

**CONNECTICUT SITING COUNCIL**  
**DOCKET NO. 265**

IN THE MATTER OF:

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PROPOSAL OF DOMINION NUCLEAR CONNECTICUT, INC.  
TO MODIFY THE EXISTING MILLSTONE POWER STATION  
TO ESTABLISH AN INDEPENDENT SPENT FUEL STORAGE  
INSTALLATION (DRY STORAGE SYSTEM) ON PROPERTY  
LOCATED OFF ROPE FERRY ROAD IN THE  
TOWN OF WATERFORD, CONNECTICUT

APPLICANT'S POST-HEARING BRIEF

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## EXECUTIVE SUMMARY

On August 25, 2003, Dominion Nuclear Connecticut, Inc. ("DNC") filed an application to modify the existing Millstone Power Station ("Millstone") site to permit the establishment of an Independent Spent Fuel Storage Installation ("ISFSI") for the storage of spent nuclear fuel. The storage of spent fuel is incidental to the principal use of the Property for generation of electricity. The ISFSI is simply an alternative method of storing spent fuel, accessory to and in support of Millstone's existing power generating operations and will not change the existing use of the Property.

Currently, DNC stores its spent fuel from each of the Millstone generating units in spent fuel pools associated with those units. In planning for spent fuel management and in evaluating when additional storage will be required, DNC's operational objective -- accepted as a prudent industry practice -- is to maintain sufficient capacity in each unit's spent fuel pool to store at least all fuel from the reactor core as well as the spent fuel that has been permanently removed from the reactor during past refuelings. This practice is known as maintaining "full core reserve" capability.

Although the U.S. Department of Energy ("DOE") was required to take the spent nuclear fuel from the nation's nuclear plants beginning in 1998, as of today, the DOE still has not fulfilled that obligation. It is certain that DOE will continue to experience delays, and the commencement date for actual DOE operations remains the subject of much controversy. As a result of DOE's failure to fulfill its contractual and statutory obligation, DNC, as a responsible and prudent nuclear plant operator, must take other steps to ensure that Millstone can continue to operate.

The U.S. Nuclear Regulatory Commission (“NRC”) regulations authorize an NRC licensee, such as DNC, to develop and store spent nuclear fuel in an ISFSI, subject to specific requirements including the use of only NRC-certified dry storage systems, the storage of only spent fuel from the particular licensed facility and the installation of physical security measures around the ISFSI. The Millstone ISFSI will be developed in accordance with these NRC regulations and will use a dry storage system certified by the NRC.

The Millstone ISFSI is needed to ensure the continued operation of Millstone and the continued reliability of the electric power supply in the State of Connecticut and the New England region. Millstone is an important State, regional and national resource. Power generated at Millstone represents 28% of the installed capacity in Connecticut and provided the equivalent of 47% of Connecticut’s actual generation needs between 2000 and 2002. Millstone also provides significant economic benefits not only to Southeast Connecticut but to the entire State. Without the ISFSI, Millstone Unit 2 will lose full core reserve capability after its Spring 2005 refueling outage and will be required to shut down if alternate spent fuel storage is not available by 2010. This premature shut down of Unit 2 will remove a valuable electric generation source and impact the reliability of not only the Connecticut energy market but the reliability of the entire region.

In its original proposal presented to the Town, DNC had designed the ISFSI to accommodate 234 Horizontal Storage Modules (“HSMs”). The 234 HSMs would have satisfied DNC’s spent fuel storage requirements for operation of Units 2 and 3 through current license and license renewal and would have provided sufficient capacity for DNC to remove all of the spent fuel from the Units 1, 2 and 3 spent fuel pools. However, in response to concerns raised by the

Town, DNC reduced the size of the ISFSI to 135 HSMs and designed it to be used in conjunction with the existing spent fuel pools. In order to maintain full core reserve capability in both Units 2 and 3 during the units' license periods (including license renewal), DNC will need a total of 85 HSMs. To plan for the long-term operational requirements of Millstone, DNC has also designed the ISFSI to accommodate an additional 50 HSMs to address potential operational, regulatory or other demands at Units 1, 2 and/or 3 or to support a change in use of the shutdown Unit 1.

The single and complete ISFSI project will be built-out in a phased approach. The first phase of the ISFSI project will involve site clearing, excavation, regrading and preparation, backfilling with "select fill" (also known as lean concrete) to address structural and seismic considerations, construction of a haul road, installation of temporary and permanent stormwater drainage improvements, placement of underground utilities, movement of the Protected Area fence and the construction of a concrete pad that can accommodate the installation of 20 HSMs. Only 19 HSMs would be installed in Phase I. Eighteen (18) of the 19 HSMs would be used to satisfy DNC's immediate spent fuel storage requirements to maintain full core reserve for Millstone Unit 2. One empty HSM (the 19<sup>th</sup> HSM) will be placed adjacent to the last-loaded HSM for radiological shielding purposes. Other HSMs and concrete pads will only be added at the rate necessary to maintain full core reserve in accordance with prudent spent fuel management practices or to satisfy an operational, regulatory or other contingency. Thus, if a federal repository opens and begins to take spent nuclear fuel at sustained rates before the end of the license periods for the Millstone units or before an operational, regulatory or other contingency arises, DNC would not install all of the 135 HSMs.

The ISFSI would have minimal impacts on the environment. The ISFSI site is located on a previously-disturbed, upland (non-wetland) area, currently used as an employee parking lot, with no special habitat value. The ISFSI site is adequately separated from inland wetlands and watercourses, coastal resources, tidal waters, marine habitats and other marine resources. DNC does not anticipate having to make any additional physical improvements beyond those identified in its application in order to move the storage unit components onto the site. The construction and operation of the ISFSI will not preclude future uses of the Millstone property. To avoid impacting existing ecological resources on the Millstone property, including without limitation, the wetlands, fresh water stream and fresh water pond east of the ISFSI site, site development plans and specifications for the ISFSI project include appropriate soil erosion and sedimentation control measures. There are no State or federal threatened, endangered or special concern species known to occur at the ISFSI site. Area topography and screening provided by the mature trees, vegetation and existing structures surrounding the site would reduce or eliminate the visual impact of the proposed ISFSI. In addition, the ISFSI project has been specifically designed to include various measures to mitigate or avoid adverse impacts to the environment. In sum, the potential environmental impacts from the proposed ISFSI would be minimal when balanced against the significant benefits to the public from the continued operation of Millstone that would result from installation of the ISFSI. As a result, these impacts are insufficient to deny the Application.

During the proceeding, the Council and various parties suggested potential conditions that could or should be imposed upon the ISFSI. In order to address questions raised by the Council and other parties to this proceeding, DNC agreed to several of these conditions. For instance, DNC would be willing to accept a condition that only spent fuel from the Millstone units will be

stored in the Millstone ISFSI. DNC is also willing to accept a condition that it will only use NRC-certified dry storage systems for the Millstone ISFSI. Furthermore, while existing data does not suggest the need for groundwater monitoring wells at the ISFSI site, in order to address concerns expressed by the Town of Waterford Conservation Commission, DNC would be willing to install three groundwater monitoring wells, two up-gradient and one down-gradient from the ISFSI Site, and to periodically share monitoring results with the Council and the Town.

DNC also agrees with the other parties to this proceeding that the ISFSI should not be the permanent storage facility for spent fuel. Once the federal government begins accepting spent nuclear fuel for disposal, DNC anticipates that Millstone spent fuel will be removed in accordance with the schedule established by the federal government. However, DNC cannot provide an exact timetable for the removal of all of the spent fuel from Millstone because the DOE has not yet established one. Nevertheless, in order to keep the Town of Waterford apprised of DNC's activities, DNC also agreed to provide the Town of Waterford with annual reports on the status of Millstone's operations, including information on the necessity to expand the ISFSI, as well as information on the status of the federal repository and a five-year projection of DNC's anticipated dry storage requirements.

Recognizing that license renewal for Units 2 and 3 is a reasonable but not absolute certainty, DNC would also accept a condition that the 85 HSMs required for Units 2 and 3 are approved now but that any units beyond the initial 19 HSMs can only be installed after submission by DNC of a verification to the Council that DNC has received license renewals for Units 2 and/or 3. In order to provide reassurance regarding the installation of the 50 contingency HSMs, DNC is willing, at the time when all or a portion of that contingency is required, to return to the Council



utilizing the Council's Petition process, present the necessity for additional HSMs to address the contingency at that time and request the Council's approval of the additional HSMs required to satisfy the contingency.

## I. INTRODUCTION

On August 25, 2003, Dominion Nuclear Connecticut, Inc. (“DNC”) filed an application with the Connecticut Siting Council (“Council”) to modify the existing Millstone Power Station (“Millstone”) site in the Town of Waterford, Connecticut (“Application”) to permit the establishment of an Independent Spent Fuel Storage Installation (“ISFSI”) (also known as a dry storage system). (Applicant’s Exhibit (“App. Exh.”) 1). The installation of an ISFSI at Millstone, as described in the Application, constitutes a modification to the existing power generating facility pursuant to Conn. Gen. Stat. § 16-50k(a). The ISFSI itself is not a “facility” as defined in Conn. Gen. Stat. § 16-50i(a). (App. Exh. 1, p. 2).

Without the ISFSI, Millstone Unit 2 will lose full core reserve capability after its Spring 2005 refueling outage and will be required to shut down if alternate spent fuel storage is not available by 2010. (App. Exh. 5, Resp. No. 3; App. Exh. 7 at 2; App. Exh. 8 at 1; App. Exh. 16, Resp. No. 19; 12/15/03 Tr. at 76-77; 1/7/04 Tr. at 57-58, 115). As discussed more fully below, this premature shut down of Unit 2 will remove a valuable electric generation source and impact the reliability of not only the Connecticut energy market but the reliability of the entire region.

The ISFSI would encompass an approximately 2-acre area in the easterly portion of the South Access Point (“SAP”) parking lot; east of and adjacent to the Millstone power generating units (the “ISFSI Site”). The westerly portion of the SAP parking lot, between the ISFSI Site and the power generating units (approximately four acres) will be used as an equipment laydown area (the “Equipment Laydown Area”). As proposed, the ISFSI Site and Equipment Laydown Area will be surrounded by an extension of the physical security measures including perimeter intrusion detection systems, physical barriers, isolation zones and security lighting (the “Protected Area”) currently surrounding the Millstone power generating units. (App. Exh. 1, p. 2).

In planning for spent fuel management and in evaluating when additional spent fuel storage will be required, one of DNC's operational objectives is to maintain sufficient capacity in each unit's spent fuel pool to store at least all fuel in the reactor core as well as the spent fuel that has been permanently removed from the reactor during past refuelings. This practice is known as maintaining "full core reserve" capability. (App. Exh. 5, Resp. No. 3; App. Exh. 7 at 2-3; App. Exh. 16, Resp. No. 19; 1/7/04 Tr. at 56). It is necessary to maintain this open space to provide the operational flexibility to remove all fuel from the reactor ("de-fuel") during routine refueling outages. (App. Exh. 14, Resp. No. 2; App. Exh. 16, Resp. No. 19). In fact, as a matter of practice, the Unit 3 reactor is completely de-fueled during each refueling outage and the Unit 2 reactor is completely de-fueled at a historical frequency of about one out of every three refueling outages. (App. Exh. 16, Resp. Nos. 19, 40). The de-fueling of the reactors is also essential for required inspections and/or maintenance. (App. Exh. 16, Resp. No. 19). Furthermore, if, for some unplanned, yet potential reason, all of the fuel in a reactor would have to be removed, adequate open space must also be available in the spent fuel pool of that unit to de-fuel the reactor. (App. Exh. 7 at 2; App. Exh. 14, Resp. No. 2; App. Exh. 16, Resp. No. 19; 1/7/04 Tr. at 206-07). A dry storage system would allow DNC to remove fuel that has cooled for at least five years, from the Millstone spent fuel pools, thereby freeing space in the spent fuel pools to both accommodate spent fuel from more recent refuelings and to maintain full core reserve capability into the future. (App. Exh. 1, p. 8).

In its original proposal presented to the Town, DNC had designed the ISFSI to accommodate 234 horizontal storage modules ("HSMs"). (App. Exh. 16, Resp. No. 25; 12/15/03 Tr. at 84-85). The 234 HSMs would have satisfied DNC's spent fuel storage requirements for

operation of Units 2 and 3 through current license and license renewal and would have provided sufficient capacity for DNC to remove all of the spent fuel from the Units 1, 2 and 3 spent fuel pools. (App. Exh. 16, Resp. No. 25; 12/15/03 Tr. at 86-87). However, in response to concerns raised by the Town, DNC reduced the size of the ISFSI to 135 HSMs. (App. Exh. 16, Resp. No. 25). These 135 HSMs, when used in conjunction with the existing spent fuel pools, will provide sufficient spent fuel storage for the operation of Millstone Units 2 and 3 through the end of the units' license periods including license renewal,<sup>1</sup> and, if necessary, support future operational, regulatory or other contingencies at Units 1, 2 and/or 3 or changes in use of the shutdown Millstone Unit 1. (App. Exh. 1, p. 10; App. Exh. 7 at 3; App. Exh. 8 at 1-2; App. Exh. 9 at 2; App. Exh. 14, Resp. No. 5; 12/15/03 Tr. at 69-70, 79, 85; 1/7/04 Tr. at 58). DNC only plans to install HSMs at the rate necessary to maintain full-core reserve capability in Units 2 and 3 in accordance with prudent spent fuel management practices and, if necessary, to support future operational, regulatory or other contingencies at Units 1, 2 and/or 3 or changes in use of the shutdown Millstone Unit 1. (App. Exh. 1, p. 10; App. Exh. 7 at 3; App. Exh. 8 at 1-3; App. Exh. 9 at 2; App. Exh. 14, Resp. No. 5; 12/15/03 Tr. at 69-70, 77, 79, 85; 1/7/04 Tr. at 58, 75, 222-23).

Pursuant to the Nuclear Waste Policy Act of 1982 and the "Standard Contract for Disposal of Spent Nuclear Fuel and/or High Level Waste," codified at 10 C.F.R. Part 961 (the "Standard Contract"), the U.S. Department of Energy ("DOE") was required to take the spent nuclear fuel from the nation's nuclear plants beginning in 1998. (App. Exh. 5, Response ("Resp.") Nos. 1, 2; 1/7/04 Transcript ("Tr.") at 61). As of today, DOE has not fulfilled that obligation. (App. Exh. 5,

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<sup>1</sup> The NRC operating licenses are due to expire in 2015 for Millstone Unit 2 and 2025 for Millstone Unit 3. (App. Exh. 1, p. 10). DNC has applied for and anticipates receiving license renewals of 20 years for each unit, extending the license period of Unit 2 to 2035 and Unit 3 to 2045. (App. Exh. 7 at 3; App. Exh. 18; 1/7/04 Tr. at 59, 75).

Resp. No. 2). Currently, plans are underway to build a federal repository at Yucca Mountain in Nevada. Although DOE's officially stated position is a target date for opening in 2010, DOE's actual ability to meet that target is doubtful, and the commencement date for actual DOE operations remains the subject of much controversy. (App. Exh. 5, Resp. No. 2; 1/7/04 Tr. at 61-64). As a result of DOE's failure to fulfill its contractual and statutory obligation, DNC, as a responsible and prudent nuclear plant operator, must take additional steps to address its spent fuel management requirements, thereby ensuring the continued operation of Millstone.

## **II. SITING COUNCIL JURISDICTION**

As the Council pointed out at the beginning of the evidentiary hearings, Millstone operates under a federal license issued by the U.S. Nuclear Regulatory Commission ("NRC") pursuant to the Atomic Energy Act of 1954, as amended, and NRC regulations. (12/15/03 Tr. at 4-5). The NRC regulations authorize DNC, as the licensee, to develop and store spent nuclear fuel in an ISFSI, subject to specific requirements including the use of only NRC-certified dry storage systems, the storage of spent fuel only from the particular licensed facility and the installation of physical security measures around the ISFSI. *See* 10 CFR § 72.212. Certification of the particular dry storage systems and technology used by NRC licensees is likewise under the exclusive jurisdiction of the NRC. Furthermore, the regulation of the radiological effects of commercial nuclear power stations and associated spent fuel storage systems is exclusively under the jurisdiction of the NRC. *See Maine Yankee Atomic Power Co. v. Bonsey*, 107 F. Supp. 2d 47 (D. ME 2000). As a result, state agencies, such as this Council, may not regulate the dry storage activities authorized by the NRC relative to radiological health and safety or impose siting standards in a manner that will frustrate or undermine NRC decisions related to the storage of spent nuclear fuel. (12/15/03 Tr. at

4-6).

Consistent with the Council's jurisdiction, the scope of this proceeding was limited to the siting of the ISFSI at Millstone, specifically the public benefit and need for the ISFSI, its location and its potential impact on the natural environment. The proceeding did not address the current operations of the Millstone facility except as those operations directly relate to the ISFSI. (10/16/03 Tr. at 3; 12/15/03 Tr. at 6-7).

### **III. PROCEDURAL BACKGROUND**

The Council conducted a public hearing on the Application on October 16, 2003. Evidentiary hearings continued on December 15, 2003, January 7, 2004, January 20, 2004 and February 19, 2004. (10/16/03 Tr. at 2; 12/15/03 Tr. at 3; 1/7/04 Tr. at 3; 1/20/04 Tr. at 3; 2/19/04 Tr. at 3). Prior to the October 16, 2003 session of the hearing, the Council and its staff visited the ISFSI Site. (Council Hearing Notice).

This post-hearing brief is filed on behalf of the Applicant pursuant to Section 16-50j-31 of the Regulations of Connecticut State Agencies ("R.C.S.A.") and the Council's directives. (2/19/04 Tr. at 223). This brief evaluates the Application in light of the review criteria set forth in Section 16-50p of the Connecticut General Statutes and addresses several other issues raised throughout the course of this proceeding, including potential conditions to be imposed on the ISFSI.

### **IV. FACTUAL BACKGROUND**

#### **A. Pre-Application History**

On March 22, 1974, the Council, then known as the Power Facility Evaluation Council, issued a Certificate of Environmental Compatibility and Public Need ("Certificate") for the

construction of the Millstone Unit 3 nuclear power generating facility. (Council Certificate No. 4). The construction and operation of Millstone Unit 1 and initiation of construction of Millstone Unit 2 predated the establishment of the Council and its authority over power generating facilities in Connecticut. (App. Exh. 1, p. 6). Millstone Unit 1 permanently ceased operations in 1998. (App. Exh. 1, p. 6; App. Exh. 7 at 3).

Millstone is located on a 520-acre parcel south of Rope Ferry Road (Connecticut Route 156) in the southwest portion of the Town of Waterford, Connecticut (the "Property"). The Property is bounded on the north by Rope Ferry Road (Connecticut Route 156), on the west by Niantic Bay, on the south by Long Island Sound and Jordan Cove, and on the east by Gardiner's Wood Road. The Property is traversed by an Amtrak rail line. (App. Exh. 1, p. 6).

The Millstone power generating units, turbine buildings, and associated support buildings are located in the southernmost portion of the Property within a 49.3-acre area encompassed by the Protected Area. (App. Exh. 1, p. 6; App. Exh. 9 at 1). The Protected Area was established and is maintained in accordance with requirements established by the NRC. (App. Exh. 1, pp. 6-7). Portions of the Property, outside of the Protected Area, are developed with employee parking areas, office and storage buildings, training facilities, an electric switchyard and a transmission line corridor extending from the switchyard to the north. In the northeast portion of the Property, DNC maintains baseball, soccer and football fields used by the Town of Waterford ("Town"). All remaining areas of the Property are maintained as open space. (App. Exh. 1, p. 7).

As part of its initial review, DNC considered four alternative locations on the Property but outside the current Protected Area for the location of the ISFSI. (App. Exh. 1, Attach. 6). Each of these locations was evaluated based on four criteria: (a) radiological compliance; (b)

physical site suitability; (c) environmental effects; and (d) security. After reviewing these criteria, DNC determined that the ISFSI Site proposed in the Application was the best location because:

- It is located closest to the existing Millstone Protected Area and would simply require an expansion of the Protected Area fence to surround the ISFSI. Each of the alternative sites would require a separate and distinct security area outside the limits of the existing Millstone Protected Area;
- It offered the shortest haul path between the Unit 2 and Unit 3 spent fuel pools and the proposed ISFSI. The entire haul path from the spent fuel pools to the ISFSI Site will be completely within the expanded Protected Area; and
- It is located approximately 1,300 feet south of the Amtrak rail line, thereby eliminating potential security issues associated with the active use of the line. The railway spur located east of the chosen site is owned by DNC and has been deactivated and secured.

(App. Exh. 1, Attach. 6). In its review of the Application, the Department of Environmental Protection (“DEP”) also determined that “[t]he proximity of the selected site to the generating units renders this site a more logical choice . . . .” (DEP Comment Letter at 2). DNC concurs.

#### B. Local Contacts

Pursuant to the provisions of Conn. Gen. Stat. Sections 16-50~~l~~ and 16-50x, DNC participated in the local review process involving the Town of Waterford, including the Waterford Planning and Zoning and Conservation Commissions. (App. Exh. 1, p. 26). Pursuant to the requirements of Conn. Gen. Stat. §§ 16-50~~l~~(b)(1) and 16-50~~l~~(e) and because a portion of the Property is located within 2,500 feet of the East Lyme municipal boundary, DNC’s pre-application process also included consultation with the Town of East Lyme. (App. Exh. 1, p. 31; App. Exh. 3).

During August and September 2002, Town of Waterford and Town of East Lyme officials accompanied DNC representatives on site visits to the manufacturing facility where the HSMs will be fabricated and to the dry storage facility currently installed at the Susquehanna Steam Electric



Station. (App. Exh. 3, pp. 1-2). Between November 2002 and June 2003, DNC representatives had several meetings with officials from both towns to discuss the proposed ISFSI. (App. Exh. 3, pp. 2-3). On June 17, 2003, pursuant to Conn. Gen. Stat. § 16-50~~l~~(e), technical information was provided to Town of Waterford officials for review and comment. (App. Exh. 3, p. 3; App. Exh. 1(d)). On that same day, following its meeting with Waterford officials, DNC representatives met with the East Lyme First Selectman to discuss the ISFSI project, the Council process and the role of the Town of East Lyme. East Lyme was also provided with a copy of the technical information prepared for the ISFSI project. (App. Exh. 1, p. 31; App. Exh. 3; App. Exh. 1(d)).

DNC representatives formally presented the ISFSI project to the Waterford Planning and Zoning and Conservation Commissions at a joint meeting on August 5, 2003. At that meeting, DNC representatives responded to questions from the Town commissioners and heard comments from members of the public in attendance. (App. Exh. 1, p. 26; App. Exh. 3). DNC also notified the Town of East Lyme First Selectman of the date of the meeting and invited him to attend. (App. Exh. 1, p. 31).

On August 18, 2003, the Waterford Planning and Zoning Commission issued an “Order Pursuant to 16-50x(d).” Comments prepared by the Waterford Conservation Commission for the Millstone ISFSI were transmitted to the First Selectman on August 15, 2003. (The Planning and Zoning Commission order and the Conservation Commission comments shall hereafter be referred to as the “Municipal Orders”). The Municipal Orders were transmitted to DNC on August 21, 2003. (App. Exh. 1, Attach. 13). The Municipal Orders include a request that the Council impose certain conditions on the proposed ISFSI. These conditions relate to the use of the ISFSI, the future use of the Property, reporting obligations, the location and size of the ISFSI and the physical

improvements required for construction and installation of the ISFSI. (App. Exh. 1, pp. 26-27).

DNC appealed the Municipal Orders to the Council on September 19, 2003. (App. Exh. 4). After the Application was filed, DNC continued to communicate with the Town of Waterford regarding the proposed ISFSI. (App. Exh. 6).

### C. The ISFSI Proposal

Currently, DNC stores spent fuel from each of the Millstone generating units in the spent fuel pool for that unit. The storage of spent fuel is incidental to the principal use of the Property for generation of electricity. The ISFSI is simply an alternative method of storing spent fuel, accessory to and in support of Millstone's existing power generating operations and will not change the existing use of the Property. (App. Exh. 1, p. 8; App. Exh. 7 at 2-3).

DNC has selected Transnuclear's Standardized NUHOMS® (NUclear HOorizontal Modular Storage) dry storage system for use at Millstone. (App. Exh. 1, pp. 9, 11-12). The NUHOMS® system has been certified for use by the NRC. (App. Exh. 1, p. 9; Adm. Not. 1). The Millstone ISFSI will consist of a series of reinforced concrete HSMs approximately 8'6" wide, 18'6" high (plus a 2'1" exhaust vent) and 20' long. In the center of each HSM is a hollow cylindrical sleeve within which a single leak-tight, steel dry-shielded canister ("DSC") is placed. (App. Exh. 1, p. 9, Attach. 5, Dwg.-10). Each DSC is capable of holding either pressurized water reactor spent fuel assemblies from Units 2 or 3 or boiling water reactor spent fuel assemblies from Unit 1. (App. Exh. 1, p. 9; App. Exh. 11 at 2; App. Exh. 16, Resp. No. 26; 12/15/03 Tr. at 144-45).

The first phase of the proposed ISFSI project will involve site clearing, excavation, regrading and preparation, backfilling with "select fill" (also known as lean concrete) to address

structural and seismic considerations, construction of a haul road, installation of temporary and permanent stormwater drainage improvements, placement of underground utilities, movement of the Protected Area fence and the construction of a concrete pad that can accommodate the installation of 20 HSMs ("Phase I"). (App. Exh. 1, p. 10; App. Exh. 9 at 2; 12/15/03 Tr. at 85; 1/7/04 Tr. at 217). Only 19 HSMs would be installed on the pad in Phase I. (App. Exh. 1, p. 10; App. Exh. 9 at 1; 12/15/03 Tr. at 85). Eighteen (18) of the 19 HSMs would be used to satisfy DNC's immediate spent fuel storage requirements for Millstone Unit 2. One empty HSM (the 19<sup>th</sup> HSM) will be placed adjacent to the last loaded HSM for radiological shielding purposes. (App. Exh. 1, p. 10-11).

For installation of HSMs beyond Phase I, DNC expects that, in advance of the anticipated loss of full core reserve in either the Unit 2 or Unit 3 spent fuel pools, DNC will load a number of canisters to assure that full core reserve is available for the next several refueling outages. (1/20/04 Tr. at 67-68). How DNC schedules and coordinates its campaigns used to load the canisters to remove fuel from the spent fuel pool depends on a number of factors, including the availability of equipment and manpower and what else is being done at the site. (1/7/04 Tr. at 211-12; 1/20/04 Tr. at 67). As a result, DNC, as a prudent and responsible nuclear plant operator, is in the best position to manage its spent fuel requirements. (1/20/04 Tr. at 100). Nevertheless, additional HSMs will be installed only at the rate necessary to maintain full core reserve for Units 2 and 3 in accordance with prudent spent fuel management practices through their license periods (including license renewal) or to address operational, regulatory or other spent fuel management requirements. (App. Exh. 1, p. 10-11).

**V. THE APPLICATION SATISFIES THE CRITERIA OF CONNECTICUT GENERAL STATUTES SECTION 16-50p FOR MODIFICATION OF A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED**

Section 16-50p of the Public Utility Environmental Standards Act (“PUESA”), Conn. Gen. Stat. §16-50g et seq., sets forth the criteria for Council decisions in proceedings for a modification to an existing facility. A “facility” is defined, in relevant part, as “any electric generating or storage facility using any fuel, including nuclear materials, including associated equipment for furnishing electricity . . . .” Conn. Gen. Stat. § 16-50i(a)(3). As discussed above, the installation of an ISFSI at Millstone, as described in the Application, constitutes a modification to the existing power generating facility pursuant to Conn. Gen. Stat. § 16-50k(a). The ISFSI itself is not a “facility” as defined in Conn. Gen. Stat. § 16-50i(a). (App. Exh. 1, p. 2).

Under Conn. Gen. Stat. § 16-50p, the Applicant must satisfy two key criteria in order for a modification to be granted. First, the Applicant must demonstrate that there is a “public benefit” for the project. Conn. Gen. Stat. § 16-50p(c)(1)(A). Second, the Applicant must also identify “the nature of the probable environmental impact” of the proposed project through review of the numerous elements specified in Conn. Gen. Stat. § 16-50p(c)(1)(B), and then demonstrate that these impacts “are not sufficient reason to deny the application.” Conn. Gen. Stat. § 16-50p(c)(1)(C). The evidence in the record for this docket establishes that the above criteria have been satisfied.

**A. The ISFSI Provides A Significant Public Benefit**

The first step in the review of the pending Application addresses the public benefit of the ISFSI. A public benefit exists if the ISFSI “is necessary for the reliability of the electric power

supply of the state or for a competitive market for electricity.” Conn. Gen. Stat. § 16-50p(c)(1).

The ISFSI is needed to ensure the continued operation of Millstone and the continued reliability of the electric power supply in the State of Connecticut. Millstone is an important State, regional and national resource. (1/20/04 Tr. at 21). It is the largest base load generator<sup>2</sup> of electricity in New England and supplies enough power to supply approximately 1.2 million households. (App. Exh. 8 at 2; App. Exh. 18; 1/7/04 Tr. at 143). Millstone Units 2 and 3 currently operate with a combined electric generating capacity of approximately 2,020 megawatts. (App. Exh. 1, p. 6). Power generated at Millstone represents 28% of the installed capacity in Connecticut and provided the equivalent of 47% of Connecticut’s actual generation between 2000 and 2002. (App. Exh. 8 at 2; App. Exh. 18). Millstone also played a key role in ensuring the reliability of the Connecticut power grid during the August 14, 2003 blackout. During the blackout, Millstone was the only major Connecticut generator to stay online. (App. Exh. 8 at 2; App. Exh. 18). As a result, Millstone was credited with playing a major role in stopping the migration of the blackout throughout the New England region. (App. Exh. 18).

Lastly, Millstone provides significant economic benefits not only to Southeastern Connecticut but to the entire State. For example, Millstone’s total annual economic impact in New London County is \$515 million and throughout the entire State of Connecticut is \$585 million. Millstone is also responsible for the purchase of \$34 million in goods and services from New London County and \$63 million throughout the State of Connecticut. (App. Exh. 18).

Without the ISFSI, Millstone Unit 2 will lose full core reserve capability after its Spring 2005 refueling outage and will be required to shut down if alternate spent fuel storage is not

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<sup>2</sup> A base load generator refers to a plant normally operated to serve loads on an around-the-clock basis.

available by 2010. This premature shut down of Unit 2 will remove a valuable electric generation source and impact the reliability of not only the Connecticut energy market but the reliability of the entire region. (App. Exh. 16, Resp. No. 19).

1. DNC Planning Process

DNC, as a responsible and prudent nuclear plant operator, conducts its planning process on a long-term basis; specifically, through the end of the license period (including license renewal) for the Millstone generating units. (App. Exh. 8 at 1). Since the end of Millstone Unit 3's license period (including license renewal) is 2045, DNC currently has a forty-two (42) year planning horizon for operations. This long-term planning is evidenced by the significant investments that DNC has made in Millstone since DNC took ownership of the plant and will continue to make in anticipation of the continued safe operation of the Millstone units through their license periods (including license renewal). (1/7/04 Tr. at 75-77).

DNC's long-term planning horizon also provides assurance to Millstone's employees, who are an integral part of Millstone's operations. Nuclear power plants maintain a high level of staffing with exceptional talents and years of experience that are integral to long-term, successful facility operations. (1/7/04 Tr. at 77). Regulatory uncertainty associated with projects that can impact the long-term viability and continued operations at Millstone can have a significant impact on employee morale and retention. Indeed, such impacts occurred at the Prairie Island nuclear generating facility as a result of the Minnesota Public Utilities Commission's decision limiting the number of dry storage units available to the owners of the Prairie Island facility. (1/7/04 Tr. at 77-78). In order to avoid these adverse impacts at Millstone, DNC plans for and seeks the necessary regulatory approvals to allow the continued operation of the Millstone units through their current license periods and license renewal.

As part of its planning process, DNC takes into account “worst-case” planning scenarios to ensure that it is prepared in the event such scenarios occur. (12/15/03 Tr. at 141). As all parties to this proceeding agree, the date upon which the federal repository at Yucca Mountain will open will be delayed and remains the subject of much controversy.<sup>3</sup> (App. Exh. 7 at 1; 12/15/03 Tr. at 141; 1/20/04 Tr. at 217).

DNC hopes that the federal repository will be open sooner rather than later. However, in sizing the ISFSI, DNC assumed that the repository may not be open during the terms of the Millstone Unit 2 and 3 operating licenses and included a sufficient number of HSMs to allow Millstone Units 2 and 3 to continue to operate through their current license periods and license renewal. (1/7/04 Tr. at 58, 63-64). However, in the absence of some operational, regulatory or other contingency, DNC will not install more HSMs than are necessary to maintain full core reserve in accordance with prudent spent fuel management practices. (App. Exh. 1, p. 10; App. Exh. 8 at 3; 12/15/03 Tr. at 77; 1/7/04 Tr. at 75, 222-23). Thus, if a federal repository opens and begins to take spent nuclear fuel at sustained rates before the end of the license periods for the Millstone units, DNC may not install all of the 135 HSMs. However, given that the DOE is responsible for taking spent nuclear fuel from the nuclear plants throughout the nation and, since January 1998, has defaulted on its obligation to do so, DNC has appropriately planned for the “worst-case” scenario. (App. Exh. 5, Resp. No. 2; 1/7/04 Tr. at 63-64).

In order for Yucca Mountain to open, several things, with speculative time horizons, must occur. First the DOE must submit its application for construction of Yucca Mountain to the NRC. (1/7/04 Tr. at 61-62). Once construction is substantially complete, the DOE then has to go to back

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<sup>3</sup> For instance, when asked in what year Yucca Mountain will be open, the Town’s expert witness responded: “I don’t buy lottery tickets.” (1/20/04 Tr. at 217).

to the NRC with its application to operate the facility. (1/7/04 Tr. at 62-63). Many of these steps will be subject to judicial review, which could further delay the date on which Yucca will open. (1/7/04 Tr. at 64). Furthermore, the opening of Yucca Mountain, in and of itself will not eliminate DNC's spent fuel storage requirements. Once Yucca Mountain is open, the DOE must then establish and implement a schedule for taking the spent fuel from each of the nuclear plants throughout the nation and begin to take fuel at sustained rates. The DOE's "Acceptance Priority Ranking & Annual Capacity Report" issued by its Office of Civilian Radioactive Waste Management in March 1995 (the "1995 APR") was only a planning document, which has become somewhat outdated and may contain assumptions that are no longer valid. (App. Exh. 14, Resp No. 7; 1/20/04 Tr. at 92-93).

To no avail, other agencies in other states have tried to integrate the date by which Yucca Mountain may be open into their decisions on the siting of spent fuel storage facilities at nuclear power stations. For instance, in 1991, the owners of the Prairie Island facility filed an application for the approval of 48 dry storage units, which would have provided enough storage space for the plant to operate at full power through the end of its license period with a margin for contingencies. (App. Administrative Notice ("Adm. Not.") 2). However, the Minnesota Public Utilities Commission approved only 17 dry storage units, which would only allow full power production through 2001; twelve (12) and thirteen (13) years short of the license life for the two reactors at the site. (App. Adm. Not. 2). To remedy this situation, in 2003, the Minnesota Legislature passed legislation that authorized the company to expand the Prairie Island nuclear waste storage facility to the extent necessary to permit both reactors to operate through the end of their license periods. (1/20/04 Tr. at 48).



Similarly, in 1995, the Public Service Commission of Wisconsin approved only 12 of the 48 dry storage units proposed. However, a mere six years later, in 2001, the Commission approved the additional 36 units included as part of the original Point Beach application. (App. Adm. Not. 2; 1/20/04 Tr. at 50). Even though during the 2001 Wisconsin proceeding it was argued that the Commission should not approve the entire balance of 36 units, the Wisconsin Commission found that “authorizing [the company] to construct as many as 36 additional dry casks is more reasonable than restricting the company to just a few more casks while awaiting development in other arenas.” (1/20/04 Tr. at 51; *see also* App. Adm. Not. 2). The Public Service Commission of Wisconsin based this decision, in part, on its belief that Yucca Mountain would not be open until 2023. (App. Adm. Not. 2; 1/20/04 Tr. at 52). These decisions both demonstrate that the Council should not base its decision in any way on the availability of Yucca Mountain by any particular date.<sup>4</sup>

As a result, the ISFSI has been sized to meet DNC’s long-term planning horizon and to ensure that Millstone can continue to operate through 2045. Specifically, the ISFSI has been designed for installation of up to 135 HSMs: 85 HSMs to maintain full core reserve in Units 2 and 3 through the units’ license periods (including license renewal) and 50 HSMs to address operational, regulatory or other contingencies at Units 1, 2 or 3 or a change in use of the shutdown Unit 1. (App. Exh. 7 at 3; 12/15/03 Tr. at 79; 1/7/04 Tr. at 58, 194-95).

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<sup>4</sup> Moreover, when asked if the Council should base its decision in any way on the availability of Yucca Mountain by a particular date, the Town’s expert witness responded, simply: “No.” (1/20/04 Tr. at 217).

2. Eight-Five (85) HSMs Are Needed To Maintain The Prudent Practice Of Full Core Reserve During The License Periods For Units 2 And 3

Without the ISFSI, Millstone Unit 2 will lose full core reserve capability after its Spring 2005 refueling outage and will be required to shut down if alternate spent fuel storage is not available by 2010. Unit 3 will lose full core reserve capability in 2020. (App. Exh. 5, Resp. No. 3; App. Exh. 7 at 2; App. Exh. 8 at 1; App. Exh. 16, Resp. No. 19; 12/15/03 Tr. at 76-77; 1/7/04 Tr. at 57-58, 115). In order to maintain full core reserve in the near term and to ensure that Unit 2 can operate through the end of its current license period, DNC requires 19 HSMs (18 loaded). In order to ensure that both Units 2 and 3 can operate through their *current* license periods, DNC requires a total of 22 HSMs (21 loaded). (12/15/03 Tr. at 82). However, neither 18 nor 21 HSMs are sufficient to satisfy DNC's long-term planning horizon.

DNC filed for license renewal for both Units 2 and 3 on January 22, 2004. (App. Exh. 18). DNC is optimistic that its operating licenses for Units 2 and 3 will be renewed. Twenty-three (23) nuclear reactors have applied to the NRC for license renewal, and all of those requests have been granted. (App. Exh. 7 at 3; 1/7/04 Tr. at 59). If license renewals are granted, Unit 2's license period will be extended to 2035 and Unit 3's license period will be extended to 2045. (App. Exh. 1, p. 10). Also, when license renewal is granted, DNC will require up to 27 additional HSMs (beyond the 18 HSMs loaded in Phase I) in order to maintain full core reserve capability for Unit 2 during its extended license period and up to 40 additional HSMs for Unit 3 (beyond the 18 HSMs loaded in Phase I) in order to maintain full core reserve capability for that unit's extended license period. (1/20/04 Tr. at 105). As all of the foregoing demonstrates, in order to maintain full core reserve capability in both Units 2 and 3 during the units' license

periods (including license renewal), DNC will need a total of 85 HSMs. (App. Exh. 7 at 3; 12/15/03 Tr. at 79; 1/7/04 Tr. at 58, 194-95).

3. Fifty (50) HSMs Are Needed To Address Operational, Regulatory Or Other Demands

Included within the Application is a request for 50 HSMs to satisfy potential operational, regulatory or other demands at Units 1, 2 and/or 3. (1/7/04 Tr. at 194-95). These 50 HSMs could also be used to empty the Unit 1 spent fuel pool in the event that DNC must address an operational demand at Unit 1, develops another economic use for Unit 1 that is not compatible with continued storage of spent fuel in the Unit 1 spent fuel pool or receives an NRC order requiring the Unit 1 spent fuel pool to be emptied. (App. Exh. 1, p. 10; App. Exh. 7 at 3; App. Exh. 14, Resp. Nos. 5, 6; App. Exh. 16, Resp. No. 51; 12/15/03 Tr. at 79; 1/7/04 Tr. at 73). In fact, these additional 50 HSMs would be sufficient to empty the spent fuel pool of any of the units in response to an NRC order or other operational requirement. (1/7/04 Tr. at 194-95, 221-22). The inclusion of these 50 HSMs as part of the Application also provides the Council with the opportunity to review the entire ISFSI project at once rather than in segments.

Although DNC testified that it would take 12-18 months for HSMs and DSCs to be delivered to the site and to be filled, if DNC were required to return to the Council through a modification proceeding (similar to the current proceeding) for approval of these additional HSMs, the process to obtain that approval could take much longer, perhaps as long as four or five years. (12/15/03 Tr. at 72-76). Therefore, in order to provide regulatory certainty and to prudently plan for the long-term operational requirements of Millstone, DNC included these additional 50 HSMs as part of its Application. (App. Exh. 16, Resp. No. 24; 1/7/04 Tr. at 196-98; 1/20/04 Tr. at 52-53). By having sufficient storage space available to satisfy its long-term

spent fuel management requirements including potential operational, regulatory or other contingencies, Millstone will continue to provide a valuable generation resource for the continued reliability of electric power throughout the State and region.<sup>5</sup>

B. Nature of Probable Impacts

After determining that a public benefit will result from a project, the Council, as part of the statutory review procedure, must then examine the probable environmental impacts of the project. Conn. Gen. Stat. § 16-50p(c)(1)(B). The extensive record before the Council demonstrates that the environmental impacts associated with the ISFSI are minimal and, to the extent possible, have been eliminated.

1. Natural Environment and Ecological Balance

The proposed development of the ISFSI has eliminated, to the extent possible, impacts on the natural environment. As discussed in detail in the Environmental Site Assessment (“ESA”) prepared for the ISFSI project, the ISFSI and associated site improvements will have no significant adverse effect on ecological resources at the Property. (App. Exh. 1, Attach. 9). DNC is proposing to construct the ISFSI on currently-disturbed, previously impacted areas. In fact, the majority of the proposed ISFSI would be located in an area currently used as a parking lot with its paved and gravel surfaces. (App. Exh. 12 at 1).

The ESA identified and evaluated vegetative communities and significant terrestrial and marine biological resources that may exist on the Property and be affected by the development of the ISFSI. The conclusions of the ESA, as they relate to on-site ecological resources, can be summarized as follows:

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<sup>5</sup> As Representative Stillman stated in her comments to the Council, DNC’s need for HSMs to handle operational contingencies should not be ignored. (12/15/03 Tr. at 11-13).

- The ISFSI Site, Equipment Laydown Area and Soil Placement Area are located on previously disturbed upland areas with no special habitat value.
- The ISFSI Site is adequately separated from inland wetlands and watercourses, coastal resources, tidal waters, marine habitats and other marine resources.
- To avoid impacting existing ecological resources on the Millstone property, including without limitation, the wetlands, fresh water stream and fresh water pond east of the ISFSI site, site development plans and specifications for the ISFSI project include appropriate soil erosion and sedimentation control measures.
- There are no state or federal threatened, endangered or special concern species known to occur at the ISFSI Site.

(App. Exh. 1, pp. 17-18, Attach. 9). In fact, in its comments, the DEP indicated that “[r]esource conflicts are negligible given the nature of the existing development of the site.” (DEP Comment Letter at 2).

The thermal effects of the ISFSI will also be inconsequential. The principal heat removal mechanism for the spent fuel stored in the DSCs is by natural convection of the heat as air circulates through the HSM. (App. Exh. 11 at 2). Ninety percent (90%) of the heat generated by the spent fuel stored in a DSC is removed from the ISFSI system by convection and ten percent (10%) is removed by conduction through the concrete HSM. (App. Exh. 11 at 2; 12/15/03 Tr. at 61). An HSM loaded to the 24-kilowatt design limit would discharge heat to the atmosphere equal to “approximately 15 hair dryers” or “a well insulated house on a cold winter’s day.” (App. Exh. 11 at 2; 1/20/04 Tr. at 39). However, with the mixture of aged fuel assemblies that will be loaded into each DSC, the heat in each DSC is not anticipated to reach the 24-kilowatt design limit. (App. Exh. 11 at 2).

Overall, the limited construction activity at the ISFSI Site would have a negligible environmental impact. No evidence to refute this conclusion was presented to the Council.

## 2. Public Health and Safety

DNC considered several factors in determining that the nature and extent of potential public health and safety impacts resulting from construction and installation of the ISFSI would be minimal or nonexistent.

First, the construction of the ISFSI will have only minor effects on local vehicular traffic. Construction related impacts will be limited to construction worker vehicle trips and truck traffic associated with the import of soil, concrete and related construction materials. Truck traffic associated with the ISFSI project will be required to use designated truck routes and adhere to Department of Transportation regulations regarding load weight. Moreover, certain materials (e.g., HSMs) are expected to be transported to the site by barge, further reducing the traffic burden on local roads. The operation of the ISFSI will have no impact on local traffic. All fuel loading processes will occur within the expanded Protected Area. No on- or off-site traffic will be impacted by this process. (App. Exh. 1, p. 21).

Second, noise associated with the construction of the ISFSI will occur on-site for a short period of time, approximately three months, during the initial phases of construction. Construction noise will stem from the operation of construction equipment and truck traffic. The closest off-site noise receptor is a residential area approximately 1,700 feet to the northeast of the ISFSI Site. Changes in topography and the existence of dense vegetation between the ISFSI Site and this residential area will significantly reduce, if not eliminate, noise impacts associated with construction activity. (App. Exh. 1, p. 18). Moreover, the NUHOMS® System is a passive system for storing spent fuel. There are no operating motors, fans or other similar devices associated with the HSMs. The only noise resulting from the operation of the ISFSI is that associated with the transport and loading operation. (App. Exh. 1, p. 18, Attach. 9 § 4.10).

Third, the installation of the ISFSI will not increase the public safety costs associated with the operations at Millstone. Millstone is “a hardened critical infrastructure site” with on-site trained security personnel. (1/20/04 Tr. at 13). Facilities, such as Millstone, licensed by the NRC must implement specific emergency planning practices, including communications with local, state and federal agencies responsible for addressing emergencies. (App. Exh. 14, Resp. No. 2; App. Exh. 16, Resp. No. 44). Although DNC would likely seek the assistance of available local, state and federal agencies, including the DOE and the Department of Homeland Security, as appropriate, were a situation not otherwise anticipated in the facility’s emergency plan to occur, DNC does not anticipate an emergency situation involving the ISFSI that would require such intervention. (App. Exh. 16, Resp. No. 44).

Fourth, although radiological safety is within the exclusive jurisdiction of the NRC, DNC evaluated the siting of the ISFSI installation and provided the Council with information on how the ISFSI would satisfy the applicable federal requirements. (App. Exh. 5, Resp. No. 15). DNC’s radiological exposure calculations, which assume a fully developed ISFSI (135 HSMs), and take into account appropriate occupancy factors for on-site locations (for example, workers do not occupy locations or buildings 24 hours a day) show that expected yearly exposures to workers and/or members of the public both on-site and off-site will be a small fraction of the regulatory limits. (App. Exh. 5, Resp. No. 15; App. Exh. 10 at 1-2). Thus, the ISFSI will meet the applicable federal standards. Furthermore, once the ISFSI is constructed, it will be included in Millstone’s Radiological Environmental Monitoring Program (“REMP”), which provides a means for monitoring the plant environments for radioactivity that may be released from operations occurring at the facility. (App. Exh. 10 at 2; App. Exh. 16, Resp. No. 56).

Overall, the nature and extent of potential public health and safety impacts resulting from construction and installation of the ISFSI would be minimal or nonexistent. No evidence to refute this conclusion was presented to the Council.

3. Scenic Values.

DNC assessed the visual impact of the ISFSI on publicly accessible areas around the Property and determined that the proposed ISFSI will have little or no visual impact on adjacent publicly accessible areas.

The ISFSI Site will be located adjacent to the existing Millstone generating units in the southernmost portion of the Property. As a part of its analysis, DNC took photographs from fourteen different locations surrounding the proposed ISFSI Site. Eleven of the fourteen photographs were taken from areas within Jordan Cove, Long Island Sound and Niantic Bay. These bodies of water surround the Property on three sides and are active recreational areas. Additional photographs were taken from residential property, northwest of the ISFSI Site; from an area along the Amtrak right-of-way, north of the ISFSI Site; and from the closest residential neighborhood, northeast of the ISFSI Site. (App. Exh. 1, Attach. 11).

As indicated by these photographs, the 20'-7" tall HSMs used in the ISFSI will have little or no visual impact on surrounding, publicly accessible areas. From most locations surrounding the ISFSI Site, views will be obstructed by changes in topography, existing vegetation (mature trees) and the existing power generating facility itself. The outline of the storage modules may be visible, through the trees, from locations to the east, southeast and northeast, but only during winter months. (App. Exh. 1, pp. 19-20). This evidence supports a finding that the proposed ISFSI will have little or no visual impact on adjacent publicly accessible areas. No evidence to refute this conclusion was presented to the Council.



4. Historical Values.

On March 18, 2003, DNC requested that the Connecticut Historical Commission/State Historic Preservation Officer (“SHPO”) review the proposed ISFSI project. In a letter dated March 24, 2003, the SHPO, John W. Shannahan, determined that the development of the ISFSI will have *no effect* on state or federal historic or archeological resources listed on or eligible for the National Register of Historic Places. (App. Exh. 1, Attach. 10). In prior decisions, the Council has found that the SHPO’s determination of “no effect,” with respect to historic, architectural, or archaeological resources listed on or eligible for the National or State Register of Historic Places is sufficient for purposes of the Council’s criteria for rendering a decision. (*See* Finding of Fact No. 57, Siting Council Docket No. 126). No evidence to refute this determination was presented to the Council.

5. Recreational Values.

DNC determined that there are no unique recreational activities or facilities at or near the Property that would be impacted by the proposed ISFSI. The closest recreational resources identified in the ESA are those located in the northeast corner of the Property. Millstone currently allows the Town to use a portion of the Property for recreational purposes. The Town has developed baseball, soccer and football fields in this area. The use of these fields by the Town will not be affected by the ISFSI project. The existing Millstone Nature Trail is a recreational area that has been closed to the public pursuant to NRC Security Orders issued since September 11, 2001. (App. Exh. 1, p. 20). Overall, the ISFSI will not impact any unique recreational activities or facilities at or near the Property. No evidence to refute this conclusion was presented to the Council.

6. Forests and Parks.

DNC determined that no forests or parks will be impacted by the ISFSI. Niantic Bay, Long Island Sound, Jordan's Cove, Harkness Memorial State Park and the Dr. William A. Niering Natural Area Preserve are all located in the vicinity of Millstone. None of these recreational resources will be impacted by the construction or operation of the ISFSI. (App. Exh. 1, p. 20, Attach. 9). No evidence to refute this conclusion was presented to the Council.

7. Air and Water Quality

a. Air Quality.

During construction, the potential exists for short-term and highly localized impacts from the operation of construction equipment and vehicular movement, but these impacts will be minimized by assuring that equipment is properly maintained. (App. Exh. 1, Attach. 9, p. 28). Additional impacts to air quality, during construction, may result from fugitive dust. These impacts are expected to be contained on-site and will be limited only to the earth-moving stage of site work. In addition, several mitigation measures will be implemented to reduce the amount of dust generated during construction. (App. Exh. 1, Attach. 9, p. 28). Upon completion of construction, the NUHOMS<sup>®</sup> System, which is a passive installation without moving equipment or components, will not generate any air emissions. (App. Exh. 12 at 2). This evidence supports a finding that the proposed ISFSI will have little or no impact on air quality. No evidence to refute this conclusion was presented to the Council.

b. Water Quality.

To assess the impact of the ISFSI project on wetlands and watercourses, DNC consultants completed an Inland Wetlands and Watercourses Delineation Report and Impact Assessment ("Wetlands Report") for the southerly portion of the Property. (App. Exh. 1, Attach. 7). The

ISFSI Site, Equipment Laydown Area and the area in which soil will be placed during construction (the “Soil Placement Area”) are located outside the limits of existing tidal and inland wetlands and watercourses on the Property; outside of the Town designated upland review areas;<sup>6</sup> and, outside identified flood hazard areas. (App. Exh. 1, pp. 14-15; DEP Comment Letter at 2; 1/7/04 Tr. at 123-24, 154).

The closest wetland or watercourse is located approximately 150 feet to the east of the ISFSI Site. (App. Exh. 1, p. 15; App. Exh. 14, Resp. No. 19). This wetland area is associated with a drainage outfall and swale to the east of the existing railroad spur line. (App. Exh. 1, Attach. 7, Fig. 2). This area will be impacted by construction activity associated with the installation of a new drainage outlet at this location. The existing stormwater culvert will be replaced with a new pipe and head-wall and permanent erosion controls measures. These impacts will be temporary but will result in long-term improvements to the existing drainage swale. (App. Exh. 1, p. 15; App. Exh. 12 at 2).

Additional wetlands have been identified to the north of Building 532 and the existing access road. Limited drainage improvements, south of the access road and east of Building 532, may encroach into the Town’s upland review area but will not directly impact any wetland or watercourse. Additional wetlands and watercourses in the southerly portion of the Property include a fresh water pond approximately 200 feet to the east of the ISFSI Site and wetlands associated with on-site drainage features to the north of the ISFSI Site. The Wetlands Report reaches a number of conclusions including:

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<sup>6</sup> The Town of Waterford Inland Wetlands and Watercourses (“IWW”) Regulations define the upland review area as non-wetland areas within 100 feet of a wetland boundary. Activity within this upland review area may be determined to be a regulated activity. (App. Exh. 1(b)).

- The development of the ISFSI Site will have no direct permanent impacts on wetland or watercourse areas and will result in no net loss of wetlands or watercourses on the Property;
- The ISFSI project will not result in any changes or impacts to the existing fresh water pond or any of its adjacent wetland areas;
- Wetland impacts associated with the reconstruction of the drainage outlet (DSN 011) east of the railroad spur will be temporary and will result in long-term improvements at the drainage outlet;
- The ISFSI Site is located outside the Town's upland review area; and
- Adequate erosion and sedimentation controls can be installed and monitored throughout the construction period to avoid construction related impacts.

(App. Exh. 1, pp. 15-16, Attach. 7).

DNC's consultants also performed hydrologic and hydraulic analyses and developed a drainage design for the ISFSI project. (App. Exh. 1, Attach. 8). Total surface runoff from the Property will not increase substantially (less than 5%) as a result of the ISFSI project. Peak stormwater runoff rates and velocity will not increase appreciably and will not materially increase water surface profiles or flooding potential of those areas that currently receive stormwater discharge from the Property. (App. Exh. 1, p. 16).

As part of the ISFSI project certain modifications to the existing stormwater drainage system will be required. These modifications include:

- the rerouting of a portion of the 30" stormwater drainage line, from a point near Building 532, to run parallel to the existing access road and around the northerly and easterly side of the ISFSI Site. This new drainage line will connect to a new stormwater culvert east of the ISFSI Site;
- the installation of new stormwater drainage structures including catch basins and trench drains within the ISFSI Site and Equipment Laydown Area. Each of these drainage structures will be connected to a piping system located south of the ISFSI Site, connected to the stormwater culvert east of the ISFSI Site;

- the replacement of the existing stormwater culvert extending from the area east of the ISFSI Site, under the access road and rail spur; and
- the replacement of an existing outlet structure east of the railroad spur line with permanent erosion control measures.

No stormwater drainage improvements are proposed or will be necessary in the Soil Placement Area. (App. Exh. 1, pp. 16-17).

The depth to groundwater at the ISFSI Site is 6.5 - 7.0 feet, and most of the overburden material is very dense with low permeability. (12/15/03 Tr. at 164-66). DNC intends to complete all subsurface work and install associated infrastructure to prepare the ISFSI site for 135 HSMs during Phase I rather than perform the subsurface work in phases. (App. Exh. 9 at 2; App. Exh. 16, Resp. No. 54). This approach will minimize potential construction impacts on groundwater. (App. Exh. 16, Resp. No. 54). As the ISFSI is built out beyond the first 19 HSMs, only the four (4) foot thick pads would be added. (App. Exh. 9 at 2; App. Exh. 16, Resp. No. 54). The concrete pad and apron are not expected to have any significant effect on groundwater, since:

- Apron stormwater will be collected and conveyed to the stormwater system and will eventually be discharged through the stormwater outlet to the east of the SAP parking lot and the railroad spur; and
- HSM pad runoff will flow in part towards the apron drainage system, and then towards the existing access road, where it will join existing drainage to the south which eventually flows to the same stormwater outlet as the SAP parking lot.

(App. Exh. 1, Attach. 5, DWG-4 & DWG-5; App. Exh. 16, Resp. No. 54).

Furthermore, there is no potential that the spent fuel stored in the ISFSI will be released into groundwater. The spent fuel to be stored in the ISFSI is a solid at all temperatures and pressures. (12/15/03 Tr. at 46). The fuel is actually a ceramic pellet inside cladding, which stays in that form throughout its lifetime. (12/15/03 Tr. at 46). Nevertheless, as part of its analysis,

the NUHOMS® supplier reviewed what would happen if all of the fuel pins ruptured and determined that the DSCs would remain leak tight. (1/7/04 Tr. at 88). In the unlikely event that the DSCs were to fail, the concrete HSM would contain the fuel assemblies. (12/15/03 Tr. at 46).

Overall, the proposed ISFSI will have little or no impact on water quality. No evidence to refute this conclusion was presented to the Council.

#### 8. Fish and Wildlife

Prior to submission of the Application, DNC requested a review of the proposed ISFSI project by the DEP Environmental and Geographic Information Center, and the DEP found that no extant populations of Federal or State Endangered or Threatened or Special Concern species will be impacted by the ISFSI project. (App. Exh. 1, Attach. 12). The ESA reached the same conclusion. (App. Exh. 1, Attach. 9).

The HSM vents are covered with exterior screens to prevent animals and birds from entering the HSMs. (App. Exh. 16, Resp. No. 32). In addition, the relative location and height of the ISFSI are such that the use of the top surface by birds for nesting is highly unlikely. Ospreys, for example, prefer nesting and perch locations typically at the higher elevations of the surrounding tree line and at remote locations allowing for full field of vision. At Millstone, there are nine (9) available man-made platforms on-site that provide suitable conditions for Osprey nesting. The lower elevation or height of the top of the ISFSI compared to available nesting locations makes the ISFSI relatively unattractive for Osprey. Moreover, since Osprey typically prefer locations that are remote from human activities, particularly during nest construction and fledging of young, the proximity of the ISFSI to power station activities will essentially preclude the use of the ISFSI for nesting. (App. Exh. 16, Resp. No. 33).

The only other bird species typically observed using the Millstone facilities for perching or nesting is the common seagull. Nesting to date has largely been limited to the roofs of higher structures such as the turbine buildings. To the extent that seagulls perch on the ISFSI, the duration would be limited and dose consequences would be negligible. (App. Exh. 16, Resp. No. 33). No evidence to refute this conclusion was presented to the Council.

C. The Application Should Be Approved Because The Benefits Of The Proposed ISFSI Outweigh Any Potential Impacts

Following a determination of the probable environmental impacts of the proposed project, Connecticut General Statutes section 16-50p requires that the Applicant demonstrate why these impacts “are not sufficient reason to deny the Application.” Conn. Gen. Stat. § 16-50p(c)(1)(C). The record establishes that the impacts from the ISFSI would be limited, minimal and significantly outweighed by the benefits to the public from the continued operation of Millstone that will result from the installation of the ISFSI.

As the record overwhelmingly demonstrates, the ISFSI would have minimal impacts on the environment. The ISFSI Site, Equipment Laydown Area and Soil Placement Area are located on previously disturbed upland areas with no special habitat value. The ISFSI Site is adequately separated from inland wetlands and watercourses, coastal resources, tidal waters, marine habitats and other marine resources. There are no State or federal threatened, endangered or special concern species known to occur at the ISFSI Site. Area topography and screening provided by the mature trees, vegetation and existing structures surrounding the sites would reduce or eliminate the visual impact of the proposed ISFSI. (App. Exh. 1, pp. 17-18, Attach. 9).

In addition, the ISFSI project has been specifically designed to include various measures to mitigate or avoid adverse impacts both to the environment on the Property and to the surrounding community. These mitigation measures include:

- the use of specific construction techniques and methods designed to limit the potential for off-site impacts and minimize on-site impacts;
- use of best management practices in the design and operation of a stormwater drainage system;
- incorporation of appropriate soil erosion and sedimentation control as to avoid impacts to nearby wetlands and watercourses; and
- adherence to strict federal regulatory requirements governing the operation of the ISFSI to protect public health and safety.

(App. Exh. 1, pp. 24-25, Attach. 9).

In sum, the potential environmental impacts from the proposed ISFSI would be minimal when considered against the significant benefits to the public from the continued operation of Millstone that will result from the installation of the ISFSI. As a result, these impacts are insufficient to deny the Application. The Application, therefore, satisfies the criteria of Connecticut General Statutes Section 16-50p.

## **VI. PROPOSED CONDITIONS**

During the proceeding, the Council and various parties suggested potential conditions that could or should be imposed upon the ISFSI project. DNC agreed to several of these conditions.

### **A. Conditions Posed By The Council**

During the proceeding, Chairman Katz outlined a hypothetical scenario for approval of the Application and asked DNC to comment. (1/20/04 Tr. at 58). The first point of the scenario was approval to expand the existing Protected Area fence to encompass the entire ISFSI Site and Equipment Laydown Area. (1/20/04 Tr. at 58). DNC would have no objection to a condition that



required it to move the Protected Area perimeter fence once to include the entire ISFSI Site. (1/20/04 Tr. at 103). In fact, that is what DNC proposed as part of its Application. (App. Exh. 1, p. 10). In addition, both the DEP and the Connecticut Division of Homeland Security agreed that the fence should only be moved once. (DEP Comment Letter at 3; 1/20/04 Tr. at 12).

The Chairman also posited an approval to complete all of the drainage improvements. (1/20/04 Tr. at 58). DNC assumes that those drainage improvements also include the completion of all other infrastructure improvements proposed in Phase I. (App. Exh. 1, p. 10). With this modification, DNC would not object to such a condition. (1/20/Tr. at 103). In fact, as the Application demonstrates, and DEP agrees, by doing the infrastructure improvements at one time and avoiding multiple disturbances to the site, the potential environmental impacts from construction would be reduced. (App. Exh. 9 at 2; DEP Comment Letter at 3; 2/19/04 Tr. at 214-15). For instance, if the infrastructure is done in phases, each time another phase of the infrastructure is constructed, additional excavation, handling of stormwater and dewatering activities would have to occur. By preparing the entire infrastructure at one time, the site and the adjacent wetland and upland review area are only exposed to this activity over one construction period. (2/19/04 Tr. at 214-15). Further, doing all of the infrastructure work at one time would also minimize operational impacts and simplify construction procedures. (App. Exh. 9 at 2; 2/19/04 Tr. at 213-14). Thus, preparing the entire site will allow DNC to minimize onsite construction activity for site development and to address comprehensively the prevention and mitigation of construction related impacts. (App. Exh. 9 at 2).

The third component of the Chairman's proposed scenario included approval to construct a concrete pad for 67 units. (1/20/04 Tr. at 58). DNC would not object to the right to build concrete

pads for up to 67 HSMs. (2/19/04 Tr. at 103-04). However, consistent with its commitment to only install HSMs at the rate necessary to maintain full core reserve in accordance with prudent spent fuel management practices or to satisfy an operational contingency, it is DNC's intent only to build pads large enough to accommodate 20 HSMs at a time.

The last points of the Chairman's proposed scenario included approval to install 19 HSMs, to install up to 50 contingency HSMs under certain conditions and to use a Petition process instead of a modification process for any additional units beyond the first 19 HSMs. (1/20/04 Tr. at 58). DNC proposed in its Application, the installation of 19 HSMs (18 loaded) during Phase I. (App. Exh. 1, p. 10). However, a total of 85 HSMs are needed in order for DNC to maintain full core reserve for Units 2 and Unit 3 throughout their license periods (including license renewal) -- 45 HSMs for Unit 2 and 40 HSMs for Unit 3. (App. Exh. 7 at 3; 12/15/03 Tr. at 79). In order to avoid the regulatory uncertainty associated with going through multiple regulatory processes (including related administrative appeals) and the impact of that uncertainty on operations and employee morale and retention, DNC would propose a slight modification to the Chairman's proposed process for the approval of additional HSMs.

In order to satisfy concerns about the uncertainty of license renewal, DNC would be willing to accept a condition that additional HSMs for Units 2 and 3 (beyond the initial 19 HSMs) are approved now but that these HSMs can only be installed upon submission by DNC of verification to the Council that DNC has received license renewal for Units 2 and/or 3. (1/20/04 Tr. at 104-06). Upon submission of verification that license renewal has been received for Unit 2, DNC would then have the right to install an additional 27 HSMs (beyond the 18 HSMs loaded in Phase I) at the rate necessary to maintain full core reserve capability in Unit 2 in accordance with prudent spent fuel

management practices. (1/20/04 Tr. at 105). Likewise, for Unit 3, upon submission of verification that license renewal has been received for Unit 3, DNC would then be entitled, at the rate necessary to maintain full core reserve in Unit 3 in accordance with prudent spent fuel management practices, to install 40 additional HSMs (beyond the 18 HSMs loaded in Phase I). (1/20/04 Tr. at 105).

With respect to the 50 contingency units, DNC testified that there are certain circumstances that might require DNC to use these additional HSMs. (1/20/04 Tr. at 53-54). Realistically, however, it is difficult for DNC to identify all of the possible contingencies that could occur that might require the use of some or all of these 50 HSMs. Therefore, DNC has reservations about directly linking or conditioning the use of the 50 HSMs to any finite list of possible eventualities. (1/20/04 Tr. at 106, 224). Rather, DNC would prefer, at the time when all or a portion of that contingency is required, to return to the Council through the Council's Petition process, present the necessity for additional HSMs to address the contingency at that time and request the Council's approval of the additional HSMs required to satisfy the contingency. This alternative would provide more certainty to the Council and the other parties about the actual number of HSMs that would be installed to satisfy a given contingency. (1/20/04 Tr. at 106-07).

At another point in the proceeding, DNC was asked if it could accept a condition requiring that it use the latest or best technology available for its ISFSI. (12/15/03 Tr. at 114). DNC's indirect parent company, Dominion Resources, Inc. ("Dominion"), owns and operates three nuclear power stations, which are Millstone, North Anna and Surry, in the United States. (App. Exh. 1, p. 3). As evidenced by the development of Dominion's North Anna and Surry ISFSIs, Dominion is committed to taking advantage of technological changes that provide an

operational benefit. (1/7/04 Tr. at 161-62). However, not all newly approved dry storage systems will necessarily be compatible with Millstone's spent fuel. (2/19/04 Tr. at 217-18). Moreover, under the NRC general license that permits DNC to establish an ISFSI at Millstone, DNC must use an NRC-certified dry storage system. (App. Exh. 1, pp. 11-12; App. Exh. 5, Resp. No. 7; *see also* 10 CFR § 72.212). Therefore, the acceptability of technology for a dry storage system is expressly regulated by the NRC. Nevertheless, DNC is willing to accept a condition that it will only use NRC-certified systems as part of its ISFSI.

B. Conditions Proposed By Town Of Waterford

As part of the local input process, the Town of Waterford Municipal Orders requested that the Council impose certain conditions on the Application. Many of these conditions are acceptable to DNC. Generally, the Municipal Orders find that DNC should not be permitted to install more than 19 HSMs for only Unit 2 use because that is all that is "needed" to satisfy DNC's spent fuel storage requirements through 2015. (*See, e.g.*, App. Exh. 3, Attach. 3, Municipal Orders Conditions 2, 4). DNC has already committed to moving the spent fuel to the ISFSI only at the rate necessary to maintain full core reserve in Units 2 and 3 in accordance with prudent spent fuel management practices or to satisfy an operational, regulatory or other contingency at Units 1, 2 and/or 3. (App. Exh. 1, p. 10; App. Exh. 8 at 3; 12/15/03 Tr. at 77; 1/7/04 Tr. at 75, 222-23). In fact, DNC has no financial incentive to move spent fuel to the ISFSI. (1/7/04 Tr. at 77-78).

Condition 1 of the Municipal Orders states that "[t]he designated and acceptable location for the storage of spent fuel is the existing spent fuel pools. The permanent storage facility is not on this site." (App. Exh. 3, Attach. 3). Although currently only the spent fuel pools are available for storage, the ISFSI is also an acceptable location for the storage of spent fuel. (1/20/04 Tr. at 74-75,

77). DNC agrees that the ISFSI should not be the permanent storage facility for spent fuel. (1/20/04 Tr. at 75). The ISFSI is intended to be used for the *interim* storage of spent fuel at Millstone until the DOE fulfills its statutory and contractual obligations and accepts the fuel for permanent disposal. The ISFSI is not a long-term repository for the storage of spent fuel. (App. Exh. 1, p. 8; App. Exh. 5, Resp. No. 9). Once the federal government begins accepting spent nuclear fuel for disposal, DNC anticipates that Millstone spent fuel will be removed to the federal repository in accordance with the schedule established by the federal government. (App. Exh. 1, p. 27).

Condition 3 of the Municipal Orders states that the ISFSI should be removed “prior to or as part of the plant decommissioning.” (App. Exh. 3, Attach. 3). The status of a federal repository and its eventual date for opening and sustained acceptance of spent fuel from the nation’s nuclear facilities is still unknown. As a result, DNC has no control over when a federal repository will open or whether DOE will have accepted all of its spent fuel prior to plant decommissioning. (1/20/04 Tr. at 80). Thus, DNC cannot provide an exact timetable for the removal of all of the spent fuel from the Millstone site. (1/20/04 Tr. at 80).

Condition 5 of the Municipal Orders states that “[t]emporary dry cask storage will be restricted to waste generated on site.” (App. Exh. 3, Attach. 3). As discussed in the Application and extensively throughout this proceeding, only spent fuel from the Millstone units will be stored in the Millstone ISFSI. (App. Exh. 1, p. 8; App. Exh. 8 at 3; App. Exh. 14, Resp. No. 17; 12/15/03 Tr. at 116-17; 1/20/04 Tr. at 79). Furthermore, the NRC general license issued to DNC for the ISFSI also restricts the storage of spent fuel in the ISFSI to “that spent fuel which the general licensee is authorized to possess at the site under the specific license for the site.” (App.

Exh. 14, Resp. No. 17). Therefore, DNC would be willing to accept a condition limiting the use of the ISFSI to storage, in accordance with NRC regulations, of spent fuel from Millstone.

Condition 6 of the Municipal Orders states that the “temporary use will not preclude the future use of the facility for business, water dependent or industrial use(s) as permitted in the Zoning Regulations of the Town of Waterford.” (App. Exh. 3, Attach. 3). As discussed in the Application, the construction and operation of the ISFSI on the former SAP parking lot will not impact future uses of the Property. (App. Exh. 1, p. 28).

Condition 7 of the Municipal Orders states that any other physical improvements or outdoor use of land required to move the storage unit components onto the site should be submitted to the Town for review. (App. Exh. 3, Attach. 3). DNC does not anticipate having to make any additional physical improvements beyond those identified in the Application in order to move the storage unit components onto the site. (App. Exh. 1, p. 31; App. Exh. 9 at 2).

Condition 8 of the Municipal Orders requests that DNC submit a written report to the Town at least every five years “on the status of construction, module installation, continued need, changes in plans for off site disposal and other information that would keep the commission informed on changes impacting the duration of the storage.” (App. Exh. 3, Attach. 3). DNC agrees that it is important to keep open the lines of communication with the Town. Currently, DNC provides the Town with informal reports on the status of Millstone’s operations. DNC will agree to formalize this process and provide the Council and the Town with *annual* reports on the status of Millstone’s operations, including the information requested on the ISFSI, as well as information on the status of the federal repository and a 5-year projection of DNC’s anticipated dry storage requirements. (App. Exh. 1, p. 28; App. Exh. 8 at 3-4).

The comments of the Town of Waterford Conservation Commission (“Conservation Commission”) are incorporated as Condition 9 in the Municipal Orders. As part of its comments, the Conservation Commission states that a “groundwater and surface water monitoring plan should be prepared and implemented on an annual basis to quantify the existing conditions of surface and groundwater resources in the vicinity of the proposed installation and monitor these resources for any potential impacts from the proposed ISFSI.” (App. Exh. 3, Attach. 3).

DNC currently maintains an individual National Pollution Discharge Elimination System (“NPDES”) permit for the discharge of stormwater and plant process wastewater and a General Permit for the Discharge of Stormwater Associated with Industrial Activity. (App. Exh. 12 at 2). The individual NPDES permit currently includes the stormwater run-off from the SAP parking lot where the ISFSI is proposed to be located. (App. Exh. 1, Section III.B.2 and Attach. 8; App. Exh. 5, Resp. No. 14; App. Exh. 12 at 2). Upon the completion of and prior to discharge of stormwater from the ISFSI, DNC will confirm or obtain coverage under its NPDES permit or register the relevant discharge under the DEP’s General Permit for the Discharge of Stormwater Associated with Industrial Activity. Monitoring of stormwater discharges will occur in accordance with these existing permit programs. (App. Exh. 5, Resp. No. 14; App. Exh. 12 at 3).

Existing data does not suggest the need for groundwater monitoring at or near the ISFSI Site. (App. Exh. 16, Resp. No. 55). Groundwater monitoring requirements generally are addressed by the DEP. In order to respond to concerns expressed by the Conservation Commission, however, and consistent with Chairman Katz’s suggestion, DNC would be willing to install three monitoring wells, one up-gradient and two down-gradient from the ISFSI Site, and

to share monitoring results with the Council and the Town. (1/20/04 Tr. at 118-19).

**VII. THE APPLICATION DOES NOT INVOLVE CONDUCT THAT IS REASONABLY LIKELY TO HAVE THE EFFECT OF UNREASONABLY POLLUTING THE PUBLIC TRUST IN THE AIR, WATER OR NATURAL RESOURCES OF THE STATE**

On October 9, 2003, the Attorney General petitioned to intervene, in part, pursuant to Connecticut General Statute Section 22a-19 (the “AG Petition”). On December 15, 2003, William H. Honan, Dr. Milton C. Burton, GERALYN COTE WINSLOW and Clarence Reynolds (collectively, the “Coalition Parties”) filed notices of intervention in this proceeding pursuant to Connecticut General Statutes Section 22a-19 (collectively, the “22a-19 Notices”).

General Statutes Section 22a-19 contains what is commonly known as an “Environmental Intervention Provision,” enacted as part of the Connecticut Environmental Protection Act (“CEPA”). Section 22a-19 provides:

- (a) In any administrative, licensing or other proceeding, and in any judicial review thereof made available by law, the Attorney General, any political subdivision of the state, any instrumentality or agency of the state or of a political subdivision thereof, any person, partnership, corporation, association, organization or other legal entity may intervene as a party on the filing of a verified pleading asserting that the pleading or action for judicial review involved conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.
- (b) In any administrative, licensing or other proceeding, the agency shall consider the alleged unreasonable pollution, impairment or destruction of the public trust in the air, water or other natural resources of the state and no conduct shall be authorized or approved which does, or is reasonably likely to, have such effect so long as, considering all relevant circumstances and factors, that there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare.

On its face, Section 22a-19(a) specifically allows the “Attorney General” and/or “any person” to intervene in an agency proceeding for the limited purpose of raising environmental



issues. However, a pleading seeking to intervene under section 22a-19 of the Connecticut General Statutes must meet certain procedural requirements before it can be considered by an agency.

Upon receipt of a properly verified pleading seeking to intervene under Connecticut General Statutes § 22a-19, the agency must determine if the pleading “contain[s] specific factual allegations setting forth the environmental issue that the intervenor intends to raise.” *Nizzardo v. State Traffic Commission*, 259 Conn. 131, 164-65 (2002). Once the agency determines whether the pleading contains the necessary factual allegations, it must then determine whether the pleading concerns environmental issues within its jurisdiction, because Section 22a-19 intervenors are limited to raising only such issues. *See Connecticut Fund for Environment Inc. v. City of Stamford*, 192 Conn. 247 (1984); *see also Nizzardo*, 259 Conn. at 165 (“The facts contained [in the intervention petition] should be sufficient to allow the agency to determine from the face of the petition whether the intervention implicates an issue within the agency’s jurisdiction”). If the pleading does not implicate any issues within the agency’s jurisdiction, the agency should deny the request to intervene.

A. The AG Petition

The AG Petition does not meet the requirements of CEPA. First, the AG Petition does not “contain[s] specific factual allegations setting forth the environmental issue that the intervenor intends to raise.” *Nizzardo*, 259 Conn. at 164-165. The AG Petition does not meet this standard because it does not set forth factual allegations about specific environmental concerns. The AG Petition speaks in generalities and alleges that the ISFSI “is reasonably likely to result in increases in radioactivity in the vicinity of the proposed ISFSI site which radioactivity

has the potential to harm natural resources in the ground and groundwater and in adjacent areas of the Long Island Sound both in the short term and long term.” (AG Petition at ¶ 13). There is no description of how and to what extent the alleged radioactivity levels will harm specific environmental resources.

Even if the AG Petition adequately alleged specific environmental issues (which DNC disputes), the Council must determine whether the AG Petition concerns environmental issues within its jurisdiction. *See Connecticut Fund for Environment*, 192 Conn. 247. The AG Petition does not meet this standard because it asserts “radioactivity” as the prime concern. Nuclear radiological safety is outside of the Council’s jurisdiction. *See Bonsey*, 107 F. Supp. 2d 47. The NRC is the principal regulatory agency for matters dealing with nuclear energy and radiological safety and its authority preempts state and local jurisdiction. (AG Petition at ¶ 7). Accordingly, the issues raised in the AG Petition do not concern areas over which the Council has jurisdiction.

B. The Coalition Parties’ Notices

The Coalition Parties’ 22a-19 Notices fail on several grounds. First, the 22a-19 Notices contain allegations regarding matters that are not environmental in nature and are outside the scope of CEPA. The Coalition Parties allege that the “application violates the Town of Waterford Zoning Regulations.” (22a-19 Notices at ¶ 3(b)). This allegation is deficient in at least two respects. First, the applicability of the Town Zoning Regulations is not within the scope of CEPA. Second, the Coalition Parties fail to allege how the claimed violations of the Town Zoning Regulations will impair the public trust in the air, water or other natural resources of the State. In short, this allegation does not set “forth the environmental issue that the intervenor intends to raise.” *Nizzardo*, 259 Conn. at 164-65. Therefore, this allegation is insufficient to support a petition to intervene under CEPA.

The Coalition Parties also allege that there is no “public need” for the ISFSI. (22a-19 Notices at ¶ 3(d)). Like the previous allegation, the public need for the facility is not within the scope of CEPA. Moreover, this allegation also does not set “forth the environmental issue that the intervenor intends to raise” because the Coalition Parties fail to allege how the lack of a need for the ISFSI will impair the public trust in the air, water or other natural resources of the State. *Nizzardo*, 259 Conn. at 164-65. Therefore, this allegation is insufficient to support a petition to intervene under CEPA.

The Coalition Parties also raise concerns regarding the completeness of the Application, as it pertains to providing certain information regarding security. (22a-19 Notices at ¶ 3(h)). While the Petitioners make an unsupported statement regarding a potential for “catastrophic” impact on the environment somehow involving security at the ISFSI, this allegation fails to set forth “the environmental issue that the intervenor intends to raise.” *Nizzardo*, 259 Conn. at 164-65. Furthermore, security at Millstone (including the ISFSI) is within the exclusive jurisdiction of the NRC and not within the jurisdiction of the Council. Accordingly, these allegations are insufficient and cannot be used to support a petition to intervene under Connecticut General Statutes § 22a-19. *Nizzardo*, 259 Conn. at 165.

Second, the 22a-19 Notices raise matters that may be considered “environmental” but are beyond the Council’s jurisdiction. The Coalition Parties raise three primary concerns regarding the environmental compatibility of the ISFSI: a “projected increase in routine radiation emissions” (22a-19 Notices at ¶ 3(c)); that the installation of the ISFSI will result in increased “levels of airborne radiation” (22a-19 Notices at ¶ 3(f)); and that the installation of the ISFSI will result in “releases of radioactive effluent” (22a-19 Notices at ¶ 3(g)). These allegations are

outside the scope of this proceeding and beyond the Council's authority and jurisdiction since they relate to radiological safety, which falls within the domain of the NRC. *See Bonsey*, 107 F. Supp. 2d 47. As a result, these allegations do not concern areas over which the Council has jurisdiction and cannot be used to support a petition to intervene under CEPA. *Connecticut Fund for Environment*, 192 Conn. 247.

The Coalition Parties also allege that, based on Millstone Unit 2's operational history, the Application should be denied because it "is intended to extend the life of Millstone Unit 2." (22a-19 Notices at ¶ 3(e)). Like the allegations above, this allegation is not within the Council's jurisdiction. DNC's intent to "extend the life" of Millstone Unit 2, through license renewal, and the operational history of Unit 2 are also matters under the exclusive jurisdiction of the NRC and outside the scope of the Council's jurisdiction. Therefore, these allegations cannot be used to support a petition to intervene under Connecticut General Statutes § 22a-19. *Connecticut Fund for Environment*, 192 Conn. 247.

Lastly, the Coalition Parties allege that the Application will create "potential adverse environmental effects" as a result of drainage into Jordan Cove and coastal areas. (22a-19 Notices at ¶ 3(a)). There is no evidence in the record to support this allegation. Furthermore, the 22a-19 Notices do not set forth these effects with any specificity and are, therefore, inadequate. *Nizzardo*, 259 Conn. at 165. In addition, the ISFSI project will have to comply with DEP requirements with regard to stormwater discharges. (App. Exh. 5, Resp. No. 14). Upon the completion of and prior to discharge of stormwater from the ISFSI, DNC will confirm or obtain coverage under its NPDES permit or register the relevant discharge under the DEP's General Permit for the Discharge of Stormwater Associated with Industrial Activity. (App. Exh. 5, Resp.

No. 14). Accordingly, the issues raised by the Coalition Parties will be addressed by the DEP.

*Nizzardo*, 259 Conn. at 164-65.

C. The Application Does Not Involve Conduct That Is Reasonably Likely To Have The Effect Of Unreasonably Polluting The Public Trust In The Air, Water Or Natural Resources Of The State

Even if the Council finds that Coalition Parties' claim is properly before it under CEPA (which DNC disputes), the Council may make a finding that these impacts do not and are not likely to unreasonably pollute, impair or destroy the public trust in the air, water or other natural resources of the State. The DEP permitting and regulatory process for monitoring and controlling stormwater discharge is an environmental legislative and regulatory scheme that specifically governs the stormwater impact of the ISFSI project, conduct that the Coalition Parties allege constitutes an unreasonable impairment under CEPA. *See* Conn. Gen. Stat. § 22a-430; R.C.S.A. §§ 22a-430-3 and 22a-430-4. As discussed above, DEP will evaluate the stormwater discharge impact of the ISFSI project on the environment and impose appropriate regulatory and monitoring conditions on DNC to insure that such discharge, if any, will not unreasonably pollute or impair the environment. Conn. Gen. Stat. § 22a-430; R.C.S.A. §§ 22a-430-3 and 22a-430-4; *see* App. Exh. 5, Resp. No. 14. Accordingly, this DEP permitting process will provide assurance that the ISFSI project's stormwater impact will not have a reasonable likelihood of unreasonable impairment. *Accord Waterbury v. Washington*, 260 Conn. 506, 557 (2002). Consequently, the Council can rely on DNC's compliance with DEP's regulatory and permitting scheme in evaluating the ISFSI's stormwater impact as evidence that there is no reasonable likelihood of unreasonable impairment to the environment. *Waterbury*, 260 Conn. at 557. Therefore, the record before the Council establishes that the ISFSI will not unreasonably

pollute, impair or destroy the public trust in the air, water or other natural resources of the State.

D. There Is No Feasible And Prudent Alternative Available.

Under CEPA, the Council has the authority to approve the Application if no feasible and prudent alternative exists in lieu of the proposed ISFSI or the proposed ISFSI Site that is consistent with the reasonable requirements of public health, safety and welfare. Conn. Gen. Stat. § 22a-19(b). A feasible and prudent alternative is one that is both “sound from an engineering standpoint” and “economically reasonable in light of the social benefits derived from the activity.” *Tarullo v. Inland Wetlands and Watercourses Commission*, 263 Conn. 572, 582 (2003) (citation omitted); *see also Manchester Environmental Coalition v. Stockton*, 184 Conn. 51 (1981), overruled on other grounds by *Waterbury v. Washington*, 260 Conn. 506, 557 (2002).

1. Alternatives To Establishment Of ISFSI

Millstone Unit 2 began commercial operation in 1975 and Unit 3 began commercial operation in 1986. Each of the unit’s spent fuel pools were designed with a capacity to store a limited number of spent fuel assemblies. (App. Exh. 7 at 1-2). Action has already been taken to increase the original installed capacity of the Unit 2 and Unit 3 spent fuel pools. (App. Exh. 7 at 1-2; App. Exh. 16, Resp. No. 20). No additional measures are available to increase the spent fuel storage capacity for Unit 2. (App. Exh. 7 at 1-2; App. Exh. 16, Resp. No. 20).

As part of its planning, DNC considered several potential alternatives to the ISFSI and determined that dry storage was the most feasible and prudent alternative. (1/20/04 Tr. at 96). The first alternative DNC considered was to do nothing. However, if alternative spent fuel storage is not available, Unit 2 would be required to shut down in 2010. (App. Exh. 16, Resp. No. 19; 1/20/04 Tr. at 96). This premature shutdown of Unit 2 would impact the reliability of the electric market in the State and the region, result in the loss of jobs and have an adverse

economic impact on the State, the region and the nation. (App. Exh. 18). DNC, therefore, determined that this alternative was not appropriate, prudent or reasonable.

As another alternative, DNC contemplated the possibility of building an additional spent fuel pool at Millstone in order to accommodate the spent fuel from Units 2 and 3. (1/20/04 Tr. at 96). This alternative was quickly dismissed as prohibitively costly, especially in light of more feasible alternatives, like dry storage. (1/20/04 Tr. at 96; Letter from the Connecticut Department of Environmental Protection, dated December 9, 2003 (“DEP Comment Letter”) at 2). In addition, there is no existing space within the current buildings at Millstone to accommodate another spent fuel pool. As a result, a new spent fuel pool would require a separate building with all its attendant support structures in an area outside the current Protected Area. (2/19/04 Tr. at 215). Furthermore, the construction of a new spent fuel pool would require the fuel to be handled multiple times. (2/19/04 Tr. at 215-16). Moreover, because no other facility in the United States has added a spent fuel pool to an existing reactor site, there are many unknowns and uncertainties that would add considerable time to the licensing process. (2/19/04 Tr. at 216). Thus, DNC found that building a new spent fuel pool was not a feasible alternative for managing its spent fuel requirements.

DNC also considered the possibility of interunit transfer. (1/7/04 Tr. at 159-60; 1/20/04 Tr. at 96). Interunit transfer would involve taking spent fuel from the Unit 2 spent fuel pool and storing it in the Unit 3 spent fuel pool. (DEP Comment Letter at 3). Although this would provide for some additional spent fuel storage capacity in the Unit 2 spent fuel pool, this alternative would also more quickly use the existing capacity of the Unit 3 spent fuel pool. (App. Exh. 16, Resp. No. 21; 12/15/03 Tr. at 67; 1/7/04 Tr. at 149). There is not sufficient open space

in the Unit 3 spent fuel pool to accommodate all of the spent fuel assemblies that will be discharged during the current license periods for Units 2 and 3. (App. Exh. 5, Resp. No. 8; App. Exh. 7 at 2; DEP Comment Letter at 3). As a result, interunit transfer would only delay but would not eliminate the need for the ISFSI. (App. Exh. 5, Resp. No. 8; App. Exh. 7 at 2; 1/7/04 Tr. at 160; 1/20/04 Tr. at 96; DEP Comment Letter at 3).

Interunit transfer would also require the Unit 2 spent fuel to be handled multiple times. (App. Exh. 5, Resp. No. 8; App. Exh. 7 at 2; App. Exh. 16, Resp. No. 21; 12/15/03 Tr. at 67, 98; 1/7/04 Tr. at 160; DEP Comment Letter at 3). The spent fuel would be discharged from the Unit 2 reactor into the Unit 2 spent fuel pool. From there, the Unit 2 spent fuel assemblies would then be packaged and moved to the Unit 3 spent fuel pool. Those same assemblies would then eventually be loaded into a DSC and transported either to the ISFSI or the federal repository. (12/15/03 Tr. at 98; 1/7/04 Tr. at 160-61). Currently, the Unit 2 and Unit 3 spent fuel pools are only permitted to accept spent fuel from their respective generating units. In order to move the spent fuel from the Unit 2 spent fuel pool to the Unit 3 spent fuel pool, DNC would have to seek and the NRC would have to approve a license amendment for Unit 3. (App. Exh. 5, Resp. No. 8, App. Exh. 16, Resp. Nos. 21, 23). This could not be accomplished in time to ensure that DNC could maintain full core reserve in Unit 2 following the Spring 2005 refueling outage and could impact the continued operation of Unit 2. (App. Exh. 5, Resp. No. 8; 1/7/04 Tr. at 150-51). Given that interunit transfer would simply delay and not eliminate the need for an ISFSI, DNC did not view interunit transfer as feasible or prudent alternative for managing its spent fuel requirements.

The most feasible and prudent alternative considered involved the installation of a dry



storage system as proposed in the Application. First, dry storage is a proven method of storing spent fuel in use in the United States since 1986.<sup>7</sup> Second, the use of a dry storage installation would not require an amendment to the NRC license for any of the Millstone generating units or an additional spent fuel pool. Third, the use of dry storage would reduce the number of times that the spent fuel would be handled. (12/15/03 Tr. at 98). Once the spent fuel is placed in the DSCs, the DSCs can be loaded into transportation casks and taken from the ISFSI to a federal repository. As a result, DNC determined that dry storage was the preferred alternative to meet its spent fuel management requirements.

In its review of the Application, the DEP similarly considered alternative methods of spent fuel storage and concluded that dry storage was the preferred alternative. (DEP Comment Letter at 2-3).

## 2. Other Spent Fuel Management Alternatives

During the proceeding, other spent fuel management alternatives were explored including: (a) reprocessing of the spent fuel; and (b) transshipment of the spent fuel to another location.

Currently, reprocessing is not commercially available in the United States. (12/15/03 Tr. at 122). As a result, DNC would be unable to ship its spent fuel to any location within the United States for reprocessing.

Transshipment of the Millstone spent fuel to another storage location would face certain regulatory impediments and would not eliminate the need for the ISFSI. For instance, it was suggested that DNC should consider shipping its spent fuel to ISFSIs located at Dominion's

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<sup>7</sup> In fact, dry storage systems are currently being used at approximately 25 nuclear reactor sites in the United States and are currently planned for use at an additional 15 nuclear reactor sites. (App. Exh. 1, p. 7).

North Anna and/or Surry power stations in Virginia. In order for DNC to ship its spent fuel to North Anna or Surry, the receiving nuclear plant would be required to obtain a license amendment from the NRC that would allow that facility to accept Millstone's spent fuel. (App. Exh. 14, Resp. No. 16; 1/7/04 Tr. at 99-100, 102). In addition, the approvals issued by Louisa County for the North Anna ISFSI and by Surry County for the Surry ISFSI include specific conditions that only allow for North Anna spent fuel to be stored at North Anna and Surry spent fuel to be stored at Surry. Consequently, the county approvals would also have to be modified in order for Millstone spent fuel to be stored at North Anna or Surry. (App. Exh. 14, Resp. No. 16; 1/7/04 Tr. at 102).

### 3. Alternatives To Design Of ISFSI As Proposed In Application

During the proceeding, several alternatives to the design of the ISFSI as proposed in the Application were also explored including: (a) installation of a berm around the ISFSI; and (b) burial of the ISFSI.

Placing a berm around the ISFSI is also not a feasible and prudent alternative to the construction of the ISFSI as proposed in the Application. First and foremost, a condition requiring DNC to place a berm around the ISFSI is unnecessary. A berm is traditionally used for one of three purposes – to reduce the radiological dose emitted from a dry storage system; to reduce the visibility of a system; or to reduce the impacts from accident conditions and/or natural phenomena. As the Council is aware, radiological safety is within the exclusive jurisdiction of the NRC and, thus, a condition requiring a berm to reduce radiological dose would be beyond the Council's authority. The ISFSI designed for Millstone, however, includes a shield wall system as part of the individual HSMs. This shield wall serves the same purpose as an earthen or gravel berm by reducing radiological dose. (1/20/04 Tr. at 226).

A berm is also not required to reduce the visual impact of the ISFSI. As discussed above, the visual impacts from the proposed ISFSI are minimal. From most locations surrounding the ISFSI Site, views will be obstructed by changes in topography, existing vegetation (mature trees) and the existing power generating facility. (App. Exh. 1, pp. 19-20). Lastly, the berm is not necessary to reduce the impacts from accident conditions and natural phenomena. As part of its NRC certification process, the NUHOMS® System was analyzed for numerous naturally-occurring and manmade events. (App. Exh. 11 at 2; *see also* App. Exh. 5, Resp. No. 13). Based on these analyses, the NRC adopted certain design parameters for the NUHOMS® System and determined them to be appropriate for the safe storage of spent nuclear fuel. (App. Exh. 1, p. 12; App. Adm. Not. 1; 12/15/03 Tr. at 39-40).

Second, the addition of a berm to the ISFSI Site would increase the overall size of the area that would have to be developed and would result in significant impacts to the environment. However, the potential gains from the berm (e.g., reduced visual impact) are not sufficient to warrant these additional environmental impacts. An earthen berm that would surround the ISFSI Site would be approximately 92 feet wide at the base, 22 feet tall and would encroach into the designated wetland area on the Property to the east of the SAP parking lot. (2/19/04 Tr. at 187). Furthermore, in order to install an earthen berm, DNC would have to relocate the rail spur and the access road to the east. As a result, DNC would lose its vehicle access point to the Protected Area. (2/19/04 Tr. at 187). Additionally, because the Protected Area fence would be on the outside of the earthen berm, the fence would extend well into the wetland area on the Property. (2/19/04 Tr. at 187-88). Moreover, the installation of an earthen berm would also require approximately 70,000 cubic yards of fill, which would require DNC to import approximately 53,000 more yards of fill

than will be available on-site. (2/19/04 Tr. at 188).

Burial of the ISFSI is also not a viable alternative. The NUHOMS® System has not been designed or certified for burial by the NRC. (App. Exh. 14, Resp. No. 12; 1/7/04 Tr. at 131-32). In fact, DNC is not aware of any dry storage system that has been certified for burial by the NRC. (1/7/04 Tr. at 125, 132-33).

#### 4. Alternative Locations For ISFSI

As discussed in Section IV.A above, DNC also considered several alternative sites for the location of the ISFSI. (App. Exh. 1, Attach. 6; App. Exh. 9 at 1). As part of its initial review, DNC considered four alternative locations on the Property but outside the current Protected Area. (App. Exh. 1, Attach. 6). Each of these locations was evaluated based on four criteria: (a) radiological compliance; (b) physical site suitability; (c) environmental effects; and (d) security. After reviewing these criteria, DNC determined that the ISFSI Site proposed in the Application was the best location. (App. Exh. 1, Attach. 6).

Furthermore, DNC also considered alternative locations within the existing Protected Area for the location of the ISFSI. (App. Exh. 1, Attach. 6). Much of the area within the Millstone Protected Area is already encumbered by buildings and related structures associated with nuclear power generation activities. (App. Exh. 9 at 1). DNC determined that this approach was not feasible because: (a) there was no contiguous area available that would allow construction of the ISFSI; (b) difficulties would be presented from a security and spent fuel storage management perspective; and (c) inability to satisfy the NRC requirements for siting an ISFSI. (App. Exh. 9 at 1).

In the Municipal Orders, the Town Conservation Commission suggested moving the location of the ISFSI closer to the existing Protected Area fence and under the Unit 2

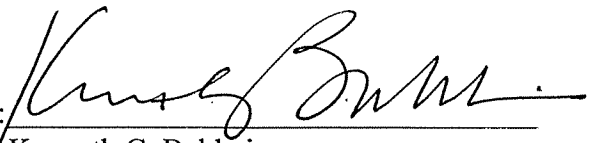
transmission lines. (App. Exh. 3, Attach. 3; App. Exh. 15). OSHA imposes certain restrictions on construction activities under energized lines. (App. Exh. 1, p. 29; App. Exh. 5, Resp. No. 12; 12/15/03 Tr. at 183). As a result of the anticipated construction activity (e.g., cranes, hydraulic excavators, etc.), it would be difficult, if not impossible, to prepare the site, construct the ISFSI and install the dry storage units in accordance with applicable OSHA requirements below the existing Unit 2 and Unit 3 transmission lines. (App. Exh. 5, Resp. No. 12). Moreover, it is not feasible for the Unit 2 and/or Unit 3 transmission lines to be de-energized during periods of construction activity because the Technical Specifications, which are part of the NRC operating licenses for Units 2 and 3, require that the transmission lines be energized *at all times* except when the units are fully shutdown or during refueling. (App. Exh. 5, Resp. No. 12). In addition, de-energizing the Unit 2 and Unit 3 transmission lines for extended periods to accommodate ISFSI construction would disrupt the flow of electricity generated by Millstone to the New England power grid. (App. Exh. 5, Resp. No. 12).

All of the foregoing demonstrates that there is no feasible and prudent alternative to the use of the proposed ISFSI itself or the proposed ISFSI Site that is consistent with the reasonable requirements of public health, safety and welfare. Conn. Gen. Stat. § 22a-19(b).

**VIII. CONCLUSION**

Based on the evidence contained in the record, the Applicant has satisfied the criteria in Connecticut General Statutes Section 16-50p. Furthermore, the Application does not involve conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the State. Accordingly, the modification requested in the Application is appropriate and fully consistent with PUESA and CEPA. Therefore, the Council should approve the Application as submitted.

Respectfully submitted,  
DOMINION NUCLEAR CONNECTICUT,  
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**CERTIFICATION**

This is to certify that on this 22<sup>nd</sup> day of March 2004, a copy of the foregoing was mailed,  
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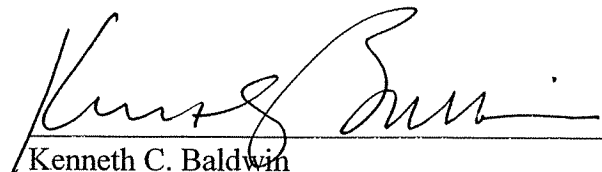
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