Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road
Waterford, CT 06385

Dominion

SEP 2 1 2001

Docket No. 50-423
B18450

RE: 10 CFR 50.90

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

Millstone Power Station, Unit No. 3
Response to a Request for Additional Information
Technical Specifications Change Request 3-6-00
Fuel Handling Accidents and Ventilation Systems

In a letter dated June 29, 2000,[1] Northeast Nuclear Energy Company requested a change to the Millstone Unit No. 3 Technical Specifications. Many of the proposed Technical Specification changes were associated with revised fuel handling accident analyses. During a conference call conducted on May 9, 2001, Dominion Nuclear Connecticut, Inc. (DNC), addressed numerous questions from a Nuclear Regulatory Commission reviewer. The purpose of this letter is to transmit the requested written responses, which are contained in Attachment 1. This additional information does not affect the conclusions of the revised Significant Hazards Consideration submitted by a letter dated October 16, 2000.[2]

In addition, DNC requests that upon issuance of the associated license amendment, a 90 day period for implementation be specified. The 90 day period is requested to allow a staggered implementation of the changes. By allowing a 90 day implementation, plant resources can be devoted to the immediate implementation of the changes associated with the specifications that are currently applicable with the unit at power. After those changes have been implemented, the same resources can then be used to implement the remaining changes, which are associated with specifications that will not be applicable until the next refueling outage.

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(1) R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Technical Specifications Change Request 3-6-00, Fuel Handling Accidents and Ventilation Systems," dated June 29, 2000.

(2) R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Technical Specifications Change Request 3-6-00, Fuel Handling Accidents and Ventilation Systems, Revised Significant Hazards Consideration," dated October 16, 2000.

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There are no regulatory commitments contained within this letter.

If you should have any questions on the above, please contact Mr. Ravi Joshi at (860) 440-2080.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.

J. Alan Price, Vice President
Nuclear Technical Services - Millstone

Sworn to and subscribed before me

this 21ST day of SEPTEMBER, 2001

Notary Public

My Commission expires FEBRUARY 28, 2006

Attachment (1)

cc: H. J. Miller, Region I Administrator
V. Nerses, NRC Senior Project Manager, Millstone Unit No. 3
NRC Senior Resident Inspector, Millstone Unit No. 3

Director
Bureau of Air Management
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

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Attachment 1

Millstone Power Station, Unit No. 3

Response to a Request for Additional Information
Technical Specifications Change Request 3-6-00
Fuel Handling Accidents and Ventilation Systems
Supplemental Information

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In a letter dated June 29, 2000,[1] Northeast Nuclear Energy Company requested a change to the Millstone Unit No. 3 Technical Specifications. Many of the proposed Technical Specification changes were associated with revised fuel handling accident analyses. During a conference call conducted on May 9, 2001, Dominion Nuclear Connecticut, Inc. (DNC), addressed numerous questions from a Nuclear Regulatory Commission reviewer. The questions and associated responses are presented below.

Question 1

Insert A for Technical Specification 3.3.2, Insert D for Technical Specification 3.7.7, and Insert G for Technical Specification 3.7.8 do not include Core Alterations in the proposed applicability. Explain why it was not included.

Response

The proposed applicability of Modes 1 through 6 already includes Core Alterations. The Millstone Unit No. 3 definition of Core Alterations states "... movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the vessel head removed and fuel in the vessel." The Millstone Unit No. 3 definition of Mode 6 states "Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed." Since the plant must be in Mode 6 to perform a Core Alteration, it is not necessary to include Core Alterations in the proposed applicability.

Question 2

Provide additional justification why the current requirement of Technical Specification 3.3.2 Action 18. and Technical Specification 3.7.8 Actions a.2. and b.1. to place the Control Room Emergency Ventilation System in the recirculation mode is not correct and should be changed as proposed in Inserts B and H. Include a discussion of the differences between the Millstone Unit No. 3 Control Room Emergency Ventilation System and a standard Westinghouse system design.

Response

The Control Room Envelope Pressurization System (Technical Specification 3.7.8) and the Control Room Emergency Air Filtration System (Technical Specification 3.7.7) are normally maintained in a standby mode of operation. 60 seconds after receipt of a

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[1] R. P. Necci letter to U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 3, Technical Specifications Change Request 3-6-00, Fuel Handling Accidents and Ventilation Systems," dated June 29, 2000.

Control Building Isolation (CBI) Signal, pressurization of the Control Room envelope to 1/8 inch wg by the Control Room Envelope Pressurization System is automatically initiated. The Control Room Envelope Pressurization System will maintain the Control Room envelope pressurized for 60 minutes. After 60 minutes, the Control Room Emergency Air Filtration System will be manually aligned in either the 100% recirculation mode (isolated from the outside environment) or the filtered pressurization mode (outside air is manually diverted through the filters to the Control Room envelope to maintain a positive pressure). The mode of operation selected will be based on the radiological conditions that exist outside the Control Room.

A CBI Signal (Technical Specification 3.3.2) is automatically generated by a manual Safety Injection Signal, High Containment Pressure Signal, or a High Inlet Ventilation Radiation Signal. A CBI Signal can also be manually generated.

The standard Westinghouse Control Room Ventilation System, as described in NUREG-1431 (Standard Technical Specifications Westinghouse Plants), does not include a Control Room Envelope Pressurization System, only a Control Room Emergency Air Filtration System. The standard Westinghouse system utilizes outside filtered makeup air to establish the positive pressure in the Control Room envelope. Millstone Unit No. 3 relies on the Control Room Envelope Pressurization System to automatically actuate and pressurize the Control Room to protect the operators during an accident. Since the Control Room Envelope Pressurization System utilizes air bottles to establish and maintain a positive pressure in the Control Room envelope, no outside air is introduced into the Control Room during this time.

The analyses performed to evaluate the radiological consequences of the design basis accidents on the Control Room operators credits operation of the Control Room Envelope Pressurization System during the first hour after the accident. The analyses were not performed crediting operation of the Control Room Emergency Air Filtration System during this first hour. As a result, the current action statements (Technical Specification 3.3.2 Action 18. and Technical Specification 3.7.8 Actions a.2. and b.1.) which specify placing an operable Control Room Emergency Air Filtration System in the recirculation mode to allow continued operation with inoperable radiation monitor channels or inoperable pressurization systems have not been verified to be acceptable by the analyses. Therefore, DNC has proposed to revise the current action requirements to provide a 7 day allowed outage time for one inoperable Control Building Inlet Ventilation Radiation Channel or one inoperable Control Room Envelope Pressurization System. If the inoperable equipment is not restored within 7 days, a plant shutdown will be required. This will remove the capability to operate indefinitely with inoperable radiation monitor channels or inoperable pressurization systems. This is more restrictive since infinite operation with inoperable actuation equipment will no longer be allowed. In addition, specifying a 7 day allowed outage time for one inoperable system is consistent with NUREG-1431, Technical Specification 3.3.7, Control Room Emergency Filtration System Actuation Instrumentation. (This specification provides 7 days to place the filtration system in recirculation. If not placed in recirculation, a plant shutdown would be required. The proposed changes simply specify 7 days to restore the inoperable equipment, or shut the plant down.)

Question 3

Insert E for Technical Specification 3.7.7 and Insert H for Technical Specification 3.7.8 do not include any transition statements between the proposed actions (e.g., from proposed Action b. to Action a. of Technical Specification 3.7.7) to address restoration of one Control Room Emergency Air Filtration System or one Control Room Envelope Pressurization System if both systems were initially inoperable. Explain why transition guidance was not included.

Response

The Millstone Unit No. 3 Technical Specifications have not been converted to the new improved Standard Technical Specifications (NUREG-1431) which do contain detailed guidance to direct the transition between action requirements. The older versions of Technical Specifications (Millstone Unit No. 3) do not typically provide detailed guidance in this area. The following discussion explains how Millstone Unit No. 3 would address simultaneous entry into multiple action statements, and how to transition between action statements.

NUREG-1431 contains the following specific guidance.

> "The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.
>
> If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.
>
> Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition."

The current Millstone Unit No. 3 Technical Specifications provide limited guidance in this area. The following is contained in Technical Specification 3.0.3.

> Where corrective measures are completed that permit operation under ACTION requirements, the action may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation.

The proposed changes to the Control Room Emergency Air Filtration System (Technical Specification 3.7.7, Insert E) and the Control Room Envelope Pressurization System (Technical Specification 3.7.8, Insert H) add action requirements to address 2 inoperable systems (subsystems or trains) along with the action requirements to address one inoperable system. The proposed action requirements for 2 inoperable systems do not contain transition statements to apply the one inoperable system action requirement after one of the two inoperable systems has been restored based on the initial loss of the remaining inoperable system. Without this guidance, the question was asked if the operators would reset the clock when leaving the action requirement for two inoperable systems and enter the action requirement for one inoperable system, or would the operators remain in the action requirement for two inoperable systems until both systems were restored.

The current Millstone Unit No. 3 Technical Specifications do not contain specific transition guidance, other than that contained in Technical Specifications 3.0.3 and 3.8.1.1, Electrical Power Sources. Even though no specific general guidance is contained in the Millstone Unit No. 3 Technical Specifications, the following approach would be taken by the plant operators to address inoperable equipment.

1. When equipment is determined to be inoperable, all appropriate action requirements are entered based on the time that inoperability was determined.

2. If multiple pieces of equipment on the same system (train or subsystem) become inoperable, the time of inoperability of the equipment is logged. The allowed outage time remains the same based on the first inoperable component, even if the first inoperable component is restored before the remaining inoperable components.

3. If a piece of equipment on the other system becomes inoperable, the time of inoperability of the equipment is logged and the appropriate action requirements are entered. If there is an action statement to address two inoperable systems, that statement is followed until at least one system is returned to operable status or the plant is shut down to below the applicability of that specification. (If no action statement exists to address two inoperable systems, Technical Specification 3.0.3 would apply.) If one system is returned to operable status, the action requirement for two inoperable systems no longer applies. The action requirement for one inoperable system still applies and the remaining available time is based on the initial inoperability of the first inoperable system, unless specified otherwise (e.g., Technical Specification 3.8.1.1).

The key point is that the clock is not reset to time zero for the remaining inoperable system after restoration of one of the two inoperable systems. In addition, the plant would not stay in the action requirement for two inoperable systems after one system has been restored to operable status.

The following example illustrate the application of action requirements at Millstone Unit No. 3.

Technical Specification 3.7.1.2, Auxiliary Feedwater (AFW), requires 3 AFW pumps and associated flowpaths to be operable.

Action a. If 1 AFW pump is inoperable restore within 72 hours, or be in Mode 3 in the next 6 hours and Mode 4 the following 6 hours.

Action b. If 2 AFW pumps are inoperable, be in Mode 3 in 6 hours and Mode 4 the following 6 hours.

Action c. If 3 AFW pumps are inoperable, immediately initiate action to restore at least one AFW pump as soon as possible (no shutdown requirements).

t=0 hours Turbine driven (TD) AFW pump is declared inoperable. Action a. entered. Restore within 72 hours.

t=12 hours Both motor driven (MD) AFW pumps declared inoperable due to faulty relay in each automatic actuation control circuit. Action c. entered. Restore at least one pump as soon as possible. Action b. also applies, but Action c., which recognizes the safety significance of the situation, takes priority. A plant shutdown should not be performed with no operable AFW pumps.

t=18 hours One MD AFW pump restored to operable status by replacing the relay. Action c. no longer applies. With two AFW pumps inoperable, Action b. applies and a shutdown to Mode 3 is required to be completed by t=24 hours. There is no allowed outage time in Action b. The 6 hour requirement to reach Mode 3 reflects an acceptable time to shut the plant down from 100% power. A normal controlled plant shutdown is appropriate in this situation and 6 hours is a reasonable time period.

t=19 hours The other MD AFW pump is restored to operable status by replacing the relay. Action b. no longer applies. With one AFW pump inoperable Action a. applies and will require restoration of the TD AFW pump to operable status by t=72 hours, or a shutdown to Mode 3 is required to be completed by t=78 hours.

The action requirements associated with Technical Specification 3.7.1.2 are unique. However, this example illustrates two key points. The operators transition between action requirements based on equipment status even though no specific guidance is

provided. The operators would not stay in an action statement that no longer applies just because there is no guidance directing the transition. If such a transition was not acceptable because of a lack of guidance that would imply the operators should remain in Action c. until all 3 AFW pumps have been restored. Although that would not create any problem based on the scenario presented, it would not be acceptable to use Action c. to allow continued plant operation indefinitely with inoperable AFW pumps. In addition, when transitioning the operators do not reset the clock. The TD AFW pump is still required to be restored by t=72 hours.

An additional example of a current Millstone Unit No. 3 Technical Specification that contains action statements to address one or two inoperable components/subsystems, but does not include action statement transition guidance is Technical Specification 3.6.4.1, Hydrogen Monitors.

As demonstrated by the above example, it is not necessary to include transition guidance between action requirements.

Question 4

Provide additional justification why the proposed Action d. of Technical Specification 3.7.8, which addresses the performance of Surveillance Requirement 4.7.8.c, is necessary.

Response

The addition of a new Modes 1 through 4 Control Room Envelope Pressurization System action requirement (d.) to address two inoperable systems (subsystems or trains) in Modes 1 through 4 is necessary to allow performance of SR 4.7.8.c during plant operation. Historically, this test has been performed during plant operation utilizing the provisions of the current Action b.1. However, Action b.1. has been replaced, as previously discussed, necessitating the addition of a new provision to allow this testing. The new action requirement will allow both systems to be inoperable for up to 4 hours during testing, provided the system not being tested is under administrative control. During performance of this test, the system not being tested is isolated by closure of a manual valve. This is necessary since the method used to generate the CBI signal (manual control board actuation) will send a signal to both systems. Restoration of the system not being tested will only require the manual isolation valve to be opened. A dedicated operator will be stationed to rapidly restore the system not being tested to operable status, if necessary. The Bases for this specification will provide additional detail concerning the acceptable administrative controls to ensure the system not being tested can be restored to operation, if needed. If at least one train is not restored to operable status within 4 hours, a plant shutdown to Mode 5 will be required. Allowing both systems to be inoperable for up to 4 hour for test performance only, will provide sufficient time to perform the test without requiring an immediate plant shutdown, and is reasonable based on the administrative controls that will be in place to rapidly restore one system to operable status. The additional proposed action requirement to immediately suspend fuel movement within the spent fuel pool is consistent with the other action requirements, and the shutdown times are consistent with Technical Specification 3.0.3.

Question 5

The proposed Actions d. and e. for Technical Specification 3.7.7 (Insert E) and Actions e. and f. for Technical Specification 3.7.8 (Insert H) include the requirement to suspend core alterations, but core alterations are not included in the proposed applicability for this specification. Why was this requirement included?

Response

It is appropriate to include the requirement to suspend core alterations with one or two inoperable Control Room Emergency Air Filtration Systems or Control Room Envelope Pressurization Systems to eliminate a potential radioactive release mechanism when these protective systems are degraded or not available. The proposed applicability did not include core alterations for the reasons previously discussed in the response to Question 1.

Question 6

Explain why the actions contain in Technical Specification 3.9.2 for one inoperable source range monitor are not repeated in the actions for 2 inoperable source range monitors.

Response

Changes have been proposed to the action requirements of Technical Specification 3.9.2. This Technical Specification contains separate action requirements to address one inoperable source range monitor and two inoperable source range monitors. The current action statement for one inoperable monitor requires the suspension of core alterations or positive reactivity changes. The action statement for two inoperable monitors requires periodic verification of Reactor Coolant System (RCS) boron concentration. It does not include the requirement to suspend core alterations or positive reactivity changes contained in the action statement for 1 inoperable monitor.

If the plant is in Mode 6 and one source range monitor becomes inoperable, the operators will enter the action requirement for one inoperable monitor and suspend core alterations or positive reactivity changes. If the second monitor becomes inoperable at some later point in time, the action statement for two inoperable monitors would be applied and RCS boron would be verified periodically. The requirement to suspend core alterations or positive reactivity changes would still be in effect. After one monitor is restored to operable status, periodic verification of RCS boron concentration would no longer apply, but the requirement to suspend core alterations or positive reactivity changes would still be in effect. If both required source range monitors become inoperable at the same time, the operators will apply both requirements (suspend core alterations or positive reactivity changes and periodically verify RCS boron concentration). This is appropriate since the action requirements are mutually exclusive and do not contradict each other. It is not necessary to include Action a. requirements in Action b. In addition, it is not necessary to include transition guidance between action requirements for the reasons previously discussed in the response to Question 3.

The following example illustrates the application of Technical Specification 3.9.2 action requirements.

Action a.	If 1 source range monitor is inoperable, immediately suspend core alterations or positive reactivity changes.
Action b.	If 2 source range monitors are inoperable, periodically verify RCS boron concentration.
t=0 hours	1 source range monitor is declared inoperable. Action a. is entered. Immediately suspend core alterations or positive reactivity changes.
t=2 hours	The other source range monitor is declared inoperable. Action b. is entered. RCS concentration verified periodically. Action a. is still applicable.
t=4 hours	1 source range monitor is declared operable. Action b. no longer applies. Action a. is still applicable.
t=6 hours	The other source range monitor is declared operable. Action a. no longer applies.

As demonstrated by the above example, it is not necessary to include the action requirements for one inoperable source range monitor in the action requirements for two source range monitors.

Question 7

The proposed change to SR 4.9.4.b will modify the frequency of performance. Provide additional justification to support the proposed change.

Response

Surveillance Requirement (SR) 4.9.4.b will be revised to be a standalone surveillance requirement. The current requirement contained in SR 4.9.4.b to test "the containment purge and exhaust isolation valves per the applicable portions of Specification 4.6.3.2" will not change. (SR 4.6.3.2 requires periodic verification, once per refueling interval, that these valves will automatically close on a high containment radiation signal. The proposed change to SR 4.9.4.b will not affect any aspect of the testing requirements of SR 4.6.3.2.) However, the frequency of performance of SR 4.9.4.b will be modified from within 100 hours of the start of core alterations or fuel movement inside containment and once per 7 days thereafter, to simply test in accordance with SR 4.6.3.2. Therefore, the proposed surveillance frequency change is a less restrictive change.

This frequency change will not change the requirement for the automatic closure feature of the containment purge and exhaust isolation valves on high containment radiation to be verified prior to the start of core alterations or fuel movement inside

containment. An acceptable performance of the surveillance requirement within the proposed surveillance frequency will still be required prior to entering the applicability of the specification. Since this is normally done shortly before entering the applicability of the specification, the proposed removal of "within 100 hours" will not adversely impact the probability a containment purge and exhaust isolation valve will fail to automatically close on high containment radiation.

Requiring performance once per refueling interval instead of every 7 days thereafter will not adversely affect the probability a containment purge and exhaust isolation valve will fail to automatically close on high containment radiation. The proposed surveillance frequency to verify automatic actuation once per refueling interval is a standard interval utilized in numerous Millstone Unit No. 3 Technical Specifications (e.g., Technical Specification 3.5.2, SR 4.5.2.e for emergency core cooling pumps and valves; Technical Specification 3.6.2.1, SR 4.6.2.1.c for quench spray pumps and valves; and Technical Specification 3.7.1.2, SR 4.7.1.2.1.c for auxiliary feedwater pumps). There is nothing unique with this design feature that would warrant a shorter surveillance frequency. In addition, the proposed frequency is consistent with NUREG-1431 (Technical Specification 3.9.4).