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

Dominion

AUG 6 2002

Docket No. 50-336
B18731

Re: 10 CFR 50.90

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

Millstone Power Station, Unit No. 2
Technical Specifications Change Request (TSCR) 2-10-01, Revision 1
Fuel Pool Requirements

In a letter dated November 6, 2001,[1] Dominion Nuclear Connecticut, Inc. (DNC) submitted a license amendment request in the form of changes to the Millstone Unit No. 2 Technical Specifications. The proposed changes would: (1) increase the allowable nominal average fuel assembly enrichment from 4.5 w/o U-235 to 4.85 w/o U-235 for all regions of the spent fuel pool, the new fuel storage racks (dry), and the reactor core; (2) allow fuel to be located in 40 Region B Storage Cells, which are currently empty and blocked, and (3) credit spent fuel pool soluble boron for reactivity control during normal conditions to maintain spent fuel pool $K_{eff} \leq 0.95$. Additionally, as a result of a subsequent discussion with the staff of the Nuclear Regulatory Commission (NRC), DNC provided a revision to the Significant Hazards Consideration (SHC) discussion (Attachment 1) in a letter dated December 27, 2001.[2] The revised SHC discussion did not affect the conclusion of the safety summary nor the original SHC determination. Additionally, in a letter dated July 15, 2002,[3] DNC responded to a Request for Additional Information (RAI) from the NRC related to the aforementioned

(1) J. A. Price letter to the U.S. NRC, "Millstone Power Station, Unit No. 2, Technical Specifications Change Request (TSCR) 2-10-01, Fuel Pool Requirements," dated November 6, 2001.

(2) J. A. Price letter to the U.S. NRC, "Millstone Power Station, Unit No. 2, Technical Specifications Change Request (TSCR) 2-10-01, Fuel Pool Requirements, Revised Significant Hazards Consideration Discussion," dated December 27, 2001.

(3) J. A. Price letter to the U.S. NRC, "Millstone Power Station, Unit No. 2, Response to a Request for Additional Information Technical Specifications Change Request (TSCR) 2-10-01, Fuel Pool Requirements," dated July 15, 2002

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license amendment request. The additional information provided did not affect the conclusions of the Safety Summary nor SHC discussion in the DNC November 6, 2001 and December 27, 2001 letters.

This letter provides a revision to the aforementioned license amendment request. Proposed Design Features TS 5.6.1 is revised by this letter. Attachments 1 and 2 provide marked-up and retyped versions of Proposed Design Features TS 5.6.1, as previously submitted in the DNC November 6, 2001 letter. Only proposed Design Features TS 5.6.1 is shown in Attachments 1 and 2, since all other proposed Technical Specification changes previously submitted by DNC in the November 6, 2001 letter remain unchanged by this letter. Attachments 3 and 4 provide marked-up and retyped versions of Proposed Design Features TS 5.6.1, as proposed by this letter. Thus by comparing Attachment 1 to Attachment 3, or comparing Attachment 2 to Attachment 4, the NRC can more easily see the changes proposed by DNC in this letter, relative to the DNC November 6, 2001 letter.

As shown in Attachment 1, the next to last sentence in proposed Design Features Technical Specification 5.6.1f) is: "Fuel having a maximum nominal enrichment of 4.85 weight percent U-235, with no burnup may be stored in un-blocked locations." As shown in Attachment 3, the next to last sentence in proposed Design Features Technical Specification 5.6.1f) is: "Fuel having a maximum nominal enrichment of 4.85 weight percent U-235, may be stored in un-blocked locations." Thus, the only revision that DNC is proposing in this letter, involves the removal of the words "with no burnup" in proposed Design Features Technical Specification 5.6.1f).

The purpose of this sentence in proposed Design Features Technical Specification 5.6.1f) is to state what fuel may be stored in Region B un-blocked locations. The criticality analyses previously submitted by DNC in the November 6, 2001 letter are based on storing maximum reactivity fuel in the Region B un-blocked locations. The maximum reactivity fuel analyzed were 4.85 weight percent U-235 fuel assemblies, with no burnup. A fuel assembly which has any amount of burnup will be less reactive and therefore less limiting than a fuel assembly with no burnup. Thus the criticality analyses previously submitted in the DNC November 6, 2001 letter bound the storage of fresh or burned fuel having a maximum nominal enrichment of 4.85 weight percent U-235, in un-blocked locations of Region B.

DNC has determined that these words "with no burnup" previously submitted in Proposed Design Features TS 5.6.1f) could be misinterpreted, and should be removed. The words "with no burnup" were originally inserted by DNC to add emphasis that fuel up to 4.85 w/o U-235 "with no burnup" could be placed in un-blocked storage cells of Region B. However, these words could be misinterpreted to read that only fuel "with no burnup" can be placed in the un-blocked cells of Region B, which is an unintended interpretation.

The removal of these 3 words does not change the intent of the proposed specification, nor alter any analysis that supports it. The revised Technical Specification provided in this letter will not affect the conclusions of the Safety Summary and SHC discussion in the DNC November 6, 2001 and December 27, 2001 letters.

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
Site Vice President - Millstone

Sworn to and subscribed before me

this 6 day of August, 2002

Notary Public

My Commission expires

WM. E. BROWN
NOTARY PUBLIC
MY COMMISSION EXPIRES MAR. 31, 2006

Attachments (4)

cc: H. J. Miller, Region I Administrator
R. B. Ennis, NRC Senior Project Manager, Millstone Unit No. 2
NRC Senior Resident Inspector, Millstone Unit No. 2

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

Attachment 1

Millstone Power Station, Unit No. 2

Technical Specifications Change Request (TSCR) 2-10-01 Revision 0
Proposed Design Features TS 5.6.1
Fuel Pool Requirements
Marked-Up Pages

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is a nominal 10,981 ft^3.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the design provisions contained in Section 6.3 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.6 FUEL STORAGE

replace with Insert #C

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal fuel enrichment to be stored in these racks is 4.50 weight percent of U-235.

b) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations to ensure a $K_{eff} \leq .95$ with the storage pool filled with unborated water. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

c) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center-to-center distance between storage locations to ensure $K_{eff} \leq .95$ with a storage pool filled with unborated water. Fuel assemblies stored in this region may have a maximum nominal enrichment of 4.5 weight percent U-235. Fuel assemblies stored in this region are placed in a 3 out of 4 STORAGE PATTERN for reactivity control.

d) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations to ensure a $K_{eff} \leq .95$ with the storage pool filled with unborated water. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

e) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel and ensure a $K_{eff} \leq 0.95$. The contents of consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3.

Unit 2
Technical Specification Changes

Insert C

Change 5.6 FUEL STORAGE Page 5-5 to read...

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal average fuel assembly enrichment to be stored in these racks is 4.85 weight percent ~~U_{235}~~. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent ~~U_{235}~~. U-235

b) The spent fuel storage racks are designed and shall be maintained with fuel assemblies having a maximum nominal average enrichment of 4.85 weight percent ~~U_{235}~~. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent ~~U_{235}~~.

c) The spent fuel storage racks are designed and shall be maintained with $k_{eff} \leq 1.00$ if fully flooded with unborated water, which includes an allowance for uncertainties.

d) The spent fuel storage racks are designed and shall be maintained with $k_{eff} \leq .95$ if fully flooded with water borated to 600 ppm, which includes an allowance for uncertainties.

e) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

f) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Region B contains both blocked and un-blocked storage locations, shown in Figure 3.9-2. Fuel having a maximum nominal enrichment of 4.85 weight percent ~~U_{235}~~, with no burnup may be stored in un-blocked locations. Fuel stored in blocked locations must be Batch B fuel assemblies. U-235

g) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

h) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel. The contents of the consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3 to ensure that the design burnup has been sustained.

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Attachment 2

Millstone Power Station, Unit No. 2

Technical Specifications Change Request (TSCR) 2-10-01 Revision 0
Proposed Design Features TS 5.6.1
Fuel Pool Requirements
Retyped Pages

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is a nominal 10,981 ft^3.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the design provisions contained in Section 6.3 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.6 FUEL STORAGE

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal average fuel assembly enrichment to be stored in these racks is 4.85 weight percent U-235. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent U-235.

b) The spent fuel storage racks are designed and shall be maintained with fuel assemblies having a maximum nominal average enrichment of 4.85 weight percent U-235. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent U-235.

c) The spent fuel storage racks are designed and shall be maintained with $K_{eff} \leq 1.00$ if fully flooded with unborated water, which includes an allowance for uncertainties.

d) The spent fuel storage racks are designed and shall be maintained with $K_{eff} \leq .95$ if fully flooded with water borated to 600 ppm, which includes an allowance for uncertainties.

e) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

f) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Region B contains both blocked and un-blocked storage locations, shown in Figure 3.9-2. Fuel having a maximum nominal enrichment of 4.85 weight percent U-235, with no burnup may be stored in un-blocked locations. Fuel stored in blocked locations must be Batch B fuel assemblies.

g) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

h) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel. The contents of the consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3 to ensure that the design burnup has been sustained.

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Attachment 3

Millstone Power Station, Unit No. 2

Technical Specifications Change Request (TSCR) 2-10-01 Revision 1
Proposed Design Features TS 5.6.1
Fuel Pool Requirements
Marked-Up Pages

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is a nominal 10,981 ft^3.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the design provisions contained in Section 6.3 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.6 FUEL STORAGE

replace with Insert #C

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal fuel enrichment to be stored in these racks is 4.50 weight percent of U-235.

b) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations to ensure a $K_{eff} \leq .95$ with the storage pool filled with unborated water. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

c) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center-to-center distance between storage locations to ensure $K_{eff} \leq .95$ with a storage pool filled with unborated water. Fuel assemblies stored in this region may have a maximum nominal enrichment of 4.5 weight percent U-235. Fuel assemblies stored in this region are placed in a 3 out of 4 STORAGE PATTERN for reactivity control.

d) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations to ensure a $K_{eff} \leq .95$ with the storage pool filled with unborated water. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

e) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel and ensure a $K_{eff} \leq 0.95$. The contents of consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3.

Unit 2
Technical Specification Changes

Insert C

Change 5.6 FUEL STORAGE Page 5-5 to read...

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal average fuel assembly enrichment to be stored in these racks is 4.85 weight percent ~~U_{235}~~. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent ~~U_{235}~~. U-235

b) The spent fuel storage racks are designed and shall be maintained with fuel assemblies having a maximum nominal average enrichment of 4.85 weight percent ~~U_{235}~~. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent ~~U_{235}~~.

c) The spent fuel storage racks are designed and shall be maintained with $k_{eff} \leq 1.00$ if fully flooded with unborated water, which includes an allowance for uncertainties.

d) The spent fuel storage racks are designed and shall be maintained with $k_{eff} \leq .95$ if fully flooded with water borated to 600 ppm, which includes an allowance for uncertainties.

e) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

f) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Region B contains both blocked and un-blocked storage locations, shown in Figure 3.9-2. Fuel having a maximum nominal enrichment of 4.85 weight percent ~~U_{235}~~, ~~with no burnup~~ may be stored in un-blocked locations. Fuel stored in blocked locations must be Batch B fuel assemblies. U-235

g) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

h) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel. The contents of the consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3 to ensure that the design burnup has been sustained.

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Attachment 4

Millstone Power Station, Unit No. 2

Technical Specifications Change Request (TSCR) 2-10-01 Revision 1
Proposed Design Features TS 5.6.1
Fuel Pool Requirements
Retyped Pages

VOLUME

5.4.2 The total water and steam volume of the reactor coolant system is a nominal 10,981 ft^3.

5.5 EMERGENCY CORE COOLING SYSTEMS

5.5.1 The emergency core cooling systems are designed and shall be maintained in accordance with the design provisions contained in Section 6.3 of the FSAR with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

5.6 FUEL STORAGE

CRITICALITY

5.6.1 a) The new fuel (dry) storage racks are designed and shall be maintained with sufficient center to center distance between assemblies to ensure a $k_{eff} \leq .95$. The maximum nominal average fuel assembly enrichment to be stored in these racks is 4.85 weight percent U-235. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent U-235.

b) The spent fuel storage racks are designed and shall be maintained with fuel assemblies having a maximum nominal average enrichment of 4.85 weight percent U-235. The maximum fuel rod enrichment to be stored in these racks is 5.0 weight percent U-235.

c) The spent fuel storage racks are designed and shall be maintained with $K_{eff} \leq 1.00$ if fully flooded with unborated water, which includes an allowance for uncertainties.

d) The spent fuel storage racks are designed and shall be maintained with $K_{eff} \leq .95$ if fully flooded with water borated to 600 ppm, which includes an allowance for uncertainties.

e) Region A of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figure 3.9-4 to ensure that the design burnup has been sustained.

f) Region B of the spent fuel storage pool is designed and shall be maintained with a nominal 9.8 inch center to center distance between storage locations. Region B contains both blocked and un-blocked storage locations, shown in Figure 3.9-2. Fuel having a maximum nominal enrichment of 4.85 weight percent U-235, may be stored in un-blocked locations. Fuel stored in blocked locations must be Batch B fuel assemblies.

g) Region C of the spent fuel storage pool is designed and shall be maintained with a 9.0 inch center to center distance between storage locations. Fuel assemblies stored in this region must comply with Figures 3.9-1a or 3.9-1b to ensure that the design burn-up has been sustained. Additionally, fuel assemblies utilizing Figure 3.9-1b require that borated stainless steel poison pins are installed in the fuel assembly's center guide tube and in two diagonally opposite guide tubes. The poison pins are solid 0.87 inch O.D. borated stainless steel, with a boron content of 2 weight percent boron.

h) Region C of the spent fuel storage pool is designed to permit storage of consolidated fuel. The contents of the consolidated fuel storage boxes to be stored in this region must comply with Figure 3.9-3 to ensure that the design burnup has been sustained.