January 23, 2004

Mr. J. Alan Price, Vice President-
Nuclear Technical Services-Millstone
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

SUBJECT: INSPECTION 05000245/2003011, DOMINION NUCLEAR CONNECTICUT, INC., MILLSTONE POWER STATION UNIT 1, WATERFORD, CONNECTICUT

Dear Mr. Price:

On January 9, 2004, the NRC completed an inspection of your Millstone Unit 1 nuclear reactor facility in Waterford, Connecticut, which covered an inspection period that began on July 28, 2003. The findings of the inspection were discussed with Mr. Sarver and members of his staff on December 11, 2003. The enclosed report presents the results of that inspection.

Your spent fuel pool safety, station freeze protection, radiation protection, radioactive waste management and transportation, and safeguards programs were inspected during this inspection period. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The programs were generally conducted in a safe manner and you maintained appropriate focus on the safe storage of fuel in the spent fuel pool. No safety concerns were identified.

In accordance with 10 CFR 2.790, a copy of this letter, its enclosure, and your response (if you choose to provide one) will be placed in the NRC Public Document Room (PDR) and will be accessible from the NRC web site at http://www.nrc.gov/reading-rm.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction.

Sincerely,

/RA/

Ronald R. Bellamy, Chief
Decommissioning and Laboratory Branch

Docket No. 50-245
License No. DPR-21

Enclosure:
Inspection Report No. 05000245/2003011

cc w/encl:
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W. R. Matthews, Vice President and Senior Nuclear Executive - Millstone
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REGION I

INSPECTION REPORT

Inspection No.	05000245/2003011
Docket No.	05000245
License No.	DPR-21
Licensee:	Dominion Nuclear Connecticut, Inc.
Location:	Millstone Power Station, Unit 1 Rope Ferry Road Waterford, CT 06385
Inspection Dates:	July 28, 2003 - January 9, 2004
Inspector:	Robert Prince, Health Physicist
Approved by:	Ronald R. Bellamy, Chief Decommissioning and Laboratory Branch Division of Nuclear Material Safety

EXECUTIVE SUMMARY

Dominion Nuclear Connecticut, Inc.
NRC Inspection Report No. 05000245/2003011

This integrated inspection included aspects of licensee operations and plant support during decommissioning activities. The report covers announced inspections by regional inspectors. No violations were identified.

Operations and Decommissioning

The licensee maintained an effective program to ensure the availability and reliability of equipment and components important to the safe storage of spent fuel. Recent efforts to implement the spent fuel pool island configuration were adequate.

The licensee established an adequate program to maintain operability of systems and components identified as important to the safe storage of spent fuel, during the cold weather season.

Millstone Unit 1 falls within the scope of the TI 2515/154, Spent Fuel Material Accountability Control and Accounting at Nuclear Power Plants, requiring the completion of Phase II activities.

Plant Support and Radiological Controls

The licensee has provided adequate controls to limit exposures of workers to external sources of radiation. Pre-job briefings were thorough and adequately covered radiological conditions and actions to take in the event of high radiation levels. High radiation area work activities were effectively controlled. Posting and labeling of radioactive materials and radiation areas continued to meet regulatory requirements.

Radioactive waste material shipments made by the licensee were in compliance with regulatory requirements.

DNC effectively implemented their security program for compliance with the May 23, 2002, Order for Interim Compensatory Measures for safeguards and security for Millstone Unit 1. No findings of significance were identified.

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REPORT DETAILS

I. Operations and Decommissioning Status

O1 Conduct of Operations

O1.1 Spent Fuel Pool Safety

a. Inspection Scope (60801)

The inspector reviewed the condition and operational status of equipment and components important to the safe storage of spent fuel. The inspection consisted of tours of plant areas, visual observation of plant equipment and interviews with cognizant personnel.

b. Observations

The inspector toured the facility with the Unit 1 Project Supervisor and verified that components and equipment important to the safe storage of spent fuel were operable and adequately maintained. Material condition of plant equipment and building areas was adequate with noted improvement from the previous inspection. The inspector noted that the licensee had implemented several measures to prepare the spent fuel pool island for SAFSTOR conditions. A decay heat (DH) system for spent fuel pool (SFP) cooling consisting of redundant circulation pumps and necessary piping to interconnect the system with existing plant piping had been installed. A recently installed makeup system consisting of a 5000 gallon-capacity makeup tank and makeup pump along with the necessary interconnecting piping can provide makeup water to the spent fuel pool. The inspector noted that one of the existing SFP cooling pumps had been replaced with a newer model, equipped with mechanical seals. The second SFP cooling pump had previously been equipped with new mechanical seals. The inspector observed work activities in the vicinity of the spent fuel pool and noted that activities were adequately controlled. No safety concerns were identified.

c. Conclusions

The licensee maintained an effective program to ensure the availability and reliability of equipment and components important to the safe storage of spent fuel. Recent efforts to implement the spent fuel pool island configuration were adequate.

O1.2 Station Freeze Protection Program

a. Inspection Scope (71714)

The inspector evaluated the licensee's preparations to maintain the operability of systems and equipment identified as important to the safe storage of spent fuel, during the cold weather season. The inspection consisted of tours of plant areas, interviews with cognizant personnel and reviews of licensee procedures relating to cold weather preparations.

b. Observations

The inspector toured the facility with the cognizant supervisor and verified that heat trace equipment was energized where required and space heaters were appropriately stationed and operable. The inspector reviewed procedure OP 2268, "Cold Weather Preparation and Operation" and procedure OP 213, "Cold Weather Preparations". The inspector noted that the licensee had performed procedure OP 2268 prior to the cold weather season and verified that equipment required to be operable during cold weather conditions in support of safe storage of spent fuel was operable. The licensee procedural checklist also identified equipment located within the drywell that was not visually inspected by the inspector. The inspector confirmed that any discrepancies noted by the licensee during the performance of OP 2268 were appropriately addressed.

The inspector noted that procedure OP 213 contained several checklist items relating to Unit 1 cold weather preparations. These items were not included in the OP 2268 checklist. Both procedures were revised in May 2003 in response to a condition report and as part of the effort to transition control of Unit 1 activities to Unit 2. The licensee subsequently identified the need to develop a site-wide, cold weather preparation, common operating procedure. This initiative is ongoing and when completed will allow the licensee to delete OP 213. The additional cold weather preparation items contained in OP 213 were completed by the licensee on December 11, 2003 with the exception of one item requiring the cycling of various system drain valves to drain any residual water that may be present. This item was completed on January 7, 2004. The inspector did not identify any safety concerns associated with the additional checklist items.

c. Conclusions

The licensee established an adequate program to maintain operability of systems and components, identified as important to the safe storage of spent fuel, during the cold weather season.

O1.3 Spent Fuel Material Accountability Control and Accounting at Nuclear Power Plants

a. Inspection Scope Temporary Instruction(TI) 2515/154

The inspection consisted of interviews with cognizant personnel and review of licensee procedures relating to spent fuel accountability and control.

b. Observations

This temporary instruction (TI) evaluates licensee's material control and accountability (MC&A) programs for spent fuel rods separated from parent fuel assemblies. The TI requires the inspector to determine if the licensee has ever removed irradiated fuel rods from an assembly, or has ever reconstituted fuel assemblies. This effort is referred to as Phase I of the TI. If a licensee has performed such activities, then Phase II of the TI is performed. Phase II consists of several questions to be answered to evaluate the effectiveness of the licensee's MC&A program. Prior events at Millstone Unit 1 resulted in the issuance of the subject TI. Since Millstone Unit 1 has removed irradiated fuel rods from parent assemblies in the past, Phase II

of the TI is applicable to Millstone Unit 1. The licensee has established programs to address spent fuel material control and accountability. The inspector interviewed the cognizant engineer responsible for the spent fuel MC&A program. The inspector noted that procedures MP-13-SNM-PRG, "Millstone Special Nuclear Material Control and Accountability Program" and MC-5, "Special Nuclear Material Inventory and Control", and other licensee documents address the items contained in Attachment A - Phase II of the TI. The completion of Phase II activities will be performed during a subsequent inspection.

c. Conclusions

Millstone Unit 1 falls within the scope of the TI 2515/154, Spent Fuel Material Accountability Control and Accounting at Nuclear Power Plants, requiring the completion of Phase II activities.

II. Plant Support and Radiological Controls

R1 Radiological Protection Controls

R1.1 Occupational Exposure Controls

a. Inspection Scope (83750)

The inspector reviewed the licensee's program to determine the capability to monitor and control radiation exposure to employees and to determine adequacy of the licensee's radiation protection program. The inspection consisted of observations of field activities, interviews with cognizant personnel and inspection of radiological postings.

b. Observations

The inspector observed that areas of the Radiologically Controlled Area (RCA) were appropriately posted and labeled for radioactive material. Portal monitors and frisking instruments were located in the RCA for use by workers. Both beta and gamma-sensitive portal monitors were provided at the primary RCA exit location. Equipment was noted to be operable and adequately maintained. High radiation areas and technical specification locked high radiation areas were properly posted and locked as required. The inspector noted that radiological postings were readily visible, well maintained and adequately reflected radiological conditions in the posted areas.

The inspector observed entry by a work crew into a technical specification locked high radiation area. A work crew supervisor coordinated the entry and performed an adequate briefing prior to workers entering the area. Health Physics personnel maintained effective key control during the entry and provided appropriate radiological coverage.

The inspector observed a pre-job briefing for a work activity to be conducted in the spent fuel pool area. The task involved the pre-operational testing of a debris collection device to be used during grid segmentation work. There were 25 attendees at the pre-job briefing. The project coordinator utilized a pre-job checklist during the briefing and adequately addressed radiological and safety aspects of the task along with foreign material exclusion (FME) controls, communications, and self-checking techniques. The Health Physics representative provided a

detailed overview of the radiation work permit (RWP) requirements and radiological conditions associated with the task. No safety concerns were identified.

c. Conclusions

The licensee has provided adequate controls to limit exposures of workers to external sources of radiation. Pre-job briefings were thorough and adequately covered radiological conditions and actions to take in the event of high radiation levels. High radiation area work activities were effectively controlled. Posting and labeling of radioactive materials and radiation areas continued to meet regulatory requirements.

R1.2 Radioactive Waste Management and Transportation

a. Inspection Scope (86750)

The inspector reviewed selected records of radioactive waste shipments made during this inspection period to determine compliance with NRC and Department of Transportation (DOT) regulations.

b. Observations

The inspector reviewed records for four radioactive waste shipments made in September - October 2003. These shipments included control rod blades, fission chambers and local power range monitors (LPRMs). The inspector reviewed package dose rate survey data, radioactive material labeling, total activity, nuclide characterization, hazard waste classification, 10CFR61 documentation, and final truck survey data. Documentation was in compliance with appropriate regulatory requirements. No safety concerns were identified.

c. Conclusions

Radioactive waste material shipments made by the licensee were in compliance with regulatory requirements.

S1 Conduct of Security and Safeguards

S1.1 Interim Compensatory Measures (ICMs) at Decommissioning Nuclear Power Plants

a. Inspection Scope Temporary Instruction (TI) 2561/004

The inspector reviewed Dominion Nuclear Connecticut's (DNC) implementation of ICMs for safeguards and security measures for the Millstone Unit 1 facility. Reviewed areas including staffing and armament, protective measures, and access control procedures and equipment. Information was gathered through a review of documents, tours of the site and interviews with cognizant personnel. This inspection focused on aspects of the ICMs pertaining specifically to Millstone Unit 1 and complements Inspection Reports 50-336/03-005 and 50-423/03-005 which addressed implementation of site-wide aspects of the ICMs for the Millstone facility.

b. Observations and Findings

The inspector reviewed the licensee's response to the May 23, 2002, Order for ICMs for safeguards and security for Millstone Unit 1. DNC's response is contained in a letter dated November 6, 2002 and contains Safeguards Information. The inspector reviewed inspection reports 50-336/03-005 and 50-423/03-005 which contains Safeguards Information to ensure that Unit 1 was appropriately covered by the site-wide aspects of the ICMs and inspection activities. The inspector examined physical features associated with Unit 1, including installed equipment for access control, and reviewed plans and procedures for compliance with the ICMs. The inspector discussed various measures with cognizant security staff. Activities for vital area access to Unit 1, spent fuel pool access, and manned security locations were directly observed by the inspector. The inspector verified that Security Officers stationed in Unit 1 were knowledgeable of responsibilities and had adequate communication capabilities.

The Unit 2 control room is responsible for the monitoring of Unit 1 equipment associated with the safe storage of spent fuel in Unit 1. The inspector verified that Unit 2 control room personnel were knowledgeable of their responsibilities and associated actions relating to the ICMs for Unit 1.

c. Conclusions

DNC effectively implemented their security program for compliance with the May 23, 2002, Order for Interim Compensatory Measures for safeguards and security for Millstone Unit 1. No findings of significance were identified.

X1 Exit Meeting Summary

The inspector met with licensee management representatives following the inspection on December 11, 2003 and discussed the results of the inspection. Follow up telephone discussions were held on January 9, 2004. The licensee acknowledged the findings presented by the inspector.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

*S. Sarver, Director, Nuclear Station Operations and Maintenance
*P. Quinlan, Project Engineer, Unit 1 Projects
*T. Cleary, Senior Engineer, Licensing
*B. Krautz, Senior Analyst, Licensing
*J.Eric Lane, Manager, Radiation Protection and Chemistry
J. Olson, Unit 1 Project Operations Supervisor, Operations
F.T. Perry, ALARA Engineer, Radiation Protection
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P. Lucky, Manager, Emergency Preparedness
H. McKenney, Reactor Engineering Supervisor, Reactor Engineering
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*J. Pandolfo, Supervisor, Nuclear Security Operations
*R. Leach, Staff Health Physicist, Radiation Protection

*Denotes attendance at the onsite exit meeting held on December 11, 2003

INSPECTION PROCEDURES USED

60801 Spent Fuel Pool Safety at Permanently Shutdown Reactors
71714 Cold Weather Preparations
71801 Decommissioning Performance and Status at Permanently Shutdown Reactors
83750 Occupational Radiation Exposure
86750 Solid Radwaste Management and Transportation
TI 2561/004 Safeguards and Emergency Preparedness Inspection of Interim Compensatory Measures at Decommissioning Power Reactors
TI 2515/154 Spent Fuel Material Control and Accounting at Nuclear Power Plants

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
D&LB	Decommissioning and Laboratory Branch
DH	Decay Heat
DNC	Dominion Nuclear Connecticut
DNMS	Division of Nuclear Materials and Safety
DOT	Department of Transportation
FME	Foreign Material Exclusion
ICM	Interim Compensatory Measures
LPRM	Local Power Range Monitor
MC&A	Material Control and Accountability
PDR	Public Document Room
RCA	Radiologically Controlled Area
RWP	Radiation Work Permit
SFP	Spent Fuel Pool
TI	Temporary Instruction