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April 3, 2002

Charles Bechhoefer, Chairman  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dr. Richard F. Cole  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dr. Charles N. Kelber  
Administrative Judge  
Atomic Safety and Licensing Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Re: **Dominion Nuclear Connecticut, Inc.**  
**Millstone Nuclear Power Station, Unit 3**  
**Docket No. 50-423-LA-3**

Administrative Judges:

Attached for the information of the Licensing Board and parties is a copy of a letter that I referenced at the Subpart K Oral Argument held in this matter yesterday in Mystic, Connecticut. The attached letter is Dominion Nuclear Connecticut's response, dated March 28, 2002, to the apparent violations identified in Inspection Report No. 05000245/2001013.

Sincerely,



David A. Repka  
Counsel for Dominion Nuclear Connecticut, Inc.

cc: Service List

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



**Dominion™**

MAR 28 2002

Docket No. 50-245  
B18600

RE: 10 CFR 2.201

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

Millstone Nuclear Power Station, Unit No. 1  
Facility Operating License No. DPR-21  
Response to Apparent Violations in  
Inspection Report No. 05000245/2001013

This letter is a response to apparent violations identified in the Nuclear Regulatory Commission (NRC) letter, "Special Inspection 05000245/2001013."<sup>(1)</sup> The letter presented the results of the special inspection of activities authorized at Millstone Unit No. 1 and focused on the investigation into the loss of two spent fuel rods from Millstone Unit No. 1.

As the current Licensee of Millstone Nuclear Power Station, Dominion Nuclear Connecticut, Inc. (DNC), understands its responsibility and accountability for safe operation of this facility and as custodian of its nuclear fuel. The events discussed in the inspection report which occurred some twenty (20) years ago, prior to Dominion's ownership of the plant, were investigated completely and thoroughly by the former operator of Millstone Unit No. 1, Northeast Nuclear Energy Company (NNECO).<sup>(2)</sup> DNC agrees with NNECO and the NRC's assessment that the fuel rods are in a location that poses minimal threat to public safety. The causes and contributing factors associated with these matters have been thoroughly evaluated and key corrective actions associated with the apparent violation regarding the loss of accountability as discussed in the root cause report<sup>(3)</sup> have been reviewed by DNC and implemented.

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<sup>(1)</sup> G. Pangburn, U.S. Nuclear Regulatory Commission letter to J. Alan Price, "Special Inspection 05000245/2001013, Dominion Nuclear Connecticut, Inc., Millstone Nuclear Power Station, Unit 1," dated February 27, 2002.

<sup>(2)</sup> J. Alan Price letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 1, Issuance of Final Report Pertaining to Unaccounted for Spent Fuel Rods," dated October 5, 2001.

<sup>(3)</sup> J. Alan Price letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 1, Issuance of Root Cause Pertaining to Unaccounted for Spent Fuel Rods," dated October 29, 2001.

DNC does not contest the apparent violations. However, particularly with respect to the apparent violation for delayed reporting of the missing fuel rods, the imposition of escalated enforcement, including the possibility of any associated civil monetary penalty, for untimely reporting under these circumstances is not consistent with prior NRC enforcement practices. As further explained in Attachment 2, the engineers who initially uncovered the records discrepancy reasonably believed that the fuel rods were not missing. They pursued logical locations for the two rods. Further, as described in the OI Investigation Report,<sup>(4)</sup> NRC determined that there was no deliberate attempt to delay or avoid reporting.

Attachments 1 and 2 provide DNC's response to the two apparent violations pursuant to the provisions of 10 CFR 2.201.

Also, although DNC does not contest these matters, DNC was not the licensee at the time the events that form the basis for the apparent violations occurred. It is for this reason that DNC also requests that going forward, the NRC not consider these apparent violations as having occurred within the past two years under Section VI.C.2 of the NRC Enforcement Policy ("Disposition of Violations, Civil Penalties").

There are no regulatory commitments contained within this letter.

Should you have any questions regarding the information contained herein, please contact Mr. David A. Smith at (860) 437-5840.

Very truly yours,

DOMINION NUCLEAR CONNECTICUT, INC.



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J. Alan Price  
Site Vice President - Millstone

Attachments (2)

cc: H. J. Miller, Region I Administrator  
J. B. Hickman, NRC Project Manager, Millstone Unit No. 1  
T. J. Jackson, NRC Inspector, Region I, Millstone Unit No. 1  
R. R. Bellamy, Chief, Decommissioning and Laboratory Branch, Region I

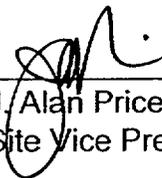
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<sup>(4)</sup> G. Pangburn, U.S. Nuclear Regulatory Commission letter to Raymond P. Necci, "Investigation of Millstone Nuclear Power Station, Unit 1: Failure to Report Missing or Lost Radioactive Fuel Rods in a Timely Manner," dated October 31, 2001.

Affirmation

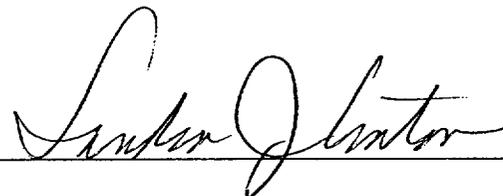
I, J. Alan Price, being duly sworn, state that I am Site Vice President of Dominion Nuclear Connecticut, Inc., that I am authorized to sign and file this information with the Nuclear Regulatory Commission on behalf of Dominion Nuclear Connecticut, Inc., and that the statements made and the matters set forth herein pertaining to Dominion Nuclear Connecticut, Inc. are true and correct to the best of my knowledge, information and belief.

Dominion Nuclear Connecticut, Inc.

  
\_\_\_\_\_  
J. Alan Price  
Site Vice President - Millstone

STATE OF Connecticut  
COUNTY OF New London

Subscribed and sworn to before me, a Notary Public, in and for the County and State above named, this 28<sup>th</sup> day of March, 2002.

  
\_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

**SANDRA J. ANTON  
NOTARY PUBLIC  
COMMISSION EXPIRES  
MAY 31, 2005**

Docket No. 50-245  
B18600

Attachment 1

Millstone Nuclear Power Station, Unit No. 1

Response to  
Inspection Report No. 05000245/2001013  
For Apparent Violation 05000245/2001013/001

Response to  
Inspection Report No. 05000245/2001013  
For Apparent Violation 05000245/2001013/001

**Restatement of Apparent Violation (VIO 50-245/2001-013/001)**

**Failure to Adequately Account for Special Nuclear Material**

Beginning in 1980 and continuing through November 2000, the licensee failed to keep adequate records of the special nuclear material in irradiated fuel rods BK0136 and BP0406; failed to establish adequate written material control and accounting procedures sufficient to account for all special nuclear material in his possession; and failed to identify through physical inventory that the two fuel rods were no longer in the location stated in the book inventory (the previous inventory updated by receipts and shipments).

**Dominion Nuclear Connecticut, Inc. (DNC) does not contest the violation.**

**Reason for the Violation**

As provided in DNC correspondence dated October 29, 2001,<sup>(1)</sup> which transmitted the root cause report, the cause of this violation was a historical unrecognized over-reliance on Millstone Unit No. 1 reactor engineers to compensate for organizational and process weaknesses in implementing the special nuclear material (SNM) inventory and control procedures. That unrecognized over-reliance masked certain behaviors and conditions that led to the loss of the two fuel rods.

**Corrective Steps Taken and Results Achieved**

1. Each of the recommendations described in the previously referenced root cause report<sup>(1)</sup> has been incorporated into the Millstone Corrective Actions Program for implementation.
2. With the exception of the two missing fuel rods, all fuel at Millstone Unit No. 1 has been accounted for.
3. A dedicated DNC management level position has been assigned responsibility for physical fuel management activities on site. This includes spent fuel pool activities and is similar to the successful organizational structure at Dominion's other nuclear stations.

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<sup>(1)</sup> J. Alan Price letter to the U.S. Nuclear Regulatory Commission, "Millstone Nuclear Power Station, Unit No. 1, Issuance of Root Cause Pertaining to Unaccounted for Spent Fuel Rods," dated October 29, 2001.

4. Procedures have been enhanced to strengthen the SNM control and accountability program.
5. Procedures temporarily have been modified to disallow the disposal of irradiated hardware. This will preclude the possibility of unauthorized and/or inadvertent shipment of SNM. Also, these procedures have been upgraded with requirements for detailed waste characterization and verification of irradiated components being placed in disposal containers. These upgrades will not become effective until Millstone is allowed to ship irradiated components to the facility licensed to accept the waste.

**Corrective Steps That Will Be Taken to Avoid Further Violations**

All necessary actions to preclude further violations are complete.

**Date When Full Compliance Will Be Achieved**

DNC is currently in compliance.

Attachment 2

Millstone Nuclear Power Station, Unit No. 1

Response to  
Inspection Report No. 05000245/2001013  
For Apparent Violation 05000245/2001013/002

Response to  
Inspection Report No. 05000245/2001013  
For Apparent Violation 05000245/2001013/002

**Restatement of Apparent Violation (VIO 50-245/2001-013/002)**

**Failure to Report Missing Radioactive Material in a Timely Manner**

Lost or missing licensed material is defined in 10 CFR 20.1003 as licensed material whose location is unknown. On September 12, 2000, with the examination of assembly MS-557 and physical verification of the northwest corner of the spent fuel pool completed, the licensee could not identify the location of the two fuel rods. Although the licensee did eventually report the missing licensed material to the Nuclear Regulatory Commission (NRC) Operations Center on December 14, 2000, the licensee did not know the location of the two spent fuel rods as of September 12, 2000. As a result, the licensee failed to notify the NRC in a timely manner according to the requirements of 10 CFR 20.2201(a)(ii), which requires that the NRC be notified within 30 days after the occurrence of any lost, stolen, or missing licensed material exceeding specified quantities becomes known to the licensee.

**Dominion Nuclear Connecticut, Inc. (DNC) does not contest the violation.**

**Reason for the Violation**

As stated in NRC correspondence dated October 31, 2001,<sup>(1)</sup> "... the lack of aggressive licensee (NU)/Entergy management oversight of, and accountability for contractors work... possibly contributed to the [Condition Report] being written on November 16, 2000, vice sometime sooner." This circumstance, compounded by a belief of those involved that the rods were located in an unspecified location in the spent fuel pool, resulted in what appears to be a delay in issuing Condition Report (CR) No. M1-00-0548 and, consequently, formally reporting the situation to the NRC.

The series of events which resulted in the issuance of the CR represented a significant effort to fully investigate the cause of a discrepancy identified in documentation regarding the location of the fuel rods, and illustrates the individuals' belief that the rods were located in an unspecified location in the spent fuel pool.

In the Summer of 2000, contract engineers working for NNECO discovered a memorandum from May 1979, that referred to two spent fuel rods in the Unit No. 1 spent fuel pool. The memorandum indicated that two spent fuel rods from MS-557 were being stored in the northwest corner of the spent fuel pool, but only "until they can be incorporated in a scavaged [sic] fuel assembly." Given the age of this memorandum

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<sup>(1)</sup> G. Pangburn, U.S. Nuclear Regulatory Commission letter to Raymond P. Necci, "Investigation of Millstone Nuclear Power Station, Unit 1: Failure to Report Missing or Lost Radioactive Fuel Rods in a Timely Manner," dated October 31, 2001.

(over twenty-years old) and the memorandum's indication that the rods would be stored in another assembly, the engineers reasonably believed that the rods remained in the pool, but in another location. Indeed, they believed that their task was simply to locate the document or documents that would accurately reflect the current pool storage location for the rods. Based upon this information and their assessment of the situation, they began a series of steps to resolve the issue raised by the twenty-one year old document.

The NRC Inspection Report indicates that the August 29, 2000, through September 12, 2000, fuel assembly serial number inspection should have led the engineers to conclude that the rods were missing, triggering the thirty-day reporting requirement. To the contrary, those inspections did not provide the engineers with sufficient information to conclude that the rods were lost or missing.

As noted above, the May 1979 memo indicated that the rods would be placed in a scavenged bundle (i.e. assembly). During the September 2000 serial number inspections, the engineers were not able to inspect the contents of the several fuel assemblies that were likely repositories for the two fuel rods. For example, the engineers were aware that the assembly that housed irradiated rods from a Segmented Test Rod Program (SRP-2D), was a likely storage place for the two rods from MS-557. So too, MSB-125Δ, the assembly that housed the test rods while in the core, was also available as a potential storage location. Significantly, the test rod program was being conducted in the timeframe that the May 1979 memo was written. Additionally, the engineers were aware that a damaged fuel assembly, MS-508, provided another likely storage location for the two rods. But, as of September 12, 2000, the engineers had not looked in these assemblies in an attempt to locate the two MS-557 fuel rods.

Second, the engineers knew that after May 1979, the Unit No. 1 spent fuel pool had been re-racked. Therefore, it was not surprising to them that the two rods were not in the northwest corner of the pool in 2000. Indeed, some disposition prior to or during the re-racking would have been required to complete the re-racking. Thus, their inability to locate the rods in the northwest corner of the pool did not mean that the rods were lost or missing.

Third, the engineers who found the May 1979 memorandum addressed it in the context of other records that they had come upon during their work to characterize all of the spent fuel in the spent fuel pool. Specifically, during the course of retrieving the documents and data needed to build the Unit No. 1 spent fuel history database, the engineers had found other documents that they could not initially reconcile. In each instance, except for these two spent fuel rods, the engineers eventually found the data or document to reconcile what may have initially appeared to be a discrepancy. Given this experience, the engineers believed that, with their continuing review of the appropriate documents, they would, once again, reconcile the May 1979 memo. They considered the likelihood that the rods were actually missing to be extremely remote. Indeed, they were not aware of any other instance involving the loss of commercial spent fuel.

Fourth, the September 2000 inspection of the parent assembly of the two rods (MS-557) did not definitively indicate that the two rods were missing. In fact, the visual inspection on September 12, 2000, raised the possibility that the missing rods were actually stored in MS-557. When the engineers inspected MS-557 by looking down at the assembly with an underwater camera, they saw a rod in the location of the center spacer capture rod. The engineers noticed that the rod protruded somewhat, which indicated that the rod might be either a re-located fuel rod or a dummy rod (as events later established), but the unexplained presence of a rod in that location at least invited the possibility that the rod was the original, unaccounted for center spacer capture rod. The engineers consulted with General Electric (GE) to determine if the protruding rod was a dummy rod or an actual spent fuel rod. The engineers learned that the identity of the rod could not be determined without a more detailed inspection. In fact, the engineers were able to conclude that the protruding rod was a dummy rod only after GE arrived at Millstone in December 2000, and removed the upper tie plate and three rods from MS-557. That work, which the engineers could not, and did not, perform in September 2000, finally permitted a visual inspection of the entire length of the protruding rod and a conclusion that the rod was a dummy rod.

Accordingly, as of September 12, 2000, the engineers reasonably believed, that the rods remained in the Unit No. 1 spent fuel pool and were not lost or missing. Only, after special visual inspections in late October 2000, of "raised" fuel assemblies, non-invasive examination of several assemblies, and an inspection via camera between the fuel racks on November 14 and 15, 2000, were the engineers able to conclude that a legitimate question existed as to whether the rods remained in the spent fuel pool. At this time, the matter was formally documented in an internal CR. The matter was discussed with the NRC on November 16, 2000, and, in accordance with the 30-day clock established by 10 CFR 20.2201(a)(ii), a formal notification was made on December 14, 2000.

#### **Corrective Steps Taken and Results Achieved**

DNC's oversight of contractors is reinforced through emphasis on performance and accountability expectations. DNC accomplishes continuous process improvement within the Corrective Action Program by maintaining a management-directed low threshold for CR initiation and concomitant reportability determinations.

#### **Corrective Steps That Will Be Taken to Avoid Further Violations**

Continuous vigilance of Corrective Action Program expectations.

#### **Date When Full Compliance Will Be Achieved**

DNC is currently in compliance.