - o. Continue with Step 13.
13. Reset "B" Air Compressor LSR using the pushbutton on MCC-9C-2M.
 14. At panel HVSGP A, place control switches for RRU-5 and RRU-7 to "Run".
 15. Open/check open RH REMOVAL PUMP P-10-1C breaker (4KV Bus 3-5).
 16. Open/check open RH REMOVAL PUMP P-10-1D breaker (4KV Bus 3-6).
 17. Check open and rack out TIE FROM 480V BUS 8 (9T8) breaker (480V Bus 9-4C).
 18. Remove the Motor Cooling Water fuses for RHR SERVICE WATER PUMPS P-8-1A (4KV Bus 4-11).
 19. Remove the Motor Cooling Water fuses for RHR SERVICE WATER PUMPS P-8-1C (4KV Bus 4-7).
 20. Standby to close other breakers at the direction of the Shift Manager
 21. When directed by the Shift Manager, shutdown the "A" diesel generator per OP 2126 (if applicable).
 22. Refer to OP 0109 to restore equipment when appropriate.

APPENDIX E

AMPLIFYING INFORMATION - MISCELLANEOUS

INDEX

- A. **Sound-Powered Phone Locations**
- B. **Local Operation of Motor Operated Valves**
- C. **Instructions for Control Power Fuse Replacement**
- D. **Local Operation of 4KV Bus 4 Breaker**
- E. **Figure: "Alternate Shutdown Power Supplies"**

APPENDIX E (Continued)

A. Sound-Powered Phone Locations

<u>NOTES</u>	
?	Sound-powered phone lines are in parallel but the phones on each line are in series. The lines are listed separately. If a phone on a line isn't getting through, a lower number phone may get through, higher numbers will not work.
?	Sound-powered phones within a building are generally able to communicate with each other.
?	Sound-powered phones in the reactor building are not ensured of being able to communicate with phones in the turbine building.
?	Any sound-powered phone not in the turbine building or reactor building is not ensured of being able to communicate with any other phone.
?	Reference drawing is G-191376.

Rx Bldg:

345 Level

1. Crane

318 Level

1. Inst Rack 25-19 (on wall by hose station across from SLC)
2. Inst Rack 13 (on wall by RWCU Oper desk, at corner)
3. Inst Rack 12B (RWCU under gray box at top of inst rack)
4. Inst Rack 12A (RWCU under gray box at top of inst rack)

303 Level

1. Inst Rack 25-65 (between RWCU door and sample sink)
2. Inst Rack RK-10 (beside ECCS 24 VDC Dist. Panel B)

APPENDIX E (Continued)

280 Level

1. MCC-6A (on RWCU pump wall across from MCC-6A)
2. Inst Rack 25-6 (on N side of column across from rack)
3. MCC-DC-2A (on wall across from MCC between 25-6 and 25-2)
4. Inst Rack 25-5 (on west side of column across from rack)
5. MCC-8B (on wall at E end of MCC)

252 Level

1. Inst Rack 24-14 (on same column as CP-82-3)
2. Inst Rack 25-52 (on FW Nozzle Temp Recorder Box ~ 3 ft off floor)
3. Cab 25-4 (by lighting panel LP-1M underneath lightbulb box)
4. MCC-89A (on E side of column across from MCC)
5. Inst Rack 25-51 (on wall between rack and S SDV)
6. Inst Rack 25-22 (on column across from HPCI stairs)

Lower Levels

- | | | |
|-----------|----|--|
| HPCI Room | 1. | Inst Rack 25-50 (between MCC-DC-1B and Rack 25-50) |
| SE RHR | 1. | Inst Rack 25-7 (232') (on wall by Hx) |
| | 2. | Inst Rack 25-60 (213') (on wall by Gai-Tronics) |
| NE RHR | 1. | Inst Rack 25-23 (232') (on wall by rack side away from Hx) |
| | 2. | Inst Rack 25-1 (213') (by Gai-Tronics) |
| RCIC | 1. | Inst Rack 25-56 (232') (by Gai-Tronics) |
| | 2. | MCC-DC-2B (213') (on wall by MCC-DC-2B) |

Turbine Building:

272 Level

1. MCC-10A (HVAC TSF 2A/B room on wall by MCC)
2. MCC-7D (HVAC TSF 1A/B room on wall by MCC)
3. Crane

APPENDIX E (Continued)

248 Level

1. Rack RK1, RK2, RK16 (under gray dist boxes on feed pump rack)
(Top of racks, lube oil room isle)
2. SWGR Bus 6 (on N wall behind sample sink)
3. MCC-DC-2D (inside L.O. room door on right side)
4. SWGR 7 (on wall behind SWGR 7 by laundry)
5. HTG BLR DIST PANEL (on S wall behind rad monitor)
6. MCC-9C (A DG room between batt chgr and MCC)
7. MCC-8C (B DG room by MCC-8C)

Lower Levels

1. SWGR 10 (232') (N side of structural column)
2. Inst Rack 9 (232') (wall behind cond vacuum rack)
3. RK-3 (220') (Feed pump room by TRU-1)
4. RK-5 (220') (Feed pump room by TRU-4)
5. MCC-7C (220') (on column by TBCCW Hx B)
6. FP-201 (220') (Bowser room by TB deluge valve)

Switchgear Room

1. North Wall next to MCC-9A

B. Local Operation of Motor Operated Valves

1. Defeat the switchgear door interlock and open the breaker door. If a screwdriver is not available, the ACB may be tripped (thus satisfying the interlock), the switchgear door opened, and the ACB reclosed.
2. Locate the desired relay:

NOTE

RCIC and HPCI Hoffman boxes near TIPS have "72X/O" (open) -
"72X/C" (close). There are no colors.

- a. Opening relay - red
- b. Closing relay - green

APPENDIX E (Continued)

3. With a pencil, flashlight, or other suitably insulated device, momentarily depress the desired contactor to initiate valve motion. Full stroking valves have a seal in feature that keeps the contactor depressed. This allows the valve to travel to the intended position without further operator action. Throttle valves do not have this feature and the contactor must be held in until the valve has traveled to the desired position. The throttle valves are RCIC-30, RHR-27A, RHR-34A and RHR-65A.

C. Instructions for Control Power Fuse Replacement

NOTE

Replacement fuses are located in all alternate shutdown locations. The fuses and the tools required for fuse replacement are located in red tool boxes staged in these areas.

1. To replace an MCC control power fuse:
 - a. Determine the compartment location for the affected equipment and the fuse size from the attached list.
 - b. Position the MCC control switch for the affected equipment to the OFF position.
 - c. Open the compartment door and replace the control power fuse.
 - d. Close the compartment door and position the MCC control switch to the ON position.
2. To replace a 4 KV SWGR control power fuse:
 - a. Open the compartment door for the affected equipment and remove the fuse holder for the affected control circuit. The fuse holders are labeled to identify the close and trip circuit fuses.
 - b. Replace the fuses in the fuse holder. For all 4 KV breakers except 3V4, install 15 amp fuses for the close circuits and 35 amp fuses for the trip circuits. For Breaker 3V4, install 15 amp fuses for both the close and trip circuits.
 - c. Place the fuse holder back into the compartment. Ensure the ON is located in the upper left corner when installing the fuse holder.
 - d. Close the compartment door and check the breaker position indicating lights to verify restoration of breaker control power.

APPENDIX E (Continued)

3. For replacement of the RCIC speed controller control power fuses, replace the two 1 amp fuses (#5 and 6) mounted in CP-82-1.
4. For replacement of the RHR control power fuses, replace the two FRN-4 fuses located on the left side of the shutdown panel.
5. To replace 480 V Swgr 9 Station Transformer BKR 99 control power fuses: (EPC_9502)
 - a. Open/check open BKR 99.
 - b. Position the Bus 9 control power knife switch to the open position.
 - c. Open BKR 99 compartment door and locate the two sets of control power fuses in the upper right side.
 - d. Replace the two 6 amp fuses in the upper fuse holders.
 - e. Replace the two 30 amp fuses in the lower fuse holders.
 - f. Close BKR 99 compartment door.
 - g. Position the Swgr 9 control power knife switch to the Alternate Feed From DC-2AS position.
 - h. Check BKR 99 position lights, then close/check closed BKR 99.
6. To replace "A" Diesel Generator Control fuses:
 - a. Verify/place the "A" Diesel Engine Panel Remote/At Engine Control switch to the "AT ENGINE" position.
 - 1) Verify "At Engine" indicator light energizes or replace the 15A fuses in fuse holder "X and Y" inside the local control cabinet.
 - 2) If "At Engine" indicator light is still not energized, replace 35A fuses in fuse holder "FU-1 and FU-2" inside the Engine Control Panel.
 - b. Check local diesel alarm panel status for indication of start failures or trips.

APPENDIX E (Continued)

- c. Verify/reset the generator lockout relay and verify white light lit. If the white light is not lit, replace 30A control power fuses in fuse holder "Q" inside the local control cabinet.
- d. If the auto voltage regulator cannot be adjusted, replace the 15A fuses in fuse holder "T" inside the local control cabinet.

REPLACEMENT FUSES

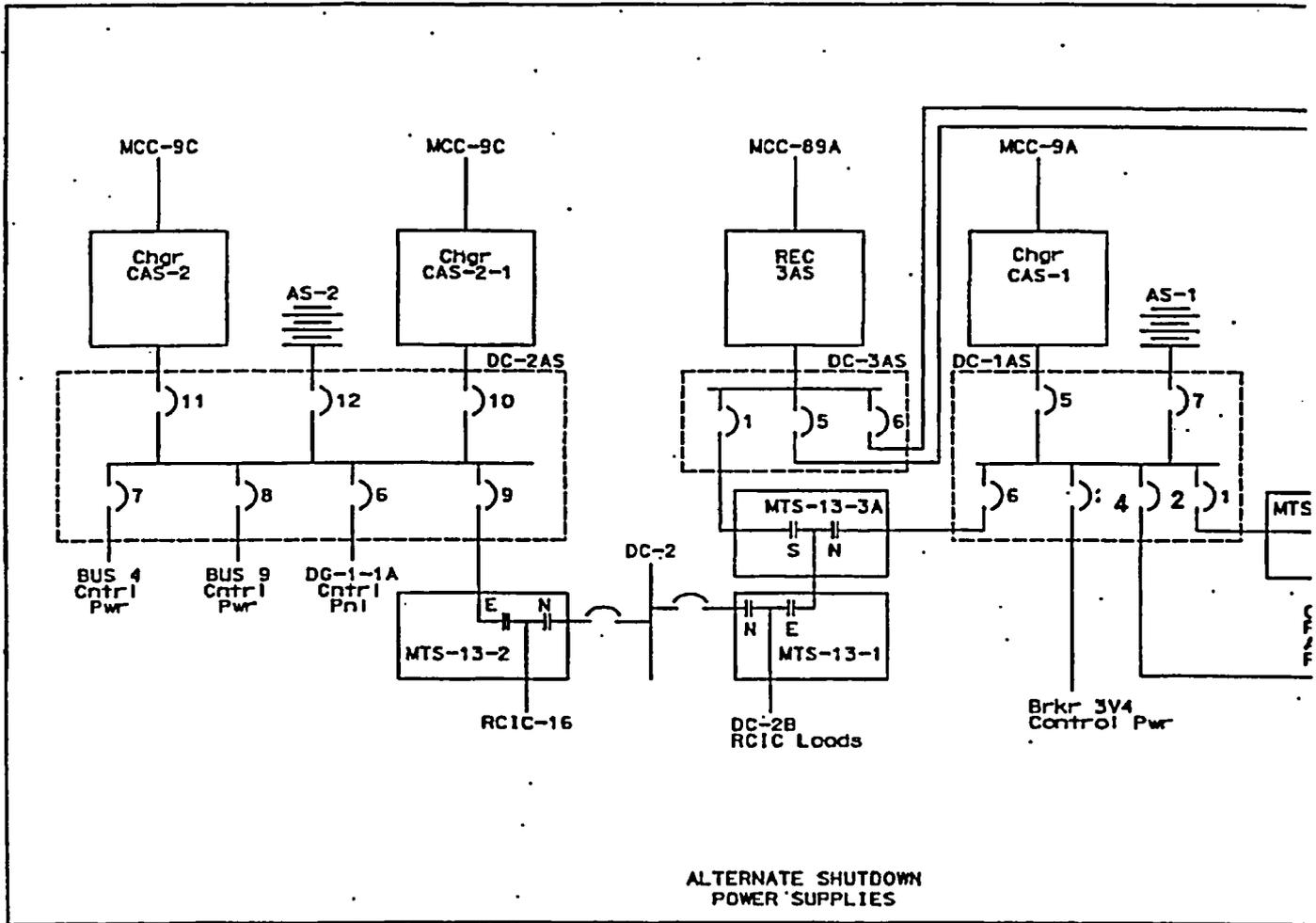
<u>Component</u>	<u>Location</u>	<u>Fuse Size - Amps</u>
P92-1A	MCC 9C	1
RCIC-1	MCC DC-2B	1
RCIC-15	MCC 9B	1
RCIC-16	Local Starter	3
RCIC-18	MCC DC-2B	3
RCIC-20	MCC DC-2B	3
RCIC-21	MCC DC-2B	3
RCIC-27	MCC DC-2B	1
RCIC-30 (Throttle)	MCC DC-2B	3
RCIC-39	MCC DC-2B	1
RCIC-41	MCC DC-2B	1
RCIC-131	MCC DC-2B	1
RCIC-132	MCC DC-2B	1
RCIC Vacuum Pump	MCC DC-2B	1
RCIC Condensate Pump	MCC DC-2B	3
RHR-13A	MCC 9B	1
RHR-15A	MCC 9B	1
RHR-18	MCC 8B	1
RHR-25A	MCC 89A	2
RHR-27A (Throttle)	MCC 89A	3
RHR-34A (Throttle)	MCC 9B	1
RHR-39A	MCC 9B	1
RHR-65A (Throttle)	MCC 9B	1
RHR-89A	MCC 9B	1
RRU-5	MCC 9B	1
RRU-7	MCC 9B	1
RV-43A	MCC 89A	2
SW-20	MCC 9D	1
TEF-2	MCC 9C	1

APPENDIX E (Continued)

D. Local Operation of 4KV Bus 4 Breaker

1. Place the alternate shutdown transfer switch to the emergency position and then place the emergency breaker control switch to the desired position.
2. Verify that the breaker changes position by observing the local position lights and the mechanical indicator.
3. Report breaker status to the Shift Manager.

APPENDIX E (Continued)



APPENDIX F

INSTRUCTIONS FOR RHR-18 ALTERNATE POWER CONNECTION

SHUTDOWN COOLING ISOLATION VALVE V10-18 IS NORMALLY POWERED FROM MCC 8B WHICH RECEIVES POWER FROM DIESEL GENERATOR B (S1 SYSTEM). SINCE ONLY DIESEL GENERATOR A IS OPERABLE FOR ALTERNATE SHUTDOWN (BY DESIGN) PROVISIONS HAVE BEEN PROVIDED TO SUPPLY POWER TO V10-18 FROM MCC-9B IN THE EVENT OF A FIRE WHICH RESULTS IN LOSS OF POWER TO MCC-8B. A CABLE HAS BEEN INSTALLED FROM A SPARE BREAKER IN MCC-9B TO A BOX ABOVE MCC-8B. SUFFICIENT CABLE LENGTH IS LEFT IN THE BOX TO REACH THE CUBICLE FOR V10-18 IN MCC-8B.

THE INSTRUCTIONS FOR CONNECTING THIS CABLE ARE AS FOLLOWS.

1. ENSURE THE STANDBY FEED BREAKER FOR V10-18 IN MCC-9B (CUBICLE 11KL) IS OPEN.
2. OPEN THE BREAKER FOR V10-18 ON MCC-8B (CUBICLE 7F).
3. CONNECT THE CABLE FROM THE JUNCTION BOX ABOVE MCC-8B TO THE LOAD SIDE OF THE BREAKER FOR V10-18 AS SHOWN BELOW. DO NOT DISCONNECT THE EXISTING WIRING ON THESE TERMINALS. (CABLE MUST BE CONNECTED ON BOTH ENDS)
4. ENSURE THE APPENDIX R TRANSFER SWITCHES ON THE RHR ALTERNATE S/D PANEL ARE IN THE EMERGENCY POSITION.
5. CLOSE THE STANDBY FEED BREAKER ON MCC-9B (CUBICLE 11KL).

V10-18 CAN NOW BE OPERATED FROM THE RHR ALTERNATE S/D PANEL.

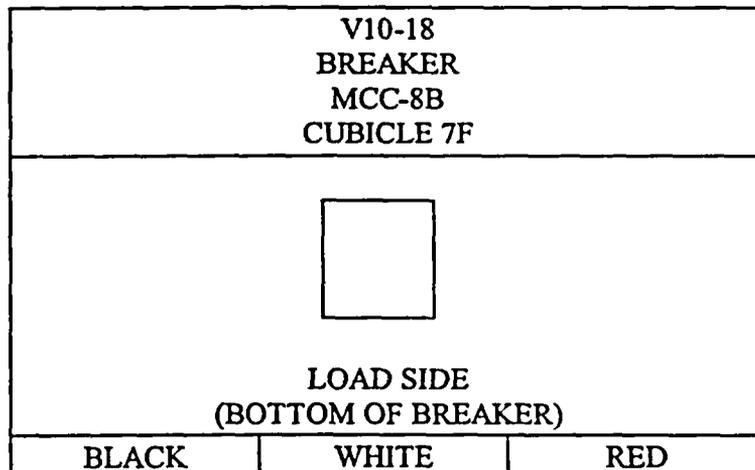


Exhibit 3

**MASTER-
VALID ONLY WHEN
STAMP IS RED**

LOR-24-405-2
Rev. 0 10/04
Page 1 of 11

**LICENSED OPERATOR REQUAL TRAINING PROGRAM
INSTRUCTOR GUIDE
COVER PAGE**

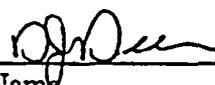
IG/SH Title Responses

No. LOR-24-405-2

Revision Number Rev. 0, October, 2004

<u>Lesson Title</u>	<u>Starting Page</u>	<u>Lesson Duration</u>	<u>Instructional Setting</u>
1. OP 3126 Revision	4	0.5 hour	Classroom
2. Plant Walkthrough	9	1.5 hour	Plant

Reviewed for technical content:

Dennis J. Deer  OPERATIONS TRAINING INSTRUCTOR 10/21/04
Name Title Date

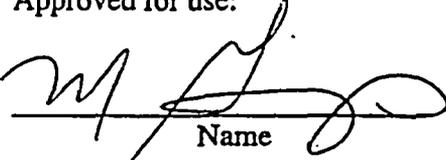
Optional Review:

N/A TRAINING ANALYST/SR INSTRUCTOR _____
Name Title Date

Approved for use:

William Pittman  OPERATIONS REVIEW 10/22/04
Name Title Date

Approved for use:

 OPERATIONS TRAINING SUPERINTENDENT 10/25/04
Name Title Date

LICENSED OPERATOR REQUAL TRAINING PROGRAM INSTRUCTOR GUIDE

Student Objectives:

At the conclusion of this lesson, the student will be able to satisfactorily, on a written or oral examination:

1. State the alternative shutdown requirements of 10CFR50 App. R.
2. State changes to OP 3126, Shutdown using the alternate shutdown methods, revision 17.
3. While on a plant walkthrough identify components operated under the guidance of OP 3126.
4. Be able to conduct a walkthrough of the actions of OP 3126 with the goal of restoring AC Power and starting RCIC injection to the vessel within 21 minutes.

Recommended Instructor References:

1. OP 3126, Shutdown using alternate shutdown methods, revision 17
2. 10CFR50 Appendix R, Fire protection program for nuclear power facilities

Required Training Aids:

Copy of OP 3126, Shutdown using the alternate shutdown methods, revision 17

**LICENSED OPERATOR REQUAL TRAINING PROGRAM
INSTRUCTOR GUIDE**

Lesson 1:

Student Objectives: Student Obj. 1, 2

Required Training Aids:

Copy of Student Handout for each student

OUTLINE	NOTES
<p>I. INTRODUCTION</p> <p>A. Purpose</p> <ol style="list-style-type: none">1. Review the alternate shutdown requirement of 10CFR50 App R and the changes to OP 3126, Shutdown Using the Alternate Shutdown Methods revision 17, which support these requirements. <p>B. Review Student Objectives.</p> <p>II. Requirements of 10CFR50 Appendix R</p> <p>A. 10CFR50 Appendix R.III.K.12.L, Alternative dedicated shutdown capability</p> <ol style="list-style-type: none">1. achieve and maintain the reactor subcritical2. maintain reactor coolant inventory3. achieve hot shutdown4. cold shutdown within 72 hours5. maintain cold shutdown <p>B. 10CFR50 Appendix R.III.K.12.L.3</p> <ol style="list-style-type: none">1. alternative shutdown capability may be unique for each area2. Must accommodate post fire conditions3. Off site power may not be available for 72 hours <p>C. All actions to achieve hot shutdown and subsequent cold shutdown must be able to be performed from outside the control room</p> <p>D. Level must stay above top of core</p> <p>E. No repairs are allowed to achieve hot shutdown</p> <p>F. Repairs are allowed for cold shutdown</p> <p>G. approved exemption from the NRC for Appendix R ADS bypass switch</p>	<p>Obj. 1</p>

OUTLINE	NOTES
<ul style="list-style-type: none">1. Switchgear Room Operator2. Should be assisted by Operator #1 to ensure the critical timeline is met.3. Step #13, restarting the "B" air compressor keeps air to RCIC-PCV-23. <p>G. Appendix E- Amplifying Information</p> <ul style="list-style-type: none">1. No changes2. Review information listed in Appendix <p>H. Appendix F-Instructions for RHR-18, alternate power</p> <ul style="list-style-type: none">1. Swaps power from MCC 8B to MCC 9B	

**LICENSED OPERATOR REQUAL TRAINING PROGRAM
INSTRUCTOR GUIDE**

Lesson 2: Plant Walkthrough

Student Objectives: Student Obj. 3, 4

Required Training Aids:

Copy of Student Handout for each student

OUTLINE	NOTES
<p>I. Plant Walkthrough</p> <p>A. While on a plant walkthrough, identify the following Alternative Shutdown Equipment.</p> <p>B. Appendix A</p> <ol style="list-style-type: none">1. Switchgear rooms<ol style="list-style-type: none">a. Bus breakers that need to be manually operatedb. Breaker cubicle Alternate shutdown control switches2. RCIC 15 and 16 indication CP-82-33. ECCS 24 vdc dist panel B4. LT-2-3-73A(M) CP-25-6B <p>C. Appendix B</p> <ol style="list-style-type: none">1. MSIV Instrument air valves2. CP-82-2, RHR alternate shutdown system3. Required MCC locations4. RHR-665. RHR-26A6. RHR-17 <p>D. Appendix C</p> <ol style="list-style-type: none">1. CRD Air Filters2. MTS-13-23. Alternate shutdown station ADS SRV panel B1300SII4. ADS transfer SS-7525. CP-82-1, RCIC Alternate Shutdown System6. MTS-13-1 <p>E. Appendix D</p>	<p>Obj. 3</p> <p>Using OP 3126</p>

OUTLINE	NOTES
<ul style="list-style-type: none">1. CLOSE fuses for identified breakers2. Test Knife switch Enclosures for identified breakers3. Alternate Shutdown Transfer switches4. SS 325, BKR 3V4 alt. shutdown transfer5. Restart DG-1-1A actions6. "B" Air Compressor LSR on MCC-9C-2M <p>II. Timed Walkthrough of Alternate Shutdown system alignment</p> <ul style="list-style-type: none">1. Following the plant walkthrough a timed system alignment will be performed to accomplish the following<ul style="list-style-type: none">a. AC power restored per the bolded sections of Appendix A and Db. RCIC running and injecting at 400 gpm<ul style="list-style-type: none">1) A 15 minute timeframe is desirable2. This must be completed with 21 minutes <p>III. Final Review</p> <ul style="list-style-type: none">A. Review objectivesB. Solicit questions/observations from studentsC. Discuss questions and observations	<p>Obj. 4</p>

Vermont Yankee Training Change Request 04-0049

Title/Keyword: E-PLAN VTYLO-2003-00206 CA 06

Originated by: MICHAEL F. EMPEY
Department: OPERATIONS

Date: 02/13/04

Originating Document:

Description:

Request that Operations Training include as an element of training operators on Shutdown outside the control room the need to complete e-plan declaration and notification. Including at least a walk-thru of the process as part of the LOR shutdown outside of the control room lessons. This may also need to be put into the Chemistry Tech Training program as they are responsible to carryout the actual notifications outside the control room.

Commitment item (Y/N)? Yes

Id: LO-VTYLO-2003-00206-

Priority: B

Number of sheets attached: 0

Cognizant Supervisor: MICHAEL E. GOSEKAMP

Date: 02/25/04

Programs affected: OPS

Review completion due date: 12/31/04

Reviewers	Assigned	Complete
1. CHRISTOPHER J. TABONE	02/25/04	11/29/04
2. KEVIN MURPHY	03/10/04	11/29/04
3. DENNIS J. DEER	10/12/04	11/05/04

Feedback:

Date:

Completed: Y MICHAEL E. GOSEKAMP

Date: 11/30/04

Closed: Y MICHAEL A. ROMEO

Date: 12/03/04

Comments

- 3-10-04 CJT Kevin cover in the Alternate S/D training in phase 24.2
- 10-7-4 KMM Alternate S/D was not covered in 24.2 because of changes to
OP 3126 and exam preps.
- 10/12/04 CJT Dennis, cover as part of eplan training and/or 3126 as
appropriate.
- 11/05/04 DJD Added to LOR-24-405-2, Alt S/D training/walkdown for licens
licensed operators. Also covered during Eplan training in
LOR cycle 24.4.

Vermont Yankee Training Change Request 04-0155

Title/Keyword: BIENNIAL EXAM HIGH MISS QUESTIONS

Originated by: CHRISTOPHER J. TABONE
Department: TRAINING

Date: 05/21/04

Originating Document:

Description:

The following 3 questions had high miss rates during the 2003 Biennial written exam. All three questions have to do with Alternate SHUTDOWN. Cover these when Alternate Shutdown is taught in phase 24.2 (june-aug 2004)

854 - RHR valve interlocks that remain in force

903 - same as above

#1323 - actions taken when drywell temperature is > 260F

Commitment item (Y/N)? No

Priority: B

Number of sheets attached: 0

Cognizant Supervisor: MICHAEL E. GOSEKAMP

Date: 06/01/04

Programs affected: OPS

Review completion due date: 12/31/04

Reviewers	Assigned	Complete
1. CHRISTOPHER J. TABONE	06/01/04	11/29/04
2. DENNIS J. DEER	10/12/04	11/05/04

Feedback:

Date:

Completed: Y MICHAEL E. GOSEKAMP

Date: 11/30/04

Closed: Y MICHAEL A. ROMEO

Date: 12/03/04

Training Change Request 04-0155
Title: BIENNIAL EXAM HIGH MISS QUESTIONS

Page 3 of 3
Originated by: CJT 05/21/04

Comments

11/05/04 DJD Added to LOR-24-405-2 Alternate S/D training done at plant

Vermont Yankee Training Change Request 04-0160

Title/Keyword: ANNUAL EXAM JPM WEAKNESS

Originated by: CHRISTOPHER J. TABONE
Department: TRAINING

Date: 05/21/04

Originating Document:

Description:

2 individuals failed their JPMs on the initial actions of 3126. review these failures and weak areas when Alternate Shutdown is taught (phase 24.2)
JPM number 29502

Commitment item (Y/N)? No

Priority: B

Number of sheets attached: 0

Cognizant Supervisor: MICHAEL E. GOSEKAMP

Date: 06/01/04

Programs affected: OPS

Review completion due date: 12/31/04

Reviewers	Assigned	Complete
1. CHRISTOPHER J. TABONE	06/01/04	11/29/04
2. DENNIS J. DEER	10/12/04	11/05/04

Feedback:

Date:

Completed: Y MICHAEL E. GOSEKAMP

Date: 11/30/04

Closed: Y MICHAEL A. ROMEO

Date: 12/03/04

Training Change Request 04-0160
Title: ANNUAL EXAM JPM WEAKNESS

Page 3 of 3
Originated by: CJT 05/21/04

Comments

11/05/04 DJD Added to LOR-24-405-2 Alternate S/D trainig done at plant

Exhibit 4

DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-405-2 DATE: 10/18/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Responses: Review of OP3126
10 CFR 50 App R and perform Plant Walkthrough.

DEPARTMENT: Operations - Crew E

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	R. D. Busack	<i>[Signature]</i>		
2.	AL SICIAK	<i>[Signature]</i>		
3.	DP FAUREAU	<i>[Signature]</i>		
4.	Gary vander Esch	<i>[Signature]</i>		
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DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-405-2 DATE: 10/26/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Review and walk through of OP 3124

DEPARTMENT: Operations - Crew C

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	R. SHUMAN	<i>R. Shuman</i>	[REDACTED]	
2.	DEVE LAWRENCE	<i>Deve Lawrence</i>	[REDACTED]	
3.	CARL FOX	<i>Carl Fox</i>	[REDACTED]	
4.	Ron Keith	<i>Ron Keith</i>	[REDACTED]	
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DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-405-2 DATE: 10/27/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Review, walk through and
live live of OP3126

DEPARTMENT: Operations - Crew F

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	MD HARRIS	<i>MD Harris</i>	N/A	
2.	Glenn Dacala	<i>G Dacala</i>	N/A	
3.	Rogan B Swanson	<i>R B Swanson</i>	N/A	
4.	LARRY AMITAUTT	<i>Larry Amitautt</i>		
5.	Bryan Croke	<i>Bryan Croke</i>	N/A	
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DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-405-2 DATE: 11/9/04
 ACTIVITY TITLE OR COURSE DESCRIPTION: Review of OP 3126 and timed walk through of time critical steps

DEPARTMENT: Operations - Crew B

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	Dennis Deer	<i>Dennis Deer</i>	[REDACTED]	
2.	WAYNE MANNING	<i>Wayne Manning</i>	[REDACTED]	
3.	Fred H. Alderton	<i>Fred H. Alderton</i>	[REDACTED]	100%
4.	WAYNE KINLA	<i>Wayne Kinla</i>	[REDACTED]	
5.	CORY R DANIELS	<i>Cory R Daniels</i>	[REDACTED]	
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DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: KOR 24-485-2 DATE: 11/10/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Review of OP 3126 and
timed walk-through of the time critical actions

DEPARTMENT: Operations - Crew D

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	Ken Oliver	<i>Ken Oliver</i>	[REDACTED]	
2.	MARK S. STANOUR	<i>Mark Stanour</i>	[REDACTED]	
3.	Thomas Mastaler	<i>Thomas Mastaler</i>	[REDACTED]	
4.	THOMAS SCHULTE	<i>Thomas Schulte</i>	[REDACTED]	
5.	MIKE FRENCH	<i>Mike French</i>	[REDACTED]	
6.	Pete Rose *	<i>Pete Rose</i>	[REDACTED]	
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* Operator failed to sign attendance. Confirmed via telecon that employee received training. *[Signature]* 12/7/09

DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-405-2 DATE: 11/22/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Review of OP 3126 and
timed walkthrough of the time critical steps

DEPARTMENT: Operations - Crew A and Staff Crew

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	GARY BOUVE	<i>[Signature]</i>	[REDACTED]	
2.	JAMES D. LIVINGSTON	<i>[Signature]</i>	[REDACTED]	
3.	Neal Tenauer	<i>[Signature]</i>	[REDACTED]	
4.	Lorenzo E. Dami	<i>[Signature]</i>	[REDACTED]	
5.	Bob Faupel	<i>[Signature]</i>	[REDACTED]	
6.	D.R. Tocgel	<i>[Signature]</i>	[REDACTED]	
7.	D.R. Pichette	<i>[Signature]</i>	[REDACTED]	
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DAILY ATTENDANCE RECORD

(Use Black Ink)

ACTIVITY NUMBER: LOR-24-204 405-2 DATE: 11/24/04

ACTIVITY TITLE OR COURSE DESCRIPTION: Classroom review of 10 CFR 50 App R and OP 3126 Conduct a Plant through of the time critical steps of OP 3126

DEPARTMENT: Operations - Staff Crew

Class Time: Start: _____ Finish: _____

Duration (in hours or days): _____

Instructor(s): _____

	PERSONNEL ATTENDING: NAME (PRINTED)	SIGNATURE	SECURITY SOCIAL NUMBER	GRADE
1.	Stephen P Adrea	Step P Adrea	[REDACTED]	
2.	Chris Wamser	Chris Wamser	[REDACTED]	
3.	Edward L. Havins	Edward L. Havins	[REDACTED]	
4.				
5.				
6.				
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Exhibit 5

November 22, 2004

OP 3126 Timelines for Crew "A"

On Monday, November 22, Crew "A" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+1 minute 50 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 through step 4 of Appendix A completed-----t+ 9 min. 47 sec.

Step 5 of Appendix A completed-----t+ 10 min 49 sec.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 11 min 3 secs.

Add 1 minute 54 sec for the Control Room actions-----Total time---12 min. 53 secs.

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors---t= 0

Step 1 through step 11.a.1)b) was completed in **9 minutes 47 seconds**. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 9 seconds. A 9 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 1 min. and 50 sec. for the Control Room actions---**Total time—11 min. 37 sec.**

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 1 minute and 6 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors--- $t=0$

At $t+11$ min. 40 sec. All steps up through 8.f. complete. A 2 minute delay was allotted for the lineup and stroke time of MOVs in step 8.a and b. The time elapsed up to this point exceeded the time required to restore AC power and reopen RCIC-15 and 16, therefore no hold point was required.

At $t+12$ minutes 48 seconds RCIC injection was started at 400 gpm.

Add 1 min 50 secs for Control Room actions for a total time for Appendix "C" of 14 minutes and 38 secs.

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors--- $t=0$.

At $t=27$ mins. 38 secs. All steps up through 15.a.2)b) had been completed. A time delay of 20 secs. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel.

Add 1 min 54 secs for the Control Room actions for a total time for Appendix B of 29 minutes and 28 seconds.

November 9, 2004

OP 3126 Timelines for Crew "B"

On Tuesday, November 9, Crew "B" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+2 minutes 17 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 through step 4 of Appendix A completed-----t+ 9 mins. 12 secs.

Step 5 of Appendix A completed-----t+ 10 mins. 1 sec.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 10 mins 15 secs.

Add 2 minute 17 secs for the Control Room actions-----Total time---12 mins. 32 secs.

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors---t= 0

Step 1 through step 11.a.1)b) were completed in 9 min 12 sec. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 8 seconds. A 8 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 2 min. and 17 sec. for the Control Room actions—Total time—11 min. 29 sec.

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 45 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors— $t=0$

At $t+8$ min. 35 sec., all steps up through 8.f. complete. A 2 minute delay was allotted for the lineup and stroke time of MOVs in step 8.a and b. At this time the CRO was told to wait until $t=10$ min. and 15 sec. to allow time for the SM to open RCIC-15.

At $t+11$ minutes 9 seconds RCIC injection was started at 400 gpm.

Add 2 min 17 sec for Control Room actions for a total time for Appendix "C" of 13 minutes and 26 sec.

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors— $t=0$.

At $t=31$ min. 17 sec. All steps up through 15.a.2)b) had been completed. A time delay of 20 sec. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel.

Add 2 min 17 secs for the Control Room actions for a total time for Appendix B of 33 minutes 34 seconds.

October 26, 2004

OP 3126 Timelines for Crew "C"

On Tuesday, October 26, Crew "C" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+1 minute 16 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 through step 4 of Appendix A completed-----t+ 9 mins.

Step 5 of Appendix A completed-----t+ 9 mins 50 secs.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 10 mins 4 secs.

Add 1 minute 16 secs for the Control Room actions-----Total time----11 mins. 20 secs.

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors---t= 0

Step 1 through step 11.a.1)b) was completed in 9 minutes. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 9 seconds. A 9 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 1 min. and 16 secs. for the Control Room actions—Total time—10 mins. 16 secs.

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 1 minute and 31 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors— $t=0$

At $t+2$ minutes 56 secs. Step 1 and Step 2 of App c are complete with the exception that it is assumed that RCIC-15 does not have power at this time and that the valve is shut.

At $t+8$ mins. 40 secs. All steps up through 8.f. complete. A 2 minute delay was allotted for the lineup and stroke time of MOVs in step 8.a and b. At this time the CRO was told to wait until $t=10$ mins. and 4 secs to allow time for the SM to open RCIC-15.

At $t+11$ minutes 10 seconds RCIC injection was started at 400 gpm.

Add 1 min 16 secs for Control Room actions for a total time for Appendix "C" of 12 minutes and 26 secs.

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors— $t=0$.

At $t=28$ mins. 25 secs. All steps up through 15.a.2)b) had been completed. A time delay of 20 secs. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel.

Add 1 min 16 secs for the Control Room actions for a total time for Appendix B of 29 minutes 41 seconds.

November 10, 2004

OP 3126 Timelines for Crew "D"

On Wednesday, November 10, Crew "D" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+1 minute 54 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 through step 4 of Appendix A completed-----t+ 9 min. 13 sec.

Step 5 of Appendix A completed-----t+ 10 min 23 sec.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 10 min 37 secs.

Add 1 minute 54 sec for the Control Room actions-----**Total time**---12 min. 31 secs.

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors---t= 0

Step 1 through step 11.a.1)b) was completed in **9 minutes 13 seconds**. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 9 seconds. A 9 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 1 min. and 54 sec. for the Control Room actions—**Total time—11 min. 7 sec.**

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 1 minute and 16 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors--- $t=0$

At $t+11$ min. 30 sec. All steps up through 8.f. complete. A 2 minute delay was allotted for the lineup and stroke time of MOVs in step 8.a and b. The time elapsed up to this point exceeded the time required to restore AC power and reopen RCIC-15 and 16, therefore no hold point was required.

At $t+13$ minutes 15 seconds RCIC injection was started at 400 gpm.

Add 1 min 54 secs for Control Room actions for a **total time for Appendix "C" of 15 minutes and 9 secs.**

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors--- $t=0$.

At $t=27$ mins. 14 secs. All steps up through 15.a.6 had been completed. A time delay of 20 secs. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel.

Add 1 min 54 secs for the Control Room actions for a **total time for Appendix B of 29 minutes and 8 seconds.**

October 20, 2004

OP 3126 Timelines for Crew "E"

On Monday, October 18, Crew "E" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+1 minute 18 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 of App A completed -----t+ 1 min 45 secs

Step 2 of App A completed-----t+ 2 mins 38 secs

Step 3 is included with the timeline for Appendix D

Step 4 of Appendix A completed-----t+ 9 mins. 5 secs.

Step 5 of Appendix A completed-----t+ 9 mins 57 secs.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 10 mins 11 secs.

Add 1 minute 18 secs for the Control Room actions-----Total time----11 mins. 29 secs.

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors— $t=0$

Step 1 through step 11.a.1)b) was completed in **9 minutes and 5 seconds**. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 9 seconds. A 9 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 1 min. and 18 secs. for the Control Room actions—**Total time—10 mins. 23 secs.**

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 1 minute and 31 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors— $t=0$

At $t+2$ mins. 18 secs. Step 1 of Appendix C is complete

At $t+3$ mins. Step 2 is complete with the exception that it is assumed that RCIC-15 does not have power at this time and that the valve is shut.

At $t+9$ mins. 40 secs. All steps up through 8.f. complete. A two minute delay was applied for the lineup and stroke time of MOVs in step 8.a and b. At this time the CRO was told to wait until $t=10$ mins. and 11 secs to allow time for the SM to open RCIC-15.

At $t+12$ minutes RCIC injection was started at 400 gpm.

Add 1 min 18 secs for Control Room actions for a total time for Appendix "C" of **13 minutes and 18 secs.**

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors— $t=0$.

At $t = 23$ mins. 20 secs. All steps up through 15.a.2)b) had been completed. A time delay of 20 secs. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel.

Add 1 min 18 secs for the Control Room actions for a total time for Appendix B of 24 minutes 38 seconds

October 27, 2004

OP 3126 Timelines for Crew "F"

On Tuesday, October 27, Crew "F" completed a timed walkthrough, of the required actions in OP 3126 Rev. 17, to restore AC power to Bus 4 and 9, and to start RCIC injection. All actions were simulated. Sufficient time delays were applied to account for the actual time required to perform the various tasks. The Shift Manager was assigned Appendix A, the CRS Appendix B, the CRO Appendix C, and the ACRO Appendix D.

An initial timeline was generated for the "initial actions" performed in the Control Room. This time was subsequently added to the individual times that it took to perform the various appendices. The timelines for all other appendices started outside the Control Room doors.

Timeline:

At time equal "0" seconds, the Shift Manager stated that a shutdown from outside the Control Room was required and that they would be taking the actions of OP 3126 to shutdown the Plant. Individual crew members were assigned the different steps in the "initial actions" section.

At t+1 minute 4 seconds all Control Room actions were completed and the Crew exited the Control Room.

Appendix A:

The time required to carry out the actions in this Appendix includes the transit time from the Control Room to the SWGR Rooms.

At time "0" the SM leaves from the area outside the Control Room doors---t = 0

Step 1 through step 4 of Appendix A completed-----t+ 9 mins. 23 secs.

Step 5 of Appendix A completed-----t+ 10 mins. 17 secs.

Add 14 secs to include the stroke times for RCIC-15 and RCIC-16---t+ 10 mins. 31 secs.

Add 1 minute 4 secs for the Control Room actions-----**Total time----11 mins. 35 secs.**

Appendix D:

The time required to carry out this appendix includes the transit time from the Control Room to the SWGR Room.

At time "0" the ACRO leaves from the area outside the Control Room doors---t= 0

Step 1 through step 11.a.1)b) was completed in 9 minutes 23 secs. The simulated actions in step 3, to remove the knifeswitch cover and open the CT knifeswitch were performed on one breaker only. The time for these simulated actions was 8 seconds. An 8 second delay was then implemented at each of the remaining breakers to simulate the actual time required to complete the actions of step 3.

Add 1 min. and 4 secs. for the Control Room actions—Total time—10 mins. 27 secs.

An additional timeline for Step 13 of Appendix D (restart "B" Air Compressor), was performed. Transit from the SWGR Rooms and the restart of the Air Compressor took 1 minute and 3 seconds.

Appendix C:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRO leaves from the area outside the Control Room doors— $t=0$

At $t+2$ minutes 56 secs. Step 1 and Step 2 of App c are complete with the exception that it is assumed that RCIC-15 does not have power at this time and that the valve is shut.

At $t+9$ mins. 15 secs. All steps up through 8.f. complete. A 2 minute delay was allotted for the lineup and stroke time of MOVs in step 8.a and b. At this time the CRO was told to wait until $t=10$ mins. and 31 secs to allow time for the SM to open RCIC-15.

At $t+11$ minutes 13 seconds RCIC injection was started at 400 gpm.

Add 1 min 4 secs for Control Room actions for a total time for Appendix "C" of 12 minutes and 17 secs.

Appendix B:

The time required to carry out this appendix includes the transit time from the Control Room to the Rx Bldg 252' level.

At time "0" the CRS leaves from the area outside of the Control Room doors— $t=0$.

At $t=22$ mins. 50 secs. All steps up through 15.a.2)b) had been completed. A time delay of 20 secs. was applied for the manual operation of RHR-66. An 8 minute time delay was applied for the manual operation of RHR-26B, and a 5 minute time delay was applied for the positioning of the MOVs on the RHR Alternate Shutdown Panel. The completion time reflects the time necessary to lineup for LPCI injection. Step 15.a.1) is N/A for LPCI and was not performed as part of this timeline.

Add 1 min 4 secs for the Control Room actions for a total time for Appendix B of 23 minutes 54 seconds.

Exhibit 6



To: Chris Wamser
From: John Twarog
Date: December 7, 2004

Subject: Response to BVY 04-107 "Additional Information Related to the 10 CFR 50 Appendix R Timeline"

Background:

On September 30, 2004 the NRC requested additional information related to Vermont Yankee's (VY) capability to mitigate a 10 CFR50 Appendix R fire event. VY's EPU submittal documented the time to core uncover as a result of EPU was changed from 23.5 minutes to 21.3 minutes and stated there was sufficient time available for the operator to performed the required actions. *error 25.3*

The NRC requested a written response to document completion of operator training and verification that operators can complete the required actions within the times stated in the EPU submittal.

Response:

As of December 1, 2004 all active operating crews have received additional training on OP-3126 "Shutdown Using Alternate Shutdown Methods", the basis of the procedure and requirements of 10 CFR50 Appendix R Fire Event. Four non-active operator license holders have not received the training however they are currently loaned to or work for other departments and do not perform license duties. Prior to activating their licenses, these individuals will receive the training. Administrative controls are in place to preclude their activation until the training is complete.

All the operating crews were timed to verify implementation of OP-3126 and that RCIC injection to maintain the core submerged could be accomplished within the required timelines. The verifications were timed from the point when the event was declared until the operator crews aligned the RCIC unit for injection at 400 gpm. The times provide were for the six operating crews along with an average time (in minutes).

Crew A	Crew B	Crew C	Crew D	Crew E	Crew F	Avg
0:14:38	0:13:26	0:12:26	0:15:09	0:13:18	0:12:17	0:13:32

As indicated by the data, there is sufficient time for the operators to perform required actions under both the current license and EPU conditions.

Exhibit 7



Entergy Nuclear Vermont Yankee, LLC
Entergy Nuclear Operations, Inc.
185 Old Ferry Road
Brattleboro, VT 05302-0500

December 8, 2004

Docket No. 50-271
BVY 04-131
TAC No. MC0761

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: **Vermont Yankee Nuclear Power Station
Technical Specification Proposed Change No. 263 – Supplement No. 22
Extended Power Uprate – 10 CFR 50 Appendix R Timeline Verification**

Reference: 1) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, Technical Specification Proposed Change No. 263, Extended Power Uprate," BVY 03-80, September 10, 2003
2) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, Technical Specification Proposed Change No. 263 – Supplement No. 17, Extended Power Uprate – Response to Request for Additional Information related to the 10 CFR 50 Appendix R Timeline," BVY 04-107, September 30, 2004

As requested by the NRC staff, this letter provides additional information in support of the application (Reference 1) by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy) for a license amendment to increase the maximum authorized power level of the Vermont Yankee Nuclear Power Station (VYNPS) from 1593 megawatts thermal (MWT) to 1912 MWT.

Reference 2 provided a commitment to verify the time assumed in the Safe Shutdown Capability Analysis for a postulated Appendix R fire and complete operator training in the revised alternate shutdown procedure by December 1, 2004. Those commitments have been met.

All six operating crews were retrained and tested in their ability to safely shut down the plant in the event that the control room must be evacuated. The results of the length of time to place the reactor core isolation cooling (RCIC) system in service from the alternate shutdown panels are presented in Table 1 below. These actual times are realistically conservative in that they include time to reposition valves that may not need repositioning.

A006

Table 1

Operating Crew	Time to RCIC Initiation (min:sec)
A	14:38
B	13:26
C	12:26
D	15:09
E	13:18
F	12:17
Average	13:32

Based on the results of this demonstration, the assumption in the Safe Shutdown Capability Analysis that the RCIC system can be made operable in approximately 15 minutes is confirmed. Therefore, sufficient margin exists to allow operator action to manually start the RCIC system prior to the reactor water level reaching the top of the active fuel.

This supplement to the license amendment request provides additional information to clarify Entergy's application for a license amendment and does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

No new regulatory commitments are made in this submittal.

If you have any further questions or require additional information, please contact Mr. James M. DeVincentis at (802) 258-4236.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 8, 2004.

Sincerely,



Jay K. Thayer
Site Vice President
Vermont Yankee Nuclear Power Station

cc: (see next page)

cc: Mr. Richard B. Ennis, Project Manager
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
Mail Stop O 8 B1
Washington, DC 20555

Mr. Samuel J. Collins
Regional Administrator, Region 1
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

USNRC Resident Inspector
Entergy Nuclear Vermont Yankee, LLC
P.O. Box 157
Vernon, Vermont 05354

Mr. David O'Brien, Commissioner
VT Department of Public Service
112 State Street – Drawer 20
Montpelier, Vermont 05620-2601

Exhibit 8

ShawPittman LLP

A Limited Liability Partnership Including Professional Corporations

JAY E. SILBERG
202-663-8063
jay.silberg@shawpittman.com

January 27, 2005

BY OVERNIGHT MAIL

Sarah Hofmann, Esq.
Special Counsel
Department of Public Service
112 State Street – Drawer 20
Montpelier, VT 05620-2601

In the Matter of Entergy Nuclear Vermont Yankee LLC and
Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear
Power Station) -- Docket No. 50-271-OLA

Dear Ms. Hofmann:

Enclosed is a set of materials that document the compliance by Entergy Nuclear Vermont Yankee LLC and Entergy Nuclear Operations, Inc. (collectively "Entergy") with Entergy's commitments to the U.S. Nuclear Regulatory Commission ("NRC") to (1) verify, for operation under extended power uprate conditions, the time assumed in the Safe Shutdown Capability Analysis for the Vermont Yankee Nuclear Power Station ("VY") for the plant operators to place the Reactor Core Isolation Cooling System in service from the alternate shutdown panels in the event of a postulated Appendix R fire, and (2) complete operator training in the revised alternate shutdown procedure being implemented by Entergy.

The materials enclosed are:

- (1) September 30, 2004 letter from Robert J. Wanczyk (Entergy) to NRC re Response to Request for Additional Information related to the 10 CFR 50 Appendix R timeline.
- (2) September 30, 2004 VY Operating Procedure OP 3126 (Rev. 17), "Shutdown Using Alternate Shutdown Methods."
- (3) VY Licensed Operator Requal Training Program Instructor Guide, LOR-24-405-2, Rev. 0, October, 2004.
- (4) Daily Attendance Records for Review of OP 3126 and Timed Walkthrough of the Time Critical Steps (six sets of records, Crews "A" through "F," dated October 18 through November 24, 2004).

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- (5) OP 3126 Timelines for Crews "A" – "F" (narrative descriptions of timed walkthroughs of actions required by OP 3126) (dated October 20, 2004 through November 22, 2004).
- (6) Entergy Memorandum from John Twarog to Chris Wamser, dated December 7, 2004, re Response to BVY 04-107 "Additional Information Related to the 10 CFR 50 Appendix R Timeline."

We understand, based on discussions with your co-counsel Mr. Roisman, that upon provision of this documentation package to the Department of Public Service ("DPS"), DPS will not object to Entergy's motion to stay discovery on DPS Contention 6 pending a ruling by the Atomic Safety and Licensing Board of a motion for summary disposition of that contention, provided that if DPS' employee Mr. William Sherman on review of the enclosed documentation package requests additional records, we will make such records available.

Sincerely,



Jay E. Silberg
Counsel for Entergy Nuclear Vermont Yankee,
LLC and Entergy Nuclear Operations, Inc.

Enclosures

cc: Anthony Z. Roisman, Esq. (w/o enclosures)