ENVIRONMENTAL SITE ASSESSMENT
INDEPENDENT SPENT FUEL STORAGE INSTALLATION
MILLSTONE POWER STATION
DOMINION NUCLEAR CONNECTICUT
WATERFORD, CONNECTICUT

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EXECUTIVE SUMMARY

This Environmental Site Assessment ("ESA") evaluates Dominion Nuclear Connecticut, Inc.'s ("DNC's") proposed construction and operation of an Independent Spent Fuel Storage Installation ("ISFSI") at the Millstone Power Station ("Millstone"), located in the Town of Waterford (the "Town"), New London County, Connecticut. The ESA has been prepared to support DNC's filing with the Connecticut Siting Council ("CSC" or the "Council").

The ISFSI is planned for location in the southerly portion of the 520-acre Millstone property (the "Millstone Property"), in an area that is currently developed as an employee parking lot.

The ISFSI is planned for construction in phases; however, most of the site work required for full build-out will be performed during the initial phase. The principal elements of the ISFSI project (the "ISFSI Project") include:

- Develop the approximately 2-acre area to support the ISFSI (the "ISFSI Site"). ISFSI Site preparation work will involve site grading, and localized over-excavation and replacement of site soils to improve the soil dynamic properties, followed by site development work (e.g., installation of concrete pads).

- Improve an approximately 4-acre Equipment Laydown Area, which may be used to support the ISFSI construction activities. The Equipment Laydown Area abuts the ISFSI Site and also is located in the existing parking area.

- Construct a haul path (paved road) to the ISFSI Site.

- Remove and transport excess soil (generated from the ISFSI Site grading and excavation) to a Soil Placement Area, located in a central portion of the Millstone Property north of the Amtrak railroad line.

- Realign the existing Security Protected Area ("PA") fence to encompass the ISFSI Site, haul path, and Equipment Laydown Area.

The first phase (Phase I) of the ISFSI Project is expected to be accomplished during 2004, and will include the construction of a concrete pad for 20 Horizontal Storage Modules ("HSMs"). The ISFSI Site will be designed to support a total of 135 HSMs at full build-out. However, no definitive schedule for subsequent phases has yet been established, and the HSMs will be added on an as-needed basis.

The ISFSI Site has been carefully sited and designed to avoid significant environmental impacts and to avoid adverse effects on environmental resources in general. As such, the potential impacts to natural resources considered in this study are those typically associated with land development (e.g., grading, drainage, wetlands, etc.) and are related to the construction and siting of the facility.

The salient characteristics of the project with respect to environmental resources are:

- The ISFSI Project is located on previously disturbed, upland portions of the Millstone Property, and will not directly affect any inland wetlands, watercourses, tidal wetlands, coastal resources, terrestrial or marine biological resources, adjacent land uses, or sensitive community areas (e.g., schools, public parks/forests, health care facilities).

- Although the ISFSI Site is located within the designated coastal boundary, the project is consistent with previously established management guidelines for Millstone. In particular, the Town and the State of Connecticut have established that Millstone is a facility of national interest because it is necessary to provide for future energy needs in Connecticut, and has a water-dependent use pursuant to the Connecticut Coastal Management Act.

- The ISFSI Project will result in short-term and localized impacts (principally limited to the period of construction) to noise and traffic; such impacts will be mitigated by adherence to the Town's noise ordinance and by minimizing construction equipment movements to the extent practical.

- The ISFSI will have a minor effect on visual resources in the vicinity of Millstone, since the developed facility will generally not be visible from publicly accessible areas and the aesthetic environment is already substantially affected by the highly visible power generation facilities.

- The design of the ISFSI Project (e.g., grading plan, site plan, stormwater management plan) reflects due consideration for the preservation of nearby water resources.

1.0 INTRODUCTION

Dominion Nuclear Connecticut, Inc. ("DNC") proposes constructing an Independent Spent Fuel Storage Installation ("ISFSI") at the Millstone Power Station ("Millstone"). Millstone is located in the Town of Waterford (the "Town"), New London County, Connecticut. Figure 1-1 presents a Locus Plan.

The ISFSI project (the "ISFSI Project") is planned for construction in phases. However, most of the site work required for full build-out will be performed during the initial phase. The ISFSI Project, which is discussed in detail in the following section, will involve the following principal elements:

- Development of the approximately 2-acre area to support the ISFSI (the "ISFSI Site"). ISFSI Site preparation work will involve site grading, and localized over-excavation and replacement of site soils to improve the soil dynamic properties, followed by site development work (e.g., installation of concrete pads).

- Improvement of an approximately 4-acre Equipment Laydown Area, which may be used to support the ISFSI construction activities. The Equipment Laydown Area abuts the ISFSI Site and also is located in the existing parking area.

- Construction of a haul path (paved road) to the ISFSI Site.

- Removal and transport of excess soil (generated from the ISFSI Site grading and excavation) to a Soil Placement Area, located in a central portion of the Millstone Property north of the Amtrak railroad line.

- Realignment of the existing Security Protected Area ("PA") fence to encompass the ISFSI Site, haul path, and Equipment Laydown Area.

The ISFSI Site, haul path and Equipment Laydown Area, are all contiguous. The Soil Placement Area is located in the central portion of the Millstone Property, north of the Amtrak railroad line.

The locations of these features in relation to other facilities at Millstone are shown on Figure 1-2.

This Environmental Site Assessment ("ESA") was completed to support DNC's submission to the Connecticut Siting Council ("CSC" or the "Council") for construction of the ISFSI. This report (the "Report") provides a summary description of the proposed project; evaluates existing environmental resources on and in the vicinity of the ISFSI Project; analyzes certain environmental impacts associated with the construction and operation of the ISFSI; assesses the consistency of the project with coastal resource policies; and identifies measures that will be applied to mitigate or avoid adverse environmental effects from the ISFSI Project.

In general, the environmental resources on and in the vicinity of the Millstone Property have been extensively studied during the last 30 years, as part of the permitting, construction and operation of Millstone, as well as in conjunction with facility modifications that have occurred. Various long-term environmental monitoring programs, conducted pursuant to Millstone's permits and certificates, provide additional comprehensive environmental resource information. In addition, the Town has adopted special guidelines relative to the management of land and coastal resources at Millstone.

The ESA draws upon, and references, this existing environmental database, as appropriate. Also, due to the location of the project within upland portions of the Millstone Property that have been devoted to power generation purposes since the early 1970s, certain environmental resources will clearly not be impacted by the project and thus are not described in detail in the Report. These include regional/municipal land use, marine resources, freshwater aquatic resources, and cultural resources.

GZA also performed drainage and wetlands studies as part of the assessment and design of the ISFSI Site. These studies are presented under separate cover in the *Drainage Report* and *Wetlands Report*, both dated May 2003. *Site Plans*[1] detailing the existing conditions and proposed grading, drainage and soil erosion and sediment controls have also been prepared. These documents are referenced in the Report.

2.0 PROJECT DESCRIPTION

2.1 SITE DESCRIPTION

All construction components of the ISFSI Project, including the ISFSI Site, the haul path, the Equipment Laydown Area and the Soil Placement Area are located on upland portions of the Millstone Property that have been previously disturbed and developed.

The ISFSI Site is approximately 92,000 square feet (approximately 2 acres) in size. The area is abutted to the east by an existing asphalt-paved access road. The ISFSI Site is currently developed as a parking lot, consisting principally of asphalt and gravel surfaces. Active high voltage electrical transmission lines (transmitting electricity generated at the station) are present directly north and southwest of the ISFSI Site. Existing grades within the storage area range from about Elevation 28[2] to Elevation 19, and slope to east-southeast.

The Equipment Laydown Area is about 157,350 square feet (approximately 4 acres) in size and is located immediately west of the ISFSI Site. This area, which is currently developed as an asphalt and gravel paved parking lot, will not be changed by the proposed development, with the exception of minor drainage improvements. Existing grades within

[1] Site Plans, Millstone Power Station, Independent Spent Fuel Storage Installation, Dominion Nuclear Connecticut, 2003

[2] Elevations presented in the Report are in units of feet and are referenced to the National Geodetic Vertical Datum of 1929.

the Equipment Laydown Area range from about Elevation 32 to about Elevation 22 and slope to the east-southeast.

The Soil Placement Area, which was used in the past for equipment laydown, currently consists of a stone, gravel, loam and grass surface. The area is abutted to the south by Amtrak train rails, to the west by the asphalt-paved Millstone Access Road and to the north by an existing ball field. The area proposed for excess soil placement is approximately 5-acres in size and is relatively flat, except along the eastern end of the site where it slopes down to the east.

2.2 PROPOSED CONSTRUCTION

The ISFSI Site will be developed in phases. The pad and approach apron, constructed to support the 20 Phase I Horizontal Storage Modules ("HSMs"), will cover an area of approximately 12,000 square feet (approximately 0.3 acre). However, most of the site work required for full build-out will be performed during Phase I, in order to minimize the extent of construction required in the future. The portion of the ISFSI Site not covered with concrete pads or aprons during Phase I will be graded and covered with a gravel surface.

The Phase I construction will generally include the following:

- Site preparation, including stripping of existing topsoil and pavement within the ISFSI Site;
- Removal and/or abandonment of existing drainage utilities;
- Re-grading within the limits of the ISFSI Site;
- Over-excavation and replacement of soil beneath the concrete pads, to improve the soil's dynamic properties (and resultant seismic response);
- Construction of a concrete retaining wall at the northeast corner of the ISFSI Site. The wall will be approximately 350 feet in length and range in height from about 1 foot to 6 feet;
- Construction of approximately 12,000 square feet of concrete pad and apron;
- Construction of new drainage structures;
- Construction of approximately 500 feet of asphalt-paved roadway, for the new haul path; and
- Construction of new protected area security fencing.

Earthwork for the Phase I construction will include excavation to achieve proposed grades, re-grading, over-excavation of some existing material considered unsuitable for foundation support, replacement with a stable backfill material or concrete, and import of clean structural fill. Excess or natural unsuitable material generated during construction, will remain within the Millstone Property and be placed in the designated Soil Placement Area. Topsoil, excavated soil and boulders will be relocated to the Soil Placement Area. Asphalt, concrete, etc. may be taken off-site as appropriate.

It is expected that approximately 550 cubic yards of clean structural fill and 600 cubic yards of gravel/crushed stone (for a total amount of 1,150 cubic yards) will be imported during Phase I to provide a sound base for the pad, apron and new haul path. Construction of the Phase I pads and aprons will require placement of approximately 1,500 cubic yards

of reinforced, structural concrete. At this time, it is expected that ready-mix concrete will be imported for use as structural concrete for the pads, aprons and retaining wall.

As noted above, earthwork will include excavation to achieve the proposed ISFSI Site grades, as well as over-excavation and replacement of soil beneath the pads to improve seismic response. The soil beneath the pads will be over-excavated to bedrock and replaced with low strength, non-structural concrete or stable backfill material. A small pug mill or batch plant may be mobilized to the site (within the Equipment Laydown Area) for on-site mixing of concrete and/or stabilized soil. Alternatively, concrete may be imported.

The final design of the ISFSI Site and analysis of the existing soil will determine the extent that the existing soil can be re-used to generate the stable backfill material. If the existing soil cannot be re-used for stable backfill material, the amount of excess and unsuitable soil placed at the Soil Placement Area during Phase I would be about 10,000 cubic yards. If the existing material can be re-used as stable backfill, the amount of excess soil placed at the Soil Placement Area during Phase I would be about 3,000 cubic yards.

In general, the nature of the construction will be similar to that associated with small commercial developments (with the exception of the over-excavation and replacement of unsuitable material). Construction is expected to occur during normal daytime work hours. Construction traffic will enter and egress the plant at the main plant entrance, and travel along the existing plant access road.

Construction activities for future project phases would include:

- Additional excavation of soil for construction of additional concrete pads and aprons;
- Modification of some of the drainage structures constructed during Phase I;
- Construction of the additional concrete pads and aprons; and
- Delivery and assembly of the HSMs.

Full build-out, if required, would generate about 7,000 cubic yards of additional excess material that would be relocated to the Soil Placement Area. Approximately 5,000 additional cubic yards of concrete would also be required to achieve full build-out.

Soil generated during construction and brought to the Soil Placement Area will be placed in controlled lifts that match the existing ground contours. The area will be hydro-seeded during Phase I and after each phase of build-out. The area is capable of taking all the excess soil from a full build-out.

The existing drainage structures within the vicinity of the ISFSI Site will be abandoned and/or removed. New drainage structures will be constructed, which will drain the ISFSI Site, the Equipment Laydown Area and the upslope areas that are currently drained by the existing utilities to be removed. Similar to the existing drainage structures, the new drainage will discharge at the location of the existing 30-inch diameter outlet DSN 011, located east of the ISFSI Site. The concrete pads and aprons will typically be drained with trench drains. During Phase I, the areas outside of the concrete pads and apron will be

drained with catch basins and piping. Appropriate sedimentation and erosion controls will be used during construction at all disturbed areas, including the Soil Placement Area.

2.3 RELATED STUDIES

Detailed drainage and wetlands studies have been performed by GZA as part of the site evaluation and design. The results of these studies are presented under separate cover.

In 2001, the property ownership was transferred to DNC. The ISFSI Project areas were not identified as Areas of Concern in studies of the Millstone Property performed in connection with the transfer pursuant to the Connecticut Transfer Act.

3.0 ENVIRONMENTAL SETTING

This section discusses the environmental site setting on, and in the vicinity of, the ISFSI Site, the 4-acre Equipment Laydown Area, the haul path, and the Soil Placement Area.

3.1 TOPOGRAPHY, GEOLOGY, SOILS AND GROUNDWATER

3.1.1 Topography

Millstone is located on a small peninsula near the mouth of the Niantic River, in a region characterized by north-south trending ridges and valleys. The peninsula slopes gently upward from Long Island Sound to the north, to a maximum elevation of about 100. The ground surface in the vicinity of the ISFSI Site, the Equipment Laydown Area, and the haul path, which are all contiguous, slopes gently to the east-southeast. As noted above, grades in this area range from about Elevations 32 to 19. The surface topography of Millstone Point is indicated on Figure 1-2.

3.1.2 Geology

The geology at the Millstone Property consists typically of glacial till overlying bedrock of the Monson Gneiss and Westerly Granite formations. At the southwestern portion of the Millstone peninsula, glacial stream deposits overlay the bedrock, and at the southern tip of the peninsula artificial fill is present.

The area of the ISFSI Site is underlain by glacial till and Westerly Granite. A recent geotechnical study of the ISFSI Site (ref. Geotechnical Study, Dry Storage Project, Millstone Nuclear Power Plant, by Dr. Clarence Welti, dated December 2002) indicates that bedrock is encountered at elevations ranging from about Elevation 7 to Elevation 14.5, corresponding to depths of about 6.5 feet to 28 feet below existing grade. The glacial till typically consists of a well-graded, poorly sorted sand and gravel with about 10 to 30 percent fine-grained soil (silt). One to 2 feet of sand fill is present throughout the area, above the glacial till.

3.1.3 Soils

According to the Soil Survey of New London County, Connecticut, surface soils at the ISFSI Site, the Equipment Laydown Area and the Soil Placement Area are mapped *Ud* for the *Udorthent* soil type. This soil type represents landforms that have been permanently reshaped for development. Their soil profile is generally without distinguishing characteristics because the soil strata were recently formed as a result of development activities. The *Ud* soil unit is generally associated with well-drained to moderately well-drained, non-wetland soil types. Surface soils at the area east of the ISFSI Site (east of the existing rail spur) consist of Charlton-Hollis fine sandy loam (CrC).

3.1.4 Groundwater

Groundwater flow at the Millstone Property is typically limited to the overburden soils; little to no groundwater flow has been observed in the bedrock (ref. MNPS-3, part 2.4, page 2.4.2, 1984). Based on the site topography and the results of previous site studies, it is inferred that groundwater at the IFSFI flows in a south-southeast direction, toward a fresh water pond located about 200 feet east of the ISFSI Site and Long Island Sound. Test borings were performed in the vicinity of the ISFSI as part of the geotechnical investigation for the project. Groundwater was observed in the test borings at depths of about 2.5 to 9 feet below existing ground surface, corresponding to elevations ranging from about Elevation 21 to Elevation 10.

3.2 WATER RESOURCES

The Millstone Property is bordered by Niantic Bay to the west, Jordan Cove (a cove and small estuary separated by a sand spit) to the east, and Long Island Sound to the south. Both Niantic Bay and Jordan Cove discharge into Long Island Sound (ref. Millstone 3 FES, Section 4.3.1.1, p. 4-9 1984).

The ISFSI Site will be situated to the east of the power generating units, and approximately 400 feet to the northwest of Jordan Cove and about 0.5 mile southwest of the Jordon Cove estuary, at their closest points. The ISFSI Site is bordered by the existing Access Road. The area east of the ISFSI Site (and Access Road) consists of lawn and a rail spur (single track). There are no watercourses, inland wetlands, or tidal wetlands on the ISFSI Site. The Jordan Cove estuary is a shallow estuary which is fed by one primary freshwater inlet (i.e., Jordan Brook) and several intermittent freshwater brooks (ref. Jordan Cove Analysis Program 1997-1998, D.W. Gerwick Engineering and Aqua Solutions, January 1998, p.14). The un-named freshwater pond is located approximately 200 feet east of the ISFSI Site, at its closest point. A dam is present at the southern end of the pond, with an overflow discharge to Long Island Sound.

The proposed Soil Placement Area is located in the central portion of the Millstone Property, east of and adjacent to the Millstone Access Road, directly north of the Amtrak railroad corridor and south of a baseball field. This upland area, which was previously

used as a soil and construction laydown area, is located approximately 0.3 mile east of Niantic Bay and 0.4 mile northwest of Jordan Cove. There are no wetlands or watercourses within the proposed Soil Placement Area.

Although there are no wetlands or watercourses on the ISFSI Site or the Soil Placement Area, the following describes the water resources in the project vicinity.

3.2.1 Watershed Area

The ISFSI Site is located within the Southeast Coast Basin, one of eight major drainage basins in Connecticut. The Southeast Coast Basin generally encompasses the coastal and near-coastal areas east of the Connecticut River Basin and west of the Pawcatuck Basin, exclusive of the Thames River Basin (ref. Connecticut Department of Environmental Protection Water Quality Classifications Map, issued December 1986 and updated in 2003).

The Connecticut Department of Environmental Protection ("DEP") has subdivided each of the eight major basins into subregional watersheds. Within the Southeast Coast Basin, the Millstone Property lies within the Waterford Subregional Basin. This subregional watershed encompasses approximately 5,046 acres bordered by Jordan Cove on the east and Niantic Bay on the west, and includes Jordan Brook, which feeds Jordan Cove. Apart from Jordan Brook, there are no major streams or rivers within the Waterford watershed, although a number of small brooks and wetlands drain into Jordan Brook, Jordan Cove and Niantic Bay.

In the vicinity of the ISFSI Site, surface water flows are generally to the east-southeast, toward Jordan Brook and Jordan Cove (ref. University of Connecticut CES and DEP, November 2, 1999).

The DEP has further divided the Waterford Subregional Basin into waterbody segments. The Jordan Cove segment (DEP waterbody segment No. = CT2201-E 01) encompasses approximately 1.1 square miles (DEP, Connecticut 2002 Water Quality Report to Congress Appendices D and E).

As discussed further in Section 4.0 of the Report, the ISFSI Project will not significantly change or adversely affect water flow within the watershed.

3.2.2 Surface Water Quality

There are no surface water resources on either the ISFSI Site or the proposed Soil Placement Area. However, as indicated on the *Site Plans* and the *Wetlands Report*, inland wetlands are located about 150 feet east of the ISFSI Site (east of the rail spur and Access Road); the un-named freshwater pond borders these wetlands and is situated about 200 feet east of the eastern border of the ISFSI Site. Jordan Cove is located approximately 400 feet to the southeast of the ISFSI Site. No tidal wetlands are located in the immediate vicinity (or within 500 feet) of the ISFSI Site. A designated tidal wetland area is located

approximately 0.3 mile northeast of the ISFSI Site. Similarly, although there are no inland wetlands located on the proposed Soil Placement Area, wetlands have been identified in the vicinity. The freshwater pond, as well as the tidal wetlands and inland wetlands (as indicated on Town plans) are indicated on Figure 1-2 (refer also to the summary description of Inland Wetlands and Watercourses in Section 3.3 as well as to the tidal wetlands discussion in Section 3.4.3). The *Wetlands Report* and the *Site Plans* present the locations and details of the field-mapped inland wetlands in the vicinity of the ISFSI Site (which were not reflected on the large-scale Town plans).

The DEP has classified the coastal and marine surface water quality in portions of Jordan Cove, Niantic Bay, and the portions of Long Island Sound near Millstone as SA, signifying designated use for marine fish, shellfish and wildlife habitat, harvesting of shellfish for direct human consumption, recreation, and all other legitimate uses, including navigation. The water quality in the northern portions of Jordan Cove, as well as the tidally influenced portions of Jordan Brook and the Niantic River, is identified as SB/SA, indicating that the ultimate water quality goal of SA has not yet been met. The SB classification signifies designated uses for marine fish, shellfish and wildlife habitat, shellfish harvesting for transfer to approved areas for purification prior to human consumption, recreation, industrial and other legitimate uses, including navigation.

Similarly, the water quality in the upper reaches (freshwater portions) of Jordan Brook is classified as B/A. This inland water classification indicates suitability for recreational use, fish and wildlife habitat, agricultural and industrial supply, and other legitimate uses, including navigation. However, the brook's water quality does not support public drinking water use (DEP Water Classification Map, Thames River, Pawcatuck River, and Southeast Coast Basins, 1986 [updated 2003] and DEP Summary of the Water Quality Standards and Classifications).

As discussed further in Section 4.0 of the Report, the ISFSI will not adversely affect the water quality of these surface water resources.

3.2.3 Flood Zones

The Federal Emergency Management Agency (FEMA) classifies flood zones for flood insurance and floodplain management purposes. This information is used at all levels of government in an effort to protect human health and property. FEMA has prepared maps (Flood Insurance Rate Maps [FIRM]) that delineate areas subject to flooding frequency during key storm events. For example, an area within the 100-year flood designation has a 1 in 100 probability of flooding during a given storm event.

According to FEMA, the most severe flooding in the Town occurs during hurricanes or coastal storms, which can create abnormally high tidal surges, wave run-up and peak runoff (ref. p. 6, FEMA Flood Insurance Study, Town of Waterford, Connecticut, August 4, 1980 in Millstone Nuclear Power Station Unit 3, Environmental Report Operating License Stage, Questions and Responses, Volume 4). As illustrated by Figure 3-1, FEMA classifies the ISFSI Site as being within Zone X, within an area outside the

500-year floodplain. The Soil Placement Area is also located within an area classified as Zone X, outside the 500-year floodplain (FEMA, FIRM Waterford, Community Map #090107 0015D, September 5, 1990).

3.2.4 Groundwater Quality

The DEP has classified groundwater in the general vicinity as GA, indicating designated uses such as private and potential public/private water supplies suitable for drinking without treatment and baseflow for hydraulically connected surface water bodies (DEP Water Classification Map, Thames River, Pawcatuck River, and Southeast Coast Basins, 1986 [updated 2003] and DEP Summary of the Water Quality Standards and Classifications).

3.2.5 Water Supply

Most of the Town, including Millstone and surrounding areas, is served by public water, supplied from the Lake Konomoc reservoir (located in the towns of Waterford and Montville) through the City of New London's system.

3.2.6 Stormwater Management

The Millstone plant area has a storm drainage system in compliance with DEP regulations. This system is independent of the Town's municipal system (Town of Waterford Order, Supplemental Information, March 18, 1985).

Surface runoff in the vicinity of the ISFSI Site flows in a general northwest to southeast direction. Stormwater is conveyed as sheet flow and is collected by one of seven catch basins located throughout the existing parking lot. Once collected in these catch basins, stormwater is conveyed via a 30-inch diameter reinforced concrete pipe (RCP), which discharges at outlet DSN 011. Stormwater discharged from the outlet is conveyed via a small drainage swale to the existing freshwater pond located east of the ISFSI Site. The total net contributory drainage area to the existing 30-inch diameter RCP, from its origin to the outlet, is approximately 24 acres.

Modifications to the existing drainage are proposed. These modifications are detailed in GZA's *Drainage Report* and the *Site Plans*. As discussed further in Section 4.0 of the Report, these drainage modifications will not adversely affect the peak run-off or water quality.

3.3 INLAND WETLANDS AND WATERCOURSES

Inland wetlands and watercourses on the Millstone Property were generally mapped in conjunction with analyses of other studies (e.g., as depicted on the Figure 1-2, which was generated from information presented on the Town of Waterford Millstone Point Site Map, March, 1985). To verify the locations of specific wetlands in relation to the ISFSI Project area, an inland wetlands and watercourses survey was conducted during December 2002.

This survey, which was performed by a Professional Soil Scientist, involved the field delineation and characterization of inland wetland boundaries within and proximate to the ISFSI Site. Wetland boundaries were flagged and subsequently surveyed.

The results of the wetland survey are presented in the *Wetlands Report*. Wetland boundaries are depicted in this report and on the *Site Plans*. As this information shows, there are no inland wetlands on the ISFSI Site. The ISFSI Site is also located outside the 100-foot Town of Waterford Upland Boundary Review Area.

In January 2003, a reconnaissance was also performed of the proposed Soil Placement Area. This reconnaissance, which was conducted when the ground surface was visible (i.e., no snow cover), confirmed that the site is an upland area that has been previously disturbed. The Millstone Point Site Map (as indicated on Figure 1-2) indicates that inland wetlands are located immediately east of the Soil Placement Area.

3.4 COASTAL AREA

Because of its location adjacent to Niantic Bay, Jordan Cove, and Long Island Sound, the Millstone Property, as a whole, includes various coastal resources. These coastal resources are described below.

3.4.1 Coastal Boundary

The ISFSI Site is within the coastal boundary, as designated by the State of Connecticut and the Town. The Soil Placement Area is not located within the designated coastal boundary. Figure 1-2 indicates the location of the coastal zone boundary as indicated on the Millstone Point Site Map, in relation to these areas.

The coastal boundary, as defined by Connecticut's Coastal Management Act ("CCMA") and by the Town, extends to an area delineated on the landward side by the elevation of the 100-year coastal flood zone or a 1,000-foot setback from the mean high water mark in coastal waters, or a 1,000-foot setback from tidal wetlands, whichever is farthest inland (Raymond et. al March 1982). The seaward side of the coastal boundary corresponds to Connecticut's jurisdiction within Long Island Sound.

3.4.2 Coastal Resources

In accordance with Connecticut General Statutes (C.G.S.) Section 22a-93(14)(G), electric generating facilities such as Millstone are facilities which are deemed to be in the national interest. In addition, Millstone has been designated as a "water dependent use" pursuant to the CCMA. Millstone is operated in accordance with the coastal management policies of the Town and Connecticut to protect facilities and resources that are in the national interest (ref. Millstone 3 FES, p. 4-2, Section 4.2.2, December 1984; and Coastal Area Management Findings for Unit #3 Closeout Millstone Point, Condition 3, May 1985).

The CCMA sets forth specific policies and standards applicable to the resources within the coastal boundary and to the evaluation of activities and plans relevant to the coastal area. Federal, state, and local agencies must follow these policies and standards when evaluating proposed developments in the coastal area. In addition, the CCMA identifies 14 coastal resources that have been mapped on a statewide basis. These resources are:

- Coastal bluffs and escarpments
- Rocky shorefronts
- Beaches and dunes
- Tidal wetlands
- Freshwater wetlands and watercourses
- Intertidal flats
- Coastal hazard areas
- Developed shorefront
- Islands
- Shorelands
- Shellfish concentration areas
- Coastal waters and estuarine embayment
- Air resources and air quality
- General resources.

The CCMA also gives priority to new shorefront development projects that require waterfront locations, and discourages the conversion of existing water-dependent facilities to non-water dependent uses.

The Town's *Municipal Coastal Program* (Raymond et. al, March 1982), as updated by the Town's 1998 *Plan of Preservation, Conservation & Development* (Plan), identifies the coastal resources in the community and establishes resource preservation and coastal use policies.

The coastal resources in the vicinity of the ISFSI Site, as indicated on the Millstone Site Map, are depicted on the Figure 1-2. DEP coastal resources mapping identifies the

portion of Jordan Cove near the ISFSI Site as "coastal bluffs and escarpments" (E); and "beaches and dunes" (B), which are generally characterized as moderately sloping shores comprised of water worked sand, gravel or cobble. Other coastal resources in the Millstone Point–Jordan Cove area include "rocky shorefront" (R), "freshwater wetlands" (F), "tidal wetlands" (T), and "modified bluffs and escarpments" (mE).

The ISFSI Site is classified as "shorelands", the coastal resource most suitable for development. Shorelands are identified as areas within the coastal boundary, where elevations exceed the 100-year flood zone. (DEP Coastal Resources Map, Niantic Quadrangle, 1979 and Northeast Utilities, Millstone Point Site Map, March 1985).

3.4.3 Tidal Wetlands

The ISFSI Site is located in an upland area approximately 400 feet northwest of the Jordan Cove, at its closest point. Based on the DEP coastal resources mapping, as well as Millstone's coastal resources data, there are no intertidal flats or tidal wetlands mapped within Jordan Cove in the area immediately east of the ISFSI Site, and there are no tidal wetlands within 500 feet of the ISFSI Site. The closest tidal wetland is located about 0.3 miles northeast of the ISFSI Site.

3.5 ECOLOGICAL RESOURCES

3.5.1 Terrestrial Resources

General Description of Resources on the Millstone Property

The terrestrial flora and fauna on the Millstone Property have been surveyed and described in detail in conjunction with previous activities at Millstone. In general, these surveys revealed that the portions of the Millstone Property that are not developed encompass a variety of habitats that support a range of wildlife.

Prior to the development of Millstone, most of the Millstone Property was cultivated or logged. As a result, the Millstone Property currently encompasses various vegetative communities in different successive stages. In 1973-1974 and again in 1977, vegetation on the Millstone Property was surveyed and classified into nine major vegetation communities: old field, mesic hardwood, riparian hardwood, coastal marsh, transmission line corridor, xeric hardwood, abandoned nursery, Bay Point (including a picnic/recreation area for Millstone employees), and beach. In 1999, the vegetation communities on the Millstone Property were resurveyed to document changes subsequent to the studies conducted in the 1970s. The 1999 survey revealed that as a result of both normal successive changes and man-made modifications associated with power facility operations (e.g., construction of buildings, parking lots), there are now six, rather than nine, distinct vegetative communities on the Millstone Property. These six communities, which are expected to continue to advance through successive stages, include: old field, mesic hardwood, coastal marsh, transmission line corridor, Bay Point, and beach. The mesic hardwood community remains the dominant vegetative community on the Millstone

Property. The three communities no longer represented on the Millstone Property (riparian hardwood, xeric hardwood, and abandoned nursery) have generally either changed to mesic hardwood or been supplanted by industrial-related uses.

Overall, the vegetative communities on the Millstone Property support a diversity of wildlife species, most of which are common to the southern New England region. Numerous waterfowl also frequent the areas near Millstone, and the entire Connecticut coastline is part of the Atlantic Coast Flyway for migratory birds.

In addition, nine nesting platforms for osprey are maintained at Millstone Point. These platforms are not located in the immediate vicinity of the ISFSI Site. From 1969 – 2001, 170 osprey have been produced from nests on these platforms.

ISFSI Site

The ISFSI Site was formerly used as a construction laydown area and is presently used for employee parking. Transmission lines from the power generation stations traverse above portions of the ISFSI Site. The ISFSI Site is a highly disturbed area that presently has little or no vegetation and no value as wildlife habitat.

The principal vegetative community in the immediate vicinity of the ISFSI Site is mesic hardwood, which characterizes the area to the east of the Access Road and rail spur. In this area, inland wetlands are also found (ref. *Wetlands Report)*. The vegetative beach community, found along Jordan Cove, is located approximately 400 feet southeast of the ISFSI Site.

Soil Placement Area

Like the ISFSI Site, the area proposed for excess soil placement has been highly disturbed as a result of past use as a construction laydown area. On the Millstone Site Vegetation Map, the Soil Placement Area is designated as a soil laydown area, with no plant community designation. However, the principal vegetative community in the immediate vicinity is mesic hardwood. A reconnaissance of the Soil Placement Area, conducted in January 2003, found that the vegetation there is limited to scattered clumps of herbaceous species.

3.5.2 Marine Resources

The ISFSI Site is located in upland portions of the Millstone Property. The Niantic Bay, Jordan Cove, and Long Island Sound, located in the vicinity of the ISFSI Site, provide habitat for a diverse assemblage of marine resources.

In conjunction with the construction and operation of the existing Millstone facilities, extensive aquatic sampling programs have been implemented to characterize the marine resources in the vicinity of Millstone Point. These programs, some of which date

to 1968, have involved studies of phytoplankton, zooplankton, ichthyoplankton (fish eggs), benthic species, shellfish, lobster, and finfish.

Approximately 90 species of finfish have been recorded in the Millstone area since sampling commenced in the late 1960s. Of these, commercially or recreationally important species include: Atlantic menhaden, silver hake, white perch, striped bass, butterfish, bluefish, winter flounder, scup, and tautog. Other ecologically important species found in the area include sand lance, killifishes, silversides, windowpane flounder, and cunner.

The marine waters in the region near Millstone have also been designated as Essential Fish Habitat ("EFH") for various federally managed marine and anadromous fish species. According to the National Marine Fisheries Service ("NMFS") *Guide to Essential Fish Habitat*, the region in the general vicinity offshore from Millstone is designated as EFH for Atlantic salmon, pollock, red hake, winter flounder, windowpane flounder, Atlantic sea herring, bluefish, king mackerel, Spanish mackerel, cobia, sand tiger shark, dusky shark, and bluefin tuna. EFH is generally defined by the Magnuson-Stevens Fishery Conservation and Management Act as waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity. Factors important to the maintenance of EFH generally include the protection of water quality, vegetated habitat (particularly submerged aquatic vegetation ["SAV"]), and benthic community structure, among others (NMFS May 2002).

There are no commercial shellfish beds in the immediate vicinity of Millstone. Soft-shell clams are found sporadically in the area and bay scallops and quahogs are found in the shallow subtidal areas of Jordan Cove. Some shellfish are harvested for recreational purposes in the Jordan Cove area (Millstone 3 FES, p.4-15, Section 4.3.5.2); in addition, shellfish may be transferred from Jordan Cove to grow-out beds located in other areas.

As discussed in more detail in Section 4.0 of the Report, the ISFSI Project will not affect marine resources.

3.5.3 Rare, Threatened, and Endangered Species

Based on a review of the DEP Natural Diversity Data Base ("NDDB") maps for the Niantic Quadrangle, there are species of concern that have been recorded in the general vicinity of the Millstone Property. However, previous environmental analyses of facilities at Millstone have indicated that there are no Federally-listed or proposed terrestrial or aquatic species of concern known to occur at the ISFSI Site.

In the general vicinity of Millstone, the Jordan Cove Spit is listed as a potential nesting habitat for the Federally-listed threatened Piping Plover, as well as the Least Tern, a State-listed threatened species (DEP and The Nature Conservancy, September 2001). However, the ISFSI Project will not affect the Spit, which is located in Jordan Cove, northeast of the ISFSI Site.

Further, as indicated in an April 1, 2003 letter from the DEP Natural Diversity Database, the ISFSI Project will not affect extant populations of Federal or State endangered, threatened or special concern species.

3.6 RECREATIONAL VALUES

The Millstone Property is privately-owned and is not available for public recreational purposes. Within the Millstone Property, the ISFSI Site is located within a parking area that has no recreational attributes.

However, in the vicinity of Millstone, Long Island Sound, Niantic Bay/Niantic River, and Jordan Cove provide the principal public recreational opportunities for activities such as fishing, boating, swimming, and nature viewing. The State maintains a boat launch and associated parking area in Jordan Cove, off Dock Road (p. 38, Plan).

The Jordan Cove Spit (a sand bar that protrudes into the northeastern portion of the cove) also is a popular recreational fishing location. This spit, which was recently donated to the State by the Jewett City Trust, is a secondary dune system, which is considered a rare occurrence in Connecticut. Originally a 14-acre peninsula, the spit now consists of about 6 acres and is breached in two places by the tide, thereby creating a peninsula and two islands (DEP and The Nature Conservancy, September 2001).

In addition to these water-based recreational opportunities, the easternmost portion of the Millstone Property abutting Jordan Cove is dedicated to open space. In the forested area surrounding the pond directly east of the ISFSI Site, a nature trail and associated wildlife viewing area have been developed. Although formerly open to the public, the open space area, employee recreation/picnic areas and nature trail have now been closed to public access to accommodate security considerations.

Recreational facilities in the vicinity of the Millstone Property include ball fields (baseball and soccer) along Gardiners Wood Road, located northeast of the ISFSI Site. Other notable Town open space in the general area includes the New London Country Club (about 1.5 miles northeast of Millstone) and Harkness Memorial State Park, which abuts Long Island Sound approximately 2.5 miles east of Millstone.

The Dr. William A. Niering Natural Area Preserve, which is located west of and adjacent to Harkness Memorial State Park, consists of approximately 80 acres of state-owned land along Goshen Cove and Long Island Sound. Formerly referred to as the Goshen Cove Natural Area Preserve, the area was renamed in honor of Dr. Niering in December 2000 and consists of open grassland, a tidal cove and salt marsh, and a coastal dune and sandy beach, among other coastal communities. Connecticut's Natural Area Preserve Program is administered by the DEP and encompasses more than 6,700 acres. The Dr. William A. Niering Natural Area Preserve is the only such area in the general vicinity of the Millstone project. Parcels of land designated as Natural Area Preserves must consist of an area of "land or water containing or potentially containing, plant or animal life or features of biological, scientific, educational, geological, paleontological or scenic value worthy of

preservation in their natural condition"; detailed management plans are developed for each area in order to protect the unique species and communities (DEP December 2000).

The Town considers its entire shoreline a scenic area (p. 37, Plan).

Table 3-1 lists the designated parks and recreation areas in the region surrounding the ISFSI Project; these facilities are illustrated on Figure 3-2.

As discussed further in Section 4.0 of the Report, the ISFSI will have no direct impacts on designated forests, parks, natural area preserves or other recreational areas.

3.7 LAND USE AND LOCAL AND STATE LAND USE PLANS

The ISFSI Site is located entirely within the Millstone Property, which is identified as a public utility use in the Town's Plan (p. 19, Plan). Lands in the immediate vicinity of the Millstone Property are used primarily for open space, single-family residential purposes, and as public/private institutional uses. Local, regional, and state land use plans also address the use of Millstone Point for power generation purposes.

The Town's Plan, identifies the Town's objectives for the future growth of the community and recommends policies to achieve such goals. Reflecting input from both the public and regional and state agencies (e.g., the DEP, Southeastern Connecticut Council of Governments), the Plan includes goals and policies for Waterford in the following areas:

- Community structure;
- Natural resource protection;
- Coastal areas;
- Open space;
- Housing and residential areas;
- Business and economic development;
- Community facilities and services;
- Transportation;
- Infrastructure; and
- Special issues (e.g., historic preservation, design review). (Plan resolution, Plan p. 2)

The Plan incorporates the recommendations from each of these categories and provides a roadmap for the Town's long-term development.

The Plan's goals and policies that are potentially relevant to the ISFSI Project include those pertaining to natural resource protection, coastal areas, open space, and future land use planning. None of the Town's other goals or policies, as stated in the Plan, are related to, or would be affected by, the proposed ISFSI Project.

In particular, the Plan cited the protection of coastal areas and natural resources, as well as the preservation of open space, as among the priority issues for the town (p.9, Plan). Further, the Plan identified specific goals and policies for the focus of future community and resource planning efforts in the Town. With respect to natural resources protection, coastal resources, and open space, the Plan summarizes the Town's policies as follows:

Natural Resource Conservation

"Continue to preserve, protect, and enhance important natural and biological resources.

- Continue to protect and improve the town's important fresh-water resources (surface water and ground water).
- Preserve key scenic vistas and areas within Waterford.
- Continue efforts to enhance environmental quality." (p. 10, Plan)

The Town's *Natural Resources Conservation Plan* (p. 31, Plan) identifies most of the Millstone Property as having both "significant" and "important" conservation opportunities, based on the presence of various natural resource functions such as beaches; watercourses; special species, habitats, or scenic areas; soils that limit the potential for development, etc. (p. 30, Plan). The Plan identified the continued protection and improvement of water quality as a key community goal, and cited various mechanisms to be implemented to achieve this goal (e.g., stormwater management, aquifer regulations) (p. 32, Plan). In addition, the Plan sets as a goal the identification and preservation of scenic vistas and areas, including the Town's entire coastline and coastal areas (p. 34, Plan).

Coastal Resources

"Continue to preserve, protect, and enhance coastal areas that are one of the unique and defining characteristics of Waterford.

- Protect the town's coastal water bodies, wetlands, fragile shoreline environment, and other important coastal resources.
- Address the specific needs and issues of coastal areas.
- Continue to restore coastal areas in Waterford." (p. 10, Plan)

The Town's coastal area and resource definitions are consistent with state statutes (Connecticut General Statutes 22a-93 and 22a-94) (p. 36, Plan).

Open Space

"Provide for adequate open space to meet present and future needs.

- Establish a coordinated open space /greenbelt system and a comprehensive trail system in Waterford.
- Set aside funds in the annual budget to acquire open space.
- Encourage private ownership of open space." (p. 10, Plan)

The Town defines open space as land that is preserved or dedicated to recreation and conservation purposes, such as agriculture, parks, natural areas, forests, fishing, wetland preservation, wildlife habitat, golf, boating, swimming, and historic and scenic preservation (p. 42, Plan).

In the immediate vicinity of Millstone, the only areas identified as open space in the Town's *Open Space Plan* (Plan, p. 45) are located adjacent to Jordan Cove, northeast and east of the Millstone Property. These include the sand spit in Jordan Cove (used principally by fishermen) and the area near Pleasure Beach and the state boat ramp off Dock Road.

Future Land Use Planning

The chapter on *Future Land Use Plan* is presented in the Plan (p. 99, Plan). As part of the Town's planning effort, the *Future Land Use Plan* was compared to, and determined to be consistent with, both the *1998-2003 State Plan of Conservation and Development* and the *1997 Regional Plan of Development for the Southeast Connecticut Council of Governments* (p. 101, Plan).

The *Future Land Use Plan* identifies the Millstone Property for continued use for electric generation, with isolated areas delineated as for natural resources protection. The ISFSI Project is not within any of the identified natural resources areas.

3.8 TRANSPORTATION

The region in the vicinity of Millstone is served by a network of interstate, state, and local roads, as well as by rail and air transportation.

The principal highways serving Waterford include Interstates 95 and 395, Boston Post Road (U.S. Route 1), State Route 85, Great Neck Road (State Route 213), and Rope Ferry Road (State Route 156). Rope Ferry Road, which provides direct access to the Millstone Property, is an arterial road, whereas other streets in the immediate Millstone vicinity are classified as local or collector streets (p. 77, Plan). These are shown on Figure 3-3.

One airport is located within approximately 6 miles of Millstone: the Groton–New London Airport is located in the City of Groton, approximately 6 miles east of Millstone. The

former Waterford-New London Airport is situated about 4.3 miles northeast of Millstone in the Town of Waterford. The Groton–New London Airport provides commercial service, whereas the Waterford–New London Airport formerly offered facilities only for small private aircraft.

The primary East Coast rail corridor for Amtrak and Conrail traverses east – west through the Millstone Property, effectively serving as a division between the intensively developed southern portion of the site (where all primary power generating facilities are located) and the northern portion of the site (which is largely undeveloped).

The Soil Placement Area abuts the railroad corridor and was formerly used as a laydown area during Amtrak construction activities. A rail spur traverses along the eastern boundary of the ISFSI Site.

As discussed further in Section 4.0 of the Report, the operation of the ISFSI will not have any adverse effects on the transportation system.

3.9 RESIDENTIAL AREAS, SCHOOLS, HOSPITALS, AND GROUP HOMES

As part of previous studies of Millstone construction activities and operations, land uses and various community facilities within about a 6-mile radius (10 km) of the ISFSI Site were identified and mapped. Table 3-2 and Figures 3-4 and 3-5 incorporate and update these analyses, identifying the educational facilities and hospitals/group health care facilities within an approximately 6-mile (10 km) radius of the ISFSI Site.

As discussed further in Section 4.0 of the Report, the ISFSI will not directly affect residential areas, schools, daycare facilities, hospitals or nursing homes.

3.10 NOISE

The noise environment in the vicinity of Millstone was characterized in conjunction with previous studies of the power station (e.g., Millstone Unit 3 Environmental Report Operating License Stage, Volume 2, Section 2.7, pp. 2.7-1 through 2.7-3, Tables 2.7-1 through 2.7-3, and Figures 2.7-1 and 2.7-2). Figure 3-6 indicates the location of the noise monitoring stations used in this previous study. The land uses in the vicinity of the power station, as well as the power station operations, have remained relatively the same since the completion of these studies[3]. As a result, the ambient sound levels recorded during the previous monitoring studies, as summarized below, are expected to be comparatively representative of the noise environment near Millstone today.

The previous Millstone noise studies involved ambient sound monitoring at eight sites that were identified as representative of the different noise-sensitive locations in the vicinity of

[3] The MNPS-3 EROLS noise studies were conducted when Millstone Units 1 and 2 were operating and Unit 3 was under construction. Millstone Unit 1 was permanently closed in July 1998, but Units 2 and 3 remain operational.

Millstone. Of these eight monitoring sites, four were in areas substantially removed from the ISFSI Site. In particular, three were located in the Town of East Lyme, 1.6 to 2.2 miles west of Millstone and one was located along Millstone Road, approximately 0.9 mile northwest of Millstone. The monitoring studies found that noise from the power station was generally not clearly audible at these four locations. The remaining four monitoring locations were located to the east or northeast of the Millstone Property and are more relevant to the ISFSI Site.

The closest noise sensitive area to the ISFSI Site is the Jordan Cove residential neighborhood, the center of which is situated about 0.5 miles to the northeast; noise measurements were taken from two locations within this community. Other monitoring sites included the Pleasure Beach residential community (which borders Jordan Cove, approximately 1.1 miles due east of the ISFSI Site) and the residential area near Goshen Road and Perry Avenue, approximately 1.5 miles east of the ISFSI Site. At these locations, the background (residual) sound levels (represented by the L_{90} percentile level, which is the sound level exceeded 90 percent of the time), ranged from about 36 dBA to 47 dBA during the daytime and from 30 dBA to 42 dBA at night. These levels are relatively representative of suburban residential areas. For comparison, Table 3-3 lists typical sound levels associated with different types of environments and activities.

Overall, the analyses demonstrated that the sound levels associated with the operation of Millstone's electric generating facilities are audible in the vicinity of Jordan Cove and Pleasure Beach, but are sometimes masked by other noise sources (e.g., traffic, wind). However, the total plant noise contribution is less than the day-night sound level (Ldn) of 55 dBA (equivalent to a constant level of 49 dBA), which the EPA has established as a general goal that exterior noise levels should not exceed in order to protect public health and welfare (MNPS-3 EROLS, Volume 2, Section 5.6.1, pp. 5.6-1 to 5.6-2).

As noted previously, the ISFSI is a passive system that does not have any noise producing equipment associated with its operation.

3.11 VISUAL RESOURCES

Although the Town's coastal area is, in general, highly scenic, the existing aesthetic environment in the vicinity of Millstone Point is significantly influenced by the high visibility of the power generation facilities, which dominate the landscape in terms of both mass and scale. For example, the Unit 1 turbine building is 90 feet in height, whereas the gas turbine building is approximately 26 feet tall. The Millstone stack is prominent from various locations in nearby coastal areas, as well as from Jordan Cove, Niantic Bay, and Long Island Sound.

The ISFSI Site is located within a developed portion of the Millstone Property. Prominent visual features in the immediate vicinity include the power generation facilities, support buildings, and multiple overhead transmission lines and transmission towers.

A visual resources survey of the vicinity of the ISFSI Site was performed by others.

3.12 CULTURAL RESOURCES

The ISFSI Project is within previously disturbed portions of the Millstone, where the potential for locating intact archaeological resources is limited and where the visual context of standing historic structures, to the extent visible to/from the ISFSI Site, has already been altered by the presence of the power generating facilities.

DNC has consulted with the Connecticut Historical Commission ("CHC") concerning the project. In a letter dated March 24, 2003, the CHC confirmed that the ISFSI Project will have NO EFFECT on historic, architectural or archeological resources listed on or eligible for the National Register of Historic Places.

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

This section discusses the potential direct or indirect impacts that the ISFSI Project will have on environmental resources. Measures that DNC proposes to mitigate potential adverse environmental impacts associated with the construction and operation of the ISFSI are identified briefly, as appropriate, and detailed in Section 6.0 of the Report.

As discussed in greater detail in Section 2.0 of the Report, the development of the ISFSI Site will require the following:

- Conversion of the existing parking lot for the installation and subsequent operation of the HSMs, as well as for use as the Equipment Laydown Area;
- Construction of the paved haul path;
- Drainage improvements; and
- Extension of the existing Security Protected Area perimeter to encompass the entire ISFSI Site, the Equipment Laydown Area and the haul path.

The only portion of the ISFSI Project that will be located outside of the Security Protected Area will be the Soil Placement Area. Because this area was previously used as a construction laydown area, no work will be necessary to prepare the area for spoil storage/disposal, apart from the installation of appropriate erosion and sedimentation controls.

Overall, as the following sections demonstrate, because the ISFSI Site will be located in an upland area within the Millstone Property, on a portion of the Millstone Property already designated for continued use for electric-generation purposes, the project will not result in significant adverse environmental impacts.

4.1 TOPOGRAPHY, GEOLOGY AND SOILS

Because the ISFSI Site is located within the Millstone industrial area that has already been altered by the installation of the parking area, access road, and overhead transmission lines and associated towers, the development of the ISFSI Project will have a minimal effect on physical resources (i.e., topography, geology, soils).

As discussed in detail in Section 2.0 of the Report, site preparation work will be required for the project. Such work will involve excavation and grading to create a relatively level and uniform area and to achieve the grades illustrated on the *Site Plans*. Over-excavation and replacement of unsuitable soils will also be required. Excess and unsuitable soils will be transported to the Soil Placement Area.

All activities involving soil disturbance and soil movement will be performed in accordance with Best Management Practices ("BMPs") to minimize the potential for erosion and sedimentation. Suitable erosion and sedimentation control measures will be installed both at the ISFSI Site and at the Soil Placement Area. Blasting is not expected to be required. Localized dewatering may be required for construction. The *Site Plans* detail the proposed BMPs and present a Soil Erosion and Sediment Control Plan.

4.2 WATER RESOURCES

The ISFSI Project will not adversely affect water resources, water quality, floodplains, or stormwater management.

In particular, the ISFSI Project is sited in an upland area, outside of the 100-year floodplain, and will not directly impact any water resources (refer also to Sections 4.3 and 4.4). Soil erosion and sediment controls will be implemented in accordance with Connecticut guidelines during project construction to assure that indirect impacts to water resources do not occur (e.g., as a result of the water- or wind-induced erosion of disturbed soils into off-site areas). Erosion and sediment controls will be deployed, as appropriate, around disturbed soils at the ISFSI construction site, as well as at the Soil Placement Area. A Soil Erosion and Sediment Control Plan is included in the Site Plans and will be implemented during project construction to address run-off and dewatering (if required) and to minimize the potential for inadvertent releases of fuels, lubricants, and other materials used in the site development process.

No aquifers or public drinking water supplies will be affected by the ISFSI Project.

As indicated in the *Drainage Report*, the ISFSI Site contributory drainage area encompasses approximately 24-acres, and is currently comprised of developed upland areas, some wooded low-lying areas and an existing parking lot. Runoff is currently conveyed through this area via a 30-inch diameter RCP trunkline drainage system, which outlets to a surface swale (DSN 011) to the east of the ISFSI Site, beyond the existing rail spur. Drainage improvements will consist of abandoning the existing trunk line and

replacing it with new drain lines. The outlet point for runoff rerouted from areas upgradient of the ISFSI, as well as from the Access Road and ISFSI Site will remain the same (DSN 011).

Runoff characteristics will remain nearly identical to existing conditions, in terms of infiltration potential as well as magnitude, timing, and volume of runoff. Peak rates of runoff under the design storm condition are expected to increase about 5 percent or less. This increase is not appreciable, as it will not materially increase water surface profiles or flooding potential to the small impoundment located immediately downstream from the ISFSI Site.

The drainage system will be equipped with various BMPs, consistent with Connecticut guidelines, in the form of deep catch basin sumps and environmental hoods, an energy dissipator (at the outlet) and grassed swales. These BMPs will provide for improvement in overall sediment removal efficiency. Erosion and sedimentation controls have been incorporated during construction and are discussed within the report and presented on the *Site Plans*.

The operation of the ISFSI will not affect water resources. In particular, the ISFSI does not have any industrial discharges to surface water or groundwater. Further, no water resources are required to operate the system. The operation of the ISFSI will not result in environmental impacts to stormwater runoff generated at, or traversing, the ISFSI Site.

4.3 INLAND WETLANDS AND WATERCOURSES

As detailed in the *Wetlands Report*:

- No permanent impacts and no net loss of wetlands or watercourses will occur as a result of the proposed construction and development.

- No changes are proposed to the area of the freshwater pond and bordering wetlands.

- There will be temporary impact during construction to one delineated watercourse area (outlet DSN 011) as part of the proposed drainage improvements. These improvements include replacement of the existing 30-inch diameter concrete culvert with a new outlet and headwall. The new outlet will be constructed with a lower invert. This work will not involve any significant re-grading in the vicinity of the culvert or within the existing downgradient drainage swale. Velocity dissipation and erosion protection will be provided.

- Accepted erosion and sedimentation control practices will be employed to minimize the potential for off-site movement of disturbed soils into nearby wetlands. An Erosion and Sediment Control Plan has been prepared and will be implemented during the construction of the project.

4.4 COASTAL RESOURCES

Although located within the coastal boundary, the ISFSI will not affect tidal wetlands, coastal resources, or coastal resource use policies. As discussed in Section 5.0 of the Report, the ISFSI Project is consistent with both State and local coastal management policies that have been established for Millstone.

4.5 ECOLOGICAL RESOURCES

The ISFSI Project will not directly affect any important vegetative communities or significant terrestrial or marine biological resources.

With respect to terrestrial biological resources, both the ISFSI Site and the Soil Placement Area are uplands that have been previously disturbed; presently support only sparse herbaceous vegetation; and have no habitat value. Neither the construction nor the operation of the ISFSI Project will affect the diverse terrestrial habitats located elsewhere on the Millstone Property.

Similarly, the ISFSI Project will not affect marine resources. Although within the designated coastal boundary, the ISFSI Project will not affect any designated coastal resources, tidal waters, vegetated marine habitat, or marine fish, shellfish, or benthic species. The ISFSI Project will not involve any work in tidal or tidally-influenced areas, and will not involve any discharge to coastal waters. The ISFSI Project will not impact any EFH or submerged aquatic vegetation (SAV).

The ISFSI Project will be designed, constructed, and operated to avert or minimize indirect impacts to ecological resources. The principal indirect adverse effects on ecological resources that could occur as a result of the project pertain to off-site erosion or sedimentation. However, during construction, appropriate erosion and sedimentation controls will be installed around work areas. Stormwater drainage from the ISFSI Site will be designed to flow into an existing vegetated swale which discharges into the existing freshwater pond located east of the ISFSI Site.

The ISFSI Project is not expected to affect any species designated as threatened, endangered, or special concern by either the State or the federal governments. As indicated in Section 3.5.3, the DEP Natural Diversity Database has confirmed, by letter dated April 1, 2003, that the ISFSI Project will not affect extant populations of Federal or State endangered, threatened or special concern species.

4.6 RECREATIONAL VALUES

The ISFSI Project will have no effect on the use of the ball fields in the northeast corner of the Millstone Property. Further, because of its location within previously disturbed portions of the Millstone Property, which is designated for power generation purposes, the

ISFSI Project will have no direct impacts on designated forests, parks, natural area preserves, or other recreational areas.

The ISFSI Site may be visible to those pursuing recreational activities in Jordan Cove. The extent to which the facility will be visible will likely depend on the season (i.e., higher potential visibility in winter in the absence of vegetation screening), as well as on the viewer's perspective. However, given the location and scale of the ISFSI Site within the already developed Millstone Property, it is unlikely that views of the project will adversely affect recreational experiences in the Jordan Cove area (refer also to Section 4.11).

4.7 ADJACENT LAND USES AND LOCAL/STATE LAND USE PLANS

As discussed in Section 3.7, the ISFSI Project is located within a portion of the Millstone Property that is designated for power generation purposes in local, regional, and State plans. The development and operation of the ISFSI is consistent with the continued use of Millstone for such purpose. In addition, Millstone is identified in the Town's Future Business and Economic Development Plan (p. 61, Plan) as an electric generation facility.

The ISFSI Project is located within the Millstone Property; as a result, all adjacent land uses are devoted to industrial or power generation purposes.

4.8 TRANSPORTATION

The construction and operation of the ISFSI will have minor effects on local vehicular traffic, whereas the operation of the facility is not expected to have any adverse effects on the transportation system. In addition, the traffic circulation internal to the facility (including emergency access ways) will not be impacted.

The construction and operation of the ISFSI will not require the creation of any new parking spaces. In fact, the existing facility parking can accommodate the loss of the existing parking spaces due to construction of the ISFSI Site over an existing parking lot. The operation of the ISFSI will not result in any increased vehicle trips per day.

Construction will temporarily increase traffic due to: 1) construction worker vehicle traffic; and 2) truck traffic associated with the import of soil and concrete. The temporary traffic impacts from the ISFSI Project construction will be consistent with past, routine construction and contractor operations at the plant and are not considered significant. Truck traffic associated with the ISFSI Project will be required to use designated truck routes and to adhere to regulations regarding load weight.

Because the operation of the ISFSI is expected to require no additional personnel, no long-term changes to traffic patterns will occur.

4.9 RESIDENTIAL AREAS, SCHOOLS, HOSPITALS AND GROUP HOMES

The ISFSI will be located entirely within previously disturbed portions of the Millstone Property and thus will not directly affect residential areas, schools, daycare facilities, hospitals, or nursing homes. However, during the construction of the ISFSI Site, construction-related traffic and noise may cause temporary and short-term indirect effects (i.e., nuisances) in the residential areas and at certain health care facilities located near the Millstone Property. These may include the Bayview Health Care and Haven Health Center of Waterford, both located on Rope Ferry Road.

The operation of the ISFSI will not have any adverse effects on residential areas, schools, daycare centers, hospitals, or other type of health care facilities.

4.10 NOISE

The construction of the ISFSI Site will affect sound levels in the immediate vicinity. However, neither the construction nor the operation of the ISFSI will have a significant effect on ambient sound levels beyond the Millstone Property boundaries.

The Town has adopted a noise control ordinance (Title 9, Public Peace, Morals & Welfare; Section 9.06, Noise Control) that is similar to State noise regulations (C.G.S. 22a-73). This local ordinance defines daytime versus nighttime noise periods; classifies noise zones based on land use; and identifies noise standards for each zone. Table 3-4 summarizes the Town's noise zone standards, by receptor noise classification. In general, the ordinance specifies that noise emitters must not cause the emission of excessive noise beyond the boundaries of their noise zone so as to exceed the allowable noise levels on a receptor's land.

The ISFSI Project will be consistent with the Town's noise regulations.

4.10.1 Construction Noise

Construction-related noise impacts will be short-term (lasting only for the duration of the construction period) and will generally stem from the operation of construction equipment, truck traffic, earth moving, etc. These impacts will be limited to the daytime hours when construction is underway.

Noise sensitive sites (receptors) include residences, schools, and designated recreational areas. The extent of a noise impact to humans at a sensitive receptor is dependent upon a number of factors, including the change in noise level from the ambient; the duration and character of the noise; the presence of other, non-project sources of noise; people's attitudes concerning the project; the number of people exposed to the noise; and the type of activity affected by the noise (e.g., sleep, recreation, conversation). There is an increased human sensitivity to noise during sleeping hours (at night).

The impact of construction-generated noise also will depend on the original sound level of the noise source. Standard types of construction equipment are expected to be used for the ISFSI Project.

Taking into consideration the factors which will cause an increase in sound levels to cause annoyance at noise sensitive receptors, the following procedures may be applied during construction to minimize noise effects at sensitive receptors:

1. Engine-powered construction equipment will be properly muffled and maintained to minimize excessive noise. Such equipment will not be permitted to operate or idle unnecessarily near noise-sensitive receptors. Efforts will be made to modify construction schedules to mitigate noise impact on sensitive sites.

2. Mechanized equipment will be used typically during a work week of Monday through Saturday. Exceptions to this schedule may occur when critical operations or extreme circumstances require a deviation.

3. If excavation activities like rock hammering must be conducted, efforts will be made to schedule or muffle the activities to minimize noise and vibration disturbances.

Overall, the development of the ISFSI Project will result in sound levels that are typical of construction projects. Due to the distance between the ISFSI Site and noise sensitive receptors (i.e., the residences adjacent to Jordan Cove), and the presence of other sources (including Millstone Units 2 and 3) that contribute to background noise in the area, sound from the project construction is not expected to be significantly audible at the nearest residences and is expected to be consistent with existing background sounds.

4.10.2 Operational Noise

The ISFSI is a passive system that does not have any noise producing equipment associated with its operation; therefore the operation of the ISFSI will result in no additional noise. All activities will be contained within the Security Protected Area, and thus will not be near any noise-sensitive receptors.

4.11 VISUAL RESOURCES

The ISFSI Site will be located in a developed portion of the Millstone Property, where it can be expected to have a minor incremental, but long-term, effect on the visual environment. As indicated on the *Site Plans*, the HSMs will be approximately 20'7" in height – substantially lower than the power generation units that presently dominate the Millstone Point visual environment.

As noted previously, pursuant to the requirements of Conn. Gen. Stat. § 16-50p and the Siting Council's Application Guide, a visual impact assessment of the ISFSI Project was

conducted by others. The ISFSI Site will likely be visible from portions of Jordan Cove and from the residential areas on the eastern side of the cove, particularly during the winter when there is minimal vegetation screening. However, because the ISFSI Site will be dwarfed by the scale and mass of the existing Millstone power generation/transmission facilities, the project's overall effect on visual resources will be limited.

The ISFSI Project will not affect any vegetation that presently serves to screen the Millstone Property from Jordan Cove and other areas to the east. For example, the ISFSI Project will not impact the buffer and plantings that exist along the coastal area. This buffer area can be expected to provide visual screening, particularly during the spring, summer, and fall.

4.12 AIR QUALITY

Potential short-term and highly localized impacts to air quality will result from the operation of construction equipment and from additional vehicular movements as workers travel to and from the ISFSI Site. These impacts will be minimized by assuring that equipment is properly maintained.

Additional potential impacts to air quality will result primarily from fugitive dust generated during construction activities. Because dust is heavier than most other components of air and thus settles out quickly, it is expected that impacts from fugitive dust will be contained on-site and will be limited only to the earth-moving stage of site work.

Several measures will be implemented to minimize the amount of dust generated by construction activities. The extent of exposed/disturbed areas on the Millstone Property at any one time will be minimized. Water may be used to wet down disturbed soils as needed during construction activities. The excess soil at the Soil Placement Area will be stabilized, as necessary, by hydro seeding.

5.0 COASTAL POLICY CONSISTENCY

In accordance with C.G.S. Section 22a-93 (14)(G), electric generating facilities such as Millstone are facilities which are deemed to be in the national interest. Millstone has also been identified as a water dependent use pursuant to the CCMA.

Although the ISFSI Site is within the coastal zone boundary, the ISFSI has been designed and located, and will be constructed and operated, in conformance with state and local coastal management policies. (Note: the Soil Placement Area, although part of the ISFSI Project, is outside of the designated coastal boundary.)

Table 5-1 summarizes the relationship of the ISFSI Project to coastal resources. As this table illustrates, the ISFSI Project will not directly affect any important coastal resources. The ISFSI Site is located within a developed portion of the Millstone Property that is identified on coastal resource maps as "developed shorefront".

Table 5-2 reviews the State and local coastal use policies, identifying those that are potentially relevant to the ISFSI Project. Overall, the ISFSI Project is consistent with State and local management policies pertaining to national interest energy developments and to the Millstone Property in particular. To minimize the impacts of construction, DNC will develop and implement soil erosion and sedimentation control procedures, as well as spill prevention, containment and control measures. Grading and stormwater management plans have been designed to avoid impacts on nearby wetlands (refer to the *Site Plans*).

6.0 MITIGATION MEASURES

The ISFSI Project has been specifically designed to include various measures to mitigate or avert adverse environmental impacts, both to the environmental resources on the Millstone Property and to the surrounding community. The project is planned for location within an industrial portion of the Millstone property that is already disturbed, near the existing power generation facilities. Excess soil will be removed and placed on another previously disturbed portion of the Millstone Property, thereby avoiding the need for transport and disposal off-site.

Impacts to other environmental resources have been avoided either through the project design, or will be mitigated by the development and implementation of appropriate plans and procedures during the construction and operational phases of the project. Such mitigation measures generally include:

- Use of specific construction techniques and methods designed to limit the potential for off-site impacts (i.e., to nearby water resources) and to minimize standard construction impacts (i.e., noise, traffic congestion).

- Use of BMPs in the design, construction and maintenance of the stormwater drainage system.

- Incorporation of appropriate soil erosion and sedimentation controls to avert impacts to nearby inland wetlands.

- Adherence to strict regulatory requirements governing the operation of the ISFSI in order to protect public health and safety.

The following sections summarize the mitigation measures that have been incorporated to date into the project design, and describe the methods that may be utilized to minimize adverse impacts to environmental features during project development.

6.1 CONSTRUCTION TECHNIQUES

6.1.1 Soil and Water Resources

A Soil Erosion and Sediment Control Plan will be developed prior to the commencement of construction activities that involve earth disturbance. Adherence to this plan will be required throughout the construction period. The plan will address appropriate measures for the temporary containment and stabilization of disturbed soils (e.g., placement of silt fence and straw bales, use of temporary seeding, mulch), as well as for the permanent stabilization of construction areas not otherwise paved or built upon. The Soil Erosion and Sedimentation Control Plan will conform to State and town requirements, as applicable to the ISFSI Project site (refer to the *Site Plans* and the *Drainage Report* for detail).

A Stormwater Pollution Control Plan also will be developed prior to the commencement of construction activities. This plan will address procedures for preventing spills of fuels, lubricants, and other materials used during the construction process, and – should spills nonetheless occur – for preventing spilled materials from entering waterbodies.

6.1.2 Traffic

Construction equipment movements on public roads will be limited to that necessary to support the project. With the exception of trucks carrying imported materials (e.g., petroleum products, soil and concrete) required for the ISFSI Site, construction equipment is expected to remain on the Millstone Property for the duration of the ISFSI Phase I construction (i.e., most construction equipment will not enter and exit the Millstone Property on a daily basis).

All truck traffic will follow designated truck routes and will adhere to regulations pertaining to load limits.

6.1.3 Noise

The following procedures may be applied during construction to minimize noise effects at sensitive receptors:

1. Engine-powered construction equipment will be properly muffled and maintained to minimize excessive noise. Such equipment will not be permitted to operate or idle unnecessarily.

2. In accordance with the Town's noise control ordinance, mechanized equipment will be used typically during a work week of Monday through Saturday. Exceptions to this schedule may occur when critical operations or extreme circumstances require a deviation.

6.2 STORMWATER BEST MANAGEMENT PRACTICES

Stormwater management has been a consideration in the design of the ISFSI and will be a factor during the construction and operation of the facility.

A stormwater system has been designed specifically for the ISFSI Site (refer to the *Site Plans* and *Drainage Report*). During operation, this system will assure that runoff from the ISFSI Site is controlled and that no adverse impacts will occur to the nearby inland wetlands or to the freshwater pond.

During construction, work on the ISFSI Project will be governed by adherence to the conditions of the DEP's General Permit for the Discharge of Stormwater and Dewatering Wastewasters Associated with Construction Activity.

7.0 REFERENCES

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TABLES

TABLE 3-1
STATE AND LOCAL PARKS AND RECREATION FACILITIES
(WITHIN APPROXIMATELY 6 MILES (10 KM) OF ISFSI PROJECT)

Fig. 3-2 Key	Community	Community/Facility/Area Name	General Types Activities or Facilities
Regional Parks and Recreation Areas			
1	Waterford	Harkness Memorial State Park	Picnicking, fishing, mansion, Camp Harkness (for disabled) - year-round recreational facility designed for use by disabled individuals. Beach, picnic area, trails, cabins, horseback riding, camping
2	East Lyme	Rocky Neck State Park	Camping, swimming, fishing, picnicking, hiking
3	Groton	Fort Griswold State Park	Museums, historic sites
4	New London	Ocean Beach Park	Beach, swimming, picnic area
4A	New London	Fort Trumbull State Park	Newest state park (est. June 2002), picnic areas, historic structures
5	Groton	Submarine Force Museum	Navy submarine museum, Submarine Nautilus tours
Community-Oriented Parks and Recreational Facilities			
	Waterford		
6		Pleasure Beach	Public swimming
7		Kiddies / Beebe's Beach	Boat launch, small beach (Niantic River)
8		Waterford Beach Park	Beach, picnic, baseball, tennis
9		State Boat Launch, Dock Rd.	Boat ramp
10		Waterford Association Beach	Private beach

TABLE 3-1 (cont.)
STATE AND LOCAL PARKS AND RECREATION FACILITIES
(WITHIN APPROXIMATELY 6 MILES (10 KM) OF ISFSI PROJECT)

Fig. 3-2 Key	Community	Community/Facility/Area Name	General Types Activities or Facilities
Community-Oriented Parks and Recreational Facilities			
	Waterford		
11		Jordan Mill Park	Trails, picnicking, fishing access /access to Long Island Sound
12		Neighborhood Park	Basketball court, picnic
13		Leary Park	Baseball, softball, tennis, soccer, jogging trails, picnic area, children's playground, basketball
14		Waterford Speed Bowl	Auto racing
15		Spera Soccer Field, Little League Fields South, Babe Ruth Field	Ball fields (Gardners Wood Road)
16		Civic Triangle Park	Softball, basketball courts, trails, tot park, ice skating
17		New London Country Club	Golf
18		Stenger Farm Park	Trails, cross-country skiing, jogging, picnicking, biking
18A		Waterford High School	Baseball, soccer, football, tennis, running track, fitness trail, indoor pool, gymnasium
	East Lyme		
19		Bridebrook Park	Softball, basketball, soccer, baseball
20		McCook Point Park	Special programs
21		Veterans Memorial Park	Baseball and softball
22		Smith-Harris Park	Softball, peewee football
23		Liberty Green	Gathering space
24		Cedar Ridge Golf Course	Golf
24A		Bobrow Nature Area	Nature trails

TABLE 3-1 (cont.)
STATE AND LOCAL PARKS AND RECREATION FACILITIES
(WITHIN APPROXIMATELY 6 MILES (10 KM) OF ISFSI PROJECT)

Fig. 3-2 Key	Community	Community/Facility/Area Name	General Types Activities or Facilities
Community-Oriented Parks and Recreational Facilities			
	New London		
25		Morgan Park	Ballfields, playground
26		Greens Harbor Beach &Park	Beach, picnic area
27		Alfred Mitchell Woods & Park	Tennis, picnic area, playground
28		Caulkins Park	Softball, basketball, soccer, playground
29		Toby May Field	Tennis, basketball, playground
30		Mercer Field	Baseball, peewee football, playground
31		Bates Woods Park	Picnic area, ballfields
32		Williams Memorial Park	Sitting area
33		Riverside Park	Picnic area, basketball, river views
34		Williams Park	Sitting area
35		Downtown Waterfront Park & Walkway	Newly created walkway along downtown waterfront, harbor views
	Groton		
36		Eastern Point Beach	Swimming, beach, playing fields
37		Shennecossett Beach	Swimming, beach
38		Shennecossett Municipal Golf Course	Golf
39		George Washington Park	Baseball fields, basketball, picnic areas, playground
	Old Lyme		
40		Cross Lane Recreation Area	Ballfields, tennis, nature study

Sources: Updated from MNPS-3 EROLS, Table 2.1-27, Volume 1, Millstone 3. Data consulted included USGS Quadrangle Maps; the Waterford Recreation and Parks Commission, http://www.neighborhoodllink.com; and other Web sites pertaining to parks and recreational facilities in the communities of Groton, New London, East Lyme, and Old Lyme (e.g.,http://www.newlondonggazette.com/parks.html; http://www.town.groton.ct.us.

TABLE 3-2
SCHOOLS AND COLLEGES/UNIVERSITIES
(WITHIN APPROXIMATELY 6 MILES (10 KM) OF THE PROPOSED ISFSI PROJECT)

Fig. 3-5 Key	Name of Facility	Approx. Distance and Direction from ISFS Site	Grades
Waterford			
1	Cohanzie Elementary	7.8 km NNE	K-5
2	Great Neck Elementary	2.8 km ENE	K-5
3	Southwest Elementary	2.7 km N	K-5
4	Oswegatchie Elementary	5.0 km N	K-5
5	Clark Lane Middle School	5.8 km NE	6-8
6	Waterford High School	4.6 km NE	9-12
7	Seaside Regional Center	3.4km ESE	-
8	Baptist Bible Academy	5.1km NE	K-12
9	Children's Discovery Center	8.5km NE	PK-1
East Lyme			
10	Flanders School	7.5 km NNW	K-5
11	Niantic Center School	3.4 km WNW	K-5
12	Lillie B. Haynes School	5.8 km NW	K-5
13	East Lyme Middle School	6.1 km NW	6-8
14	East Lyme High School	7.5 km NNW	9-12
New London			
15	Edgerton School	7.0 km NE	K-5
16	Harbor School	6.2 km ENE	K-5
17	Jennings School	7.5 km NE	K-5
18	Nathan Hale School	5.8 km ENE	K-5
19	Winthrop School	8.6 km NE	K-5
20	Little Red Schoolhouse	8.2 km NE	PK
21	Bennie Dover Jackson Middle School	7.3 km NE	6-8
22	New London High School	6.7 km NE	9-12
23	Interdisciplinary School for Arts & Communication	7.4 km NE	6-8
24	St. Joseph's School	6.4 km NE	K-8
25	St. Mary's Star of the Sea School	7.4 km NE	K-8
26	The Williams School	9.0 km NNE	7-12
27	Connecticut College	9.0 km NNE	College
28	Mitchell College	6.1 km ENE	College

TABLE 3-2 (cont.)
SCHOOLS AND COLLEGES/UNIVERSITIES
(WITHIN APPROXIMATELY 6 MILES (10 KM) OF THE PROPOSED ISFSI PROJECT)

Fig. 3-5 Key	Name of Facility	Approx. Distance and Direction from ISFS Site	Grades
New London			
29	U.S. Coast Guard Academy	9.0 km NNE	College
30	University of New Haven (Ext.)	6.1 km ENE	College
Groton			
31	Colonel Ledyard School	8.5 km ENE	PreK-2
32	Eastern Point School	8.5 km ENE	PreK-5
33	Groton Heights School	9.5 km NE	3-5
34	William Seely School	10.1 km NE	K-5
35	West Side Middle School	8.9 km ENE	6-8
36	Sacred Heart School	8.8 km ENE	PreK-8
37	University of Connecticut at Avery Point	8.5 km E	College / Graduate School
Old Lyme			
38	Mill Creek School	10 km W	K-5

Sources: Updated from MNPS-3 EROLS, Table 2.1-25, Volume 1, Millstone 3Connecticut Education Directory, www.csde.state.ct.us/public/der/directory/index.htm; Roster of Independent Schools of Connecticut, www.greatschools.net, www.neasc.org/cta.htm and http://nces.ed.gov/surveys/pss/privateschoolsearch.

TABLE 3-3
TYPICAL NOISE LEVELS
(ASSOCIATED WITH DIFFERENT INDOOR AND OUTDOOR ACTIVITIES)

Outdoor Noise Levels	A-Weighted Sound Level (dBA)	Indoor Noise Levels
Jet aircraft take-off at 100 feet	+ 120	
Riveting machine at operator's position	+110	
Cut-off saw at operator's position	+100	
Elevated subway at 50 feet		
		Newspaper press
Automobile horn at 10 feet		
	+90	Industrial boiler room
Diesel truck at 50 feet		Food blender at 3 feet
Noisy urban daytime	+80	
Garbage disposal at 3 feet		
		Shouting at 3 feet
	+70	
Gas lawn mower at 100 feet		Vacuum cleaner at 10 feet
Quiet urban daytime	+60	Normal conversation at 5 - 10 feet
		Large business office
Quiet urban nighttime	+50	Open office area background level
Quiet suburban nighttime		
	+40	Large conference room
		Small theater (background)
Quiet rural nighttime	+30	Soft whisper at 2 feet
		Bedroom at nighttime

TABLE 3-4
TOWN OF WATERFORD NOISE ORDINANCES
(BY EMITTER AND RECEPTOR LAND USE CLASSIFICATION)

Noise Emitter Class	Noise Receptor Class			
	C: Industrial	**B: Generally Commercial**	**A: Residential**	**A/Night**
C: Industrial	70 dBA	66 dBA	61 dBA	51 dBA
B: Generally Commercial	62 dBA	62 dBA	55 dBA	45 dBA
A: Residential	62 dBA	55 dBA	55 dBA	45 dBA

Definitions:
Day = 7:00 AM to 9:00 PM Monday – Saturday; 9:00 AM to 9:00 PM Sunday
Night = 9:00 PM to 7:00 AM Monday – Saturday; 9:00 PM to 9:00 AM Sunday

Class C Industrial Uses: Districts zoned IP1, IP3, IG, IC
Class B Commercial Uses: Districts zoned NB, NBPO, CT, CG, WD, CR
Class A Residential Uses: Districts zoned R-20, R-40, RU-120, VR, OS, R-MF, C-MF, CT MF, I-MF

Source: Town of Waterford Noise Control Ordinance (Section 9.06 of Title 9, Public Peace, Morals & Welfare), www.waterfordct.org/.

TABLE 5-1
COASTAL LAND AND WATER RESOURCES

Coastal Resource Area*	On Site	Adjacent to Site**	Affected by ISFSI Project
Beaches and Dunes	N	N	N
Bluffs and Escarpments	N	N	N
Rocky Shorefronts	N	N	N
Intertidal Flats	N	N	N
Tidal Wetlands	N	N	N
Freshwater Wetlands and Watercourses	N	Y	Not directly affected; stormwater discharge to existing freshwater pond
Coastal Hazard Areas	N	Y	The ISFSI Site is outside of the coastal hazard area
Developed Shorefront	Y	Y	Y
Islands	N	N	N
Shellfish Concentration Areas	N	N	N
Coastal Waters and Estuarine Embayments	N	N	N
Air Resources and Air Pollution	N	N	N

*Pursuant to CTDEP Reference Guide to Coastal Policies and Definitions DEP-OLIS-GUID-200, CCMA Section 22a-93(7), and Town of Waterford Application for Coastal Site Plan Review.

**Pertains to areas surrounding 2-acre ISFSI site.

TABLE 5-2
COASTAL USE POLICIES

Coastal Use Policy Category*	Affected by ISFSI Project	Summary of Potential Effect
General Development	Y	The ISFSI will be developed within the coastal boundary, but will not adversely affect coastal water resources. By providing for the continued use of Millstone for power generation, the project is consistent with state economic initiatives.
Water Dependent Use	N	None. Millstone has been designated as a water dependent use; the proposed ISFSI is consistent with the continued use of the site for energy generation purposes.
Ports and Harbors	N	
Coastal Structures and Filling	N	
Dredging and Navigation	N	
Boating	N	
Fisheries	N	
Coastal Recreation and Access	N	
Sewer and Water Lines	N	
Energy Facilities	Y	No adverse effect will occur. The ISFSI project is consistent with the established and continuing use of Millstone for energy generation purposes.

TABLE 5-2 (cont.)
COASTAL USE POLICIES

Coastal Use Policy Category*	Affected by ISFSI Project	Summary of Potential Effect
Fuel, Chemicals, and Hazardous Materials	Y	The ISFSI project will be designed, constructed, and operated in accordance with strict regulatory requirements and best management practices that will protect the public health and safety. Construction activities will be governed by plans designed to minimize off-site erosion and sedimentation and spills of petroleum products or hazardous substances.
Transportation	N	
Solid Waste	Y	Solid waste will be generated as a result of the construction of the project. Any waste (during construction or operation) will be disposed of in accordance with appropriate federal, state, and local requirements.
Dams, Dikes and Reservoirs	N	
Cultural Resources	N	
Open Space and Agricultural Lands	N	

*Pursuant to CTDEP Reference Guide to Coastal Policies and Definitions DEP-OLIS-GUID-200, CCMA Section 22a-92, and Town of Waterford Application for Coastal Site Plan Review.

FIGURES

1"=2000'

0 1000' 2000' 4000'

SOURCE: U.S.G.S. NIANTIC, CT QUADRANGLE MAP (1983)

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION

WATERFORD, CONNECTICUT

LOCUS PLAN

2/14/03

FIGURE 1-1

FILE: G:\JOBS\42898\L72\42898-00.DCS\42898-CAD\DWG\LOCUS.DWG

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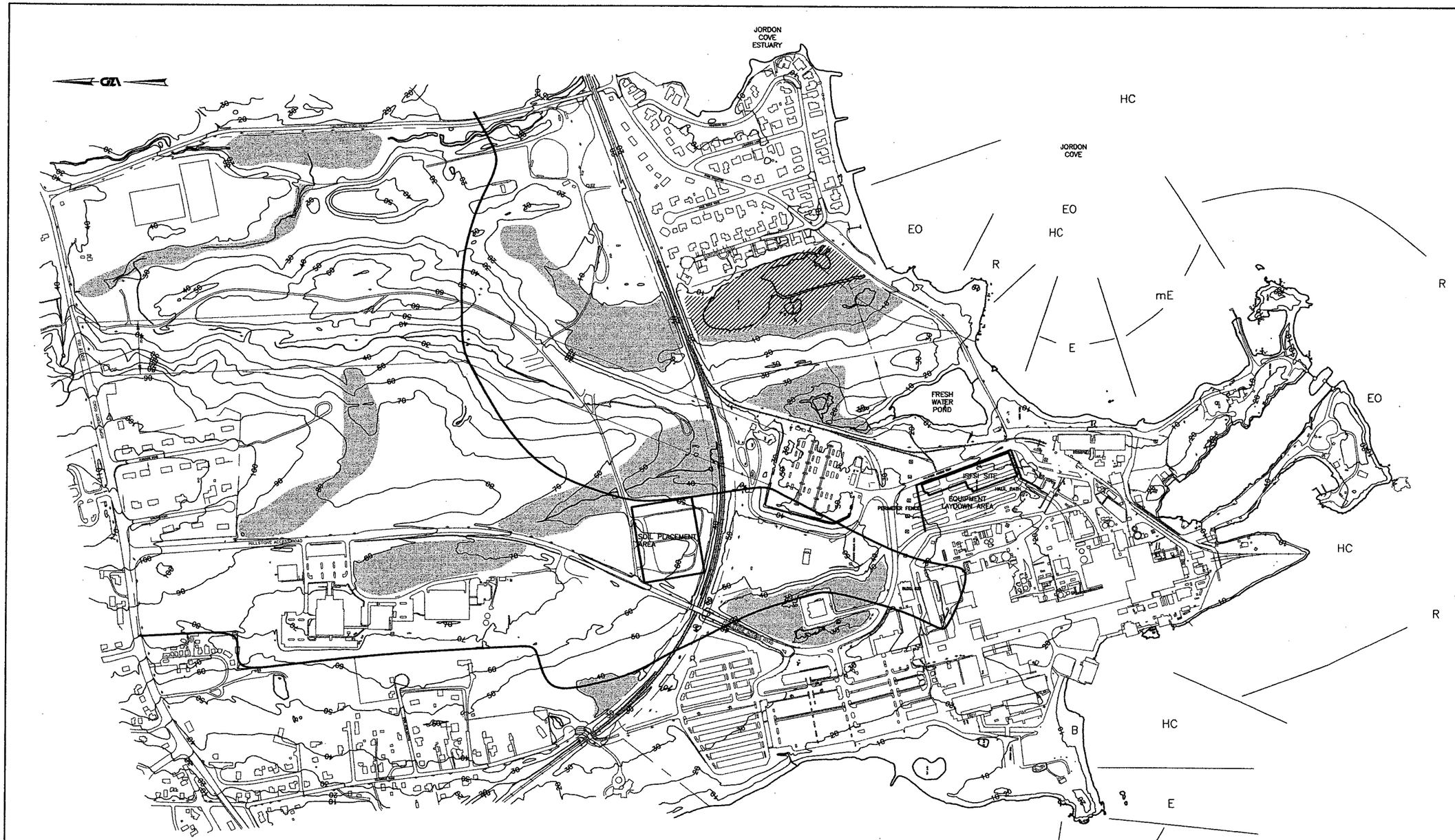


NOTES:

1. BASE PLAN FROM METCALF AND EDDY PLAN DATED JANUARY, 2001. ORIGINAL MAP REFERENCES:"NORTHEAST NUCLEAR ENERGY CO., MILLSTONE STATION, SITE PLAN." SCALE 1" = 100', DATED 08/03/99 AND "THE CONNECTICUT LIGHT & POWER CO. , BERLIN, CONNECTICUT" PROJECT: MILLSTONE POINT, SCALE: 1" = 200', SHEET 1 OF 2 AND 2 OF 2".

2. COASTAL RESOURCES, COASTAL ZONE BOUNDARY, TIDAL AND INLAND WETLANDS, AND SHELLFISH CONCENTRATION AREAS WERE DIGITIZED FROM "THE MILLSTONE POINT SITE, WATERFORD, CONNECTICUT PLAN, DATED MARCH 1985, FROM THE "TOWN OF WATERFORD "ORDER PURSUANT TO SECTION 16-50X(d) OF THE CONNECTICUT GENERAL STATUTES AND COASTAL AREA MANAGEMENT FINDINGS AND ORDER FOR UNIT #3 CLOSEOUT, MILLSTONE POINT, WATERFORD, CONNECTICUT" DATED MAY, 1985. THE LOCATIONS OF THESE WERE NOT VERIFIED (WITH THE EXCEPTION OF INLAND WETLANDS IN THE VICINITY OF THE ISFSI SITE) BY GZA AND SHOULD BE CONSIDERED APPROXIMATE.

3. INLAND WETLANDS IN THE VICINITY OF THE ISFSI SITE WERE FIELD LOCATED BY GZA GEOENVIRONMENTAL, INC. DURING DECEMBER 2002. THE LOCATIONS OF THESE FIELD-LOCATED INLAND WETLANDS ARE INDICATED ON THE SITE PLANS, 2003 AND THE WETLANDS REPORT, 2003. THEY ARE NOT SHOWN ON THIS PLAN DUE TO SCALE LIMITATIONS.

LEGEND

COASTAL RESOURCES:

E	INDICATES COASTAL BLUFFS AND ESCARPMENTS
mE	INDICATES MODIFIED BLUFFS AND ESCARPMENTS
R	INDICATES ROCKY SHOREFRONT
B	INDICATES BEACH

INDICATES APPROXIMATE LOCATION OF INLAND WETLANDS

INDICATES APPROXIMATE LOCATION OF TIDAL WETLANDS

40 INDICATES GROUND ELEVATION CONTOUR

INDICATES APPROXIMATE LOCATION OF COASTAL ZONE BOUNDARY

SHELLFISH CONCENTRATION AREAS:

HC	INDICATES HARD CLAM
EO	INDICATES EASTERN OYSTER

REV. NO.	DESCRIPTION	BY	DATE

SCALE IN FEET 0 150 300 600

GZA GeoEnvironmental, Inc.
27 NAEK ROAD
VERNON, CT 06066
P:860 875-7655 F:860 872-2416

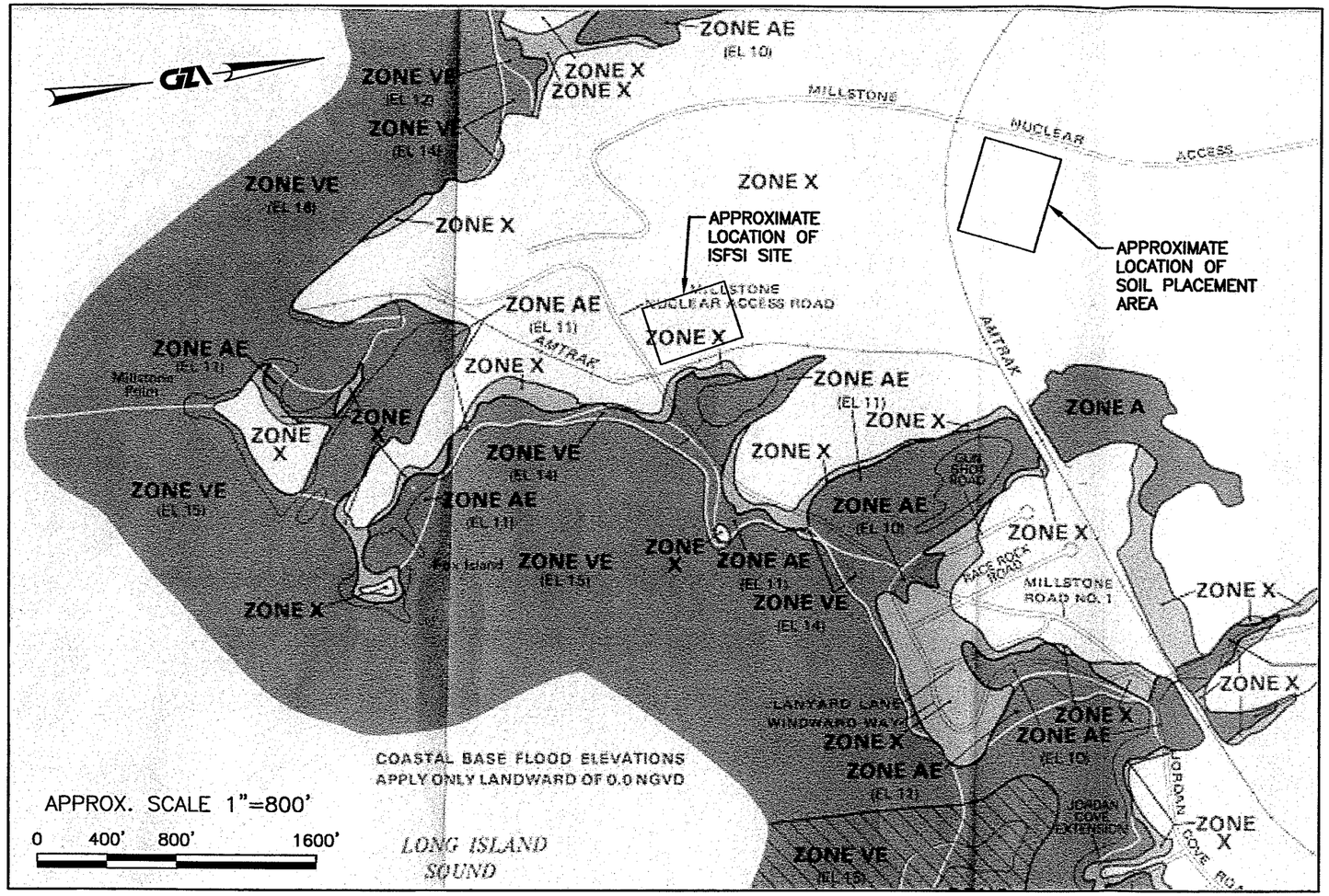
PROJ MGR: DCS
DESIGNED BY: DCS
REVIEWED BY: SFD
DRAWN BY: DCS
DATE: 5/19/03

DOMINION NUCLEAR CONNECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNECTICUT

SITE PLAN

JOB NO. 42898

FIGURE NO. 1-2



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year floodplain.
- ZONE D — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM 7x — Elevation Reference Mark
- •M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

Elevation reference marks are described in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Town Hall, Hope Ferry Road, Waterford, Connecticut 06385 (Maps available for reference only, not for distribution)

INITIAL IDENTIFICATION:

JULY 28, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:

NOVEMBER 19, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:

FEBRUARY 4, 1981

FLOOD INSURANCE RATE MAP REVISIONS:

October 1, 1982 - to add undeveloped coastal barriers.

September 5, 1990 - to update corporate limits, to change special flood hazard areas.

REV. NO.	DESCRIPTION	BY	DATE
	PROJ MGR: DCS DESIGNED BY: DCS REVIEWED BY: SFD	DRAWN BY: MJS DATE: 5/13/03	

1"=800' (0, 400', 800', 1600')

GZA GeoEnvironmental, Inc.
27 Naek Road
Vernon, CT 06066
P:860-875-7655 F:860-872-2416

DOMINION NUCLEAR CONNECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNECTICUT

FEMA FLOOD MAP
(NO. 09010700150; PANEL 15 OF 20)

JOB NO. 42898

FIGURE NO. 3-1

MJS, 05/12/2003, 10:13:25 | FILE: G:\JOBS\42898\L2\42898-00.DGS\42898-CAD\DWG\ESA REPORT\FIGURE 3-1.DWG

MJS, 05/12/2003, 10:11:17 | PCP: GZA_001.CTB | FILE: G:\JOBS\42898.L72\42898-00.DCS\42898-CAD\DWG\ESA REPORT\FIGURE 3-2.DWG

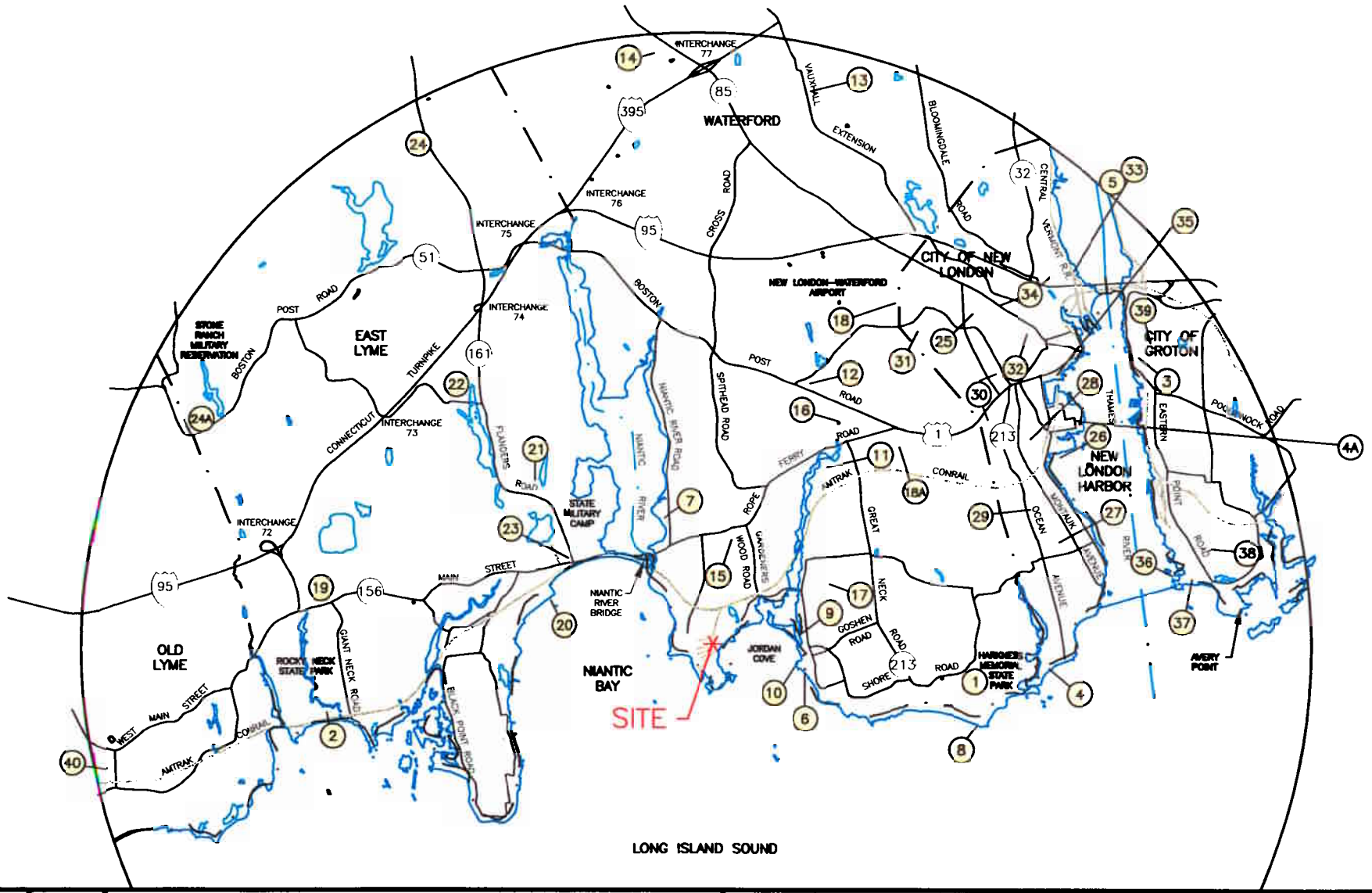


FIGURE NO.	JOB NO.	DOMINION NUCLEAR CONNECTICUT INC. MILLSTONE POWER STATION WATERFORD, CONNECTICUT	REV. NO.	DESCRIPTION	BY	DATE
3-2	42898	**RECREATION AND PARK FACILITIES (Within 10km of Site)**				

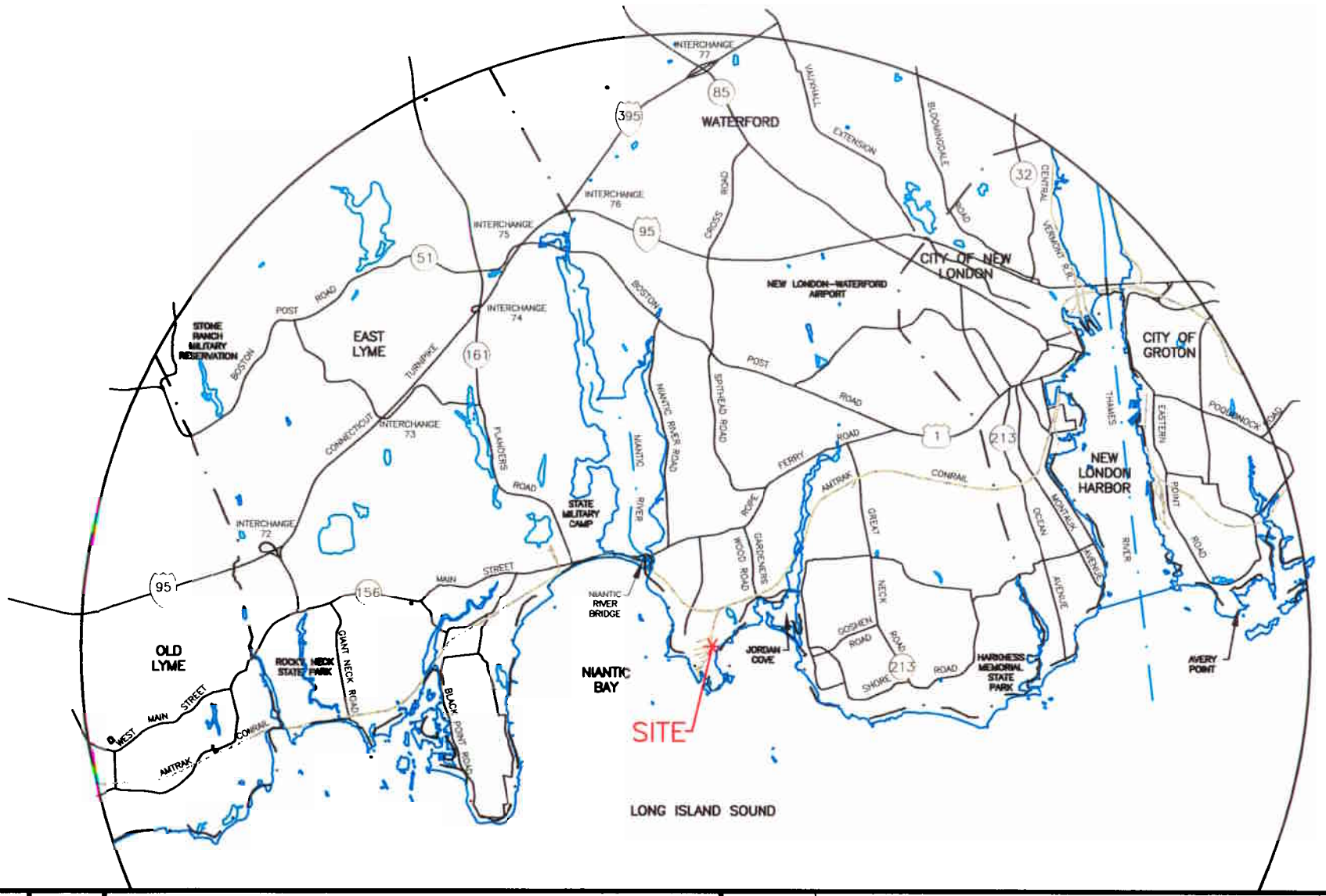
1"=8000'

0 4000' 8000' 16000'

PROJ MGR: DCS
DESIGNED BY: LM
REVIEWED BY: DCS
DRAWN BY: MS
DATE: 2/12/2003

GZA GeoEnvironmental, Inc.
27 Naek Road
Vernon, CT 06066
P:860 875-7655F: 860 872-2416

MJS, 05/12/2003, 10:10:25 | PCP: GZA_001.CTB | FILE: G:\JOBS\42898.L72\42898-00.DCS\42898-CAD\DWG\ESA REPORT\FIGURE 3-3.DWG



DOMINION NUCLEAR CONNECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNECTICUT

TRANSPORTATION ROUTES (Within 10 km of Site)

REV. NO.	DESCRIPTION	BY	DATE

1"=8000'

0 4000' 8000' 16000'

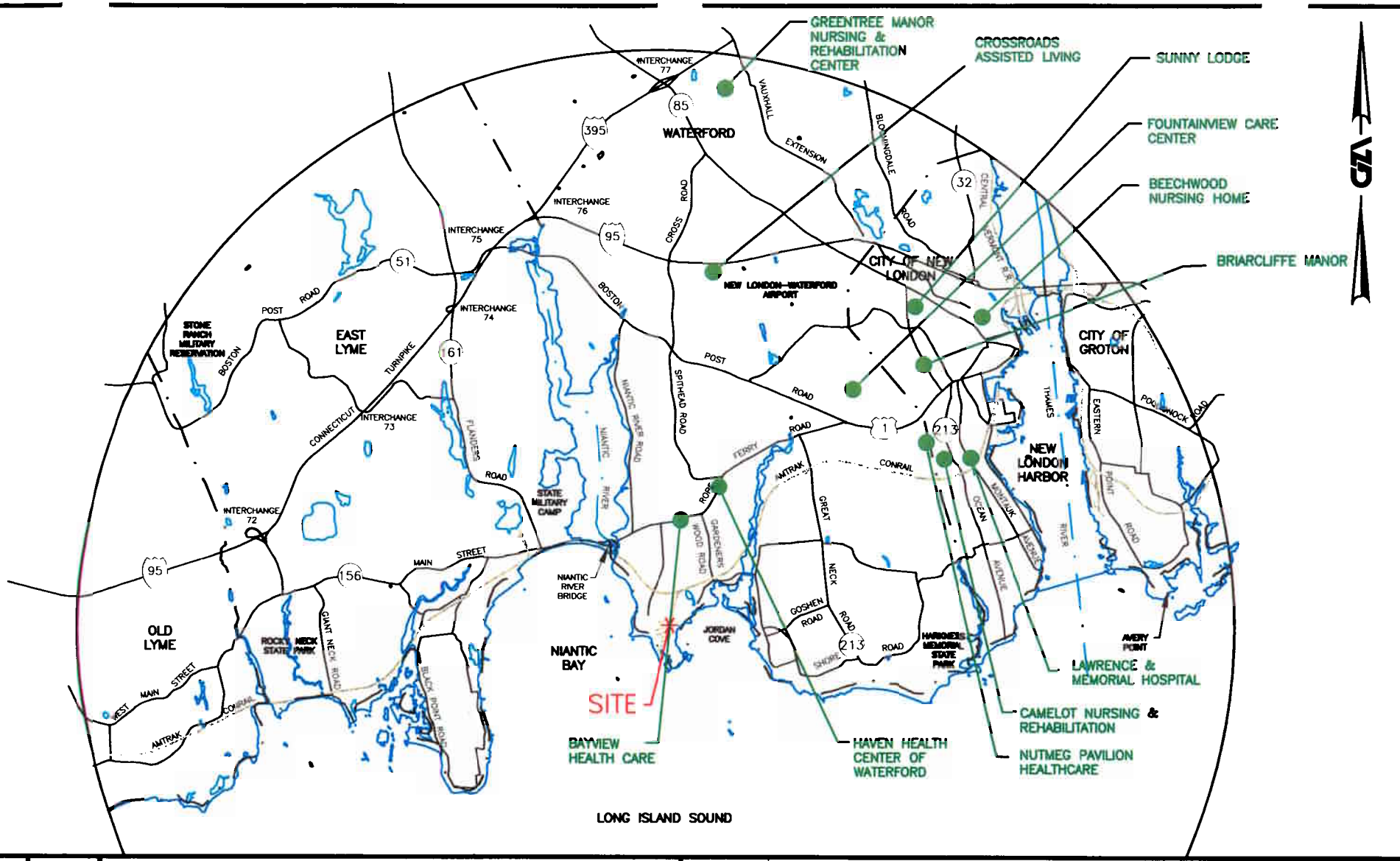
PROJ MGR: DCS
DESIGNED BY: LM
REVIEWED BY: DCS
DRAWN BY: MS
DATE: 2/12/2003

GZA GeoEnvironmental, Inc.
27 Nack Road
Vernon, CT 06066
P: 860 875-7655 F: 860 872-2416

JOB NO. 42898

FIGURE NO. 3-3

MJS, 05/12/2003, 10:09:36 | PCP: GZA_001.CTB | FILE: G:\JOBS\42898.L72\42898-00.DCS\42898-CAD\DWG\ESA REPORT\FIGURE 3-4.DWG



REV. NO.	DESCRIPTION	BY	DATE

DOMINION NUCLEAR CONECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNECTICUT

HOSPITALS AND HEALTH CARE FACILITIES (Within 10 km of Site)

1"=8000'

0 4000' 8000' 16000'

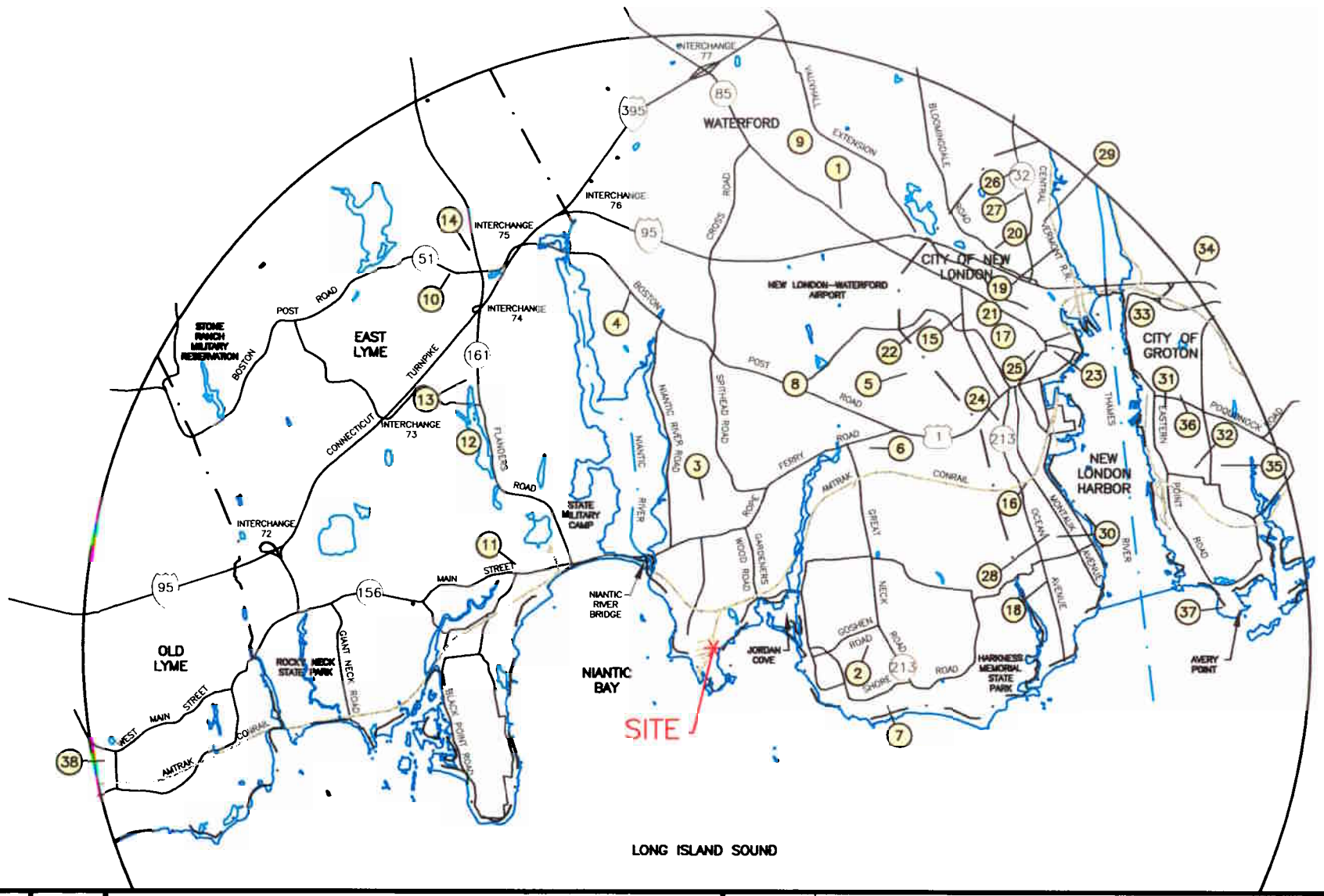
PROJ MGR: DCS
DESIGNED BY: LM
REVIEWED BY: DCS
DRAWN BY: MS
DATE: 2/12/2003

GZA GeoEnvironmental, Inc.
27 Naek Road
Vernon, CT 06066
P: 860 875-7655 F: 860 872-2416

JOB NO. 42898

FIGURE NO. 3-4

MJS, 05/12/2003, 10:08:55 | PCP: GZA_001.CTB | FILE: G:\JOBS\42898.L72\42898-00.DCS\42898-CAD\DWG\ESA REPORT\FIGURE 3-5.DWG



REV. NO.	DESCRIPTION	BY	DATE

DOMINION NUCLEAR CONNECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNNECTICUT

SCHOOLS
(Within 10km of Site)

1"=8000'

0 4000' 8000' 16000'

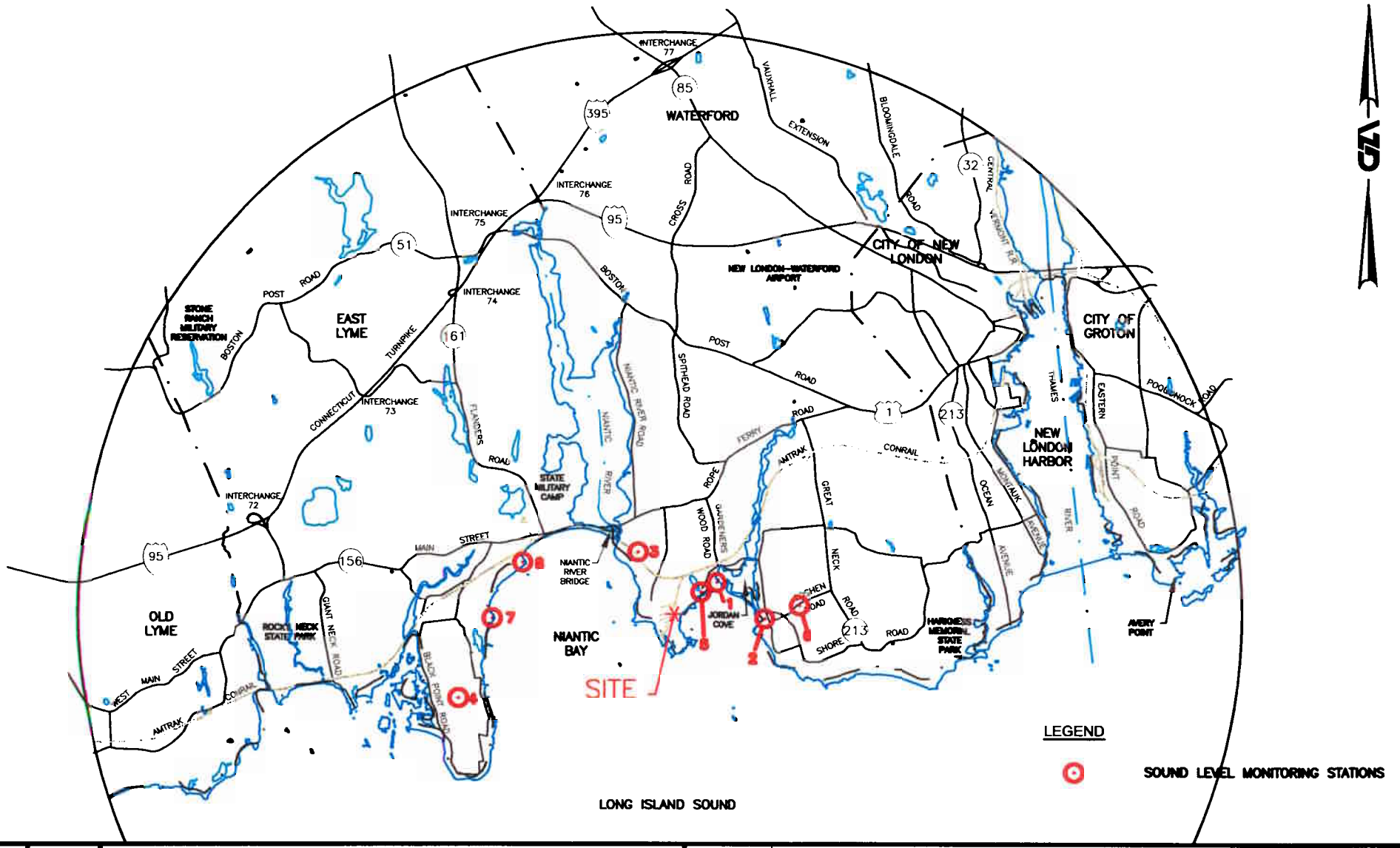
PROJ MGR: DCS
DESIGNED BY: LM
REVIEWED BY: DCS
DRAWN BY: MS
DATE: 2/12/2003

GZA GeoEnvironmental, Inc.
27 Naek Road
Vernon, CT 06066
P:860 875-7655F: 860 872-2416

FIGURE NO. 3-5

JOB NO. 42898

MJS, 05/12/2003, 10:07:23 | PCP: GZA_001.CTB | FILE: G:\JOBS\42898.L72\42898-00.DCS\42898-CAD\DWG\ESA REPORT\FIGURE 3-6.DWG



DOMINION NUCLEAR CONNECTICUT INC.
MILLSTONE POWER STATION
WATERFORD, CONNECTICUT

NOISE MONITORING LOCATIONS

REV. NO.	DESCRIPTION	BY	DATE

1"=8000'

0 4000' 8000' 16000'

PROJ MGR: DCS
DESIGNED BY: LM
REVIEWED BY: DCS
DRAWN BY: MS
DATE: 2/12/2003

GZA GeoEnvironmental, Inc.
27 Nasek Road
Vernon, CT 06066
P:860 875-7655 F: 860 872-2416

JOB NO. 42898

FIGURE NO. 3-6

APPENDIX A
GZA LIMITATIONS

LIMITATIONS

1. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein.

2. In preparing this report, GZA has relied on certain information provided by state and local officials and other parties referenced therein, and on information contained the files of state and/or local agencies available to GZA at the time of the assessment. Although there may have been some degree of overlap in the information provided by these various sources, GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.

3. GZA completed a visual reconnaissance of the site during this study. No independent field or scientific investigations were completed.

APPENDIX B
GLOSSARY OF ACRONYMS

GLOSSARY OF ACRONYMS

ALARA	As Low As Reasonably Achievable
CCMA	Connecticut Coastal Management Act
CSC	Connecticut Siting Council
DEP	Connecticut Department of Environmental Protection
DNC	Dominion Nuclear Connecticut, Inc.
DPUC	Department of Public Utility Control (Connecticut)
DSC	Dry Shielded Canisters
EFH	Essential Fish Habitat
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
HSMs	Horizontal Storage Modules
ISFSI	Independent Spent Fuel Storage Installation
NDDB	Natural Diversity Data Base (CTDEP)
NGVD	National Geodetic Vertical Datum
NMFS	National Marine Fisheries Service
NRC	Nuclear Regulatory Commission
NUHOMS	Nuclear Horizontal Modular Storage System
PA	(Security) Protected Area
SAV	Submerged Aquatic Vegetation