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October 9, 2002
BVY 02-81

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

Reference: (a) Letter, VYNPC to USNRC, "Technical Specification Proposed Change No. 254, Definition of Operable," BVY 02-12, dated February 26, 2002

Subject: **Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 254, Supplement 1
Definition of "Operable"**

In Reference (a), Vermont Yankee¹ (VY) proposed to amend its Facility Operating License, DPR-28, by incorporating changes into the VY Technical Specifications (TS). The proposed changes would 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. During a June 24, 2002, teleconference between NRC and VY representatives, the NRC representatives requested a change to proposed action requirements associated with off-site power sources. The requested changes would provide clarification and relaxation of off-site power source action requirements for additional consistency with industry standards². This letter provides the requested changes to Reference (a). In addition, this letter revises Reference (a) to reflect changes approved in recent License Amendments that affect pages incorporated within Proposed Change 254.

This letter provides revisions to Attachment 1 - Table 1 (Safety Assessment), Attachment 3 (Marked-up Version of the Current Technical Specifications), and Attachment 4 (Re-typed Technical Specification Pages) of Reference (a). For convenience, all pages of Attachment 1 Table 1, Attachment 3, and Attachment 4 are included with this letter. To facilitate NRC staff review, revision bars are added to denote the changes made to Table 1 since the original submittal (BVY 02-12).

¹ Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. are the licensees of the Vermont Yankee Nuclear Power Station

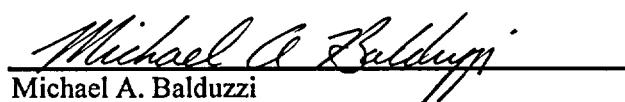
² NUREG 1433, Revision 2, Standard Technical Specifications, General Electric Plants, BWR/4, dated April 30, 2001

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This revised submittal does not change the scope of the original request for license amendment. In addition, the no significant hazards consideration conclusion and environmental impact evaluation conclusion contained in Reference (a) are unaffected.

If you have any questions on this transmittal, please contact Mr. Gautam Sen at (802) 258-4111.

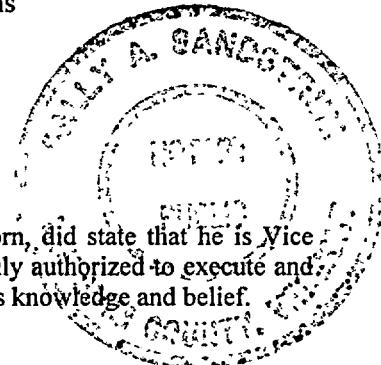
Sincerely,

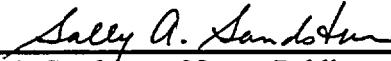


Michael A. Baldazzi
Vice President, Operations

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Michael A. Baldazzi, who, being duly sworn, did state that he is Vice President, Operations of the Vermont Yankee Nuclear Power Station, that he is duly authorized to execute and file the foregoing document, 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

Docket No. 50-271
BVY 02-81

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254, Supplement 1

Definition of "Operable"

Supporting Information and Safety Assessment of Proposed Change

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	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.

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>
Basis / Safety Assessment:		<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 #	
4	Change #4 is not used. The changes previously addressed in Change # 4 have been incorporated into the Technical Specifications with the issuance of License Amendment No. 209.

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 #	
6	Change # 6 is not used. The changes previously addressed in Change # 6 are superceded by the changes approved in License Amendment No. 208.

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>
Basis / Safety Assessment:		
<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"> 1. <i>all required systems, subsystems, trains, components and devices (i.e., required features) supported by the operable off-site power source are operable, or</i> 2. <i>if required feature(s) supported by the operable off-site power source are inoperable, the redundant required feature(s) with no off-site power 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 when no off-site power is available 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"> 1. <i>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> 2. <i>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) with no offsite power and 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
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 for the inoperable off-site power source, the supported equipment is required to be declared inoperable when no off-site power is available or a plant shutdown is required. Specifically, in this condition for the inoperable diesel generator, 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 #	
12	Change # 12 is not used. The changes previously addressed in Change # 12 have been incorporated into the Technical Specifications with the issuance of License Amendment No. 208.

Table 1
(continued)

Change #	Current Technical Specification	Proposed Change
13	Bases are provided for TS Section 3/4.10.	Conforming changes to the Bases for TS Section 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.

Docket No. 50-271
BVY 02-81

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254, Supplement 1

Definition of "Operable"

Determination of No Significant Hazards Consideration

(The determination of no significant hazards consideration is unchanged from that submitted by letter of February 26, 2002, BVY 02-12.)

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254, Supplement 1

Definition of “Operable”

Marked-up Version of the Current Technical Specifications

1.0 DEFINITIONS

- 1**
-
- 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).
 - 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.

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.

2**and****3**

3. Deleted.

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

2**3**

4.5 SURVEILLANCE REQUIREMENT

2. Deleted.

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 ~~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.

2**4.5 SURVEILLANCE REQUIREMENT**

4. Deleted.

and**3**

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

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C. Residual Heat Removal (RHR) Service Water System

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. Deleted.

2

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

3. Deleted.

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during such seven days,

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**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 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. Deleted.

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.
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. Deleted.

sooner

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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.

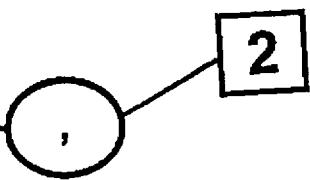
F. Automatic Depressurization System

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. Deleted.



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. Deleted.

3.5 LIMITING CONDITION FOR OPERATION

- b. During such 14 days all active components of the HPCI System are 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.

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H. Minimum Core and Containment Cooling System Availability

- 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

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

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H. Minimum Core and Containment Cooling System Availability

- 1. Deleted.

Deleted.

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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

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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. Deleted.

and associated Emergency Diesel Generator

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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.

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.

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4.10 SURVEILLANCE REQUIREMENTS

B. Operation With Inoperable Components

1. Diesel Generator

When one of the emergency diesel generators is made or found to be inoperable:

- a. Within 24 hours determine that the remaining diesel generator is not inoperable due to common cause failure; or
- b. The remaining diesel generator shall have been or shall be demonstrated to be operable within 24 hours.

2. Batteries

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

< INSERT 3.10.B.1 >

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< INSERT 3.10.B.2 >

7

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.

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

- 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.
- 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.

4.10 SURVEILLANCE REQUIREMENTS

< NO CHANGES ON THIS PAGE >

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.

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.

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<INSERT 3.10.B.3.a>

8

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) with no off-site power 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.
- If this requirement cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown within 24 hours.

<INSERT 3.10.B.3.b>

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4.10 SURVEILLANCE REQUIREMENTS

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

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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.
2. The requirements of Specification 4.10.B.1 shall be met within 24 hours.

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) with no off-site power and 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.

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.

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Electric power can be supplied from the off-site transmission network to the on-site Emergency Safeguards Electric Power system by two independent sources, one immediate access source and located so as to minimize the risk of their simultaneous failure due to accident and environmental source, a 4160 V tie line to supply either 4160 V emergency power to Keene slackout and Appendix R licensing

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

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.

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The immediate access source is a 480 V Uninterruptible Power System through the 345 kV/115 kV on-site Electric Power Distribution System. It consists of a 4.16 kV startup transformer, a 4160 V emergency power source, and a 4160 V emergency bus. The immediate access source is controlled by the emergency power system controls and circuit paths (including feeder breakers to both 4160 V emergency buses).

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.

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 ----

- 13**
- B. Adequate power is available to operate the equipment from the immediate access source or ~~the~~ 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.

<INSERT B3.10.B-1>

Each of the diesel generator units is capable of supplying 100 percent of the minimum emergency loads required under postulated design basis conditions. Each unit is physically ~~separated~~ from the other and of any off-site ~~power~~ available to operate the emergency access source or from the delayed-access source or from the delayed-access 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.

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<INSERT B3.10.B-2> <INSERT B3.10.B-3>

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.

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.

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. Provided at least one off-site power source is available to each 4160 V Emergency Safeguards Bus, no additional action requirements exist due to a required feature being inoperable. However, if both off-site power sources are lost to one or both 4160 V Emergency Safeguards Buses and a required feature is inoperable, then redundant required features with no off-site power are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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.

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. If required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable diesel generator are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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.

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. Provided at least one off-site power source is available to each 4160 V Emergency Safeguards Bus, no additional action requirements exist due to a required feature being inoperable. However, if both off-site power sources are lost to one or both 4160 V Emergency Safeguards Buses and a required feature is inoperable, then redundant required features with no off-site power are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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 operating and to operate 100% of the minimum emergency ~~operable~~ diesel generator. In addition, an 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.

<INSERT B3.10.B-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.

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.

<INSERT B3.10.B-5>

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. If required feature(s) supported by the operable off-site power source are inoperable or if the required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) with no off-site power available and the redundant required feature(s) supported by the inoperable diesel generator are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. 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.

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).

Assurance that the diesels will meet their intended function is obtained by periodic surveillance testing and the results obtained from the pump and valve testing performed in accordance with the requirements of ASME Section XI and Specification 4.6.E. Specification 4.10.B.1.a provides an allowance to avoid unnecessary testing of the operable emergency diesel generator (EDG). If it can be determined that the cause of the inoperable EDG (e.g., removal from service to perform routine maintenance or testing) does not exist on the operable EDG, demonstration of operability of the remaining EDG does not have to be performed. If the cause of inoperability exists on the remaining EDG, it is declared inoperable upon discovery, and Limiting Condition for Operation ~~3.5.H.1~~ requires reactor shutdown within 24 hours. Once the failure is repaired, and the common cause failure no longer exists, Specification 4.10.B.1.a is satisfied. If the cause of the initial inoperable EDG cannot be confirmed not to exist on the remaining EDG, performance of Surveillance Requirement (SR) 4.10.B.1.b suffices to provide assurance of continued operability of that EDG.

3.10.B.1

In the event the inoperable EDG is restored to operable status prior to completing either SR 4.10.B.1.a or SR 4.10.B.1.b, the plant corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in the condition of SR 4.10.B.1 or SR 4.10.B.3.b.2.

According to NRC Generic Letter 84-15, 24 hours is a reasonable time to confirm that the operable EDG is not affected by the same problem as the inoperable EDG.

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.

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- 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.

Docket No. 50-271
BVY 02-81

Attachment 4

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 254, Supplement 1

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
103	103
104	104
105	105
106	106
108	108
154	154
215	215
216	216
217	217
217a	217a
---	217b
220	220
221	221
221a	221a
---	221b
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. Deleted.

3. Deleted.

**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. Deleted.

**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. Deleted.
3. Deleted.

**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. Deleted.

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. Deleted.

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. Deleted.

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. Deleted.

**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.

**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. Deleted.

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:

- a. Within 24 hours determine that the remaining diesel generator is not inoperable due to common cause failure; or
- b. 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) with no off-site power 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) with no off-site power and 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

2. The requirements of Specification 4.10.B.1 shall be met 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, controls and circuit paths (including feeder breakers to both 4160 V emergency buses) 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.

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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. Provided at least one off-site power source is available to each 4160 V Emergency Safeguards Bus, no additional action requirements exist due to a required feature being inoperable. However, if both off-site power sources are lost to one or both 4160 V Emergency Safeguards Buses and a required feature is inoperable, then redundant required features with no off-site power are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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

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operable diesel generator are operable. If required feature(s) supported by the operable diesel generator are inoperable, the redundant required feature(s) supported by the inoperable diesel generator are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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.

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. Provided at least one off-site power source is available to each 4160 V Emergency Safeguards Bus, no additional action requirements exist due to a required feature being inoperable. However, if both off-site power sources are lost to one or both 4160 V Emergency Safeguards Buses and a required feature is inoperable, then redundant required features with no off-site power are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. These provisional requirements ensure 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. If required feature(s) supported by the operable off-site power source are inoperable or if the required feature(s) supported by

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the operable diesel generator are inoperable, the redundant required feature(s) with no off-site power available and the redundant required feature(s) supported by the inoperable diesel generator are required to be immediately declared inoperable and the applicable Technical Specification action(s) taken. 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. 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.

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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 diesels will meet their intended function is obtained by periodic surveillance testing and the results obtained from the pump and valve testing performed in accordance with the requirements of ASME Section XI and Specification 4.6.E. Specification 4.10.B.1.a provides an allowance to avoid unnecessary testing of the operable emergency diesel generator (EDG). If it can be determined that the cause of the inoperable EDG (e.g., removal from service to perform routine maintenance or testing) does not exist on the operable EDG, demonstration of operability of the remaining EDG does not have to be performed. If the cause of inoperability exists on the remaining EDG, it is declared inoperable upon discovery, and Limiting Condition for Operation 3.10.B.1 requires reactor shutdown within 24 hours. Once the failure is repaired, and the common cause failure no longer exists, Specification 4.10.B.1.a is satisfied. If the cause of the initial inoperable EDG cannot be confirmed not to exist on the remaining EDG, performance of Surveillance Requirement (SR) 4.10.B.1.b suffices to provide assurance of continued operability of that EDG.

In the event the inoperable EDG is restored to operable status prior to completing either SR 4.10.B.1.a or SR 4.10.B.1.b, the plant corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in the condition of SR 4.10.B.1 or SR 4.10.B.3.b.2.

According to NRC Generic Letter 84-15, 24 hours is a reasonable time to confirm that the operable EDG is not affected by the same problem as the inoperable EDG.

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.