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BVY 01-86

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 252
Allowed Outage Times for Post Accident Monitoring Instrumentation

Pursuant to 10CFR50.90, Vermont Yankee (VY) hereby proposes to amend its Facility Operating License, DPR-28, by incorporating the attached proposed change into the VY Technical Specifications. This proposed change revises allowable outage times and associated action requirements for certain post-accident monitoring instrumentation. By adopting these changes, the allowed outage times and other required actions will be more consistent within the Technical Specifications, more appropriate based on operating experience, and commensurate with the importance to safety of the post-accident monitoring instrumentation under the specified conditions.

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

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

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

Upon acceptance of this proposed change by the NRC, VY requests that a license amendment be issued no later than six months from the date of this letter for implementation within 60 days of its effective date. Issuance of an amendment by this date will facilitate planned, as well as unscheduled, maintenance activities.

A001

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

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Michael A. Balduzzi
Senior Vice President and Chief Nuclear Officer

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

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

SALLY A. SANDSTRUM NOTARY PUBLIC WINDHAM COUNTY, VERMONT

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 01-86

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 252

Allowed Outage Times for Post Accident Monitoring Instrumentation

Supporting Information and Safety Assessment of Proposed Change

INTRODUCTION

Purpose

This proposed change revises allowable outage times (AOTs) and associated action requirements for certain post-accident monitoring (PAM) instrumentation. By adopting these changes, the allowed outage times and other required actions will be more consistent within the Technical Specifications (TSs), more appropriate based on operating experience, and commensurate with the importance to safety of the PAM instrumentation under the specified conditions.

Current Technical Specifications

TS Limiting Condition for Operation (LCO) 3.2.G requires that the PAM instrumentation in Table 3.2.6 (Post Accident Monitoring Instrumentation) be operable during reactor power operation to provide the control room operator with the information necessary to initiate and control the systems used during and following a postulated accident or abnormal operating condition.

Description of Proposed Change

The proposed change revises the allowable outage times and related requirements for the PAM instrumentation listed in Table 3.2.6 of the TSs. The specific changes involve Notes 1, 3, 4 and 5 of Table 3.2.6 and the majority of the PAM instrumentation included in that table. Associated changes to the TS Bases are also being made to conform to the changed TS. The proposed AOTs and associated actions are consistent with the requirements for PAM instrumentation in Standard Technical Specifications (NUREG-1433).

In most cases, the current TSs require a minimum of two operable PAM instrument channels for monitoring each of the parameters identified in Table 3.2.6. For safety/relief valve position indication, two channels per valve are required for operation. Exceptions to the two channels per parameter standard involve the safety valve position indication (one channel per valve) and the stack noble gas effluent indication. The requirements for minimum number of operable instrument channels per parameter are unaffected by this proposed change.

In general, the AOT for one inoperable PAM instrument channel will be 30 days (except for two cases involving instrumentation that are designed with only one channel for the parameter monitored). If the required channel is not restored to operable status within 30 days, an action requirement to prepare and submit a special report to the Commission within 14 days outlining the actions taken (which may include use of alternate monitoring), the cause of the inoperability, and the plans and schedule for restoring the inoperable channel to operable status. The AOT for two inoperable channels, in most cases, will be seven days. If at least one of the two inoperable channels cannot be restored within this interval, the reactor will be placed in hot shutdown within the following 12 hours. The proposed AOTs, reporting requirements, and shutdown actions have been demonstrated to be acceptable based on industry operating experience and are consistent with NUREG-1433.

A detailed description of each change to TS Table 3.2.6 is described in the following "Safety Assessment." Conforming changes are also being made to the Bases for these TSs.

Need for Change

The current allowed outage times (AOTs) specified in TS Table 3.2.6 are overly conservative in most cases and do not properly reflect an importance to safety that is commensurate with the PAM instrument's safety function in comparison to other safety-related structures, systems, and components. For example, upon loss of safety valve position indication (including secondary indication), existing TSs require that the reactor be placed in a hot shutdown condition within six hours. Loss of safety valve position indication would have a very small contribution to risk such that taking immediate actions to shut down the plant are unwarranted. These overly restrictive AOTs can also present undue and significant burdens when conducting maintenance and plant betterment activities.

BACKGROUND

Specification 3.2.G requires that the post-accident monitoring (PAM) instrumentation of Table 3.2.6 be operable during reactor power operation. PAM instrumentation is not required to be operable during shutdown and refueling conditions when the likelihood of an event that would require PAM instrumentation is extremely low. The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design basis accidents. The operability of the PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97[1], "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

The operability of required PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. The availability of PAM instrumentation ensures that the control room operating staff can:

- Perform the diagnosis specified in the Emergency Operating Procedures. These diagnoses are restricted to preplanned actions for the primary success path of DBAs;
- Take the specified, preplanned, manually-controlled actions for which no automatic control is provided, which are required for safety systems to accomplish their safety function;
- Determine whether systems important to safety are performing their intended safety functions
- Determine the potential for a gross breach of the barriers to radioactivity release;
- Determine whether a gross breach of a barrier has occurred; and
- Initiate action necessary to protect the public and to obtain an estimate of the magnitude of any impending threat.

Regulatory Guide 1.97

The operability of PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. The PAM instrumentation that provides primary information is necessary to support the plant operator in taking those manual actions for which no automatic control is provided and that are required for safety systems

[1] U.S. Nuclear Regulatory Commission Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," Revision 3, May 1983

to accomplish their safety functions during design basis accident events. The instrumentation that monitors these key variables is designated as either Type A or Category 1 in accordance with Regulatory Guide 1.97.

VY's Regulatory Guide 1.97 program meets the intent of Regulatory Guide 1.97, Revision 3, as defined in VY letter[2] to NRC dated March 29, 1996, and previously found acceptable by NRC staff in a safety evaluation[3]. The following PAM instrumentation identified in TS Table 3.2.6 are neither Regulatory Guide 1.97 Type A nor Category 1:

- Safety/Relief Valve Position From Pressure Switches
- Safety Valve Position From Acoustic Monitor
- Stack Noble Gas Effluent

Comparison to Standard Technical Specifications

Standard Technical Specifications[4] (STS) contain requirements for PAM Instrumentation in Section 3.3.3.1. PAM instrumentation is only required to be operable when the reactor is in either Mode 1 or 2. The AOTs prescribed for PAM instrumentation generally specify 30-day completion times for restoring one inoperable channel and seven days for loss of two instrument channels. (As discussed below, it is recognized that the containment hydrogen/oxygen monitors have a more restrictive AOT in STS.) The required action and associated completion time for not meeting the 30-day requirement is to submit a special report to the NRC within 14 days. In general, the action requirement for not meeting the 7-day requirement is to place the reactor in a hot shutdown condition within 12 hours.

[2] Letter, VYNPC to USNRC, "NUREG-0737, Supplement No. 1 – Regulatory Guide 1.97 Program Update," BVY 96-33, dated March 29, 1996

[3] Letter, USNRC to VYNPC, "Conformance to Regulatory Guide 1.97 for Vermont Yankee Nuclear Power Station (TAC No. 51365)," dated December 4, 1990

[4] NUREG-1433, Revision 1, "Standard Technical Specifications, General Electric Plants, BWR/4," dated April 1995

SAFETY ASSESSMENT

Revisions to PAM instrumentation requirements are being made to ensure that LCOs and other required actions are internally consistent within TS, provide AOTs that are appropriate based on operating experience, and are commensurate with the PAM instrument's importance to safety under the conditions specified. The proposed revisions to TSs do not change the plant variables that are monitored.

The instruments listed in TS Table 3.2.6 (Post Accident Monitoring Instrumentation) provide indications of key parameters to plant operators during and following accident conditions. These instruments are required strictly to provide such indication and do not generate trip signals to any actuation logic.

The following Tables 1 and 2 summarize the changes to TS Table 3.2.6. Table 1 lists the affected parameters, Notes currently applicable, and Notes proposed to be applicable. Table 2 is a summary comparison of the requirements contained in the current Notes to the proposed, changed Notes.

Table 1
Summary of Changes

Table 3.2.6 Parameters Monitored	Current Notes Applicable	Proposed Notes Applicable
Drywell Atmospheric Temperature	1	1 and 3
Containment Pressure	1	1 and 3
Torus Pressure	1	1 and 3
Torus Water Level	3	1 and 3
Torus Water Temperature	1	1 and 3
Reactor Pressure	1	1 and 3
Reactor Vessel Water Level	1	1 and 3
Torus Air Temperature	1	1 and 3
Safety/Relief Valve Position	4	1 and 3
Safety Valve Position	5	5
Containment Hydrogen/Oxygen	1	1 and 3

Table 2

Summary Note Changes – Table 3.2.6

Note	Current Note	Proposed Note
1	- applicable to 8 parameters - 30 d. AOT for loss of one indication - 7 d. AOT for loss of two indications - 6 hrs. to restore indication - 6 hrs. to hot shutdown (S/D) - 18 hrs. to cold S/D	- applicable to 10 parameters - 30 d. AOT for loss of one indication - 14 d. to submit special report to NRC outlining actions taken, cause, plans - no shutdown requirement after 30 d.
2	- not applicable (N/A)	- N/A
3	- only applicable to torus water level - 30 d. AOT for loss of one indication (no required actions after 30 d.) - no AOT for loss of two indications - 6 hrs. to restore if lose both - 6 hrs. to hot S/D - 18 hrs. to cold S/D	- applicable to 10 parameters - 7 d. AOT for loss of two indications - after 7 d., 12 hrs. to hot S/D (no cold S/D requirement)
4	- only applicable to safety/relief valve position - indefinite operation allowed upon loss of indication, provided two alternate means available - if both alternate means not available, shutdown - 6 hrs. to hot S/D - 18 hrs. to cold S/D	- N/A (new Notes 1 and 3 will be applicable to this parameter)
5	- only applicable to safety valve position - indefinite operation allowed upon loss of indication, provided two alternate means available - if both alternate means not available, shutdown - 6 hrs. to hot S/D - 18 hrs. to cold S/D	- only applicable to SV position - 30 d. AOT provided two alternate means available - 14 d. to submit special report to NRC outlining actions taken, cause, plans - no shutdown requirement after 30 d. - 7 d. AOT with only one alternate means available - after 7 d., 12 hrs. to hot S/D (no cold S/D requirement)

The following discussion provides a detailed description of each change, including the basis for the change and a safety assessment.

Current Note 1 of Table 3.2.6

Note 1 of Table 3.2.6 currently specifies:

> *From and after the date that a parameter is reduced to one indication, operation is permissible for 30 days. If a parameter is not indicated in the Control Room, continued operation is permissible during the next seven days. If indication cannot be restored within the next six hours, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours.*

Note 1 is currently applicable to instrumentation that monitor the following eight parameters identified in TS Table 3.2.6:

- Drywell atmospheric temperature
- Containment pressure
- Torus pressure
- Torus water temperature
- Reactor pressure
- Reactor vessel water level
- Torus air temperature
- Containment hydrogen/oxygen

Revised Note 1 will be applicable to the instrumentation that monitor the above eight parameters, as well as instrumentation that monitor the following two parameters:

- Torus water level
- Safety/relief valve position from pressure switches

For clarification, current Note 1 is being reformatted into two separate notes (designated as Note 1 and Note 3):

- Proposed Note 1 will address action requirements associated with the loss of one indication, and

- Proposed Note 3 will address action requirements associated with the loss of two indications.

By separating current Note 1 into two parts, the requirements are organized in terms of condition severity and are clarified for better operator understanding. This reformatting will segregate the action requirements that are applicable to reactor shutdown when indications cannot be restored within the AOT.

Proposed Notes 1 and 3 will specify:

Note 1 - *Within 30 days following the loss of one indication, restore the inoperable channel to an operable status or a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.*

Note 3 - *Within 7 days following the loss of both indications, restore at least one required channel to an operable status or place the reactor in a hot shutdown condition within the following 12 hours.*

The change to Note 1 replaces the required shutdown actions with a requirement for a special written report. The requirement for a special report is similar to the requirements of current Notes 6 and 7 of Table 3.2.6. This change will eliminate the requirement to shut down the reactor following loss of a single parameter indication (i.e., when only one instrument channel is inoperable).

When a parameter is reduced to one indication, current Note 1 permits continued reactor operation for 30 days. It is unclear as to what actions are required if the one indication cannot be restored by the end of this allowed outage time. Conservatively, it may be assumed that the last sentence of current Note 1 applies to this condition, and that if the lost indication cannot be restored within the next six hours, an orderly shutdown shall be initiated and the reactor placed in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours. However, the meaning of "indication" as used in the last sentence of Note 1 may be interpreted as meaning any single indication (i.e., either of the two instrument channels). That is, if any one channel is operable, no further actions are required, and the statement and shutdown requirements are only applicable to the condition where no indication is operable. The proposed change will clarify the meaning.

Whether or not the shutdown criteria of current Note 1 were meant to apply when a parameter is reduced to one indication, it is understood that these criteria would certainly apply if no indication is available in the control room. Proposed Note 3 specifically addresses the requirements for this condition. As proposed, Note 3 will require that the reactor be placed in a hot shutdown condition within 12 hours of exceeding the allowed 7-day outage time. This shutdown action requirement is somewhat different than the current requirement to restore the inoperable channel to an operable status within the next six hours, proceeding to a hot shutdown condition in the following six hours and then a cold shutdown condition in the following 18 hours.

The seven-day AOT provided by new Note 3 is acceptable (as applied when one or more parameters have two required channels that are inoperable) based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation (beyond seven days) is not permitted by new Note 3, and hot shutdown must be achieved within 12 hours following the initial seven-day AOT.

Current Note 2

There is no current Note 2 to Table 3.2.6. This item is unchanged.

Current Note 3

Note 3 of Table 3.2.6 currently specifies:

> *From and after the date that this parameter is reduced to one indication in the Control Room, continued reactor operation is permissible during the next 30 days. If both channels are inoperable and indication cannot be restored in six hours, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours.*

Current Note 3 is only applicable to the torus water level indication. Note 3 does not currently specify an action requirement for the specific condition when one indication is inoperable for more than 30 days. To address this condition, new Note 1 will apply to the torus water level indication. New Notes 1 and 3 will provide limiting conditions for operation for the torus water level indication and replace current Note 3. As discussed above, new Note 1 adds a new, special reporting requirement for circumstances where one torus water level indication is inoperable for more than 30 days.

If both torus water level channels are inoperable, current Note 3 specifies that if indication cannot be restored in six hours, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours. New Note 3 will provide an LCO and required actions when both torus water level channels are inoperable.

Current Note 4

Note 4 of Table 3.2.6 currently specifies:

> *From and after the date that safety/relief valve position from pressure switches is unavailable, reactor operation may continue provided safety/relief valve position can be determined by monitoring safety/relief valve discharge temperature and torus water temperature. If both parameters are not available, the reactor shall be in a hot shutdown condition is six hours and a cold shutdown condition in the following 18 hours.*

Current Note 4 is only applicable to the safety/relief valve position indication. Note 4 does not currently specify an action requirement if one or two indications per valve are inoperable, provided that the specified alternate monitoring capability is available. The alternate monitoring requirement consists of both safety/relief valve discharge temperature and torus water temperature. If safety/relief valve position from pressure switches is unavailable and both alternate parameters are not available, current Note 4 specifies that the reactor shall be placed in a hot shutdown condition within six hours and a cold shutdown condition in the following 18 hours.

New Notes 1 and 3 will replace the current application of current Note 4 to safety/relief valve position indication. Proposed Note 3 will address requirements associated with the loss of both safety/relief valve position indications from pressure switches. This is acceptable because proposed Note 1 provides the appropriate action in lieu of a shutdown requirement or requirement for the availability of two alternate means for monitoring the safety/relief valve position parameter. These actions are adequate since they will be taken before loss of functional capability, and given the likelihood of plant conditions that would require information provided by safety/relief valve position indication. Current Note 4 does not specify any action if one of the two available channels is inoperable. Similar to other PAM instrumentation, a 30-day allowable outage time is appropriate, and there is no need to require reactor shutdown when one safety/relief valve position indication is inoperable and cannot be restored to an operable status within the

30-day allowed outage time. Proposed Note 1 requires action to report to the NRC on actions taken, cause of the failure and plans for restoration. For this condition with one indication inoperable, a requirement to prepare and submit (within 14 days) a special report to the Commission is adequate corrective action. This change will allow continued operation with one channel inoperable. This change is acceptable based on operating experience and because there is a remaining operable channel to provide the monitoring function, and the special report will adequately address actions taken and planned, such as availability of diverse or alternate monitoring capability.

New Note 3 will also be applicable to safety/relief valve position indication. This Note will provide a seven-day AOT with a 12-hour completion time to achieve hot shutdown, if at least one channel has not been restored to an operable status. As discussed above, new Note 3 is acceptable for this purpose.

Current Note 5

Note 5 of Table 3.2.6 currently specifies:

> *From and after the date that safety valve position from the acoustic monitor is unavailable, reactor operation may continue provided safety valve position can be determined by monitoring safety valve discharge temperature and primary containment pressure. If both indications are not available, the reactor shall be in a hot shutdown condition in six hours and in a cold shutdown condition in the following 18 hours.*

Current Note 5 is only applicable to the safety valve position indication. Note 5 does not currently specify any required action if one or two indications per valve are inoperable, provided that alternate monitoring capability is available. The alternate monitoring requirement consists of both safety valve discharge temperature and primary containment pressure. If safety valve position from acoustic monitor is unavailable and both alternate parameters are not available, the reactor shall be placed in a hot shutdown condition within six hours and a cold shutdown condition in the following 18 hours.

Revised Note 5 will require:

> *From and after the date that safety valve position from the acoustic monitor is unavailable, reactor operation may continue for 30 days provided safety valve position can be determined by monitoring safety valve discharge temperature and primary containment pressure. If after 30 days the inoperable channel has not been returned to an operable status, a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.*
>
> *If one or both parameters are not available (i.e., safety valve discharge temperature and primary containment pressure indication) with one or more safety valve position indications from the acoustic monitor unavailable, continued reactor operation is permissible during the next seven days. In this condition, if both secondary parameters are not restored to an operable status within seven days, the reactor shall be placed in a hot shutdown condition within the following 12 hours.*

There is no need to require reactor shutdown when safety valve position indication from acoustic monitor is inoperable and cannot be restored to an operable status within the 30-day allowed outage time, when the two alternate means of safety valve discharge temperature and primary containment pressure are operable. Together they provide an acceptable alternative. For this condition a requirement to prepare

and submit (within 14 days) a special report to the Commission is adequate corrective action. This change will allow continued operation in this condition. If both means of secondary indication are not operable with one or more safety valve position indications unavailable, continued reactor operation is only permissible for the following seven days. If both secondary parameters are not restored to an operable status within the seven day allowed outage time, the reactor shall be placed in a hot shutdown condition within the following 12 hours. This AOT and associated action is acceptable based on operating experience and because the special report will adequately address other corrective actions, such as the availability of diverse or alternate monitoring capability.

Containment Hydrogen/Oxygen Monitor

VY recognizes that the AOTs specified in STS for containment hydrogen/oxygen monitoring are more restrictive than current VY TS. However, based on the results of recent risk-informed studies for combustible gas control systems conducted for the NRC, VY is not proposing more restrictive (e.g., 72-hour) AOTs for these monitors. Current Note 1 is applicable to the containment hydrogen/oxygen monitor. New Notes 1 and 3 will replace current Note 1 for this application. The application and justification for these Notes are discussed above. Upon loss of both indicating channels, the 7-day AOT is acceptable based on the low probability of the occurrence of a design basis accident that would generate hydrogen in amounts capable of exceeding the flammability limit; the length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit; and the availability of other systems to either control or monitor for hydrogen accumulation.

Allowable Outage Times

Relaxation of completion times (i.e., longer prescribed AOTs) is acceptable based on the low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. The AOTs proposed herein have been demonstrated to be adequate based on industry operating experience and are consistent with NRC's Standard Technical Specifications.

Shutdown Requirements

Current Notes 1, 3, 4, and 5 contain provisions for bringing the reactor to a hot, and then cold shutdown. Notes 1 and 3 contain provisions to restore lost indications within six hours, and if indications cannot be restored in this completion time, the reactor is to be brought to a shutdown condition.

The intent of current Notes 1 and 3 is to achieve a hot shutdown status (i.e., a safe condition) within 12 hours of exceeding the AOT, if indication cannot be restored. To specify that the inoperable channel may be restored within six hours and then placed in a hot shutdown condition in the next six hours only serves to achieve the safety objective of having the plant in a shutdown state within 12 hours of exceeding the AOT. There is little purpose to applying an additional six-hour restoration interval following a 30-day or 7-day AOT. The 30-day and 7-day periods (as appropriate) are the AOTs during which the inoperable indications should be returned to an operable status. Therefore, the specification can be simplified to achieve the same safety objective by requiring that a hot shutdown condition be achieved within 12 hours of exceeding the AOT.

Current Notes 4 and 5 do not allow any interval for restoring inoperable indications; however, for the conditions specified, the reactor must be brought to a hot shutdown condition in six hours. Operating experience has demonstrated that a six hour period to bring the reactor to a hot shutdown condition from full power in an orderly manner may challenge plant operators and/or plant systems. A six-hour shutdown interval is unnecessarily restrictive and may not be in the best interest of plant safety. A 12-

hour completion time to hot shutdown is much more appropriate, based on operating experience, and is the industry standard.

It is unnecessary to place the reactor in a cold shutdown condition upon loss of PAM instrumentation indication. Since PAM instrumentation is only needed during reactor power operation, and TS LCO 3.2.G is only applicable to reactor power operation, it is acceptable to place the reactor in a mode or condition where the requirements and need for PAM instrumentation do not apply. To achieve this, it is only necessary that the reactor be placed in at least a hot shutdown condition within 12 hours. It is not necessary to bring the reactor to cold shutdown since plant conditions during hot shutdown are such that the likelihood of an accident that would require PAM instrumentation is extremely low. This change is acceptable since the required action places the reactor in a condition in which the LCO does not apply. Therefore, the cold shutdown requirements are not required and are being deleted.

Loss of One PAM Indication

In most cases, Table 3.2.6 requires a minimum of two operable channels to ensure that the operators are provided the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. Under the proposed change, where applicable, when one of the required channels is inoperable, the required inoperable channel must be restored to operable status within 30 days. The 30-day completion time is based on operating experience and takes into account the remaining operable channel (or in the case of a parameter that has only one required channel, an alternate means to monitor the parameter), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

If a PAM instrument channel has not been restored to an operable status within the specified interval, the required action is to prepare a written report to be submitted to the NRC within the following 14 days. This report will detail the corrective actions taken, an evaluation of the cause of the inoperability, proposed restorative actions, and a schedule for returning the inoperable system to service. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

This change is acceptable, given the likelihood of plant conditions that would require the information that is provided by this instrumentation, and the fact that the special report identifies preplanned alternate methods of monitoring as well as the plans and schedule for returning the inoperable channel to operability. In addition, at least one channel (or alternate means) for monitoring is required to be operable during this period.

Loss of Two PAM Indications

For the majority of PAM instrumentation, when two required channels are inoperable (or in the case of a parameter that is monitored by only one channel, the channel and an alternate means are inoperable), one channel (or the required alternate means) should be restored to an operable status within seven days. The completion time of seven days is based on the relatively low probability of an event requiring PAM instrumentation and the normal availability of alternate means to obtain the required information. Where specified, continuous operation with two required channels inoperable (or one channel and the required alternate means inoperable) is not acceptable after seven days. Therefore, restoration of one inoperable channel limits the risk that the PAM function will be in a degraded condition should an accident occur.

Conclusion/Summary

Except for the changes to AOTs and associated required actions, this revision to TSs does not materially change the meaning or application of any TS functional requirement. In addition, this proposed change does not modify the design bases of any Regulatory Guide 1.97 instrumentation. While the PAM instrumentation provides information to the control room operator that may be used to mitigate an accident, this change does not affect the ability of the PAM instrumentation to perform this function.

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 01-86

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 252

Allowed Outage Times for Post Accident Monitoring Instrumentation

Determination of No Significant Hazards Consideration

Description of amendment request:

The proposed amendment would revise the allowable outage times and related requirements for the post-accident monitoring (PAM) instrumentation listed in Table 3.2.6 of the Technical Specifications (TSs). Associated changes to the TS Bases are also being made to conform to the changed TS.

The proposed changes provide Limiting Conditions for Operation and action requirements that are more consistent within the TSs and commensurate with the importance to safety of the PAM instrumentation. Furthermore, the proposed AOTs and associated actions are consistent with the requirements for PAM instrumentation in Standard Technical Specifications (NUREG-1433).

Requirements for PAM instrumentation ensure that information is available to plant operators to assist in performing manual actions, or to verify automatic actions have occurred, which are required to mitigate the effects of a design basis accident. The instrumentation is used for monitoring by the operators only after an accident occurs and performs no automatic functions.

Basis for No Significant Hazards Determination:

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

1. Will the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

   The PAM instrumentation is not considered as an initiator or contributor to any previously evaluated accident. The proposed change will not affect any Final Safety Analysis Report safety analysis. Because there are no credible failures of the PAM instrumentation that could initiate any accidents previously evaluated, changing the AOTs and related actions for PAM instrumentation does not increase the probability of any accident previously evaluated. The operability or inoperability of this instrumentation will not cause an accident because this instrumentation was not intended to and does not serve a function for preventing accidents. Therefore, the proposed change does not involve a significant increase in the probability of an accident previously evaluated.

   The availability and use of PAM instrumentation ensures that the prescribed operator (manual) actions for mitigating the consequences of an accident will be implemented when necessary, and that the operator has sufficient information to verify required automatic actions have occurred as intended. The availability and use of PAM instrumentation provide assurance that the consequences of accidents will not be greater than previously evaluated. Changes to allowed outage times and shutdown completion times do not affect the consequences of accidents. The proposed change does not modify any parameters or assumptions contained in previously analyzed design basis events. Because PAM instrumentation is used by operators for monitoring accidents and does not

perform any automatic action, changes to requirements for PAM instrumentation do not increase the consequences of accidents previously evaluated. Therefore, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

2. Will the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change does not involve any physical modification to the plant, change in TS setpoints, plant design basis, or the manner in which the plant is operated. Because the PAM instrumentation serves a passive function and does not provide any automatic action, there are no credible failures of the PAM instrumentation that could initiate a new or different kind of accident from any accident previously evaluated.

The change to AOTs and related action requirements for PAM instrumentation will not result in a failure mode not previously analyzed. This instrumentation is not considered an accident precursor because its existence or availability does not have any adverse impact on the pre-accident state of the reactor.

Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will the proposed changes involve a significant reduction in a margin of safety?

PAM instrumentation is assumed to be used by operators for monitoring only after an accident occurs and performs no automatic functions. The continued availability and use of this instrumentation ensures that the prescribed manual operator actions for mitigating the consequences of an accident will be implemented when necessary, and that the operator has sufficient information to verify required automatic actions have occurred as intended. The requirements of the revised TS are adequate to ensure the required instrumentation is maintained operable such that PAM instrumentation will be available to perform its intended safety function.

Therefore, this change does not involve a significant reduction in a margin of safety.

Conclusion

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

Docket No. 50-271
BVY 01-86

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 252

Allowed Outage Times for Post Accident Monitoring Instrumentation

Marked-up Version of the Current Technical Specifications

TABLE 3.2.6

POST-ACCIDENT INSTRUMENTATION

Minimum Number of Operable Instrument Channels (Note 8)	Parameter	Type of Indication	Instrument Range
2	Drywell Atmospheric Temperature ~~(Note 1)~~	Recorder #TR-16-19-45 (Blue) Meter #TI-16-19-30B	0-350°F 0-350°F
2	Containment Pressure ~~(Note 1)~~	Meter #PI-16-19-12A Meter #PI-16-19-12B	(-15) -(+260) psig (-15) -(+260) psig
2	Torus Pressure ~~(Note 1)~~	Meter #PI-16-19-36A Meter #PI-16-19-36B	(-15) -(+65) psig (-15) -(+65) psig
2	Torus Water Level ~~(Note 3)~~	Meter #LI-16-19-12A Meter #LI-16-19-12B	0-25 ft. 0-25 ft.
2	Torus Water Temperature ~~(Note 1)~~	Meter #TI-16-19-33A Meter #TI-16-19-33C	0-250°F 0-250°F
2	Reactor Pressure ~~(Note 1)~~	Meter #PI-2-3-56A Meter #PI-2-3-56B	0-1500 psig 0-1500 psig
2	Reactor Vessel Water Level ~~(Note 1)~~	Meter #LI-2-3-91A Meter #LI-2-3-91B	(-200)-0-(+200)"H_2O (-200)-0-(+200)"H_2O
2	Torus Air Temperature ~~(Note 1)~~	Recorder #TR-16-19-45 (Red) Meter #TI-16-19-41	0-350°F 50-300°F
2/valve	Safety/Relief Valve Position From Pressure Switches ~~(Note 4)~~	Lights RV-2-71(A-D) From PS-2-71-(1-3)(A-D)	Closed - Open

Notes 1 and 3

TABLE 3.2.6
(Cont'd)

POST-ACCIDENT INSTRUMENTATION

Minimum Number of Operable Instrument Channels (Note 8)	Parameter	Type of Indication	Instrument Range
1/valve	Safety Valve Position From Acoustic Monitor (Note 5)	Meter ZI-2-1A/B	Closed - Open
2	Containment Hydrogen/Oxygen Monitor ~~(Note 1)~~	Recorder SR-VG-6A (SI) Recorder SR-VG-6B (SII)	0-30% hydrogen 0-25% oxygen
2	Containment High-Range Radiation Monitor (Note 6)	Meter RM-16-19-1A/B	1 R/hr-10^7 R/hr
1	Stack Noble Gas Effluent (Note 7)	Meter RM-17-155	0.1 - 10^7 mR/hr

Notes 1 and 3

<INSERT #1>

TABLE 3.2.6 NOTES

Note 1 - From and after the date that a parameter is reduced to one indication, operation is permissible for 30 days. If a parameter is not indicated in the Control Room, continued operation is permissible during the next seven days. If indication cannot be restored within the next six hours, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours.

Note 2 - Deleted.

Note 3 - From and after the date that this parameter is reduced to one indication in the Control Room, continued reactor operation is permissible during the next 30 days. If both channels are inoperable and indication cannot be restored in six hours, an orderly shutdown shall be initiated and the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours.

Note 4 - From and after the date that safety/relief valve position from pressure switches is unavailable, reactor operation may continue provided safety/relief valve position can be determined by monitoring safety/relief valve discharge temperature and torus water temperature. If both parameters are not available, the reactor shall be in a hot shutdown condition in six hours and a cold shutdown condition in the following 18 hours.

Note 5 - From and after the date that safety valve position from the acoustic monitor is unavailable, reactor operation may continue provided safety valve position can be determined by monitoring safety valve discharge temperature and primary containment pressure. If both indications are not available, the reactor shall be in a hot shutdown condition in six hours and in a cold shutdown condition in the following 18 hours.

Note 6 - Within 30 days following the loss of one indication, or seven days following the loss of both indications, restore the inoperable channel(s) to an operable status or a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 7 - From and after the date that this parameter is unavailable by Control Room indication, within 72 hours ensure that local sampling capability is available. If the Control Room indication is not restored within 7 days, prepare and submit a special report to the NRC within 14 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 8 - When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required action notes may be delayed for up to 6 hours.

INSERT #1
TABLE 3.2.6 NOTES
(replaces current Notes 1 through 5)

Note 1 – Within 30 days following the loss of one indication, restore the inoperable channel to an operable status or a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 2 – Deleted.

Note 3 – Within 7 days following the loss of both indications, restore at least one required channel to an operable status or place the reactor in a hot shutdown condition within the following 12 hours.

Note 4 – Deleted.

Note 5 – From and after the date that safety valve position from the acoustic monitor is unavailable, reactor operation may continue for 30 days provided safety valve position can be determined by monitoring safety valve discharge temperature and primary containment pressure. If after 30 days the inoperable channel has not been returned to an operable status, a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

If one or both parameters are not available (i.e., safety valve discharge temperature and primary containment pressure indication) with one or more safety valve position indications from the acoustic monitor unavailable, continued reactor operation is permissible during the next seven days. In this condition, if both secondary parameters are not restored to an operable status within seven days, the reactor shall be placed in a hot shutdown condition within the following 12 hours.

<INSERT #2>

BASES: 3.2 (Cont'd)

Post-accident instrumentation parameters for Containment Pressure, Torus Water Level, Containment Hydrogen/Oxygen Monitor, and Containment High-Range Radiation Monitor, are redundant, environmentally and seismically qualified instruments provided to enhance the operators' ability to follow the course of an event. The purpose of each of these instruments is to provide detection and measurement capability during and following an accident as required by NUREG-0737 by ensuring continuous on-scale indication of the following: containment pressure in the (-15) -(+260) psig range; torus water level in the 0 to 25 foot range (i.e., the bottom to 5 feet above the normal water level of the torus pool); containment hydrogen/oxygen concentrations (0 to 30% hydrogen and 0 to 25% oxygen); and containment radiation in the 1 R/hr to 10^7 R/hr gamma.

The Degraded Grid Protective System has been installed to assure that safety-related electrical equipment will not be subjected to sustained degraded voltage. This system incorporates voltage relays on 4160 Volt Emergency Buses 3 and 4 which are set to actuate at the minimum voltage required to prevent damage of safety-related equipment.

If Degraded Grid conditions exist for 10 seconds, either relay will actuate an alarm to alert operators of this condition. Based upon an assessment of these conditions the operator may choose to manually disconnect the off-site power. In addition, if an ESF signal is initiated in conjunction with low voltage below the relay setpoint for 10 seconds, the off-site power will be automatically disconnected.

The Reactor Core Isolation Cooling (RCIC) System provides makeup water to the reactor vessel during shutdown and isolation to supplement or replace the normal makeup sources without the use of the Emergency Core Cooling Systems. The RCIC System is initiated automatically upon receipt of a reactor vessel low-low water level signal. Reactor vessel high water level signal results in shutdown of the RCIC System. However, the system will restart on a subsequent reactor vessel low-low water level signal. The RCIC System is normally lined up to take suction from the condensate storage tank. Suction will automatically switch over from the condensate storage tank to the suppression pool on low condensate storage tank level.

Upon receipt of a LOCA initiation signal, if normal AC power is available, all RHR pumps and both Core Spray pumps start simultaneously with no intentional time delay. If normal AC power is not available, RHR pumps A and D start immediately on restoration of power, RHR pumps B and C start within 3 to 5 seconds of restoration of power and both Core Spray pumps start within 8 to 10 seconds of restoration of power. The purpose of these time delays is to stagger the start of the RHR and Core Spray pumps on the associated Division 1 and Division 2 Buses, thus limiting the starting transients on the 4.16 kV emergency buses. The time delay functions are only necessary when power is being supplied from the standby power sources (EDGs). The time delays remain in the pump start logic at all times as the time delay relay contact is in parallel with the Auxiliary Power Monitor relay contact. Either contact closure will initiate pump start. Thus, the time delays do not affect low pressure ECCS pump operation with normal AC power available. With normal AC power not available, the pump start relays which would have started the B and C RHR pumps and both Core Spray pumps are blocked by the Auxiliary Power Monitor contacts and the pump start time delay relays become the controlling devices.

INSERT #2
BASES 3.2
(page 1 of 2)

Specification 3.2.G requires that the post-accident monitoring (PAM) instrumentation of Table 3.2.6 be operable during reactor power operation. PAM instrumentation is not required to be operable during shutdown and refueling conditions when the likelihood of an event that would require PAM instrumentation is extremely low. The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design basis accidents. The operability of the PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

In most cases, Table 3.2.6 requires a minimum of two operable channels to ensure that the operators are provided the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. For the majority of parameters monitored, when one of the required channels is inoperable, the required inoperable channel must be restored to operable status within 30 days. The 30-day completion time is based on operating experience and takes into account the remaining operable channel (or in the case of a parameter that has only one required channel, an alternate means to monitor the parameter), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

If a PAM instrument channel has not been restored to an operable status within the specified interval, the required action is to prepare a written report to be submitted to the NRC within the following 14 days. This report will detail the corrective actions taken, an evaluation of the cause of the inoperability, proposed restorative actions, and a schedule for returning the inoperable system to service. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

For the majority of PAM instrumentation, when two required channels are inoperable (or in the case of a parameter that is monitored by only one channel, the channel and an alternate means are inoperable), one channel (or the required alternate means) should be restored to an operable status within seven days. The completion time of seven days is based on the relatively low probability of an event requiring PAM instrumentation and the normal availability of alternate means to obtain the required information. Where specified, continuous operation with two required channels inoperable (or one channel and the required alternate means inoperable) is not acceptable after seven days. Therefore, restoration of one inoperable channel limits the risk that the PAM function will be in a degraded condition should an accident occur.

INSERT #2
BASES 3.2
(page 2 of 2)

For the majority of PAM instrumentation in Table 3.2.6, if two of the required channels (one required channel per valve and alternate means for safety valve position indication) remain inoperable beyond the allowed interval, actions must be taken to place the reactor in a mode or condition in which the limiting condition for operation does not apply. To achieve this status, the reactor must be brought to at least hot shutdown within 12 hours. The allowed completion time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. It is not necessary to bring the reactor to cold shutdown since plant conditions during hot shutdown are such that the likelihood of an accident that would require PAM instrumentation is extremely low.

Docket No. 50-271
BVY 01-86

Attachment 4

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 252

Allowed Outage Times for Post Accident Monitoring Instrumentation

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.

Remove	Insert
53	53
54	54
55	55
79	79
	79a

TABLE 3.2.6

POST-ACCIDENT INSTRUMENTATION

Minimum Number of Operable Instrument Channels (Note 8)	Parameter	Type of Indication	Instrument Range
2	Drywell Atmospheric Temperature (Notes 1 and 3)	Recorder #TR-16-19-45 (Blue)	0-350°F
		Meter #TI-16-19-30B	0-350°F
2	Containment Pressure (Notes 1 and 3)	Meter #PI-16-19-12A	(-15) -(+260) psig
		Meter #PI-16-19-12B	(-15) -(+260) psig
2	Torus Pressure (Notes 1 and 3)	Meter #PI-16-19-36A	(-15) -(+65) psig
		Meter #PI-16-19-36B	(-15) -(+65) psig
2	Torus Water Level (Notes 1 and 3)	Meter #LI-16-19-12A	0-25 ft.
		Meter #LI-16-19-12B	0-25 ft.
2	Torus Water Temperature (Notes 1 and 3)	Meter #TI-16-19-33A	0-250°F
		Meter #TI-16-19-33C	0-250°F
2	Reactor Pressure (Notes 1 and 3)	Meter #PI-2-3-56A	0-1500 psig
		Meter #PI-2-3-56B	0-1500 psig
2	Reactor Vessel Water Level (Notes 1 and 3)	Meter #LI-2-3-91A	(-200)-0-(+200)"H_2O
		Meter #LI-2-3-91B	(-200)-0-(+200)"H_2O
2	Torus Air Temperature (Notes 1 and 3)	Recorder #TR-16-19-45 (Red)	0-350°F
		Meter #TI-16-19-41	50-300°F
2/valve	Safety/Relief Valve Position From Pressure Switches (Notes 1 and 3)	Lights RV-2-71(A-D) From PS-2-71-(1-3)(A-D)	Closed - Open

TABLE 3.2.6
(Cont'd)

POST-ACCIDENT INSTRUMENTATION

Minimum Number of Operable Instrument Channels (Note 8)	Parameter	Type of Indication	Instrument Range
1/valve	Safety Valve Position From Acoustic Monitor (Note 5)	Meter ZI-2-1A/B	Closed - Open
2	Containment Hydrogen/Oxygen Monitor (Notes 1 and 3)	Recorder SR-VG-6A (SI) Recorder SR-VG-6B (SII)	0-30% hydrogen 0-25% oxygen
2	Containment High-Range Radiation Monitor (Note 6)	Meter RM-16-19-1A/B	1 R/hr-10^7 R/hr
1	Stack Noble Gas Effluent (Note 7)	Meter RM-17-155	0.1 - 10^7 mR/hr

TABLE 3.2.6 NOTES

Note 1 - Within 30 days following the loss of one indication, restore the inoperable channel to an operable status or a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 2 - Deleted.

Note 3 - Within 7 days following the loss of both indications, restore at least one required channel to an operable status or place the reactor in a hot shutdown condition within the following 12 hours.

Note 4 - Deleted.

Note 5 - From and after the date that safety valve position from the acoustic monitor is unavailable, reactor operation may continue for 30 days provided safety valve position can be determined by monitoring safety valve discharge temperature and primary containment pressure. If after 30 days the inoperable channel has not been returned to an operable status, a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

If one or both parameters are not available (i.e., safety valve discharge temperature and primary containment pressure indication) with one or more safety valve position indications from the acoustic monitor unavailable, continued reactor operation is permissible during the next seven days. In this condition, if both secondary parameters are not restored to an operable status within seven days, the reactor shall be placed in a hot shutdown condition within the following 12 hours.

Note 6 - Within 30 days following the loss of one indication, or seven days following the loss of both indications, restore the inoperable channel(s) to an operable status or a special report to the Commission must be prepared and submitted within the subsequent 14 days, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 7 - From and after the date that this parameter is unavailable by Control Room indication, within 72 hours ensure that local sampling capability is available. If the Control Room indication is not restored within 7 days, prepare and submit a special report to the NRC within 14 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

Note 8 - When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions for Operation and required action notes may be delayed for up to 6 hours.

BASES: 3.2 (Cont'd)

Specification 3.2.G requires that the post-accident monitoring (PAM) instrumentation of Table 3.2.6 be operable during reactor power operation. PAM instrumentation is not required to be operable during shutdown and refueling conditions when the likelihood of an event that would require PAM instrumentation is extremely low. The primary purpose of the PAM instrumentation is to display plant variables that provide information required by the control room operators during accident situations. This information provides the necessary support for the operator to take the manual actions for which no automatic control is provided and that are required for safety systems to accomplish their safety functions for design basis accidents. The operability of the PAM instrumentation ensures that there is sufficient information available on selected plant parameters to monitor and assess plant status and behavior following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

In most cases, Table 3.2.6 requires a minimum of two operable channels to ensure that the operators are provided the information necessary to determine the status of the plant and to bring the plant to, and maintain it in, a safe condition following an accident. For the majority of parameters monitored, when one of the required channels is inoperable, the required inoperable channel must be restored to operable status within 30 days. The 30-day completion time is based on operating experience and takes into account the remaining operable channel (or in the case of a parameter that has only one required channel, an alternate means to monitor the parameter), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

If a PAM instrument channel has not been restored to an operable status within the specified interval, the required action is to prepare a written report to be submitted to the NRC within the following 14 days. This report will detail the corrective actions taken, an evaluation of the cause of the inoperability, proposed restorative actions, and a schedule for returning the inoperable system to service. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

For the majority of PAM instrumentation, when two required channels are inoperable (or in the case of a parameter that is monitored by only one channel, the channel and an alternate means are inoperable), one channel (or the required alternate means) should be restored to an operable status within seven days. The completion time of seven days is based on the relatively low probability of an event requiring PAM instrumentation and the normal availability of alternate means to obtain the required information. Where specified, continuous operation with two required channels inoperable (or one channel and the required alternate means inoperable) is not acceptable after seven days. Therefore, restoration of one inoperable channel limits the risk that the PAM function will be in a degraded condition should an accident occur.

BASES: 3.2 (Cont'd)

For the majority of PAM instrumentation in Table 3.2.6, if two of the required channels (one required channel per valve and alternate means for safety valve position indication) remain inoperable beyond the allowed interval, actions must be taken to place the reactor in a mode or condition in which the limiting condition for operation does not apply. To achieve this status, the reactor must be brought to at least hot shutdown within 12 hours. The allowed completion time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. It is not necessary to bring the reactor to cold shutdown since plant conditions during hot shutdown are such that the likelihood of an accident that would require PAM instrumentation is extremely low.

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If Degraded Grid conditions exist for 10 seconds, either relay will actuate an alarm to alert operators of this condition. Based upon an assessment of these conditions the operator may choose to manually disconnect the off-site power. In addition, if an ESF signal is initiated in conjunction with low voltage below the relay setpoint for 10 seconds, the off-site power will be automatically disconnected.

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Upon receipt of a LOCA initiation signal, if normal AC power is available, all RHR pumps and both Core Spray pumps start simultaneously with no intentional time delay. If normal AC power is not available, RHR pumps A and D start immediately on restoration of power, RHR pumps B and C start within 3 to 5 seconds of restoration of power and both Core Spray pumps start within 8 to 10 seconds of restoration of power. The purpose of these time delays is to stagger the start of the RHR and Core Spray pumps on the associated Division 1 and Division 2 Buses, thus limiting the starting transients on the 4.16 kV emergency buses. The time delay functions are only necessary when power is being supplied from the standby power sources (EDGs). The time delays remain in the pump start logic at all times as the time delay relay contact is in parallel with the Auxiliary Power Monitor relay contact. Either contact closure will initiate pump start. Thus, the time delays do not affect low pressure ECCS pump operation with normal AC power available. With normal AC power not available, the pump start relays which would have started the B and C RHR pumps and both Core Spray pumps are blocked by the Auxiliary Power Monitor contacts and the pump start time delay relays become the controlling devices.