

VERMONT YANKEE NUCLEAR POWER CORPORATION

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February 26, 2002
BVY 02-12

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

**Subject: Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 254
Definition of "Operable"**

Pursuant to 10CFR50.90, Vermont Yankee (VY) hereby proposes to amend its Facility Operating License, DPR-28, by incorporating the attached proposed changes into the VY Technical Specifications (TS). The proposed changes revise TS Definition 1.0.K, Operable, and specific system TS for clarification to eliminate inconsistent TS requirements for supported systems when their associated normal or emergency electrical power source is inoperable. The subject changes would provide a clarification of operability that is consistent with industry standards¹.

Attachment 1 to this letter contains supporting information and the safety assessment of the proposed change. Attachment 2 contains the determination of no significant hazards consideration. Attachment 3 provides the marked-up version of the current Technical Specification pages. Attachment 4 is the retyped Technical Specification pages.

VY has reviewed the proposed Technical Specification changes in accordance with 10CFR50.92 and concludes that the proposed changes do not involve a significant hazards consideration.

VY has also determined that the proposed changes satisfy the criteria for a categorical exclusion in accordance with 10CFR51.22(c)(9) and do not require an environmental review. Therefore, pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment needs to be prepared for these changes.

VY requests that a license amendment be issued for implementation within 90 days of its effective date.

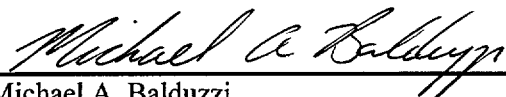
¹ NUREG 1433, Revision 2, Standard Technical Specifications General Electric Plants, BWR/4, dated April 30, 2001.

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If you have any questions on this transmittal, please contact Mr. Jeffrey T. Meyer at (802) 258-4105.


Sincerely,

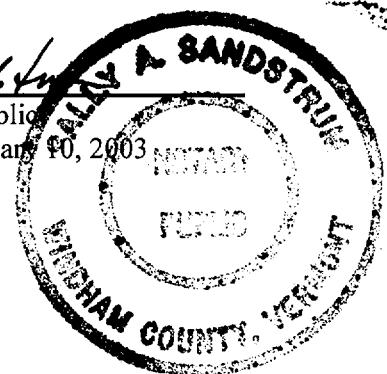
VERMONT YANKEE NUCLEAR POWER CORPORATION


Michael A. Balduzzi
Senior Vice President and Chief Nuclear Officer

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Michael A. Balduzzi, who, being duly sworn, did state that he is Senior Vice President and Chief Nuclear Officer of Vermont Yankee Nuclear Power Corporation, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Vermont Yankee Nuclear Power Corporation, and that the statements therein are true to the best of his knowledge and belief.


Sally A. Sandstrum, Notary Public
My Commission Expires February 10, 2003



Attachments

cc: USNRC Region 1 Administrator
 USNRC Resident Inspector - VYNPS
 USNRC Project Manager - VYNPS
 Vermont Department of Public Service

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254

Definition of “Operable”

Supporting Information and Safety Assessment of Proposed Change

INTRODUCTION

Purpose

Proposed Change 254 revises the definition of “Operable” contained in Technical Specifications (TS) 1.0.K. Conforming changes are also being made to other TS, as well as the TS Bases. These changes are intended to (1) eliminate inconsistent TS requirements for supported systems when their associated normal or emergency electrical power source is inoperable by clarifying the definition of “Operable” with respect to electrical power source requirements, (2) clarify requirements consistent with current practices, and (3) add new requirements to ensure operability of required systems, subsystems, trains, components, and devices.

The revision to the definition of “Operable” is based on considerations of NUREG-1433¹. Clarifications are necessary to provide consistency between the TS Operability and Action requirements for normal and emergency electrical power sources and associated supported systems. These clarifications are also consistent with current practice and industry standard practices. Additional requirements are also provided to ensure that during the period that AC power source(s) are inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices results in appropriate actions being taken.

The following Table 1 provides a detailed discussion of the specific changes, including the bases for the changes and associated safety assessments.

BACKGROUND

The TS are formulated to preserve the single failure criterion for systems that are relied upon in the safety analysis report. By and large, the single failure criterion is preserved by specifying Limiting Conditions for Operation (LCOs) that require all redundant components of safety related systems to be operable. When the required redundancy is not maintained, either due to equipment failure or maintenance outage, action is required, within a specified time, to restore compliance with the LCO or change the operating mode of the plant to place it in a safe condition. The specified time to take action, i.e., allowed outage time, is a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time to fix equipment or otherwise make it operable. If equipment can be returned to operable status within the specified time, plant shutdown is not required.

LCOs are specified for systems in the plant relied upon in the safety analysis report, and with few exceptions, the Action statements address single outages of components, trains or subsystems. For any particular system, the LCO does not normally address multiple outages of redundant components, nor does it address the effects of outages of most support systems, such as cooling water, that are relied upon to maintain the operability of the particular system. This is because of the large number of combinations of these types of outages that are possible. Instead, the TS employ general specifications and an explicit definition of the term Operable to encompass all such cases. These provisions were formulated to assure that no set of equipment outages would be allowed to persist that would result in the facility operating with a loss of safety function.

The VY definition of “Operable” was modified in License Amendment No. 61, dated December 18, 1980, in response to NRC letter dated April 10, 1980 from D. Eisenhut (NRC) to L.H. Heider (VYNPC). The purpose of the April 10, 1980, NRC letter was to resolve misunderstandings regarding the use of the term

¹ NUREG-1433, Standard Technical Specifications General Electric Plants, BWR/4, Revision 2, dated April 30, 2001.

“Operable” as it applied to single failure criterion for safety systems in power reactors. The NRC letter requested proposed changes be incorporated into TS based on model TS that were attached. The model TS included a definition of “Operable-Operability” that included explicit requirements for support systems that were not at that time included in the VY definition of “Operable” (e.g., normal and emergency power was required to be Operable for the supported system to be considered operable). The model TS also included a provision when a normal or emergency power source is inoperable, that operation would be governed by the time limits of the Action statement associated with the LCO for the normal or emergency power source, not the individual Action statements for each system, subsystem, train, component or device that would currently be considered inoperable solely because of the inoperability of its normal or emergency power source. This was only to be allowed if during the period that AC power source(s) were inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices did not exist.

VY stated in a response letter to the NRC dated May 22, 1980, that the TS address the necessary supporting cooling system, emergency electric power sources and instrumentation as well as multiple outages of redundant equipment. Therefore, VY concluded there was assurance that no set of equipment outages would be allowed to persist that would result in the facility being in an unprotected condition. VY further stated that each system and subsystem specification has attendant required actions and out-of-service time limits. Therefore, VY stated the only modification necessary to the TS was to modify the definition of “Operable.” The provisions for an inoperable normal or emergency power source included in the NRC letter were not proposed to be added. This position was approved by the NRC as reflected by the issuance of License Amendment No. 61.

The current VY TS definition of “Operable” requires that a system, subsystem, train, component, or device have its normal and emergency power supply operable for the component to be considered operable. However, inconsistent TS requirements exist for supported systems when their associated normal or emergency electrical power source is inoperable. For example, TS 3.5.H.1 currently specifies the equipment required to be operable when a diesel generator is inoperable to support continued plant operation for 7 days (i.e., all LPCI, Core Spray and Containment Cooling Subsystems supported by the operable diesel generator must be operable), but it does not address all the equipment impacted by the removal of an emergency power supply (i.e., supported by the inoperable diesel generator). Applying the definition of “Operable” to certain TS (e.g., TS 3.5.A.2) for the case of an inoperable diesel generator results in requirements that are inconsistent with the requirements of TS 3.5.H.1 (e.g., when one diesel generator is inoperable, then one core spray pump is inoperable and two residual heat removal pumps are inoperable in accordance with the TS definition of “Operable” and TS 3.5.A.2 does not allow continued operation in this condition). Therefore, this change to the TS is proposed to clarify the definition of “Operable” and eliminate this type of inconsistency between the Action statement allowed outage times for inoperable AC power sources and the Action statement allowed outage times for the supported systems, subsystems, trains, components and devices.

VY Design Considerations

The initial conditions of design basis accident and transient analyses in the Updated Final Analysis Report (UFSAR) assume that emergency safeguards systems are operable. The VY AC electrical power sources are designed to provide sufficient capacity, capability and redundancy to ensure the availability of the necessary power to emergency safeguards systems. Adequate power can be provided to operate required emergency safeguards equipment by any one of the following AC electrical power sources:

1. An immediate access off-site power source through both startup transformers,
2. Backfeed through the main transformer (delayed access off-site power source), or
3. Either of the two diesel generators.

The immediate access off-site power source is capable of supplying the necessary power to operate emergency safeguards equipment. The immediate access off-site power source is available within seconds following a design basis accident to assure core cooling, containment integrity and other vital functions are maintained.

The delayed access off-site power source is capable of supplying the necessary power to operate emergency safeguards equipment. The delayed access off-site power source is available within an hour of loss of main generator capability to assure that fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

Each of the diesel generators is capable of supplying 100 percent of the minimum emergency loads required under postulated design basis accident conditions to assure core cooling, containment integrity and other vital functions are maintained. Each diesel generator is physically and electrically independent of the other and of any off-site power source.

UFSAR

The following VY UFSAR sections provide additional background information.

- 8.3 – Station Transmission System
- 8.4 – Station Auxiliary Power System
- 8.5 – Standby Diesel Generator System
- 8.6 – 125 VDC System

Comparison to Standard Technical Specifications

Standard Technical Specifications (STS) contain a definition of “Operable-Operability” in STS 1.1, “Definitions.” Additional requirements related to support system requirements associated with normal and emergency AC power sources are contained in STS 3.8.1, “AC Sources - Operating.”

In addition to the VY TS definition of “Operable” being addressed by this Proposed Change, VY’s current TS also contain requirements regarding support system operability requirements for AC power sources in Specifications 3.5.A.2, 3.5.A.3, 3.5.A.4, 3/4.5.H.1, 3.5.H.4, 3.7.B.1.b, 3.7.B.3.b, 3/4.10.B.1 and 3/4.10.B.3.

The changes proposed in this revision of VY TS are consistent with STS definition of “Operable-Operability,” with respect to AC power source requirements and are consistent with the logic of the STS Actions for AC Source inoperabilities.

Precedent

On February 11, 1997, NRC granted (TAC No. M95277) License Amendment No. 170 to the Pilgrim Nuclear Power Station Operating License for the purpose of revising the definition of “Operable-Operability” with respect to support system AC power source requirements and the conforming changes to the specific supported system Technical Specifications. VY’s proposed change is similar in nature to the Pilgrim Nuclear Power Station amendment.

SAFETY ASSESSMENT

Table 1 (below) provides a detailed description of each change, including the basis for the change and a safety assessment. The Change Numbers in the left-hand column correspond to the boxed annotation numbers in Attachment 3, "Marked-Up Version of the Current Technical Specifications." Attachment 4, "Retyped Technical Specification Pages," illustrates the proposed changes in final form.

Table 1

Change #	Current Technical Specification	Proposed Change
1	<p>Current Technical Specification (CTS) definition 1.0.K, "Operable," requires that normal <u>and</u> emergency power sources be capable of performing their related support functions (i.e., operable) for the supported system, subsystem, train, component or device to be considered operable.</p>	<p>Revise definition 1.0.K, Operable, to require that normal power sources <u>or</u> emergency power sources be capable of performing their related support functions (i.e., operable) for the supported system, subsystem, train, component or device to be considered operable.</p> <p>TS 1.0.K is changed to:</p> <p><i>A system, subsystem, train, component or device shall be operable or have operability when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
1	<p>The current VY TS definition of “Operable” (1.0.K) considers systems, subsystems, trains, components and devices to be operable provided that both normal and emergency AC power sources are operable for these supported systems, subsystems, trains, components and devices. Thus when one source of AC power is inoperable, the current definition requires the supported systems, subsystems, trains, components and devices be declared inoperable and the associated Action statements entered. The definition of “Operable” is revised to redefine AC power source needs to allow either a normal or emergency power source to be operable for the supported systems, subsystems, trains, components or devices to be considered operable.</p> <p>This is considered acceptable since additional conditions are proposed to be incorporated into the Action statements for AC power sources in TS Section 3.10 (per proposed change # 5, # 8, and # 10) when a normal or emergency power source is inoperable. These additional conditions ensure that during the period that AC power source(s) are inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices results in appropriate actions being taken. These additional conditions restrict operation when one division’s normal or emergency power source is inoperable and a redundant system, subsystem, train, component or device in the other division is inoperable. Specifically, in this condition, the supported equipment is required to be declared inoperable or a plant shutdown is required. By declaring the affected supported equipment inoperable and as a result taking the TS actions of the affected supported equipment, unit operation is maintained within the bounds of the TS and approved actions. Since the AC power sources support the operability of the affected equipment, it is appropriate that a proper action, in this condition, would be to declare that affected supported equipment inoperable. During shutdown conditions, individual emergency power source requirements are already included in the specific system TS (i.e., CTS 3.5.H.4, 3.7.B.1.b, and 3.7.B.3.b) to ensure the required emergency power source is operable, consistent with the VY licensing basis, for the required supported systems, subsystems, trains, components and devices. These specific system TS require one safety train/subsystem with both normal and emergency power sources operable and the redundant train/subsystem with either a normal or emergency power source operable. These shutdown conditions requirements are consistent with the STS.</p> <p>When a normal or emergency power source is inoperable, this change will normally allow operation to be governed by the time limits of the Action statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual Action statements for each system, subsystem, train, component or device that could currently be considered inoperable solely because of the inoperability of its normal or emergency power source.</p> <p>Therefore, this proposed change does not compromise the level of safety afforded to the supported systems, subsystems, trains, components and devices because functional operability requirements are assured through each of the individual system TS and the AC power source operability and availability continues to be assured through the proposed additional conditions incorporated into the AC power source Action statements. In addition, the change to the definition of “Operable” is consistent with the STS.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
2	<p>CTS 3.5.A.2, 3.5.A.3, 3.5.A.4.b, 3.5.C.2, 3.5.C.3, 3.5.D.2, 3.5.D.3, 3.5.E.2.b, and 3.5.G.2.b, provide actions when Core or Containment Cooling System components are inoperable. Each of these actions provides an allowed outage time only if all <u>active</u> components of the other specified systems and subsystems are operable.</p> <p>CTS 3.7.B.3.a and 3.7.B.3.b, provide actions when Standby Gas Treatment trains are inoperable. Each of these actions provides an allowed outage time only if all <u>active</u> components of the other systems and subsystems are operable.</p>	<p>Delete the reference to “all active components” from the provisions for the allowed outage times in the following Actions statements.</p> <p>CTS 3.5.A.2 is revised to state:</p> <p><i>From and after the date that one of the Core Spray Subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other Core Spray Subsystem and the LPCI Subsystems...</i></p> <p>CTS 3.5.A.3 is revised to state:</p> <p><i>From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such pump is sooner made operable, provided that during such seven days, the LPCI and Containment Cooling Subsystem with the inoperable pump is not otherwise inoperable, and the other LPCI and Containment Cooling Subsystem and both Core Spray Subsystems...</i></p> <p>CTS 3.5.A.4.b is revised to state (the reference to expired actions in CTS 3.5.A.4.a is deleted in proposed change # 4 below):</p> <p><i>From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided that during that time, the other LPCI and Containment Cooling Subsystem and the Core Spray Subsystems...</i></p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
2		<p>CTS 3.5.C.2 is revised to state:</p> <p><i>From and after the date that one of the RHR service water pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such pump is sooner made operable, provided that during such thirty days, the RHR Service Water Subsystem with the inoperable pump is not otherwise inoperable and the other RHR Service Water Subsystem is operable.</i></p> <p>CTS 3.5.C.3 is revised to state:</p> <p><i>From and after the date that one RHR Service Water Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other RHR Service Water Subsystem and both Core Spray Subsystems...</i></p> <p>CTS 3.5.D.2 is revised to state:</p> <p><i>From and after the date that the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, reactor operation is permissible only during the succeeding 15 days unless adequate cooling to both essential equipment cooling loops is restored sooner, provided that during such 15 days, the remaining essential equipment cooling loop and....</i></p> <p>CTS 3.5.D.3 is revised to state:</p> <p><i>From and after the date that the Alternate Cooling Tower System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless the Alternate Cooling Tower System is sooner made operable, provided that during such seven days, the Station Service Water System and...</i></p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
2		<p>CTS 3.5.E.2.b is revised to state:</p> <p><i>During such 14 days, the Automatic Depressurization System, the Core Spray Subsystems, the LPCI Subsystems, and the RCIC System are operable.</i></p> <p>CTS 3.5.G.2.b is revised to state:</p> <p><i>During such 14 days, the HPCI System is operable.</i></p> <p>CTS 3.7.B.3.a is revised to state:</p> <p><i>From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days, the other standby gas treatment train...</i></p> <p>CTS 3.7.B.3.b is revised to state:</p> <p><i>From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible during the succeeding seven days unless such train is sooner made operable, provided that during such seven days, the other standby gas treatment train and associated Emergency Diesel Generator...</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
2	<p>In CTS 3.5.A.2, 3.5.A.3, 3.5.A.4.b, 3.5.C.2, 3.5.C.3, 3.5.D.2, 3.5.D.3, 3.5.E.2.b, 3.5.G.2.b, 3.7.B.3.a and 3.7.B.3.b, the reference to “all active components” is deleted from each of these actions since operability of the other subsystems and systems required to be operable by the actions can be adversely affected by both active and passive system components. For example, an inoperable passive component can cause inoperability of a redundant subsystem. This change is proposed to preclude continued plant operation with a loss of safety function or a condition outside the licensing basis due to inoperable passive components. As a result of this change, editorial and grammatical presentation changes are also made for readability and clarity. This more restrictive change is acceptable because it maintains the level of protection intended to be provided by the current TS. This change is also consistent with the STS.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
3	<p>CTS 3.5.A.2, 3.5.A.3, 3.5.A.4.b, and 3.5.C.3, provide actions when Core or Containment Cooling System components are inoperable. Each of these actions provides an allowed outage time for the subject component if the diesel generators that support the remaining operable components, specified in the actions, are operable.</p>	<p>Delete the phrase “and (the/both) diesel generators required for operation of such components if no external source of power were available” from the provisions for the allowed outage times in the following Actions statements. With the deletion of this phrase, a grammatical change is also made to the sentence for readability (i.e., insertion of the word “and” before the last item in the list of components required to be operable). The reference to “all active components” is deleted from these actions in proposed change # 2 above.</p> <p>CTS 3.5.A.2 is revised to state:</p> <p><i>From and after the date that one of the Core Spray Subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other Core Spray Subsystem and the LPCI Subsystems shall be operable.</i></p> <p>CTS 3.5.A.3 is revised to state:</p> <p><i>From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such pump is sooner made operable, provided that during such seven days, the LPCI and Containment Cooling Subsystem with the inoperable pump is not otherwise inoperable, and the other LPCI and Containment Cooling Subsystem and both Core Spray Subsystems shall be operable.</i></p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
3		<p>CTS 3.5.A.4.b is revised to state (the reference to expired actions in CTS 3.5.A.4.a is deleted in proposed change # 4 below):</p> <p><i>From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided that during that time, the other LPCI and Containment Cooling Subsystem and the Core Spray Subsystems shall be operable.</i></p> <p>CTS 3.5.C.3 is revised to state:</p> <p><i>From and after the date that one RHR Service Water Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other RHR Service Water Subsystem and both Core Spray Subsystems shall be operable.</i></p>
	<p>Basis / Safety Assessment:</p> <p>In CTS 3.5.A.2, 3.5.A.3, 3.5.A.4.b, and 3.5.C.3, the phrase “and (the/both) diesel generators required for operation of such components if no external source of power were available” is deleted from the provisions for the allowed outage times. This is considered acceptable since additional conditions are proposed to be incorporated into the Action statements for AC power sources, when a normal or emergency power source is inoperable (TS 3.10.B.1, 3.10.B.3.a, and 3.10.B.3b). These additional conditions restrict operation when one division’s normal or emergency power source is inoperable and a redundant system, subsystem, train, component or device in the other division is inoperable. Specifically, in this condition, the supported equipment is required to be declared inoperable or a plant shutdown is required. By declaring the affected supported equipment inoperable and as a result taking the TS actions of the affected supported equipment, unit operation is maintained within the bounds of the TS and approved actions. Since the AC power sources support the operability of the affected equipment, it is appropriate that a proper action, in this condition, would be to declare that affected supported equipment inoperable. These additional conditions will ensure the level of protection provided by the CTS 3.5.H.1 is maintained and are consistent with the STS. (CTS 3.5.H.1 only permits continued operation in an action statement with an inoperable diesel generator if all Core and Containment Cooling System components supported by the operable diesel generator are also operable.) Therefore, there is no negative impact on plant safety.</p>	

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
4	<p>The CTS 3.5.A.4.a provides actions for an inoperable LPCI Subsystem due to the failure of its associated Uninterruptible Power Supply. This action was only applicable for the 1989/90 operating cycle and has expired.</p>	<p>Delete the actions of CTS 3.5.A.4.a. In addition, due to the deletion of CTS 3.5.A.4.a, commensurate changes to CTS 3.5.A.4.b are also required to delete “other than failure of the UPS during the 1989/90 operating cycle, or Specification 3.5.A.4.a is not met.” As a result of this deletion, CTS 3.5.A.4.b is also relabeled as 3.5.A.4.</p> <p>CTS 3.5.A.4.b is revised, in proposed TS 3.5.A.4, to state:</p> <p><i>From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable,...</i></p>
	<p>Basis / Safety Assessment:</p> <p>The actions of CTS 3.5.A.4.a (and references to CTS 3.5.A.4.a in CTS 3.5.A.4.b) are deleted since CTS 3.5.A.4.a was only applicable of the 1989/90 operating cycle. The 1989/90 operating cycle has been completed. As a result, actions of CTS 3.5.A.4.a have expired and are no longer applicable. This change is acceptable since it is administrative only; thus, there is no negative impact on plant safety.</p>	

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
5	<p>CTS 3.5.H.1 provides an action for the condition of one diesel generator inoperable. This action provides an allowed outage time for the diesel generator provided the LPCI, Core Spray and Containment Cooling Subsystem supported by the operable diesel generator are operable.</p>	<p>CTS 3.5.H.1 requirements are moved from TS Section 3.5, Core and Containment Cooling Systems,” to TS Section 3.10, “Auxiliary Electrical Power Systems.” In addition, these requirements are revised to require all TS required systems, subsystems, trains, components and devices supported by the operable diesel generator to be operable, not just the LPCI, Core Spray and Containment Cooling Subsystems supported by the operable diesel generator. Alternative actions are also provided if these requirements are not met.</p> <p>CTS 3.10.B.1 currently addresses the condition of inoperable buses and references CTS 3.5.H.1 for actions. CTS 3.5.H.1 does not address the condition of inoperable buses (it only addresses the condition of one inoperable diesel generator). As such CTS 3.5.H.1 is not applicable for the condition of inoperable buses. Therefore, CTS 3.10.B.1 is revised to delete references to inoperable buses consistent with the referenced condition and actions in CTS 3.5.H.1. As a result of this deletion, a grammatical change is also made (“are” is changed to “is”).</p> <p>CTS 3.5.H.1 is revised to state:</p> <p><i>Deleted.</i></p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
5		<p>CTS 3.10.B.1 is revised to state:</p> <p><i>From and after the date that one of the diesel generators is made or found to be inoperable for any reason and the remaining diesel generator is operable, continued operation is permissible only during the succeeding 7 days, provided that either:</i></p> <ul style="list-style-type: none"> <i>a. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable diesel generator are operable, or</i> <i>b. if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable diesel generator are immediately declared inoperable and the applicable Technical Specification action(s) taken.</i> <p><i>Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
5	<p>Moving the diesel generator action requirements from TS Section 3.5 to TS Section 3.10, is done as a presentation preference. This action in TS Section 3.5 is currently referenced by TS Section 3.10. Since TS Section 3.10 contains the majority of the diesel generator requirements and since the diesel generators support the operability of more systems than just the Core and Containment Cooling Systems (e.g., Standby Gas Treatment System), it is more appropriate for the diesel generator action requirements to be in TS Section 3.10. This change is acceptable since moving these diesel generator action requirements is an administrative change. Therefore, there is no negative impact on plant safety.</p> <p>Deletion of the CTS 3.10.B.1 reference to inoperable buses is considered to be administrative since the CTS do not include any specific applicable actions for inoperable buses. CTS 3.10.B.1 does address the condition of inoperable buses, but references CTS 3.5.H.1 for actions. However, CTS 3.5.H.1 does not address the condition of inoperable buses (it only addresses the condition of one inoperable diesel generator). As such CTS 3.5.H.1 is not applicable for the condition of inoperable buses. Currently, if required buses are inoperable, the definition of “Operable” requires the supported equipment to be declared inoperable and the associated TS actions taken. The deletion of the reference to inoperable buses in CTS 3.10.B.1 does not change this requirement of the definition of “Operable.” Therefore, the deletion of the CTS 3.10.B.1 reference to inoperable buses has no negative impact on plant safety.</p> <p>Revising the diesel generator action provisions to require all TS required systems, subsystems, trains, components and devices supported by the operable diesel generator to be the operable, not just the LPCI, Core Spray and Containment Cooling Subsystems supported by operable diesel generator, is necessary to support the change to the definition of “Operable” discussed in proposed change # 1 above. These additional conditions ensure that during the period that a diesel generator is inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices results in appropriate actions being taken. These additional conditions restrict operation when one division’s emergency power source is inoperable and a redundant system, subsystem, train, component or device in the other division is inoperable. Specifically, in this condition, the supported equipment is required to be declared inoperable or a plant shutdown is required. By declaring the affected supported equipment inoperable and as a result taking the TS actions of the affected supported equipment, unit operation is maintained within the bounds of the TS and approved actions. Since the AC power sources support the operability of the affected equipment, it is appropriate that a proper action, in this condition, would be to declare that affected supported equipment inoperable. This change will provide a positive measure to restrict operation within the bounds of the TS with an inoperable diesel generator if any redundant system that is supported by the operable diesel generator (not just LPCI, Core Spray and Containment Cooling Subsystems) is inoperable. These additional provisions are consistent with the STS and are considered an enhancement to plant safety.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
6	<p>CTS 4.5.H.1 provides a requirement to demonstrate the remaining diesel generator is operable when one diesel generator is inoperable.</p>	<p>The requirements of CTS 4.5.H.1 are moved from TS Section 3.5, Core and Containment Cooling Systems,” to TS Section 3.10, “Auxiliary Electrical Power Systems.”</p> <p>CTS 4.5.H.1 is revised to:</p> <p><i>Deleted.</i></p> <p>CTS 4.10.B.1 is revised to:</p> <p><i>When one of the diesel generators is made or found inoperable, the remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.</i></p>
	<p>Basis / Safety Assessment:</p> <p>Moving the diesel generator action surveillance requirement in CTS 4.5.H.1 from TS Section 3.5 to TS Section 3.10, is done as a presentation preference. This surveillance in TS Section 3.5 is currently referenced by TS Section 3.10. Since the TS Section 3.10 contains the majority of the diesel generator requirements and since the diesel generators support the operability of more systems than just the Core and Containment Cooling Systems (e.g., Standby Gas Treatment System), it is more appropriate for the diesel generator surveillance requirements to be in TS Section 3.10. This change is acceptable since moving this diesel generator surveillance requirement is an administrative change. Therefore, there is no negative impact on plant safety.</p>	

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
7	<p>CTS 3.10.B.2.b provides an action for the condition of one 125 volt Station Battery System inoperable. This action provides an allowed outage time for the Battery System provided Specification 3.5.H is met.</p>	<p>The applicable requirements of CTS 3.5.H are moved to TS Section 3.10 and revised in proposed change # 5 above. Therefore, CTS 3.10.B.2.b will be revised to include the applicable requirements from CTS 3.5.H and to be consistent with the changes provided in proposed change # 5.</p> <p>CTS 3.10.B.2.b is revised to:</p> <p><i>From and after the date that one of two 125 volt Station Battery Systems is made or found inoperable for any reasons, continued operation is permissible only during the succeeding three days provided that during such three days, all required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System are operable, unless such Battery System is sooner made operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.</i></p>
	<p>Basis / Safety Assessment:</p> <p>The 125 volt Station Battery System action provisions are revised to require all TS required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System to be operable, not just the LPCI, Core Spray and Containment Cooling Subsystems supported by the operable 125 volt Station Battery System. These additional provisions ensure that during the period when one of the two 125 volt Station Battery Systems is inoperable, continued operation with a loss of safety function associated with the supported systems, subsystems, trains, components or devices is precluded. These additional provisions specifically prohibit continued operation when one division's 125 volt Station Battery System is inoperable and a redundant system, subsystem, train, component or device in the other division is inoperable. This change will provide a positive measure to prevent operation with an inoperable 125 volt Station Battery System if any redundant system that is supported by the operable 125 volt Station Battery System (not just LPCI, Core Spray and Containment Cooling Subsystems) is inoperable. This more restrictive change is considered an enhancement to plant safety.</p>	

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
8	<p>CTS 3.10.B.3.a provides an action for the condition of one off-site power source inoperable. This action provides an allowed outage time for the off-site power source provided both diesel generators, the associated emergency buses, and all Low Pressure Core and Containment Cooling Systems are operable.</p>	<p>The requirements of CTS 3.10.B.3.a are revised to require all TS required systems, subsystems, trains, components and devices supported by the operable off-site power source to be operable, not just the associated emergency buses, and all Low Pressure Core and Containment Cooling Systems. Alternative actions are also provided if these requirements are not met.</p> <p>CTS 3.10.B.3.a is revised to state:</p> <p><i>From and after the date that one off-site power source is made or found to be inoperable for any reason, reactor operation may continue for seven days provided that during such seven days, the remaining off-site power source and both diesel generators are operable, and either:</i></p> <ol style="list-style-type: none"> <i>1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable, or</i> <i>2. if required feature(s) supported by the operable off-site power source are inoperable, the redundant required feature(s) supported by the inoperable off-site power source are immediately declared inoperable and the applicable Technical Specification action(s) taken.</i> <p><i>Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours unless the conditions of Specification 3.10.B.3.b are applicable.</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
8	<p>Revising the off-site power source action provisions to require all TS required systems, subsystems, trains, components and devices supported by the operable off-site power source to be operable, not just the associated emergency buses, and all Low Pressure Core and Containment Cooling Systems, is necessary to support the change to the definition of “Operable” discussed in proposed change # 1 above. These additional conditions ensure that during the period that an off-site power source is inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices results in appropriate actions being taken. These additional conditions restrict operation when one off-site power source is inoperable and a redundant system, subsystem, train, component or device in the other division is inoperable. Specifically, in this condition, the supported equipment is required to be declared inoperable or a plant shutdown is required. By declaring the affected supported equipment inoperable and as a result taking the TS actions of the affected supported equipment, unit operation is maintained within the bounds of the TS and approved actions. Since the AC power sources support the operability of the affected equipment, it is appropriate that a proper action, in this condition, would be to declare that affected supported equipment inoperable. This change will provide a positive measure to restrict operation to within the bounds of the TS with an inoperable off-site power source if any redundant system that is supported by the operable off-site power source (not just associated emergency buses, and all Low Pressure Core and Containment Cooling Systems) is inoperable. These additional provisions are consistent with the STS and are considered an enhancement to plant safety.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
9	<p>CTS 4.10.B.3.a provides a requirement to verify the remaining off-site power source, both emergency diesel generators, and all Low Pressure Core and Containment Cooling Systems are operable within one hour and once per eight hours thereafter when one off-site power source is inoperable.</p> <p>CTS 4.10.B.3.b.1 provides a requirement to verify the other off-site power source and all Low Pressure Core and Containment Cooling Systems are operable within one hour and once per eight hours thereafter when one off-site power source and one diesel generator are inoperable.</p>	<p>CTS 4.10.B.3.a and 4.10.B.3.b.1 are revised to only require verification that the remaining off-site power source is operable.</p> <p>CTS 4.10.B.3.a is revised to:</p> <p><i>When one off-site power source is unavailable, the remaining power source shall be verified operable within one hour and once per eight hours thereafter.</i></p> <p>CTS 4.10.B.3.b.1 is revised to:</p> <p><i>The other off-site power source shall be verified operable within one hour and once per eight hours thereafter.</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
9	<p>The requirements in CTS 4.10.B.3.a and 4.10.B.3.b.1 are revised to eliminate the requirements to verify the operability of remaining equipment (i.e., to verify which TS action is required to be entered and taken). Proposed TS 4.10.B.3.a and 4.10.B.3.b.1 only require verification that the remaining off-site power source is operable. Action statement provisions to identify the condition for which the specified allowed outage is applicable are included in TS 3.10.B.3.a for when one off-site power source is inoperable (e.g., reactor operation may continue for seven days provided the remaining off-site source, both diesel generators and all required systems, subsystems, trains, components and devices supported by the operable off-site power source are operable), and in TS 3.10.B.3.b for when one off-site power source and one diesel generator are inoperable (e.g., reactor operation may continue to 24 hours provided the remaining off-site power source, the remaining diesel generator, all required systems, subsystems, trains, components and devices supported by the operable off-site power source are operable, and all required systems, subsystems, trains, components and devices supported by the operable diesel generator are operable). These Action statement provisions are adequate to ensure that the specified allowed outage time is only utilized if these provisions are satisfied without the need to explicitly require periodic verification that the applicable TS equipment is operable. In general, this type of requirement is addressed by plant specific processes which continuously monitor plant conditions to ensure that changes in the status of plant equipment that require entry into Actions (as a result of failure to maintain equipment operable) are identified in a timely manner. This verification is an implicit part of using TS and determining the appropriate Actions to enter and take in the event of inoperability of TS equipment. In addition, plant and equipment status is continuously monitored by control room personnel. The results of this monitoring process are documented in records/logs maintained by control room personnel. The continuous monitoring process includes re-evaluating the status of compliance with TS requirements when TS equipment becomes inoperable using the control room records/logs as aids. Therefore, the explicit requirement to periodically verify that the applicable TS equipment is operable is considered to be unnecessary for ensuring compliance with the TS 3.10.B.3.a and TS 3.10.B.3.b.1 requirements.</p> <p>However, to ensure a highly reliable off-site power source remains with one of the off-site power sources inoperable, it is necessary to verify the availability of the remaining off-site power source on a more frequent basis than is normally required by CTS 4.10.A.4.a (i.e., status of off-site power sources shall be checked daily). Therefore, the requirement in CTS 4.10.B.3.a and 4.10.B.3.b.1 to verify the other off-site power source is operable within one hour and once per eight hours thereafter will be maintained.</p> <p>The proposed change does not negatively impact plant safety since the status of plant equipment and compliance with TS requirements will continue to be monitored. In addition, this change is consistent with the STS.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
10	<p>CTS 3.10.B.3.b provides an action for the condition of one off-site power source and one diesel generator inoperable. This action provides an allowed outage time for the off-site power source and one diesel generator provided the associated emergency buses and all Low Pressure Core and Containment Cooling Systems are operable.</p>	<p>The requirements of CTS 3.10.B.3.b are revised to require all TS required systems, subsystems, trains, components and devices supported by the operable off-site power source and supported by the operable diesel generator to be operable, not just the associated emergency buses, and all Low Pressure Core and Containment Cooling Systems. Alternative actions are also provided if these requirements are not met.</p> <p>CTS 3.10.B.3.b is revised to state:</p> <p><i>From and after the date that either off-site power source and one diesel generator are made or found to be inoperable for any reason, continued operation is permitted for 24 hours as long as the remaining off-site power source and the remaining diesel generator are operable, and either:</i></p> <ol style="list-style-type: none"> <i>1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable and all required features supported by the operable diesel generator are operable, or</i> <i>2. if required feature(s) supported by the operable off-site power source are inoperable or if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable AC power source(s) are immediately declared inoperable and the applicable Technical Specification action(s) taken.</i> <p><i>Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.</i></p>

Table 1
(continued)

Change #	Basis / Safety Assessment
10	<p>Revising the inoperable off-site power source and diesel generator action provisions to require all TS required systems, subsystems, trains, components and devices supported by the operable off-site power source, or supported by the operable diesel generator, to be operable, not just the associated emergency buses, and all Low Pressure Core and Containment Cooling Systems, is necessary to support the change to the definition of “Operable” discussed in proposed change # 1 above. These additional conditions ensure that during the period that AC power source(s) are inoperable, that a loss of safety function associated with the supported systems, subsystems, trains, components or devices results in appropriate actions being taken. These additional conditions restrict operation when a normal and an emergency power source are inoperable and a redundant system, subsystem, train, component or device is inoperable. Specifically, in this condition, the supported equipment is required to be declared inoperable or a plant shutdown is required. By declaring the affected supported equipment inoperable and as a result taking the TS actions of the affected supported equipment, unit operation is maintained within the bounds of the TS and approved actions. Since the AC power sources support the operability of the affected equipment, it is appropriate that a proper action, in this condition, would be to declare that affected supported equipment inoperable. This change will provide a positive measure to restrict operation to within the bounds of the TS with an inoperable off-site power source and inoperable diesel generator if any redundant system that is supported by the operable off-site power source, or supported by the operable diesel generator, (not just associated emergency buses and all Low Pressure Core and Containment Cooling Systems) is inoperable. These additional provisions are consistent with the STS and are considered an enhancement to plant safety.</p>

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
11	<p>CTS 4.10.B.3.b provides requirements to verify the operability of remaining equipment (i.e., to verify which TS action is required to be entered and taken) for the CTS 3.10.B.3.b Action associated with the inoperability of one off-site power source and one diesel generator. CTS 4.10.B.3.b includes reference to performing this verification when either off-site power source and one diesel or associated buses are unavailable</p>	<p>CTS 4.10.B.3.b is revised to delete the reference to “or associated buses.”</p> <p>CTS 4.10.B.3.b is revised to:</p> <p><i>When either off-site power source and one diesel are unavailable:</i></p>
<p>Basis / Safety Assessment:</p> <p>Deletion of the CTS 4.10.B.3.b reference to inoperable buses is considered to be administrative since the CTS do not include Actions for inoperable buses. CTS 3.10.B.3.b addresses the condition of an inoperable off-site power source and inoperable diesel generator. CTS 4.10.B.3.b provides requirements to verify the operability of remaining equipment (i.e., to verify which TS action is required to be entered and taken) for the CTS 3.10.B.3.b Action for an inoperable off-site power source and inoperable diesel generator. CTS 3.10.B.3.b does not address the condition of inoperable buses. As such CTS 4.10.B.3.b is not applicable for the condition of inoperable buses. Therefore, the deletion of the CTS 4.10.B.3.b reference to inoperable buses has not negative impact on plant safety.</p>		

Change #	Current Technical Specification	Proposed Change
12	<p>A typographical error exists on page 108, CTS 4.5.G.1.c is mis-designated as paragraph “c.”</p>	<p>The typographical error on page 108 is corrected. TS 4.5.G.1.c is re-designated as TS 4.5.G.1.d.</p>
<p>Basis / Safety Assessment:</p> <p>The typographical error on page 108 of the CTS was inadvertently introduced as part of the license amendment request for Amendment No. 195. A review of the re-typed TS pages provided by VY letter BVY 00-83, dated September 19, 2000, indicates this error. Prior to Amendment No. 195, this TS paragraph was correctly designated as 4.5.G.1.d. (Note, there was no change to this TS paragraph as part of Amendment No. 195.) This correction involves an administrative error that has no bearing on the obvious meaning or intent of the TS. Making this correction does not change any technical requirements and is acceptable since it is merely correcting an administrative error introduced through the licensing process.</p>		

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
13	Bases are provided for TS Sections 3/4.5 and 3/4.10.	Conforming changes to the Bases for TS Sections 3/4.5 and 3/4.10 are being made to clarify the associated Specifications.
	Basis / Safety Assessment: Bases changes are made for clarity purposes and conformance to the changes being made to the associated Specifications. Bases do not establish actual requirements, and as such do not change technical requirements of the TS. Therefore, the changes are administrative in nature and have no negative impact on plant safety.	

Conclusion/Summary

VY concludes that this proposed change does not adversely affect plant safety and will result in a net benefit to safe operation of the facility, and is therefore acceptable. Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; (2) such activities will be conducted in compliance with the Commission's regulations; and (3) the issuance of the requested license amendment will not be inimical to the common defense and security or to the health and safety of the public.

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254

Definition of “Operable”

Determination of No Significant Hazards Consideration

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Description of amendment request:

The license amendment request would revise the definition of Operable in Technical Specification 1.0.K with respect to support system requirements for AC power sources. Conforming changes are made to specific supported system Technical Specifications in Sections 3.5, "Core and Containment Cooling Systems," 3.7, "Station Containment Systems," 3.10, "Auxiliary Electrical Power Systems," and associated Bases.

Each of the proposed changes can be categorized as one of the following:

1. Revision to the definition of "Operable" with respect to support system AC power source requirements and conforming changes to specific supported system Technical Specifications;
2. An imposition of more restrictive requirements to ensure operability that is driven by an effort for completeness and consistency with the BWR/4 Standard Technical Specifications;
3. Administrative changes which add clarity; or
4. Elimination of explicit requirements to verify the operability of remaining equipment (i.e., to verify which Technical Specification action is required to be entered and taken).

Basis for no significant hazards determination:

Pursuant to 10CFR50.92, VY has reviewed the proposed change and concludes that the change does not involve a significant hazards consideration since the proposed change satisfies the criteria in 10CFR50.92(c). These criteria require that the operation of the facility in accordance with the proposed amendment will not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

1. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The revised definition of "Operable" redefines the AC power source requirements to allow either normal or emergency power available for equipment requiring AC power to be considered operable and provides conforming changes to specific supported system Technical Specifications. This does not compromise the level of safety already afforded by this equipment because operability continues to be assured through the Technical Specifications applicable to such equipment. AC power source availability continues to be assured through the Technical Specifications for AC power sources. None of the proposed changes affects any parameters or conditions that could contribute to the initiation of any accident. The proposed change does not affect the ability of the AC power sources to perform their required safety functions nor does the proposed change affect the ability of the systems requiring AC power to perform their respective safety functions. As a result, the ability of these systems to mitigate accident consequences is

unchanged. Since reactor operation with these revised Technical Specifications is fundamentally unchanged, no design or analytical acceptance criteria will be exceeded. As such, these changes do not impact initiators of analyzed events, nor the analyzed mitigation of design basis accident or transient events.

More stringent requirements that ensure operability of equipment and purely administrative changes do not affect the initiation of any event, nor do they negatively impact the mitigation of any event.

The elimination of explicit requirements to verify the operability of remaining equipment (i.e., to verify which TS action is required to be entered and taken) does not affect the initiation of any event, nor does it negatively impact the mitigation of any event since the verification of the status of compliance with Technical Specification requirements is an implicit part of using Technical Specifications and determining the appropriate Actions to enter and take in the event of inoperable Technical Specification equipment. This type verification continues to be addressed by plant specific processes which continuously monitor plant conditions to ensure that changes in the status of plant equipment that require entry into Actions (as a result of failure to maintain equipment Operable) are identified in a timely manner.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve any physical modification to the plant, change in Technical Specification setpoints, change in plant design basis, or a change in the manner in which the plant is operated. No new or different type of equipment will be installed. No safety-related equipment or safety functions are altered as a result of these changes. In addition, there are no changes in methods governing normal plant operation. No new accident modes are created since plant operation is unchanged. None of the proposed changes affects any parameters or conditions that could contribute to the initiation of any accident. The changes do not introduce any new accident or malfunction mechanism that could create a new or different kind of accident, thus, no new failure mode is created. Therefore, the proposed changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The operation of Vermont Yankee Nuclear Power Station in accordance with the proposed amendment will not involve a significant reduction in a margin of safety.

The change to the definition of "Operable" clarifies the relationship between AC power sources and the operability status of equipment requiring AC power and provides conforming changes to specific supported system Technical Specifications. No change is being made in the manner in which plant systems relied upon in the safety analyses provide plant protection. Plant safety margins continue to be maintained through the limitations established in the Technical Specifications Limiting Conditions for Operation and Actions. This change does not impact plant equipment design or operation, and there

are no changes being made to safety limits or safety system settings that would adversely affect plant safety as a result of the proposed changes. Since the changes have no effect on any safety analysis assumptions or initial conditions, the margins of safety in the safety analyses are maintained.

In addition, administrative changes that do not change technical requirements or meaning, and the imposition of more stringent requirements to ensure operability, have no negative impact on margins of safety.

The elimination of explicit requirements to verify the operability of remaining equipment (i.e., to verify which TS action is required to be entered and taken) has no negative impact on margins of safety since the status of compliance with Technical Specification requirements will continue to be monitored to assure the appropriate previously approved actions are taken in the event of a failure to meet Technical Specification requirements. The verification of the status of compliance with Technical Specification requirements is an implicit part of using Technical Specifications and determining the appropriate Actions to enter and take in the event of inoperable Technical Specification equipment. This type verification continues to be addressed by plant specific processes which continuously monitor plant conditions to ensure that changes in the status of plant equipment that require entry into Actions (as a result of failure to maintain equipment Operable) are identified in a timely manner.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Summary No Significant Hazards Consideration

Conclusion

On the basis of the above, VY has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10CFR50.92(c), in that it: (1) does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) does not involve a significant reduction in a margin of safety.

Docket No. 50-271
BVY 02-12

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254

Definition of “Operable”

Marked-up Version of the Current Technical Specifications

1.0 DEFINITIONS

- I. Minimum Critical Power Ratio - The minimum critical power ratio is defined as the ratio of that power in a fuel assembly which is calculated to cause some point in that assembly to experience boiling transition as calculated by application of the appropriate NRC-approved critical power correlation to the actual assembly operating power.
- J. Mode - The reactor mode is that which is established by the mode-selector-switch.

- K. Operable - A system, subsystem, train, component or device shall be operable or have operability when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal ~~and~~ emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

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or

- L. Operating - Operating means that a system or component is performing its intended functions in its required manner.
- M. Operating Cycle - Interval between the end of one refueling outage and the end of the next subsequent refueling outage.
- N. Primary Containment Integrity - Primary containment integrity means that the drywell and pressure suppression chamber are intact and all of the following conditions are satisfied:

1. All manual containment isolation valves on lines connecting to the reactor coolant system or containment, which are not required to be open during accident conditions, are closed. Such valves may be opened intermittently under administrative controls.
2. At least one door in each airlock is closed and sealed.
3. All automatic containment isolation valves are operable or deactivated in the isolated position.
4. All blind flanges and manways are closed.

O. Protective Instrumentation Definitions

1. Instrument Channel - An instrument channel means an arrangement of a sensor and auxiliary equipment required to generate and transmit to a trip system a single trip signal related to the plant parameter monitored by that instrument channel.
2. Trip System - A trip system means an arrangement of instrument channel trip signals and auxiliary equipment required to initiate action to accomplish a protective trip function. A trip system may require one or more instrument channel trip signals related to one

3.5 LIMITING CONDITION FOR OPERATION

2. From and after the date that one of the Core Spray Subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, all active components of the other Core Spray Subsystem, the LPCI Subsystems, and the diesel generators required for operation of such components if no external source of power were available, shall be operable.

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3. From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such pump is sooner made operable, provided that during such seven days, the remaining active components of the LPCI Containment Cooling Subsystem and all active components of both Core Spray Subsystems and the diesel generators required for operation of such components if no external source of power were available shall be operable.

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4.5 SURVEILLANCE REQUIREMENT

2. When one Core Spray Subsystem is made or found to be inoperable, the active components of the redundant Core Spray Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3. When one of the LPCI pumps is made or found to be inoperable, the remaining operable LPCI pumps shall have been or shall be demonstrated to be operable within 24 hours.

2

the LPCI and Containment Cooling Subsystem with the inoperable pump is not otherwise inoperable, and

other LPCI and

2

3.5 LIMITING CONDITION FOR OPERATION

4. a. From and after the date that a LPCI Subsystem is made or found to be inoperable due to failure of the associated UPS, reactor operation is permissible only during the succeeding thirty days, for the 1989/90 operating cycle, unless it is sooner made operable, provided that during that time the associated motor control center (89A or 89B) is powered from its respective maintenance tie, all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the emergency diesel generators shall be operable, the requirements of Specification 3.10.A.4 are met, and the 4160 volt tie line to the Vernon Hydro is the operable delayed access power source.

Deleted.

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4

X

From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, other than failure of the UPS during the 1989/90 operating cycle, or Specification 3.5.A.4.a is not met, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided

4

4.5 SURVEILLANCE REQUIREMENT

4. When a LPCI Subsystem is made or found to be inoperable, the active components of the redundant LPCI Subsystem shall have been or shall be demonstrated to be operable within 24 hours (except the Recirculation System discharge valves).

3.5 LIMITING CONDITION FOR OPERATION

2 — that during that time ~~all active components of the other LPCI and the Containment Cooling Subsystem, the Core Spray Subsystems, and the diesel generators required for operation of such components if no external source of power were available shall be operable.~~

3 —

3 —

5. All recirculation pump discharge valves and bypass valves shall be operable or closed prior to reactor startup.

6. If the requirements of Specifications 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

B. Containment Spray Cooling Capability

1. Both containment cooling spray loops are required to be operable when the reactor water temperature is greater than 212°F except that a Containment Cooling Subsystem may be inoperable for thirty days.
2. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

4.5 SURVEILLANCE REQUIREMENT

5. Recirculation pump discharge valves shall be tested to verify full open to full closed in $27 \leq t \leq 33$ seconds and bypass valves shall be tested for operability in accordance with Specification 4.6.E.

B. Containment Spray Cooling Capability

1. Surveillance of the drywell spray loops shall be performed as follows. During each five-year period, an air test shall be performed on the drywell spray headers and nozzles.
2. When a Containment Cooling Subsystem is made or found to be inoperable, the active components of the redundant Containment Cooling Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

C. Residual Heat Removal (RHR) Service Water System

1. Except as specified in Specifications 3.5.C.2, and 3.5.C.3 below, both RHR Service Water Subsystem loops shall be operable whenever irradiated fuel is in the reactor vessel and prior to reactor startup from a cold condition.

2. From and after the date that one of the RHR service water pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such pump is sooner made operable, provided that during such thirty days ~~all other active components of the RHR Service Water Subsystem~~ ^{are} operable.

3. From and after the date that one RHR Service Water Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that ~~all active components of the other RHR Service Water~~ ^{are} operable.

4.5 SURVEILLANCE REQUIREMENT

C. Residual Heat Removal (RHR) Service Water System

Surveillance of the RHR Service Water System shall be performed as follows:

1. RHR Service Water Subsystem testing:

Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.

2. When one of the RHR service water pumps is made or found to be inoperable, the operable RHR service water pumps shall have been or shall be demonstrated to be operable within 24 hours.

the RHR Service Water Subsystem with the inoperable pump is not otherwise inoperable and

other

3. When one RHR Service Water Subsystem is made or found to be inoperable, the active components of the redundant RHR Service Water Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

during such seven days,

3.5 LIMITING CONDITION FOR OPERATION

- 3 Subsystem, both Core and Spray Subsystems and both diesel generators required for operation of such components, if no external source of power were available shall be operable.

4. If the requirements of Specification 3.5.C cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

D. Station Service Water and Alternate Cooling Tower Systems

1. Except as specified in Specifications 3.5.D.2 and 3.5.D.3, the Station Service Water System and both essential equipment cooling loops and the alternate cooling tower shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.
2. From and after the date that the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, reactor operation is permissible only during the succeeding 15 days unless adequate cooling capability to both essential equipment cooling loops is restored sooner, provided that during such 15 days, all other active components of the remaining essential equipment cooling loop and the Station Service Water and Alternate Cooling Tower Systems are operable.

4.5 SURVEILLANCE REQUIREMENT

D. Station Service Water and Alternate Cooling Tower Systems

Surveillance of the Station Service Water and Alternate Cooling Tower Systems shall be performed as follows:

1. Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.
2. When the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, the remaining active components of the Station Service Water System, both essential equipment cooling loops, and the alternate cooling tower fan, shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

3. From and after the date that the Alternate Cooling Tower System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days, unless the Alternate Cooling Tower System is made operable, provided that during such seven days all active components of the Station Service Water System and both essential equipment cooling loops are operable.

2

4. If the requirements of Specification 3.5.D cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours..

E. High Pressure Cooling Injection (HPCI) System

1. Except as specified in Specification 3.5.E.2, whenever irradiated fuel is in the reactor vessel and reactor steam pressure is greater than 150 psig:
 - a. The HPCI System shall be operable.
 - b. The condensate storage tank shall contain at least 75,000 gallons of condensate water.

4.5 SURVEILLANCE REQUIREMENT

3. When the Alternate Cooling Tower System is made or found to be inoperable, all active components of the Station Service Water System and both essential equipment cooling loops shall have been or shall be demonstrated to be operable within 24 hours.

2

Sooner

E. High Pressure Coolant Injection (HPCI) System

Surveillance of HPCI System shall be performed as follows:

1. Testing

- a. A simulated automatic actuation test of the HPCI System shall be performed during each refueling outage.
- b. Operability testing of the pump and valves shall be in accordance with Specification 4.6.E.
- c. Upon reactor startup, HPCI operability testing shall be performed as required by Specification 4.6.E within 24 hours after exceeding 150 psig reactor steam pressure.

3.5 LIMITING CONDITION FOR OPERATION

2. From and after the date that the HPCI System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 14 days unless such system is sooner made operable, provided that:

- a. The RCIC System is immediately verified by administrative means to be operable, and

- b. During such 14 days all active components of the Automatic Depressurization System, the Core Spray Subsystems, the LPCI Subsystems, and the RCIC System are operable.

3. If the requirements of either Specification 3.5.E or Specification 4.5.E.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to ≤ 150 psig within 24 hours.

F. Automatic Depressurization System

1. Except as specified in Specification 3.5.F.2 below, the entire Automatic Depressurization Relief System shall be operable at any time the reactor steam pressure is above 150 psig and irradiated fuel is in the reactor vessel.
2. From and after the date that one of the four relief valves of the Automatic Depressurization Subsystem are made or found to be inoperable

4.5 SURVEILLANCE REQUIREMENT

- d. The HPCI System shall deliver at least 4250 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.

2. When the HPCI Subsystem is made or found to be inoperable, the Automatic Depressurization System shall have been or shall be demonstrated to be operable within 24 hours.

NOTE: Automatic Depressurization System operability shall be demonstrated by performing a functional test of the trip system logic.

F. Automatic Depressurization System

Surveillance of the Automatic Depressurization System shall be performed as follows:

1. Operability testing of the relief valves shall be in accordance with Specification 4.6.E.
2. When one relief valve of the Automatic Pressure Relief Subsystem is made or found to be inoperable, the HPCI Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

- 2 b. During such 14 days, ~~all active components of the HPCI System are~~ operable. ^{is}
3. If the requirements of either Specification 3.5.G or Specification 4.5.G.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to ≤ 150 psig within 24 hours.

H. Minimum Core and Containment Cooling System Availability

- 15 1. ~~During any period when one of the emergency diesel generators is inoperable, continued reactor operation is permissible only during the succeeding seven days, provided that all of the LPCI, Core Spray and Containment Cooling Subsystems connecting to the operable diesel generator shall be operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.~~
2. Any combination of inoperable components in the Core and Containment Cooling Systems shall not defeat the capability of the remaining operable components to fulfill the core and containment cooling functions.
3. When irradiated fuel is in the reactor vessel and the reactor is in either a refueling or cold shutdown condition, all Core and Containment Cooling Subsystems may be inoperable provided no work is permitted which has the potential for draining the reactor vessel.

4.5 SURVEILLANCE REQUIREMENT

- 12 d e. The RCIC System shall deliver at least 400 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.

H. Minimum Core and Containment Cooling System Availability

- 6 1. ~~When one of the emergency diesel generators is made or found to be inoperable, the remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.~~

Deleted.

Deleted.

BASES: 4.5 (Cont'd)

The Automatic Depressurization System is tested during refueling outages to avoid an undesirable blowdown of the Reactor Coolant System.

The HPCI Automatic Actuation Test will be performed by simulation of the accident signal. The test is normally performed in conjunction with the automatic actuation of all Core Standby Cooling Systems.

G. Reactor Core Isolation Cooling System

The frequency and conditions for testing of the RCIC system are the same as for the HPCI system. Testing is conducted in accordance with Specification 4.6.E and provides assurance that the system will function as intended.

H. Minimum Core and Containment Cooling System Availability

13 Deleted. Assurance that the diesels will perform their intended function is obtained by the periodic surveillance test and the results obtained from the pump and valve testing performed in accordance with ASME Section XI requirements described in Specification 4.6.E. Whenever a diesel is inoperable, the potential for extended operation with two diesels inoperable is reduced by requiring that the redundant diesel be tested within 24 hours.

I. Maintenance of Filled Discharge Pipe

Observation of water flowing from the discharge line high point vent as discussed in Section I assures that the Core Cooling Subsystems will not experience water hammer damage when any of the pumps are started. Core Spray Subsystems and LPCI Subsystems will also be vented through the discharge line high point vent following a return from an inoperable status to assure that the system is "solid" and ready for operation.

3.7 LIMITING CONDITIONS FOR OPERATION

3. a. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components of the other standby gas treatment train shall be operable.

If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply.

3. b. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible during the succeeding seven days unless such train is sooner made operable, provided that during such seven days all active components including the associated Emergency Diesel Generator of the other standby gas treatment train shall be operable.

If this condition cannot be met during a refueling or cold

4.7 SURVEILLANCE REQUIREMENTS

once per operating cycle not to exceed 18 months. If the ultrasonic test indicates the presence of a leak, the condition will be evaluated and the gasket repaired or replaced as necessary.

- f. DOP and halogenated hydrocarbon test shall be performed following any design modification to the Standby Gas Treatment System housing that could have an effect on the filter efficiency.
- g. An air distribution test demonstrating uniformity within $\pm 20\%$ across the HEPA filters and charcoal adsorbers shall be performed if the SGTs housing is modified such that air distribution could be affected.

3. a. At least once per operating cycle automatic initiation of each train of the Standby Gas Treatment System shall be demonstrated.
- b. Operability testing of valves shall be in accordance with Specification 4.6.E.
- c. When one train of the Standby Gas Treatment System is made or found to be inoperable, the other train shall have been or shall be demonstrated to be operable within 24 hours.

3.10 LIMITING CONDITIONS FOR OPERATION

B. Operation With Inoperable Components

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in the Cold Condition, the requirements of 3.10.A shall be met except:

1. Diesel Generators

From and after the date that one of the diesel generators ~~or its associated buses are~~ made or found to be inoperable for any reason and the remaining diesel generator ~~is operable~~, the requirements of Specification 3.5.H.1 shall be satisfied.

5 — is

5 — Insert 3.10.B.1.

2. Batteries

a. From and after the date that ventilation is lost in the Battery Room portable ventilation equipment shall be provided.

b. From and after the date that one of the two 125 volt Station Battery Systems is made or found to be inoperable for any reasons, continued reactor operation is permissible only during the succeeding three days provided Specification 3.5.H is met unless such Battery System is sooner made operable.

7 — Insert 3.10.B.2

4.10 SURVEILLANCE REQUIREMENTS

B. Operation With Inoperable Components

1. Diesel Generator

When one of the diesel generators is made or found to be inoperable, the requirements of Specification 4.5.H.1 shall be satisfied.

6 —

Insert 4.10.B.1

2. Batteries

Samples of the Battery Room atmosphere shall be taken daily for hydrogen concentration determination.

5

Insert 3.10.B.1

continued operation is permissible only during the succeeding 7 days, provided that either:

- a. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable diesel generator are operable, or
- b. if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable diesel generator are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

6

Insert 4.10.B.1

the remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

7

Insert 3.10.B.2

that during such three days, all required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System are operable, unless such Battery System is sooner made operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

3.10 LIMITING CONDITIONS FOR OPERATION

- f. From and after the date that one of the two 125 volt Switchyard battery systems is found or made to be inoperable for any reason, continued reactor operation is permissible provided that the other 125 volt Switchyard battery system is operable.

3. Off-Site Power

- a. From and after the date one off-site power source is made or found to be inoperable for any reason, reactor operation may continue for seven days provided the remaining off-site source, both emergency diesel generators, associated emergency buses and all Low Pressure Core and Containment Cooling Systems are operable.

8

Insert
3.10.B.3.a

If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown within 24 hours unless the conditions of Specifications 3.10.B.3.b are applicable.

4.10 SURVEILLANCE REQUIREMENTS

3. Off-Site Power

- a. When one off-site power source is unavailable, the remaining power source, both emergency diesel generators, associated emergency buses and all Low Pressure Core and Containment Cooling Systems shall have been or shall be verified operable within one hour and once per eight hours thereafter.

9

Insert 3.10.B.3.a

remaining off-site power source and both diesel generators are operable, and either:

1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable, or
2. if required feature(s) supported by the operable off-site power source are inoperable, the redundant required feature(s) supported by the inoperable off-site power source are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours unless the conditions of Specification 3.10.B.3.b are applicable.

3.10 LIMITING CONDITIONS FOR OPERATION

- b. From and after the date that either off-site power source and one diesel generator are made or found to be inoperable for any reason, continued operation is permitted for 24 hours as long as the remaining off-site power source, the remaining diesel generator, associated emergency buses and all Low Pressure Core and Containment Cooling Systems are operable.

10

Insert
3.10.8.3.b

If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown within 24 hours.

4.10 SURVEILLANCE REQUIREMENTS

- b. When either off-site power source and one diesel or associated buses are unavailable:

11

1. The other off-site power source and all Low Pressure Core and Containment Cooling Systems shall have been or shall be verified operable within one hour and once per eight hours thereafter.

9

2. The remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

10

Insert 3.10.B.3.b

off-site power source and the remaining diesel generator are operable, and either:

1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable and all required features supported by the operable diesel generator are operable, or
2. if required feature(s) supported by the operable off-site power source are inoperable or if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable AC power source(s) are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

BASES:3.10 AUXILIARY ELECTRIC POWER SYSTEMS

- A. The objective of this Specification is to assure that adequate power will be available to operate the emergency safeguards equipment. Adequate power can be provided by any one of the following sources: an immediate access source through both startup transformers, backfeed through the main transformer, or either of the two diesel generators. The backfeed through the main transformer is a delayed access off-site power source. The delayed access source is made available by opening the generator no load disconnect switch and establishing a feed from the 345 kV switchyard through the main generator step up transformer and unit auxiliary transformer to the 4.16 kV buses. The delayed access source is available within an hour of loss of main generator capability to assure that fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

Electric power can be supplied from the off-site transmission network to the on-site Emergency Safeguards Electric Power Distribution System by two independent sources, one immediate access and one delayed access, designed and located so as to minimize to the extent practicable the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. An additional off-site source, a 4160 V tie line to Vernon Hydroelectric Station, can supply either 4160 V emergency bus. It is used to meet station blackout and Appendix R licensing requirements.

Off-site power is supplied to the 345 kV switchyard from the transmission network by three transmission lines. A 400 MVA autotransformer is connected between the 345 kV north bus and the 115 kV bus. The autotransformer is the normal source for the 115 kV bus and the station startup transformers. The autotransformer also feeds the 115 kV transmission line to Keene.

The immediate access source is supplied from the 345 kV Transmission System through the 345 kV/115 kV autotransformer. It feeds the on-site Electric Power Distribution System through the two 115 kV to 4.16 kV startup transformers and is available within seconds following a design basis accident to assure that core cooling, containment integrity and other vital functions are maintained. An alternate immediate access source through the Keene line may be made available. Its availability is dependent on its preloading which must be limited by system dispatchers prior to it being declared an immediate access source.

A qualified source consists of all breakers, transformers, switches, interrupting devices, cabling and controls required to transmit adequate power from the off-site transmission network to the on-site Emergency Safeguards Buses 3 and 4.

Two 480 V Uninterruptible Power Systems supply power to the LPCIS valves via designated Motor Control Centers. The 480 V Uninterruptible Power Systems are redundant and independent of any on-site ac power sources.

This Specification assures that at least two off-site and two on-site power sources, and both 480 V Uninterruptible Power Systems will be available before the reactor is made critical. In addition to assuring power source availability, all of the associated switchgear must be operable as specified to assure that the emergency cooling equipment can be operated, if required, from the power sources.

13

Insert
B 3.10.6-0

13

Insert B 3.10.B-0

A 480 V Uninterruptible Power System consists of a battery, associated battery charger and a motor generator unit.

BASES: 3.10 (Cont'd)

Station service power is supplied to the station through either the unit auxiliary transformer or the startup transformers. In order to start up the station, the startup transformers are required to supply the station auxiliary load. After the unit is synchronized to the system, the unit auxiliary transformer carries the station auxiliary load, except for the station cooling tower loads which are always supplied by one of the startup transformers. The station cooling tower loads are not required to perform an engineered safety feature function in the event of an accident; therefore, an alternate source of power is not essential. Normally one startup transformer supplies 4160 volt Buses 1 and 3, and the other supplies Buses 2 and 4.

A battery charger is supplied for each battery. In addition, the two 125 volt main station battery systems have two chargers available for each system. Either charger is capable of supplying its respective 125 VDC bus.

Power for the Reactor Protection System is supplied by 120 V ac motor generators with an alternate supply from MCC-8B. Two redundant, Class 1E, seismically qualified power protection panels are connected in series with each ac power source. These panels provide overvoltage, undervoltage, and underfrequency protection for the system. Setpoints are chosen to be consistent with the input power requirements of the equipment connected to the bus.

- B. Adequate power is available to operate the emergency safeguards equipment from the immediate access source or for minimum engineered safety features from either of the emergency diesel generators. Therefore, reactor operation is permitted for up to seven days with the delayed-access off-site power source unavailable.

13

Insert
B 3.10.B-1

Each of the diesel generator units is capable of supplying 100 percent of the minimum emergency loads required under postulated design basis accident conditions. Each unit is physically and electrically independent of the other and of any off-site power source. Adequate power is also available to operate the emergency safeguards equipment from the immediate access source or from the delayed access source of off-site power. Therefore, one diesel generator can be allowed out of service for a period of seven days without jeopardizing the safety of the station.

13

Insert
B 3.10.B-2

In the event that the immediate access source is unavailable, adequate power is available to operate the emergency safeguards equipment from the emergency diesel generators or from the delayed-access off-site power source. Therefore, reactor operation is permitted for up to 7 days with the immediate access source unavailable.

13

Insert
B 3.10.B-3

In the event that both emergency diesel generators are lost, adequate power is available to operate the emergency safeguards equipment from the immediate access source or from the delayed-access off-site power source within one hour.

The plant is designed to accept one hundred percent load rejection without adverse effects to the plant or the transmission system. Network stability analysis studies indicate that the loss of the Vermont Yankee unit will not cause instability and consequent tripping of the connecting 345 kV and 115 kV lines. Thus, the availability of the off-site power sources is assured in the event of a turbine trip.

13

Insert B 3.10.B-1

provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power with a coincident single failure of a diesel generator does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

13

Insert B 3.10.B-2

provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable diesel generator are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

13

Insert B 3.10.B-3

provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power with a coincident single failure of a diesel generator does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

BASES: 3.10 (Cont'd)

In the event that one off-site power source and one emergency diesel generator are unavailable, adequate power is available to operate both emergency safeguards buses from the operable off-site power source and to operate 100% of the minimum emergency safeguards loads from the operable diesel generator. In addition, the station blackout alternate ac source of power is capable of supplying power to the bus with the inoperable diesel generator. Therefore, continued operation is permitted for up to 24 hours with one off-site power source and one emergency diesel generator unavailable.

13

Insert
B 310.8-4

Either of the two main station batteries is sized to supply its assigned emergency load for 8 hours without recharging, which provides margin relative to design requirements.

The main station battery duty cycle is defined as 2 hours based upon plant design which postulates the time required to restore AC power to the auxiliary systems, including the battery chargers.

13

Insert
B 310.8-5

Due to the high reliability of battery systems, one of the two batteries may be out of service for up to three days. This minimizes the probability of unwarranted shutdown by providing adequate time for reasonable repairs. A station battery or an Uninterruptible Power System battery is considered inoperable if one cell is out of service. A cell will be considered out of service if its float voltage is below 2.13 volts and the specific gravity is below 1.190 at 77°F.

The Battery Room is ventilated to prevent accumulation of hydrogen gas. With a complete loss of the ventilation system, the accumulation of hydrogen would not exceed 4 percent concentration in 2 1/2 days. Therefore, on loss of Battery Room ventilation, the use of portable ventilation equipment and daily sampling provide assurance that potentially hazardous quantities of hydrogen gas will not accumulate.

- C. The minimum diesel fuel supply of 36,000 gallons will supply one diesel generator for a minimum of seven days of operation at its continuous duty rating of 2750kW. Additional fuel can be obtained and delivered to the site from nearby sources within the seven-day period.

13

Insert B 3.10.B-4

provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable and all required features supported by the operable diesel generator are operable. These provisional requirements ensure that, during the 24 hour allowed outage time, a loss of off-site power does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

13

Insert B 3.10.B-5

provided all required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System are operable. The provisional requirement ensures that, during the three day allowed outage time, a loss of safety function of critical systems does not exist. Required systems, subsystems, trains, components and devices are those supported by 125 volt Station Battery System and are required to be operable by the Technical Specifications in the existing plant mode or condition.

BASES: 4.10 (Cont'd)

for the associated batteries. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability.

The Service Discharge Test (4.10.A.2.c) is a test of the batteries ability to satisfy the design requirements of the associated dc system. This test will be performed using simulated or actual loads at the rates and for the durations specified in the design load profile (battery duty cycle).

13 Insert
B 4.10.B → Verification of operability of an off-site power source and Low Pressure Core and Containment Cooling Systems within one hour and once per eight hours thereafter as required by 4.10.B.3.b.1 may be performed as an administrative check by examining logs and other information to determine that required equipment is available and not out of service for maintenance or other reasons. It does not require performing the surveillance needed to demonstrate the operability of the equipment.

- 13 → C. Logging the diesel fuel supply weekly and after each operation assures that the minimum fuel supply requirements will be maintained. During the monthly test for quality of the diesel fuel oil, a viscosity test and water and sediment test will be performed as described in ASTM D975-68. The quality of the diesel fuel oil will be acceptable if the results of the tests are within the limiting requirements for diesel fuel oils shown on Table 1 of ASTM D975-68.

13 Insert B 4.10.B

Assurance that the diesel generators will meet their intended function is obtained by periodic surveillance testing and the results obtained from pump and valve testing performed in accordance with the requirements of ASME Section XI and Specification 4.6.E. Whenever a diesel generator is inoperable, the potential for extended operation with two diesel generators inoperable is reduced by requiring the redundant diesel generator to be tested, as required by Specification 4.10.B.1, within 24 hours.

Attachment 4

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254

Definition of “Operable”

Retyped Technical Specification Pages

Listing of Affected Technical Specifications Pages

Replace the Vermont Yankee Nuclear Power Station Technical Specifications pages listed below with the revised pages included herein. The revised pages contain vertical lines in the margin indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
2	2
100	100
101	101
102	102
103	103
104	104
105	105
106	106
108	108
114	114
154	154
215	215
216	216
217	217
217a	217a
---	217b
220	220
221	221
221a	221a
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223	223

1.0 DEFINITIONS

- I. Minimum Critical Power Ratio - The minimum critical power ratio is defined as the ratio of that power in a fuel assembly which is calculated to cause some point in that assembly to experience boiling transition as calculated by application of the appropriate NRC-approved critical power correlation to the actual assembly operating power.
- J. Mode - The reactor mode is that which is established by the mode-selector-switch.
- K. Operable - A system, subsystem, train, component or device shall be operable or have operability when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal or emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).
- L. Operating - Operating means that a system or component is performing its intended functions in its required manner.
- M. Operating Cycle - Interval between the end of one refueling outage and the end of the next subsequent refueling outage.
- N. Primary Containment Integrity - Primary containment integrity means that the drywell and pressure suppression chamber are intact and all of the following conditions are satisfied:
1. All manual containment isolation valves on lines connecting to the reactor coolant system or containment, which are not required to be open during accident conditions, are closed. Such valves may be opened intermittently under administrative controls.
 2. At least one door in each airlock is closed and sealed.
 3. All automatic containment isolation valves are operable or deactivated in the isolated position.
 4. All blind flanges and manways are closed.
- O. Protective Instrumentation Definitions
1. Instrument Channel - An instrument channel means an arrangement of a sensor and auxiliary equipment required to generate and transmit to a trip system a single trip signal related to the plant parameter monitored by that instrument channel.
 2. Trip System - A trip system means an arrangement of instrument channel trip signals and auxiliary equipment required to initiate action to accomplish a protective trip function. A trip system may require one or more instrument channel trip signals related to one

3.5 LIMITING CONDITION FOR OPERATION

2. From and after the date that one of the Core Spray Subsystems is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other Core Spray Subsystem and the LPCI Subsystems shall be operable.
3. From and after the date that one of the LPCI pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such pump is sooner made operable, provided that during such seven days, the LPCI and Containment Cooling Subsystem with the inoperable pump is not otherwise inoperable, and the other LPCI and Containment Cooling Subsystem and both Core Spray Subsystems shall be operable.

4.5 SURVEILLANCE REQUIREMENT

2. When one Core Spray Subsystem is made or found to be inoperable, the active components of the redundant Core Spray Subsystem shall have been or shall be demonstrated to be operable within 24 hours.
3. When one of the LPCI pumps is made or found to be inoperable, the remaining operable LPCI pumps shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

4. From and after the date that a LPCI Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless it is sooner made operable, provided that during that time the other LPCI and the Containment Cooling Subsystem and the Core Spray Subsystems shall be operable.

4.5 SURVEILLANCE REQUIREMENT

4. When a LPCI Subsystem is made or found to be inoperable, the active components of the redundant LPCI Subsystem shall have been or shall be demonstrated to be operable within 24 hours (except the Recirculation System discharge valves).

3.5 LIMITING CONDITION FOR OPERATION

5. All recirculation pump discharge valves and bypass valves shall be operable or closed prior to reactor startup.
6. If the requirements of Specifications 3.5.A cannot be met, an orderly shutdown of the reactor shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

B. Containment Spray Cooling Capability

1. Both containment cooling spray loops are required to be operable when the reactor water temperature is greater than 212°F except that a Containment Cooling Subsystem may be inoperable for thirty days.
2. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

4.5 SURVEILLANCE REQUIREMENT

5. Recirculation pump discharge valves shall be tested to verify full open to full closed in $27 \leq t \leq 33$ seconds and bypass valves shall be tested for operability in accordance with Specification 4.6.E.

B. Containment Spray Cooling Capability

1. Surveillance of the drywell spray loops shall be performed as follows. During each five-year period, an air test shall be performed on the drywell spray headers and nozzles.
2. When a Containment Cooling Subsystem is made or found to be inoperable, the active components of the redundant Containment Cooling Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

C. Residual Heat Removal (RHR) Service Water System

1. Except as specified in Specifications 3.5.C.2, and 3.5.C.3 below, both RHR Service Water Subsystem loops shall be operable whenever irradiated fuel is in the reactor vessel and prior to reactor startup from a cold condition.
2. From and after the date that one of the RHR service water pumps is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding thirty days unless such pump is sooner made operable, provided that during such thirty days, the RHR Service Water Subsystem with the inoperable pump is not otherwise inoperable and the other RHR Service Water Subsystem is operable.
3. From and after the date that one RHR Service Water Subsystem is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such subsystem is sooner made operable, provided that during such seven days, the other RHR Service Water Subsystem and both Core Spray Subsystems shall be operable.

4.5 SURVEILLANCE REQUIREMENT

C. Residual Heat Removal (RHR) Service Water System

Surveillance of the RHR Service Water System shall be performed as follows:

1. RHR Service Water Subsystem testing:

Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.
2. When one of the RHR service water pumps is made or found to be inoperable, the operable RHR service water pumps shall have been or shall be demonstrated to be operable within 24 hours.
3. When one RHR Service Water Subsystem is made or found to be inoperable, the active components of the redundant RHR Service Water Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

4. If the requirements of Specification 3.5.C cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

D. Station Service Water and Alternate Cooling Tower Systems

1. Except as specified in Specifications 3.5.D.2 and 3.5.D.3, the Station Service Water System and both essential equipment cooling loops and the alternate cooling tower shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.
2. From and after the date that the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, reactor operation is permissible only during the succeeding 15 days unless adequate cooling capability to both essential equipment cooling loops is restored sooner, provided that during such 15 days, the remaining essential equipment cooling loop and the Station Service Water and Alternate Cooling Tower Systems are operable.

4.5 SURVEILLANCE REQUIREMENT

D. Station Service Water and Alternate Cooling Tower Systems

Surveillance of the Station Service Water and Alternate Cooling Tower Systems shall be performed as follows:

1. Operability testing of pumps and valves shall be in accordance with Specification 4.6.E.
2. When the Station Service Water System is made or found to be unable to provide adequate cooling to one of the two essential equipment cooling loops, the remaining active components of the Station Service Water System, both essential equipment cooling loops, and the alternate cooling tower fan, shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

3. From and after the date that the Alternate Cooling Tower System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days, unless the Alternate Cooling Tower System is sooner made operable, provided that during such seven days, the Station Service Water System and both essential equipment cooling loops are operable.
4. If the requirements of Specification 3.5.D cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 24 hours.

E. High Pressure Cooling Injection (HPCI) System

1. Except as specified in Specification 3.5.E.2, whenever irradiated fuel is in the reactor vessel and reactor steam pressure is greater than 150 psig:
 - a. The HPCI System shall be operable.
 - b. The condensate storage tank shall contain at least 75,000 gallons of condensate water.

4.5 SURVEILLANCE REQUIREMENT

3. When the Alternate Cooling Tower System is made or found to be inoperable, all active components of the Station Service Water System and both essential equipment cooling loops shall have been or shall be demonstrated to be operable within 24 hours.

E. High Pressure Coolant Injection (HPCI) System

Surveillance of HPCI System shall be performed as follows:

1. Testing

- a. A simulated automatic actuation test of the HPCI System shall be performed during each refueling outage.
- b. Operability testing of the pump and valves shall be in accordance with Specification 4.6.E.
- c. Upon reactor startup, HPCI operability testing shall be performed as required by Specification 4.6.E within 24 hours after exceeding 150 psig reactor steam pressure.

3.5 LIMITING CONDITION FOR OPERATION

2. From and after the date that the HPCI System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding 14 days unless such system is sooner made operable, provided that:
 - a. The RCIC System is immediately verified by administrative means to be operable, and
 - b. During such 14 days, the Automatic Depressurization System, the Core Spray Subsystems, the LPCI Subsystems, and the RCIC System are operable.
3. If the requirements of either Specification 3.5.E or Specification 4.5.E.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to ≤ 150 psig within 24 hours.

F. Automatic Depressurization System

1. Except as specified in Specification 3.5.F.2 below, the entire Automatic Depressurization Relief System shall be operable at any time the reactor steam pressure is above 150 psig and irradiated fuel is in the reactor vessel.
2. From and after the date that one of the four relief valves of the Automatic Depressurization Subsystem are made or found to be inoperable

4.5 SURVEILLANCE REQUIREMENT

- d. The HPCI System shall deliver at least 4250 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.

2. When the HPCI Subsystem is made or found to be inoperable, the Automatic Depressurization System shall have been or shall be demonstrated to be operable within 24 hours.

NOTE: Automatic Depressurization System operability shall be demonstrated by performing a functional test of the trip system logic.

F. Automatic Depressurization System

Surveillance of the Automatic Depressurization System shall be performed as follows:

1. Operability testing of the relief valves shall be in accordance with Specification 4.6.E.
2. When one relief valve of the Automatic Pressure Relief Subsystem is made or found to be inoperable, the HPCI Subsystem shall have been or shall be demonstrated to be operable within 24 hours.

3.5 LIMITING CONDITION FOR OPERATION

- b. During such 14 days, the HPCI System is operable.
 - 3. If the requirements of either Specification 3.5.G or Specification 4.5.G.1.c cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to ≤ 150 psig within 24 hours.
- H. Minimum Core and Containment Cooling System Availability
- 1. Deleted.
 - 2. Any combination of inoperable components in the Core and Containment Cooling Systems shall not defeat the capability of the remaining operable components to fulfill the core and containment cooling functions.
 - 3. When irradiated fuel is in the reactor vessel and the reactor is in either a refueling or cold shutdown condition, all Core and Containment Cooling Subsystems may be inoperable provided no work is permitted which has the potential for draining the reactor vessel.

4.5 SURVEILLANCE REQUIREMENT

- d. The RCIC System shall deliver at least 400 gpm at normal reactor operating pressure when recirculating to the Condensate Storage Tank.
- H. Minimum Core and Containment Cooling System Availability
- 1. Deleted.

BASES: 4.5 (Cont'd)

The Automatic Depressurization System is tested during refueling outages to avoid an undesirable blowdown of the Reactor Coolant System.

The HPCI Automatic Actuation Test will be performed by simulation of the accident signal. The test is normally performed in conjunction with the automatic actuation of all Core Standby Cooling Systems.

G. Reactor Core Isolation Cooling System

The frequency and conditions for testing of the RCIC system are the same as for the HPCI system. Testing is conducted in accordance with Specification 4.6.E and provides assurance that the system will function as intended.

H. Minimum Core and Containment Cooling System Availability

Deleted.

I. Maintenance of Filled Discharge Pipe

Observation of water flowing from the discharge line high point vent as discussed in Section I assures that the Core Cooling Subsystems will not experience water hammer damage when any of the pumps are started. Core Spray Subsystems and LPCI Subsystems will also be vented through the discharge line high point vent following a return from an inoperable status to assure that the system is "solid" and ready for operation.

3.7 LIMITING CONDITIONS FOR OPERATION

3. a. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such train is sooner made operable, provided that during such seven days, the other standby gas treatment train shall be operable.

If this condition cannot be met during reactor operation, or the inoperable train is not restored to operable status within seven days, the actions and completion times of Specification 3.7.B.4.a shall apply.

3. b. From and after the date that one train of the Standby Gas Treatment System is made or found to be inoperable for any reason, operations requiring secondary containment are permissible during the succeeding seven days unless such train is sooner made operable, provided that during such seven days, the other standby gas treatment train and associated Emergency Diesel Generator shall be operable.

If this condition cannot be met during a refueling or cold

4.7 SURVEILLANCE REQUIREMENTS

once per operating cycle not to exceed 18 months. If the ultrasonic test indicates the presence of a leak, the condition will be evaluated and the gasket repaired or replaced as necessary.

- f. DOP and halogenated hydrocarbon test shall be performed following any design modification to the Standby Gas Treatment System housing that could have an effect on the filter efficiency.

- g. An air distribution test demonstrating uniformity within $\pm 20\%$ across the HEPA filters and charcoal adsorbers shall be performed if the SGTS housing is modified such that air distribution could be affected.

3. a. At least once per operating cycle automatic initiation of each train of the Standby Gas Treatment System shall be demonstrated.

- b. Operability testing of valves shall be in accordance with Specification 4.6.E.

- c. When one train of the Standby Gas Treatment System is made or found to be inoperable, the other train shall have been or shall be demonstrated to be operable within 24 hours.

3.10 LIMITING CONDITIONS FOR OPERATION

B. Operation With Inoperable Components

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in the Cold Condition, the requirements of 3.10.A shall be met except:

1. Diesel Generators

From and after the date that one of the diesel generators is made or found to be inoperable for any reason and the remaining diesel generator is operable, continued operation is permissible only during the succeeding 7 days, provided that either:

- a. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable diesel generator are operable, or
- b. if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable diesel generator are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

4.10 SURVEILLANCE REQUIREMENTS

B. Operation With Inoperable Components

1. Diesel Generator

When one of the diesel generators is made or found to be inoperable, the remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

3.10 LIMITING CONDITIONS FOR OPERATION

2. Batteries

- a. From and after the date that ventilation is lost in the Battery Room portable ventilation equipment shall be provided.
- b. From and after the date that one of the two 125 volt Station Battery Systems is made or found to be inoperable for any reasons, continued reactor operation is permissible only during the succeeding three days provided that during such three days, all required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System are operable, unless such Battery System is sooner made operable. If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.
- c. Deleted.
- d. From and after the date that the AS-2 125 Volt battery system is made or found to be inoperable for any reason, continued reactor operation is permissible provided Diesel Generator DG-1-1A control power is transferred to Station Battery B1.

4.10 SURVEILLANCE REQUIREMENTS

2. Batteries

Samples of the Battery Room atmosphere shall be taken daily for hydrogen concentration determination.

3.10 LIMITING CONDITIONS FOR OPERATION

- e. From and after the date that one of the two 24 Volt Neutron Monitoring and Process Radiation Monitoring battery systems is found or made to be inoperable for any reason, continued reactor operation is permissible providing the minimum channel requirements of Sections 3.1 and 3.2 for the Neutron Monitoring and Process Radiation Monitoring systems are met.
- f. From and after the date that one of the two 125 volt Switchyard battery systems is found or made to be inoperable for any reason, continued reactor operation is permissible provided that the other 125 volt Switchyard battery system is operable.

3. Off-Site Power

- a. From and after the date one off-site power source is made or found to be inoperable for any reason, reactor operation may continue for seven days provided the remaining off-site power source and both diesel generators are operable, and either:

4.10 SURVEILLANCE REQUIREMENTS

3. Off-Site Power

- a. When one off-site power source is unavailable, the remaining power source shall be verified operable within one hour and once per eight hours thereafter.

3.10 LIMITING CONDITIONS FOR OPERATION

1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable, or
2. if required feature(s) supported by the operable off-site power source are inoperable, the redundant required feature(s) supported by the inoperable off-site power source are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours unless the conditions of Specification 3.10.B.3.b are applicable.

- b. From and after the date that either off-site power source and one diesel generator are made or found to be inoperable for any reason, continued operation is permitted for 24 hours as long as the remaining

4.10 SURVEILLANCE REQUIREMENTS

- b. When either off-site power source and one diesel are unavailable:

1. The other off-site power source shall be verified operable within one hour and once per eight hours thereafter.

3.10 LIMITING CONDITIONS FOR OPERATION

off-site power source and the remaining diesel generator are operable, and either:

1. all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable and all required features supported by the operable diesel generator are operable, or
2. if required feature(s) supported by the operable off-site power source are inoperable or if required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable AC power source(s) are immediately declared inoperable and the applicable Technical Specification action(s) taken.

Otherwise, an orderly shutdown shall be initiated and the reactor shall be in the cold shutdown condition within 24 hours.

4.10 SURVEILLANCE REQUIREMENTS

2. The remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

BASES:3.10 AUXILIARY ELECTRIC POWER SYSTEMS

- A. The objective of this Specification is to assure that adequate power will be available to operate the emergency safeguards equipment. Adequate power can be provided by any one of the following sources: an immediate access source through both startup transformers, backfeed through the main transformer, or either of the two diesel generators. The backfeed through the main transformer is a delayed access off-site power source. The delayed access source is made available by opening the generator no load disconnect switch and establishing a feed from the 345 kV switchyard through the main generator step up transformer and unit auxiliary transformer to the 4.16 kV buses. The delayed access source is available within an hour of loss of main generator capability to assure that fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

Electric power can be supplied from the off-site transmission network to the on-site Emergency Safeguards Electric Power Distribution System by two independent sources, one immediate access and one delayed access, designed and located so as to minimize to the extent practicable the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. An additional off-site source, a 4160 V tie line to Vernon Hydroelectric Station, can supply either 4160 V emergency bus. It is used to meet station blackout and Appendix R licensing requirements.

Off-site power is supplied to the 345 kV switchyard from the transmission network by three transmission lines. A 400 MVA autotransformer is connected between the 345 kV north bus and the 115 kV bus. The autotransformer is the normal source for the 115 kV bus and the station startup transformers. The autotransformer also feeds the 115 kV transmission line to Keene.

The immediate access source is supplied from the 345 kV Transmission System through the 345 kV/115 kV autotransformer. It feeds the on-site Electric Power Distribution System through the two 115 kV to 4.16 kV startup transformers and is available within seconds following a design basis accident to assure that core cooling, containment integrity and other vital functions are maintained. An alternate immediate access source through the Keene line may be made available. Its availability is dependent on its preloading which must be limited by system dispatchers prior to it being declared an immediate access source.

A qualified source consists of all breakers, transformers, switches, interrupting devices, cabling and controls required to transmit adequate power from the off-site transmission network to the on-site Emergency Safeguards Buses 3 and 4.

Two 480 V Uninterruptible Power Systems supply power to the LPCIS valves via designated Motor Control Centers. The 480 V Uninterruptible Power Systems are redundant and independent of any on-site ac power sources. A 480 V Uninterruptible Power System consists of a battery, associated battery charger and a motor generator unit.

This Specification assures that at least two off-site and two on-site power sources, and both 480 V Uninterruptible Power Systems will be available before the reactor is made critical. In addition to assuring power source availability, all of the associated switchgear must be operable as specified to assure that the emergency cooling equipment can be operated, if required, from the power sources.

BASES: 3.10 (Cont'd)

Station service power is supplied to the station through either the unit auxiliary transformer or the startup transformers. In order to start up the station, the startup transformers are required to supply the station auxiliary load. After the unit is synchronized to the system, the unit auxiliary transformer carries the station auxiliary load, except for the station cooling tower loads which are always supplied by one of the startup transformers. The station cooling tower loads are not required to perform an engineered safety feature function in the event of an accident; therefore, an alternate source of power is not essential. Normally one startup transformer supplies 4160 volt Buses 1 and 3, and the other supplies Buses 2 and 4.

A battery charger is supplied for each battery. In addition, the two 125 volt main station battery systems have two chargers available for each system. Either charger is capable of supplying its respective 125 VDC bus.

Power for the Reactor Protection System is supplied by 120 V ac motor generators with an alternate supply from MCC-8B. Two redundant, Class 1E, seismically qualified power protection panels are connected in series with each ac power source. These panels provide overvoltage, undervoltage, and underfrequency protection for the system. Setpoints are chosen to be consistent with the input power requirements of the equipment connected to the bus.

- B. Adequate power is available to operate the emergency safeguards equipment from the immediate access source or for minimum engineered safety features from either of the emergency diesel generators. Therefore, reactor operation is permitted for up to seven days with the delayed-access off-site power source unavailable provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power with a coincident single failure of a diesel generator does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

Each of the diesel generator units is capable of supplying 100 percent of the minimum emergency loads required under postulated design basis accident conditions. Each unit is physically and electrically independent of the other and of any off-site power source. Adequate power is also available to operate the emergency safeguards equipment from the immediate access source or from the delayed access source of off-site power. Therefore, one diesel generator can be allowed out of service for a period of seven days without jeopardizing the safety of the station provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable diesel generator are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

BASES: 3.10 (Cont'd)

In the event that the immediate access source is unavailable, adequate power is available to operate the emergency safeguards equipment from the emergency diesel generators or from the delayed-access off-site power source. Therefore, reactor operation is permitted for up to 7 days with the immediate access source unavailable provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable. The provisional requirement ensures that, during the seven day allowed outage time, a loss of off-site power with a coincident single failure of a diesel generator does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

In the event that both emergency diesel generators are lost, adequate power is available to operate the emergency safeguards equipment from the immediate access source or from the delayed-access off-site power source within one hour.

The plant is designed to accept one hundred percent load rejection without adverse effects to the plant or the transmission system. Network stability analysis studies indicate that the loss of the Vermont Yankee unit will not cause instability and consequent tripping of the connecting 345 kV and 115 kV lines. Thus, the availability of the off-site power sources is assured in the event of a turbine trip.

In the event that one off-site power source and one emergency diesel generator are unavailable, adequate power is available to operate both emergency safeguards buses from the operable off-site power source and to operate 100% of the minimum emergency safeguards loads from the operable diesel generator. In addition, the station blackout alternate ac source of power is capable of supplying power to the bus with the inoperable diesel generator. Therefore, continued operation is permitted for up to 24 hours with one off-site power source and one emergency diesel generator unavailable provided all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable and all required features supported by the operable diesel generator are operable. These provisional requirements ensure that, during the 24 hour allowed outage time, a loss of off-site power does not result in a loss of safety function of critical systems. Required features are systems, subsystems, trains, components and devices supported by the off-site power sources and diesel generators and are required to be operable by the Technical Specifications in the existing plant mode or condition.

Either of the two main station batteries is sized to supply its assigned emergency load for 8 hours without recharging, which provides margin relative to design requirements.

The main station battery duty cycle is defined as 2 hours based upon plant design which postulates the time required to restore AC power to the auxiliary systems, including the battery chargers.

Due to the high reliability of battery systems, one of the two batteries may be out of service for up to three days provided all required systems, subsystems, trains, components and devices supported by the operable 125 volt Station Battery System are operable.

BASES: 3.10 (Cont'd)

The provisional requirement ensures that, during the three day allowed outage time, a loss of safety function of critical systems does not exist. Required systems, subsystems, trains, components and devices are those supported by 125 volt Station Battery System and are required to be operable by the Technical Specifications in the existing plant mode or condition. This minimizes the probability of unwarranted shutdown by providing adequate time for reasonable repairs. A station battery or an Uninterruptible Power System battery is considered inoperable if one cell is out of service. A cell will be considered out of service if its float voltage is below 2.13 volts and the specific gravity is below 1.190 at 77°F.

The Battery Room is ventilated to prevent accumulation of hydrogen gas. With a complete loss of the ventilation system, the accumulation of hydrogen would not exceed 4 percent concentration in 2 1/2 days. Therefore, on loss of Battery Room ventilation, the use of portable ventilation equipment and daily sampling provide assurance that potentially hazardous quantities of hydrogen gas will not accumulate.

- C. The minimum diesel fuel supply of 36,000 gallons will supply one diesel generator for a minimum of seven days of operation at its continuous duty rating of 2750kW. Additional fuel can be obtained and delivered to the site from nearby sources within the seven-day period.

BASES: 4.10 (Cont'd)

for the associated batteries. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability.

The Service Discharge Test (4.10.A.2.c) is a test of the batteries ability to satisfy the design requirements of the associated dc system. This test will be performed using simulated or actual loads at the rates and for the durations specified in the design load profile (battery duty cycle).

Assurance that the diesel generators will meet their intended function is obtained by periodic surveillance testing and the results obtained from pump and valve testing performed in accordance with the requirements of ASME Section XI and Specification 4.6.E. Whenever a diesel generator is inoperable, the potential for extended operation with two diesel generators inoperable is reduced by requiring the redundant diesel generator to be tested, as required by Specification 4.10.B.1, within 24 hours.

Verification of operability of an off-site power source within one hour and once per eight hours thereafter as required by 4.10.B.3.b.1 may be performed as an administrative check by examining logs and other information to determine that required equipment is available and not out of service for maintenance or other reasons. It does not require performing the surveillance needed to demonstrate the operability of the equipment.

- C. Logging the diesel fuel supply weekly and after each operation assures that the minimum fuel supply requirements will be maintained. During the monthly test for quality of the diesel fuel oil, a viscosity test and water and sediment test will be performed as described in ASTM D975-68. The quality of the diesel fuel oil will be acceptable if the results of the tests are within the limiting requirements for diesel fuel oils shown on Table 1 of ASTM D975-68.