PROPRIETARY

LONG ISLAND POWER AUTHORITY

OPERATIONS PLAN FOR

MARINE TRANSPORTATION OF FUEL SHIPMENT

FROM SHOREHAM, NY TO EDDYSTONE, PA

Approved By: _____

Resident Manager, Shoreham Project

July 7, 1993
Rev. 0

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SECTION 1.0 - INTRODUCTION

This document details the plan for the marine transportation of 33 shipments of fuel from Long Island Power Authority (LIPA) Shoreham Nuclear Power Station at Wading River, NY. The destination of these fuel shipments, is the Eddystone Power Station located on the Delaware River in Eddystone, Pennsylvania.

The fuel is identified as a highway route controlled quantity of radioactive material. It will be moved in Pacific Nuclear IF-300 fuel casks, numbers 301 and 302.

The primary hauling contractor for this project is Williams Crane & Rigging, Inc., Richmond, Virginia. The water carrier is S.C. Loveland Co., Inc., Pennsville, New Jersey. The engineer for the work is 2DM Associates, Inc., Houston, Texas. This plan and the associated engineering have been developed in accordance with ANSI N14.24-1985 *American National Standard for Highway Route Controlled Quantities of Radioactive Materials - Domestic Barge Transport* (hereafter referred to as N14.24-1985). Where appropriate, definitions and information from that Standard have been incorporated into this plan.

This plan is organized in several major sections. Section 2.0 - Marine Transportation Operations presents a description of the equipment to be used and operations to be executed based on the anticipated conditions and desired end results. Included in this section is a description of the required communications activities to be performed throughout the transportation operation. Section 3.0 - Marine Transportation Emergency Response (Contingency) Plan outlines appropriate activities to be performed in response to a number of potential emergency situations. Section 4.0 Radiological Operations Plan outlines the normal and emergency response activities that will ensure that fuel shipment radiation levels are below applicable limits and any dose received is as low as reasonably achievable.

Under Enclosure 15, the Security Plan for Fuel Shipment is being provided. The Security Plan has been developed in accordance with 10CFR73.67 and has been submitted to the U.S. Nuclear Regulatory Commission for review and approval. The Security Plan details the in-transit physical protection and specific notification links that will mobilize response resources in the event of an incident affecting the shipments.

SECTION 2.0 - MARINE TRANSPORTATION OPERATION PLAN

2.1 Identity and Responsibility of All Parties Involved

American Bureau of Shipping (ABS) The ABS is a non-profit, nongovernmental, international ship-classification society that establishes standards for the design, construction, and periodic survey of merchant vessels and other marine structures. The regulations promulgated by the USCG appoint the ABS as the prime authority for assigning and issuing load line certificates.

Captain of the Port (COTP) The COTP is the officer of the U.S. Coast Guard (USCG) under the command of a district commander, so designated by the commandant for the purpose of giving immediate direction to USCG law enforcement activities within an assigned area. This USCG officer also has regulatory authority to supervise and control the transportation, handling, loading, discharging, stowage, and storage of hazardous materials. Additionally the COTP designates facilities for hazardous material operations. These barge shipments will pass through the zones of the COTP Long Island Sound, New York, and Philadelphia.

Local law enforcement agency A local law enforcement agency (i.e., Port Authority police, state highway patrol, city police, or similar agencies) may assist or support NRC licensees in the physical protection of spent fuel.

Marine insurer The marine insurer or underwriter provides financial protection to the shipper or carrier for non-nuclear events that involve the vessel and cargo. Coverage is available for property damage and loss as well as liability.

Naval architect A naval architect is an individual or firm with the technical expertise to design or analyze a vessel for the intended service, or to design and analyze the vessel. The naval architect transforms codes, standards, regulations, and the requirements of the shipper or carrier into hardware.

2DM Associates, Inc. is providing naval architectural services to the project.

Nuclear insurer The private nuclear insurer or underwriter (or pools thereof) provides financial protection to the shipper, carrier, and any other directly or indirectly related party from liability or property damage or loss claims arising from the hazardous properties of the radioactive materials.

Rigging company (rigger) The loading and unloading of the transport vessel, including the securing and unsecuring of the cargo, is generally carried out by a rigging company. The tiedown arrangement, design, fabrication, and installation will be performed by the rigger, and the remaining unloading or loading operations will follow established procedures. The rigger for this project is also a specialized heavy hauler and will provide transport vehicles to move heavy packages for short distances, in addition to the loading and unloading functions.

Williams Crane & Rigging, Inc. is the rigging company for this project.

Shipper The shipper is the party that has the responsibility under Federal regulations for the radioactive materials being transported. In the commercial sector, the shipper is the Nuclear Regulatory Commission (NRC) licensee that has been granted permission to possess, utilize, and transfer the radioactive material. The shipper bears the additional responsibility for integrating the transport activities, although portions of this responsibility may be delegated to others. The shipper certifies to the carrier that the radioactive material being shipped is correctly identified; properly packaged, marked, labeled, and documented; and in proper condition for transportation in accordance with applicable regulations of the Department of Transportation (DOT). The shipper plays the principal role in the transfer of materials.

Long Island Power Authority (LIPA) is the shipper for this project.

U.S. Coast Guard (USCG) This military service within the DOT has been delegated the authority for waterborne safety. It promulgates and enforces rules and regulations that pertain to vessel design and operations, vessel manning, casualty investigation, navigational aids, and waterfront facilities. It also provides certain lifesaving and property protection services. The COTP and the officer-in-charge, Marine Inspection are the local USCG offices with which a shipper and carrier of radioactive materials will deal. These offices are often combined under the commanding officer, Marine Safety Office (MSO).

The USCG office at New Haven is the Captain of the Port for Long Island Sound, and will coordinate the review and approval of this Operations Plan.

Water carrier The water carrier is the organization that supplies the barge, towing vessel, and crew. In this case, the water carrier will consist of a barge operator and a subcontracted towing vessel operator. The water carrier provides transportation services only. Loading and securing of the cargo is the responsibility of the shipper, although the function may be delegated to a rigging company by the shipper.

S.C. Loveland Co., Inc. is the water carrier for this project.

2.2 Description of the Berth at Shoreham, NY

Enclosures 5.1 through 5.4 are drawings that detail the layout and construction of the intake canal and barge slip. The intake canal was formed by constructing two jetties (approximately 800') into Long Island Sound and digging a canal (approximately another 900') from Long Island Sound up to the "screenwell." The original "channel" of the canal was designed to be 78' wide and 12' deep at mean low water. According to Enclosure 5.1, the channel is now 7' to 13' deep at mean low water. The mean range of the tide (from low water to high water) is 5.9 feet for the year and 6.8 feet for the spring. The mean tide level is 3.1 feet. (These values are based on the U.S. Department of Commerce 1992 tide tables for Herod Point, which is the closest reference point.)

The jetties are constructed of concrete structures and 2-ton to 8-ton armor stone over core stone. The sloping sides of the channel portion of the canal have been stabilized by a covering of medium sized stones. Enclosure 5.2 (Excavation and Grading of Intake Canal) indicates that there are no stones in the barge loading area next to the dock. There is no evidence in Enclosure 5.2 that there is any stone on the flat bottom portion of the channel. The borings which were taken in 1966 (Enclosure 5.3) indicate the area of the intake canal is naturally sandy. There is apparently no natural rock in the canal area so the barge operator would only have to be concerned about that rock which was placed in the canal to stabilize the sloping sides.

The Shoreham facility was constructed with a barge dock in the intake canal. The dock is constructed of 24 concrete blocks which are 14'0" long x 10'0" wide x 2'-6" deep each. They are laid to form a dock area approximately 48' wide (along the bank) and 28' deep in from the bank. Enclosure 5.4 is a plan of the barge unloading dock and surrounding area.

This dock area was modified several years ago to accommodate the "roll-off" of an oversized piece of cargo (a transformer). The modification consisted of the construction of a "prepared bed". A prepared bed is a mound of small diameter stone which is dumped at the end of the slip and graded to conform with the shape of the rake plate of the barge. The barge may then be pushed up onto the prepared bed at high tide and ballasted with water to keep it in place. The bed is engineered so that the deck of the barge will be nearly equal in height to the surface of the dock. The cargo can then be transferred between the barge and the dock by simply rolling it on or off the barge using an appropriate vehicle. Enclosure 5.2 details the construction of the existing prepared bed. The prepared bed has been used successfully for roll-off operations numerous times over the past several years. The current condition has been reviewed and no modifications are required.

2.3 Description of the Berth at Eddystone, PA

The barge dock at Eddystone is a part of Philadelphia Electric Company's (PECO) Eddystone Station. The dock is located to the west of the waste-water treatment plant discharge. The top of bulkhead elevation is 12.0 feet above mean low water. Water depth at low tide is approximately 9 feet at the bulkhead. The mean range of the tide (from low water to high water) is 5.7 feet for the year and 6.0 feet for the spring. The mean tide level is 3.0 feet. (These values are based on the U.S. Department of Commerce 1992 tide tables for Chester, PA, which is the closest reference point.)

Structural and soil analysis of the dock area will determine whether the barge will be unloaded by a heavy lift rigging crane or a roll-off method. Any structural improvements necessary will be completed prior to the commencement of shipping operations.

2.4 Marine Transportation Route to Eddystone, PA

The tug and barge shall exit the Shoreham facility and proceed east in Long Island Sound until reaching Block Island Sound. An escort tug will accompany the shipment during

the Long Island Sound portion of the shipment. The tug and barge will then pass Montauk Point (the eastern tip of Long Island) and then turn south into the Atlantic Ocean. The tug and barge would proceed south-southwest in the ocean on an essentially straight-line course to the Cape May-Delaware Bay buoy, around Cape May, through the Delaware Bay, and up the Delaware River. The tug and barge will travel north in the Delaware River to Eddystone, PA. There are no scheduled intermediate ports of call on this tow.

A list of safe harbors is provided in Section 3.4.2. The water depths over which the tow will travel are also listed in Section 3.4.1.

Enclosure 5.6 is a map of the Eastern Seaboard showing the tow route from Shoreham, NY, to Eddystone, PA.

2.5 Weather Conditions

Williams Crane & Rigging, Inc. will have the primary input regarding weather conditions that affect the loading and unloading of the barge. Particular consideration shall be given to the presence of heavy rain, ice, or snow which will affect the safety of any attempt to perform a roll-on or roll-off operation and extremely high winds and/or high currents that would impair the ability to maintain the barge in a stable condition. If conditions at Eddystone do not allow immediate unloading, the barge and tug will tie up dockside at Eddystone.

Weather conditions and forecasts will be monitored by Williams Crane & Rigging and Loveland on a regular basis during the performance of this project to assure advance knowledge of changing weather that could adversely affect the work.

Strong winds and high seas are the two principal concerns of the mariner. The water carrier, the towing company, and all parties concerned will verify that the marine forecast calls for winds below 40 mph, Beaufort Scale #8 during the expected term of the voyage (estimated to be 50-60 hours). The USCG will be contacted regarding weather parameters for the trip. Once the tow is underway, the towing vessel Master will closely monitor the local and long range forecast. The vessel Master always has the sole authority to bring the tow to a "safe harbor" for adverse weather or any other reason.

2.6 Description of Barge and Barge Gear

The barge will be provided by S.C. Loveland Co., Inc., located in Pennsville, New Jersey. The nominated barge is the Loveland 1721 series deck barge (numbers 1721 through 1726). These barges are of steel construction with 18 watertight compartments. The overall length is 172'-6", the beam is 43'-6", and the molded depth is 10'-9". The bow rake is flat with a slope of about 3.4 : 1. The stern rake is similarly sloped and has two skegs. The deck is flat with neither sheer nor camber. The bottom between rakes is flat. A drawing of the barge construction is shown on Enclosure 5.5.

The ANSI N14.24-1985 addresses vessel and equipment requirements. They are as follows for the barge:

2.6.1 *Load Line Document* This voyage will transit areas that are more than 20 miles offshore, therefore the barge will have a load line certificate for ocean service. The load line document for the Loveland barge showing its ABS class as A-1 Ocean Service is attached in Enclosure 5.5.

2.6.2 *USCG Certificate of Inspection* This is a certificate issued by the USCG when they complete their periodic inspection of the vessel, indicating that the vessel is still suitable for coastwise (within 20 miles of the coast) or oceangoing (beyond 20 miles) service. The Certificate of Inspection for the Loveland barge is attached in Enclosure 5.5.

2.6.3 *Barge Length* Barges used for the transport of RAM packages shall be no less than 125 feet in length. The nominated barges are 172'-6" in length, thus meeting this requirement.

2.6.4 *Intact Stability* Intact stability refers to the behavior of the barge under various loading conditions in the absence of any hull damage. Intact stability shall be assessed in accordance with 46 CFR 170 (Subpart E of 46 CFR 172 [6] for a Type II hull under 46 CFR, Subchapter O). Intact stability calculations are contained in 2DM Associates Report Number 9315-402 and demonstrate that the barge meets the requirements. This report is attached in Enclosure 5.10.

2.6.5 *Damage Stability* Damage stability refers to the behavior of the barge under various loading conditions with defined hull damage. Damage stability shall be assessed in accordance with the rules for a Type II barge hull under Subpart E of 46 CFR 172. These rules specify a one compartment standard, which requires that, following damage to any one compartment in the barge, the vessel will still meet specified margins of safety and not sink or capsize. Damage stability calculations are contained in 2DM Associates Report Number 9315-402 and demonstrate that the barge meets the requirements. This report is attached in Enclosure 5.10.

2.6.6 *Stowage* All casks (excluding the vehicle used to transport the cask by truck if same is transported with the cask on the barge) must be located a minimum of B/5 inboard from the side of the barge, where B is equal to the beam of the barge. On the Loveland 1721, this equates to the cargo being stowed at least 8'-8" from each side. 2DM Associates Drawing Number 9315-401 "Barge Loading Arrangement" Enclosure 5.11, shows the set-back of the cask, including its support frame, to be in excess of 15 feet from the side.

The casks, excluding vehicle, shall also be stowed abaft the forward perpendicular and foreword of the stern a minimum of $0.495\ L^{2/3}$ where L is the length of the barge. For the Loveland 1721, the cargo must be stowed at least 15'-4" aft of the forward perpendicular and 15'-4" forward of the stern. 2DM Associates Drawing Number 9315-401 "Barge Loading Arrangement" shows the position of the cask, including its support frame, to be in excess of 67 feet abaft the forward perpendicular and 45 feet forward of the stern.

The cask shall be loaded on board in accordance with the positioning shown on 2DM Associates Drawing Number 9315-401 "Barge Loading Arrangement" Enclosure 5.12. The deck strength, stability, and static analyses in 2DM Associates Report Number 9315-402 are all based on this position. The sea-fastening requirements noted in N14.24-1985 are addressed by the design calculations in 2DM Associates Report Number 9315-402. The barge shall be exclusively used for the shipment of the cask and associated equipment.

2.6.7 *Manning* Barges which transport oversized cargo are unmanned. Radiological health personnel shall accompany the cargo on the primary towing vessel.

2.6.8 ANSI N14.24-1985 also details "required" and "suggested" equipment for the barge. Required equipment shall be provided without exception. The suggested equipment is not considered applicable and will not be provided for this shipment for the reasons stated in section 2.6.8.2.

2.6.8.1 Required Equipment

Emergency Position Indicating Radio Beacon (EPIRB) The EPIRB is a vessel-mounted, radio-signal-transmitting device that is water actuated and aids in the location of a barge that has sunk. The Class A EPIRB floats free from the sunken vessel (i.e., it is untethered), thus its ability to precisely locate the barge strongly depends on ocean conditions and emergency response time. For this standard, an EPIRB shall be a Class A unit having a minimum operating time of 10 days. Design, location, stowage, operation, maintenance, and approval of this device shall be in accordance with 46 CFR 161.011 and 46 CFR 94.60.

Radar Reflector This barge mounted passive device amplifies the return signal to impinging radar. Such a reflector will make the barge more "visible" to other traffic during normal operations and will aid in the location of the barge should it come adrift. The radar reflector shall be mounted on the barge or package no less than 20 feet above the waterline. Mounting shall be designed to withstand the collision and wave action accelerations of N14.24-1985.

Emergency Towing Wire A suitably sized emergency towing wire fastened to towing bitts or pads, shall be carried aboard a barge that is towed offshore. This wire runs aft, being affixed to the breakable tiedown points on the port or starboard deck edge. A small buoy or length of floatable line (such as polypropylene), attached to the end of the wire trails behind the barge. If the main towing wire breaks, the towing vessel can fall behind the barge and retrieve the end of the emergency towing wire breaking the tiedowns holding it to the deck. This emergency towing wire can then be used to bring the tow to a safe harbor. The emergency towing wire should be approximately 300 feet long.

Sonic Signaling Device A sonic signaling device, or "pinger," is an underwater locating transmitter that remains with the sunken barge. The signals emitted by

this equipment permit accurate location but are limited in range (i.e., approximately 1 mile). Special receiving equipment is required on the search vessel. For this project, the sonic signaling device shall have a minimum operating time of 30 days.

2.6.8.2 Suggested Equipment

Bow Mounted Breakwater The breakwater is a structure that is used for oceangoing tows to deflect waves coming over the bow, thus offering some degree of cargo protection. A breakwater is not necessary for these tows and, as the roll-on and roll-off operations will be done over the bow, a breakwater is not desirable (a removable breakwater would be necessary). The stated requirement that the tow seek a safe harbor in the event of heavy weather will effectively avoid the possibility of wave damage to the cargo.

Redundant Tow This technique uses two towing cables instead of one so that the barge will not come adrift in the event of the failure of a single tow line. A double tow cable (hawser) is not common practice on the East Coast and is not necessary or desirable for a tow of this relatively short distance. The barge will be fitted with an emergency towing wire (paragraph 2.6.8.1, above).

Remote Controlled Anchor This device allows the towing vessel operator to release an anchor and line mounted on the barge in the event of the failure of the tow line. The remote controlled anchor is only effective in waters less deep than this tow will be traversing. Thus, this is not an effective tool for this movement.

Air Identification A distinct marking on the deck of sufficient size that it can be identified from low flying aircraft. This is redundant in view of the requirement for a radar reflector.

Real Time Motion Monitoring This involves specialized equipment that is installed on the barge to measure the forces, motions, or accelerations to which the barge is subjected. The data is recorded and analyzed in the wheel-house of the towing vessel. As there will be no fragile equipment on the barge during the tow, and because the tow will seek a safe harbor in the event of heavy weather, motion monitoring is not necessary.

Radar Transponder These electronic devices emit an encoded identification signal that is visible on marine radar sets. If mounted on the barge, this equipment would facilitate recovery of the barge in the event the tow line fails under poor visibility conditions. The transponder can also be used to monitor both the alignment and proximity of the barge relative to the towing vessel. This is redundant in view of the requirement for a radar reflector.

2.6.9 Williams Crane & Rigging shall remove all sea fastening and restore the barge upon completion of shipment operations.

2.7 Description of Towing Vessel and Towing Gear

Towing Vessel - The towing vessels shall be supplied by S.C. Loveland Co., Inc. There will be an additional tug of at least 200 horsepower used for shifting at Shoreham and/or escort in Long Island Sound. ANSI N14.24-1985, Section 6.4, details several requirements for the towing vessels. These requirements will apply to the "principal towing tug".

2.7.1 *Motive Power* Towing vessels will be of suitable size and horsepower to maneuver the barge under the most adverse weather, tidal, and current conditions. The principal towing vessel shall be twin screw and have at least two propulsion engines, each capable of powering the towing vessel. Vessels with a minimum of 1,300 horsepower will be used in order to assure suitable power in the event of heavy weather.

2.7.2 *Certifications and Inspections* The principal tug shall have a current ABS load line certification.

2.7.3 *Towing Gear* The towing gear and cable shall be inspected by the vessel Master prior to departure of the loaded barge and shall be free of defects that might impair their functioning. There are several methods of connecting the tug to the barge. The method used will be at the discretion of the tugboat vessel Master based on whether the tow will proceed inland, in calm seas, where the tug can make up directly to the barge, or offshore, where seas are high and a hawser must be used.

2.7.3.1 *Ocean* The tug will run a metal cable, or a nylon hawser, from the tug to a "fishplate". The fishplate is a steel plate which connects the main tow hawser to a pair of "bridles". The two bridles are made of chain or wire and run from the fishplate to a bitt at each corner of the barge. A 9" nylon hawser (1,200 feet in length) or 2" diameter steel cable (1,500 feet in length) will be used for the main towing hawser. The shackle size is 35-ton to 50-ton capacity and the fishplate will be 2" thick steel plate. Bridles will be 1 1/4" to 1 1/2" chain or wire strength equivalent. The tug will carry a spare hawser equal in size to the original.

2.7.3.2 *Inland* On the inland portion of a tow, the tug will make up to the barge by either:

laying alongside the barge and tightly tying ropes between the tug and barge so that they act as one unit when underway; or,

butting the nose of the tug against the stern of the barge and tying lines or cables from the port and starboard after barge bitts to the after quarter bitts on the tug. The lines or cables will be secured so tightly that the tug and barge will maneuver as one unit.

2.7.4 *Navigational Aids* The principal towing vessel shall be equipped with radar, LORAN C or SATNAV, magnetic compass with deviation table, gyrocompass, charts and publications specified in 33 CFR 164.33 (corrected charts of areas to be transitted, U.S. Coast Pilot, USCG Light List, tide tables, and current tables).

2.7.5 *Communications* The principal towing vessel and its dispatching office shall have appropriate communications equipment with the proper frequencies. For the tug, this shall include, but not be limited to, at least two permanently mounted VHF radios, a cellular telephone, and an HF radio, all of which are capable of inland and coastal communications. Such communications redundancy will be provided to compensate for equipment failure.

2.7.6 *Manning* The crew of the towing vessel shall be in accordance with the regulations contained in 46 CFR 156 and 157 and applicable USCG and vessel inspection circulars. As a minimum, the tug shall be manned by a master and mate (licensed for near coastal route and the tonnage of the tug in accordance with USCG regulations), an engineer, and two deckhands.

2.7.7 *Health Physics Technician* An individual trained in the principles of health physics and equipped with appropriate radiation detection instruments shall be present during barge loading and unloading. A health physics technician shall accompany the shipment and shall ride aboard the primary towing tug.

2.7.8 *Marine Personnel Training* The crew of the principal towing tug, and a representative from the tower's operations staff will be trained in Security Plan and Operations Plan details. Such training should take approximately four hours and is described in Section 3.7.

2.8 Regulatory Certificates and Licenses

2.8.1 *Barge* All barges used have a current ABS load line certificate for ocean service (paragraph 2.6.1) and a current USCG inspection certificate for ocean service (paragraph 2.6.2).

2.8.2 *Tug* The primary towing vessels have a current ABS load line certificate (paragraph 2.7.2). Tugs are not required to be USCG inspected unless they exceed 300 gross tons.

2.8.3 *Licenses* Marine licenses are issued by the USCG after the mariner has served a lengthy period of apprenticeship and passed a series of tests and a physical examination. The master and mate of all towing vessels used in this project will be licensed by the USCG in accordance with the gross tonnage of the tug and for the route which the tug will follow. (For instance, if the tug is 125 gross tons and the track of the voyage will take it up to 100 miles offshore, then the licenses of the master and mate must be for towing vessels in excess of that tonnage and distance offshore.) The deckhands are unlicensed personnel. The engineer is not required to be licensed unless the tug is over 200 gross tons.

2.8.4 *ICC Operating Authority and Tariff* Part 3 of the Interstate Commerce Act vests the ICC with the authority to regulate water carriers with respect to operating jurisdiction and rates. Water carriers who move cargo between states must possess a valid ICC Certificate granting operating authority for the cargo and the route intended. S.C. Loveland Co., Inc. holds such an ICC Certificate.

Prior to a specialized move such as those covered by this plan, the carrier (Loveland) shall file a tariff with the ICC or execute an agreement of affreightment in advance of the shipment. Upon approval, the tariff or agreement binds the carrier to the rates and conditions contained therein.

2.8.5 *Notifications* Pre-shipment notification by Loveland will be sent to the Captain of the Port, Long Island Sound. As this shipment will be defined as "highway route controlled," this notification shall include the date of the proposed loading so that the COTP may have the option of having his representative present during the loading process.

Loveland will also notify the COTP Long Island Sound 4 hours in advance of departure in accordance with 33 CFR 160.213.

Pre-arrival notification will be made to the COTP, Philadelphia. Prior to departure, Loveland will also notify the USCG Port Safety Officers in the USCG Districts enroute. (see Enclosure 5.7 to this report for a listing). They will be provided with the name of the principal towing tug and dates during which the tow is anticipated to be in the waters of their District.

There are various notifications which will be made by LIPA. Federal regulations prescribe specific notification requirements in advance of shipment of certain radioactive materials. In accordance with 10 CFR 71.97, the NRC and the governor (or governor's designee) of the states entered or passed through in the course of transport of certain quantities of RAM by NRC licensees shall be notified in advance of the shipment. The shipment's consignee shall also receive advance notification in accordance with DOT regulations.

2.8.6 *Fuel Cask* - The IF-300 fuel shipment cask has a Certificate of Compliance issued by the U.S. Nuclear Regulatory Commission. (See Enclosure 5.13)

2.8.7 *State Regulations* - The barge will be passing through the waters of New York, New Jersey, Delaware and Pennsylvania. A Certificate of Handling will be obtained as necessary for the State of New Jersey in accordance with Title 7, Chapter 28 of the New Jersey Administrative Code. The other states do not have an equivalent requirement.

2.9 Marine Operations Checklists

Prior to each voyage and prior to leaving port during the voyage, the towing vessel Master shall inspect the barge and the towing vessel. The inspection shall be documented using a checklist that requires reviewing the condition of all marine safety

related items and indicating whether the conditions are deficient or satisfactory. Deficient conditions shall be resolved before leaving port. Separate checklists shall be used for the barge and towing vessel. Each checklist shall identify the barge or the towing vessel, the crew, the location and date of the inspection, and it shall be signed by the operator. Copies of the completed checklists shall be provided to the COTP (in the port that the tug is departing), as required. A copy of each completed checklist shall be maintained on the towing vessel for the entire voyage. LIPA shall retain a copy of each inspection report in the shipment record file. Operations Checklists for the tug and the barge are attached in Enclosure 5.8.

2.10 Communications Plan

In accordance with ANSI N14.24-1985, communications shall be made between the towing vessel and predetermined shore installations at frequent intervals established by LIPA and Loveland, but not exceeding 6 hours.

There are two types of marine radios generally used by towing vessels. The VHF set is used for short distance communication (often referred to as "line of sight"). Communications between the bridges of two vessels which are passing one another are made on a VHF radio. The effective distance for a VHF set varies according to the height of the antenna (of both the sending and receiving sets), the weather conditions, and the presence of obstructions (skyscrapers, hills etc.) between the sender and the receiver. Even between two vessels on the open ocean, in good weather, the signal will not go over the horizon, limiting the effective range to about 20 miles.

Many VHF channels are assigned by the FCC. There are "working channels" reserved for use by tug operators, commercial fisherman, and other workboat and passenger boat operators. There are also VHF channels reserved for the USCG (channel 22), marine telephone operators, traffic service, search and rescue, and continuous weather broadcasts (among others). Channel 13, for example, is the channel used for initiating "bridge to bridge" communications with another vessel and channel 16 is used for "calling and distress" (emergencies). Most tug companies use a local "house channel" with which they continually communicate with their tugs. The actual VHF frequencies used between the tug and its office will be determined by the towing company which is selected to tow the barge.

The VHF signal can be "extended" by use of the marine operator. When near the coast or on an inland waterway, the tug can call a marine operator who will patch the call through telephone lines to the desired party. Marine operators are located at intervals along the coast and near large tributaries such as the Delaware Bay. The tug must still be within about 20 miles of the coast to reach a marine operator.

The HF radio is for long distance communications. The HF signal bounces off the upper atmosphere, returns to earth and bounces back to the atmosphere in a continuing cycle ("/\/\/\"). HF signals can be picked up for hundreds (or even thousands) of miles. Reception of HF signals is not absolutely reliable, however. Atmospherics such as sunset, solar flares, and lightning can make an HF signal unreadable. The strength of the signal is also relative to the proximity of the receiving station to the location where

the signal returns to earth. HF transmissions are usually made at a predetermined time, and on a predetermined frequency, so that the receiving station will be listening for the sender. Experience with long range HF transmissions indicates that the signal is successfully sent and received about 75% to 80% of the time.

The primary towing tug will have a cellular phone. This system is very reliable when in range of a cellular station. The available cellular systems cover a great deal of the metropolitan area, but have very little coverage over the water (particularly in the ocean). It therefore suffers from the same problem as VHF: the tug must be in close proximity (about 24 miles) to the coastline or transmission will not be received.

There will be three types of communications taking place during these voyages:

1. Communications with the tug's office (dispatcher) on 6 hour intervals (or less) giving the tow's position, speed, and estimated time of arrival (ETA). The tug's office has the equipment and experience to maintain contact with the tug. The tug's office shall then telephone the LIPA Notification Point at set times with a progress report.

2. When in VHF range, the tug shall advise each USCG COTP when he enters or leaves, or at such other times prescribed by the USCG COTP. The VHF channels used by each Group are listed in Enclosure 5.7. When the tug is out of range, the tug's office will make the USCG notifications by phone based on HF radio contact with the tug or the best ETA of the tug's arrival into or departure from the COTP zone.

3. Bridge to bridge communications when in close proximity to other vessels as required by law.

The tug will contact his office and the local COTP immediately if any emergency situation arises which could affect the safety of the vessels or the cargo. These communications are covered in more detail in the Security Plan for Fuel Shipment.

2.11 Insurance

ANSI N14.24-1985, Section 6.7, provides a discussion of the insurance coverage required of a prudent shipper and water carrier. The Loveland Company or the tower will provide the following insurance coverage (as described in N14.24-1985) with limits satisfactory to the Loveland Company and the LIPA: hull insurance on the barge and tug, including primary collision liability; primary Protection and Indemnity; tower's liability; cargo legal liability; and wreck and removal (salvage insurance).

SECTION 3.0 - MARINE TRANSPORTATION EMERGENCY RESPONSE (CONTINGENCY) PLAN

3.1 Barge Documentation and Intact and Damages Stability Studies

ANSI N14.24-1985 requires that stability analyses for both intact and damaged conditions be performed and that the barge meet certain acceptance criteria. These requirements are more fully discussed in paragraphs 2.6.4 (intact stability) and 2.6.5 (damage stability), above. The required calculations, which show satisfactory results, are contained in 2DM Associates Report Number 9315-402, Enclosure 5.10.

The shipping papers shall be kept aboard the towing vessel, including the bill of lading, dangerous cargo manifest, and emergency response guidance. In the event the barge needs to be moored or tied-up, the tugboat will remain near-by. In addition, all shipping papers and package documents including those of the sea-fastenings, shall be available at the LIPA Notification Point.

In the event of an emergency involving structural damage to the barge, information about the vessel's construction will be immediately required. A drawing of the Loveland 172i series barges is included in this plan in Enclosure 5.5.

3.2 U.S. Coast Guard

During early planning for this project, contact was made with the Captain of the Port for Long Island Sound, who has authority over the loading site at Shoreham and the transit through Long Island Sound. The COTP Long Island Sound shall coordinate the review of this Operations Plan. Subsequent contacts have been made with the COTPs listed below:

Office Station	Contact	Phone	24 Hr Phone	VHF Station
LI Sound	Lcdr. Skewes (Lt. Schroder)	203-468-4464	203-468-4464	16 (Group Moriches CH 23)
New York	Capt. Larabie (Lt. Shatinsky)	212-668-7932	212-668-7936	13 and 16
Philadelphia	Capt. Guldenschuh (Lt. Kuhaneck)	215-271-4940	215-271-4940	13 and 16

The USCG shall always have the final input in matters of weather, navigation and emergency response.

3.3 Salvage Operations

Two separate types of marine salvage may be required in the event of a casualty.

3.3.1 Salvage Towing

If the tug had a dual engine failure, or the barge broke away from the tug and could not be located, additional towing power will be needed. Depending on the position of the casualty, the owner of the principal towing tug may have one or more tugs ready to respond to the emergency, particularly in the case of engine failure of the tug. If the barge has broken away and cannot be located, or if the owner of the principal towing tug is not in a position to respond, a tower experienced in towing salvage will be called.

Moran Towing is a well located and equipped salvage tower that is situated to handle a towing emergency. Moran was a partner in Ocean Salvors, a salvage company with operations in many areas of the U.S. Although that venture was closed several years ago, their personnel are familiar with ocean and inland recovery and salvage techniques. They have recovered many tugs and barges adrift in the North Atlantic and brought them safely to port. They have large tugs stationed in New York and Philadelphia. A list of their equipment and the 24-hour phone numbers of each office is attached as Enclosure 5.7.

3.3.2 Traditional Salvage Operations

Any casualty which affects the watertight integrity of the hull of either the tug or the barge will require the assistance of a full service salvage company. A traditional salvage company has large pumps, floating cranes, air compressors, gear for removing beached vessels, large winches, and many other types of salvage gear. This gear is kept on hand so that the salvage company is ready to immediately respond to many types of emergencies. More importantly, they have personnel on staff who are experienced with salvage operations including divers, crane operators, engineers, and salvage masters.

DonJon Marine, based in New York, has held the U.S. Navy Salvage contract for the Great Lakes, Atlantic Ocean, Gulf of Mexico, and other areas since 1979. They have two heavy lift cranes (220-ton and 1,000-ton capacity) and three tugs (1,200, 1,800 and 7,000 HP) in New York. They also have heavy winches, various oceangoing barges, beach gear, and other related salvage equipment ready to be moved to the site of a casualty upon notice. This firm has experience in virtually every type of salvage (raising sunken vessels, removal from a beach, bridge collisions, pumping sinking vessels, etc.) Their New York base is not a serious disadvantage if a casualty should occur further south. Much of their equipment is portable (by truck) and they have working relationships with owners of

barges, cranes, and other equipment which cannot be trucked. They also own a hazardous materials pollution control firm (Cycle Chem) with offices in Cartaret and Elizabeth, NJ, and in Swedesboro which is in southern New Jersey.

Salvage companies have various ways of charging for their services but in the case of this movement, DonJon would consult with the underwriters and barge company representatives and the local office of the USCG, and then respond to the casualty with all the equipment that they, the USCG, and the surveyor felt was needed to resolve the emergency. After the emergency was concluded DonJon would negotiate a rate for the services performed. The rate would be loosely based on manhours and equipment utilized, but DonJon (or any other salvage company) would be entitled to a premium over and above the rates charged for manpower and equipment in a normal operating environment. This premium is earned as a result of the risks they take in the performance of their job and the cost of equipment and manpower which must be kept on idle standby waiting for the next emergency. There is no fee unless a casualty occurs (salvage companies are not put on "retainer") but the fees charged if they do have to respond will vary according to the location of the job and the manpower and equipment needed to conclude the emergency.

In the event of an emergency where the hull integrity of the barge and the tug are not threatened, such as barge breakaway or mechanical failure on the principal towing tug, Moran may be called for towing assistance. For any other type of marine casualty, DonJon may be called to manage the salvage effort.

Telephone numbers of secondary towers, salvage companies, and USCG Group contacts are also listed in Enclosure 5.7.

3.4 Water Depths and Safe Harbors

3.4.1 Water Depths Along the Route

The IF-300 cask has been calculated to maintain its integrity to a depth of 400 feet. The water depths (at mean low water) along the tow route are as follows:

Approach to Shoreham Jetties	6' - 15'
Long Island Sound, East of Sh[illegible]am	75' - 150'
Plum Gut	190'
Block Island Sound	80' - 100'
Montauk Point	30' - 60'
Montauk Point to Delaware Bay Entrance	60' - 200'
Delaware Bay	40' - 125'
Delaware River (channel)	39' - 43'

3.4.2 Safe Harbors

New York is the safe harbor along the intended route. The vessel Master will contact the COTP New York to identify an anchorage should the need arise to use this safe harbor.

3.5 Responses to Emergency Situations

The responses outlined below are those which are recommended for consideration after consultation with towers and others. It is noted that this list of responses is principally for the benefit and education of non-marine personnel. The actual action taken at the time of the casualty will depend on many factors such as weather, USCG input, salvage equipment available, location of the tow, etc. The variables are too numerous to analyze individually and this plan lists only the single response that is assumed to be most appropriate in a majority of the potential situations. *This list is not intended to limit the parties involved in the event of an actual incident.*

In the event of an emergency during barge movement, the carrier shall notify the nearest salvage (or towing) company, the nearest COTP, the COTP Philadelphia and the Coast Guard National Response Center and the LIPA Notification Point using the Incident Notification Form Enclosure 5.14. Personnel at the LIPA Notification Point will verify that the Coast Guard has been notified and will notify other government agencies. Based on the details of the incident, LIPA will mobilize response personnel in coordination with the Carrier.

3.5.1 *Broken Hawser* If the weather is good (calm seas), the tug will retrieve the broken hawser, back up under the bridles and reattach the spare hawser which will be carried aboard the tug. In this event, the tow would continue directly to the destination. If the weather is bad, the tug would fall behind the barge and retrieve the floating line which trails behind the barge and is attached to the end of the emergency towing wire. The emergency pickup wire is attached to breakable points on the side of the barge. As the tug pulls the end of the wire, from aft to foreword, it releases from the attachment points and the end is left attached to the towing bitts on the bow of the barge. This wire or rope is much shorter than a normal hawser and the tug should proceed to the nearest port of refuge unless he is able to reattach his spare full-sized hawser while underway.

If the tug is unable to immediately reconnect the hawser to the barge, the master shall keep a constant log of the barge's position and notify the USCG and LIPA. It is possible that contact will be lost with the barge in heavy weather or darkness. The salvage tower will be ordered to the scene immediately.

3.5.2 *Listing of the Barge* The barge will be towed with a slight amount of "aft drag" (e.g., the cargo should be stowed as shown on 2DM

Associates Drawing No. 9315-401 "Barge Loading Arrangement" so as to produce a trim to the stern). This drag allows the stern of the barge to act as a fixed rudder, making the barge more controllable while being towed on a hawser.

Other than "aft drag," the barge should not have any type of list to port or starboard or any change in draft. The Barge checklist (Enclosure 5.8) requires the tug master to check the drafts prior to departure and upon entering port to seek safe refuge. When pushing the barge, the tug will be next to the barge and a change in draft will be easily observable. When the barge is being towed on a hawser, however, it will be hundreds of feet behind the tug and constantly moving up and down with the wave action. (Part of the tow will also be at night.) Changes in draft will be extremely difficult to detect until the change in draft is extreme enough to be visible from the tug or the Master begins to notice changes in the way the barge is handling on the hawser.

If a change in draft is suspected, the tug will pull in enough hawser to examine the barge at close range. If the Master believes a change in draft has occurred, he should head for the nearest port of refuge and notify the salvage company immediately. Pumps and assist tugs should be made immediately available if there is any sign of a change in draft. If the barge appears to be in imminent danger of sinking, the tug will disconnect the hawser, and the Coast Guard and/or the salvage contractor can fly pumps to the site of the incident. Two 2" pumps will be carried by the principal towing tug in the event of an emergency.

3.5.3 *Failure of One or Both Tug Engines* If one tug engine fails, the tug will proceed to the nearest port of refuge. If failure of both engines occurs, the tug will standby the barge. If the owner of the primary towing tug has a nearby replacement tug of suitable power and classification available, he should be allowed to provide same. If these replacement tugs are too far away or are otherwise unsuitable, the salvage company must be called to bring the principal towing tug and the barge to the nearest port of refuge.

3.5.4 *Heavy Weather* If winds and seas are permissible upon departure but increase during the voyage, it would normally be up to the Master of the tug to determine when the tow should be brought to a safe harbor. In the case of this cargo, the tower will set the maximum wind and sea conditions under which the tow can proceed at sea. It should be understood that the Master of the tug always has the sole authority to bring the tow to a safe harbor for adverse weather or any other reason.

3.5.5 *Shifting Cargo or Damage to the Package* The barge checklist (Enclosure 5.8) requires the Master of the tug to inspect the cargo and the lashings prior to departure form Shoreham and at each port of refuge. When pushing the barge, the tug will be next to the barge and

a change in the cargo will be easily observable. When the barge is being towed on a hawser, however, it will be hundreds of feet behind the tug and changes in the sea-fastenings or radiological condition of the cargo will be extremely difficult to detect. (Part of the tow will also be at night.) If a change in the cargo package or the lashings is suspected, the tug should pull in enough hawser to examine the barge and the cask at close range.

3.5.6 *Security Threat* Security response details are contained in the Security Plan

3.5.7 *Damage to the Hull of the Barge* Refer to paragraph 3.5.2 above (Listing of the Barge) for the appropriate response actions.

3.5.8 *Fire or Damage to the Hull of the Tug or Barge* The Master of the tug shall notify the USCG immediately. A replacement tug, either from the owner of the principal towing tug or the salvage contractor, shall be ordered. The services of the salvage contractor may be required depending on the extent of damage to the tug. Note: All tugs have fire-fighting equipment and the crews are trained in fighting fires.

Fire aboard the barge is extremely unlikely as there will be no combustible material aboard.

3.5.9 *Sinking of the Tug* If the tug sinks, the crew may try to board the tow. The USCG will be called to respond to rescue the crew. A replacement tug shall be ordered from the owner of the principal towing tug or the salvage company. A salvage company chosen by the owner of the principal towing tug will be employed to raise the sunken tug.

3.5.10 *Sinking of the Barge* When the barge is in imminent danger of sinking, the tug will release the hawser and remove any men aboard the barge. After the barge sinks the tug will record the location where the barge went down and standby at that location until relieved by the salvage contractor. The salvage contractor shall handle underwater location of the barge (using the signals emanated by the "sonic signaling device" and the EPIRB) and the efforts to raise the vessel. The sea-fastening requirements in ANSI N14.24-1985 and as applied to the sea-fastening design for this project state that the cargo will be secured in such a manner that the cargo will not separate from the barge in the event of sinking. The cargo will, therefore, be salvaged with the barge.

3.5.11 *Grounding or Beaching of the Barge* If the barge is put aground or breaks away from the tug and runs up on a shoreline, the salvage contractor and the nearest USCG Group shall be notified by the master of the tug. The salvage contractor shall be contacted by the principal towing contractor and shall coordinate all efforts to free the barge

3.5.12 *Death, Injury or Sickness of Personnel on the Tug* If any personnel aboard the tug becomes injured or sick (or dies), the tug shall head for the nearest port of refuge. Unless off course, the tow will always be within 60 miles of the coastline, which is within helicopter range. If the injury or sickness is of a serious nature and the tow cannot make a port of refuge in time, a boat or helicopter evacuation shall be requested from the USCG.

3.5.13 *Radiological Emergency* See Radiological Operations Plan, Section 4.0

3.6 Radio Failure and Emergency Communications

Section 2.10 of the Operations Plan (Communications Plan) discusses the various methods of communication in detail. The three primary methods of communication are the VHF radio (effective range about 20 miles), cellular telephone (effective range about 24 miles from the coast), and HF radio which can transmit over very long distances.

3.6.1 Emergency Communications

The cellular phone should be used as the primary means of emergency communication with the tug's dispatch office in the event of an emergency in inland waters or near the coastline. Cellular will provide a private means of communication which is unlikely to be interrupted. If cellular communication cannot be established in an inland or near-coastal emergency, the VHF radio is the second choice. Should the tug be out of cellular and VHF range, the only means of normal communication is the HF radio.

3.6.2 Procedures in the Event of Radio Failure

The tug shall carry at least two permanently mounted VHF radios, a cellular telephone, and an HF radio which are all capable of inland and coastal communications (see paragraph 2.7.5). It is unlikely that all of these systems would fail, but if they should and contact is not made within the 6 hour period required, the tug shall seek the nearest harbor of refuge and make contact by normal telephone lines. A replacement radio shall then be brought to the tug before it continues the voyage.

Once the tug is more than 25 miles from the coastline, VHF and cellular will no longer be effective and HF radio will be the primary means of communication. HF communications can be disrupted by atmospheric conditions or the tug's location.

If the tug loses HF communications due to radio failure or atmospherics, it shall try to establish communications with a ship or any passing vessel on VHF channel 13 or 16. That vessel shall be asked to contact the

principal towing tug's dispatch office with the tug's position and estimated time of arrival.

Due to the long distances to a port of refuge, the tow should not seek refuge for HF radio failure unless some other emergency exists. Alternatively, the tow should turn toward shore (weather permitting) and continue the voyage within 20 miles of the coast so that VHF or cellular communications can be established.

The tower's office shall contact the LIPA Notification Point any time the shipment is unaccounted-for. The tower's office shall contact the USCG if contact with the tug, either directly or through another vessel, has not been possible for 12 hours or more. At that point, the USCG could decide whether to initiate an air search for the tow based on the last reported position.

3.7 Emergency Response Training

Emergency response training is discussed in detail in Section 2.7.9 (Marine Personnel Training). Subjects to be covered and estimated time of instruction are as follows:

Radiological nature of the cargo and associated risks

Construction of the cask and sea-fastening system

Role of the water carrier, the health physics technician, the rigger, and the USCG.

List of USCG Groups, salvage companies, and towers enroute

Checklists and paperwork

Discuss suggested responses for various types of emergencies as noted in Section 3.5

Safe harbors

Communications plan, emergency communications, and importance of maintaining contact at 6-hour intervals

Proposed schedule of operations

Question and answers

Total training time 3.5 to 4.0 hours

SECTION 4.0 - RADIOLOGICAL CONTROLS

The Long Island Power Authority will conduct operations to ensure that fuel shipment radiation levels are below applicable limits. In addition, all activities will be accomplished with the goal of keeping radiation exposures As Low As Reasonably Achievable (ALARA). The LIPA Health Physics Engineer is the designated radiation protection officer for the shipping operations.

There will be a Health Physics Technician (HP Tech) on the primary towing tugboat.

4.1 Pre-Operational Activities

Prior to the shipment of the fuel, the LIPA Health Physics Engineer shall have the barge loading plan reviewed and estimates made of the radiation dose that will be received by carrier and rigging personnel during barge loading, transport and unloading operations. This review will ensure that the training and radiation exposure limit requirements of 10 CFR 19 and 20, respectively, are adhered to. The results of this evaluation shall be documented and retained during the entire shipment period and for a two year period thereafter.

4.2 Normal Operations

The following activities will be accomplished routinely during the fuel shipment. Records will be maintained during the entire shipment period and for a two year period thereafter.

4.2.1 While in transit the fuel cask will be enclosed in a tarp over a retractable metal grate enclosure. Prior to the fuel shipment leaving the Shoreham Reactor Building a radiological survey will be made outside of the retractable enclosure to ensure that there are no radiation levels greater than acceptable levels. These readings shall be recorded on the shipping papers.

DOT/NRC Radiation limits for the fuel shipment are:
200 mR/hr on surface of the enclosure
10 mR/hr at 2 meters from vertical plane of enclosure

4.2.2 A HP Technician will be present during loading operations. This HP Tech will perform surveys around the fuel shipment enclosure upon completion of barge loading operations to ensure that radiation levels are consistent with those previously taken.

4.2.3 The barge carrying the fuel shipment will be unmanned during the transit. There will not be any routine radiological surveys made during the barge transit.

4.2.4 Upon arrival of the barge at the unloading site an HP Tech will board

the barge and ensure that radiation levels outside of the enclosure are consistent with the readings on the shipping papers.

4.2.5 The HP Technician will be present during unloading operations and will take another survey of the cask enclosure when unloading operations are complete.

4.2.6 The HP Technician will survey the barge after each shipment to assure that radioactive contaminatien levels are below 49 CFR 173.443 and 176.715 limits. These readings will be provided to the carrier.

4.2.7 In the event any of the routine surveys done by the Health Physics Technician show dose rates or contamination levels above regulatory limits, the HP Tech will contact the LIPA Notification Point and inform them of the situation.

4.3 Incident Operations

Upon notification of an emergency, the tugboat office will contact the 24 hour LIPA Notification Point and the Coast Guard National Response Center in accordance with 49 CFR 171.15. The LIPA Notification Point will contact the appropriate State Agency and the Nuclear Regulatory Commission.

The LIPA On-Call Manager will mobilize support in coordination with the Carrier. The personnel mobilized will be based upon the nature of the incident. If a significant radiological hazard is present, the Federal Radiological Monitoring Assessment Plan (FRMAP) Team may be mobilized. This team is located at U.S. Department of Energy Brookhaven Area Office in Upton, New York.

4.3.1 Collision or Grounding

Given the structural design of the cask and skid it is implausible that any grounding or collision involving the barge will affect the radiological integrity of the cask. Therefore the tugboat crew may board the barge to perform necessary response actions without being accompanied by a Health Physics Technician.

If the vessel Master determines there is a potential for a breech in cask integrity, the HP Technician will perform a survey once conditions are safe enough to allow access to the barge.

4.3.2 Sinking

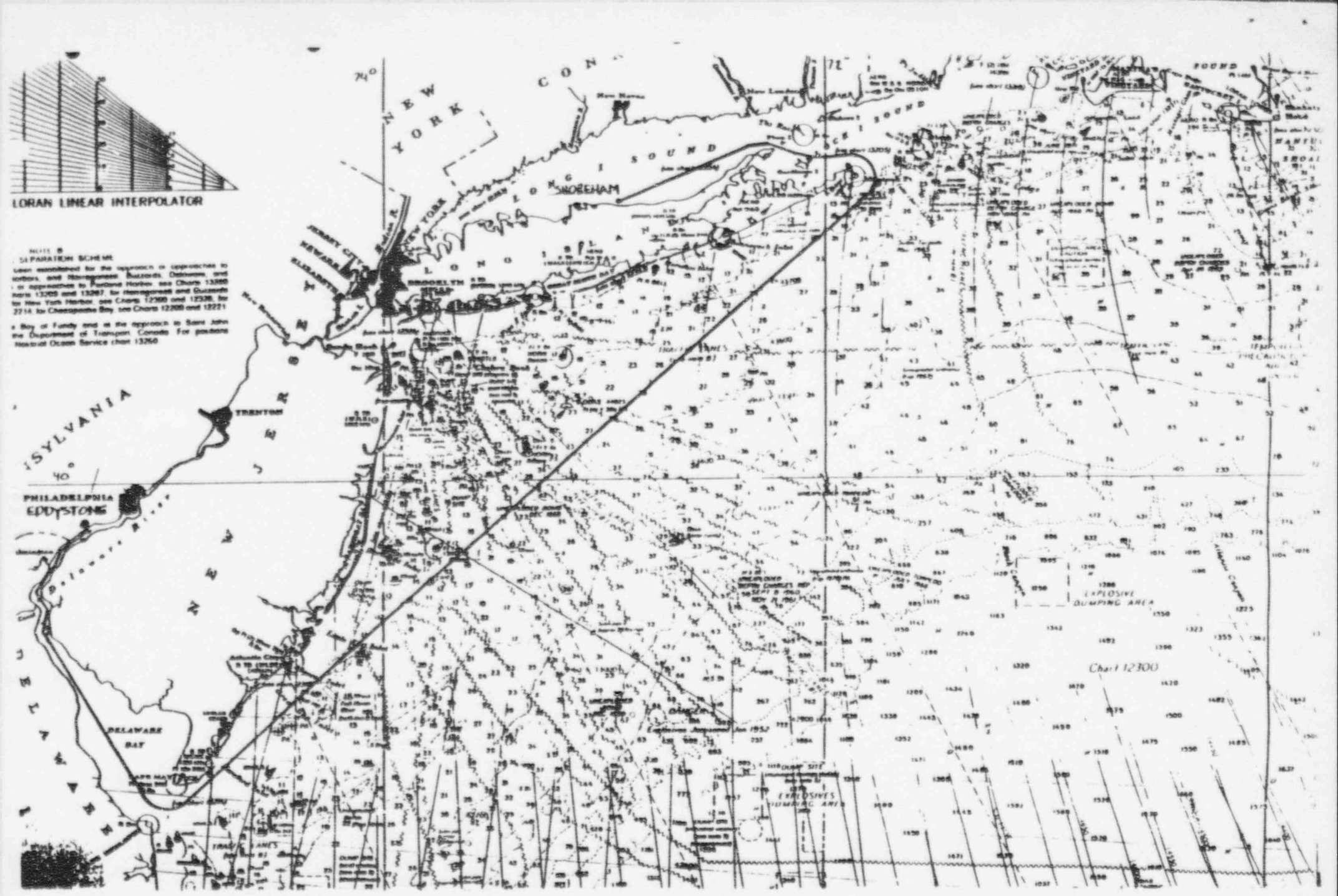
Upon notification that the fuel shipment is in danger of sinking or has sunk, LIPA personnel will work with the tugboat and salvage company to provide radiological support for salvage operations.

4.3.3 Safe Harbor

If due to weather or equipment problems the tug and barge seek safe harbor, the vessel Master will contact the U.S. Coast Guard Captain of the Port and the tugboat office. The Coast Guard will specify an anchorage location. The tugboat office will notify the LIPA Notification Point. The HP Technician will support U.S. Coast Guard and Local Law Enforcement requests for information concerning the radiological status of the cask.

Enclosure 5.6 - Map of Route

Nautical Chart with (Approximate) Tow Route Illustrated - 1 sheet


LORAN LINEAR INTERPOLATOR
SEPARATION SCHEME
NEW YORK
LONG ISLAND
SOUND
BROOKLYN
NEWARK
TRENTON
PHILADELPHIA
EDDYSTONE
DELAWARE BAY
NEW JERSEY
PENNSYLVANIA
EXPLOSIVE DUMPING AREA
Chart 12300
40°
71°

Long Island Power Authority

Shoreham Nuclear Power Station
P.O. Box 628
North Country Road
Wading River, N.Y. 11792

August 9, 1993
LRM-93-079

State of New Jersey
Department of Environmental
Protection and Energy
CN 415
Trenton, New Jersey 08625-0415

ATTN: Mr. John Feeney
Bureau of Environmental Radiation
Division of Environmental Safety, Health
and Analytical Programs

Application for Certificate of Handling
Shoreham-Limerick Fuel Shipment

Dear Mr. Feeney:

Enclosed is Long Island Power Authority's (LIPA's) application for a Certificate of Handling (COH) for the first shipment consisting of seventeen slightly irradiated fuel assemblies from the Shoreham Nuclear Power Station to the Limerick Generating Station owned and operated by Philadelphia Electric Company. In accordance with the Nuclear Regulatory Commission (NRC) regulations (10 CFR Section 73.2), the shipment is classified as "Special Nuclear Material of Low Strategic Significance."

There are a total of five hundred and sixty Shoreham fuel assemblies including natural uranium and enriched uranium fuel assemblies. Accordingly, 33 shipments will be required to complete the fuel transfer campaign.

The first shipment will not contain any enriched fuel assemblies, and will consist entirely of natural uranium assemblies. Consequently, the radionuclide content will be below the threshold values for highway route controlled quantities of radioactive material. Most of the following 32 shipments are expected to contain highway route controlled quantities.

The Shoreham-Limerick fuel shipments will comply with all NRC and Federal DOT requirements, thereby assuring the radiological safety of the shipment. We note in that regard that LIPA has been advised that, due to the applicable federal regulations, New Jersey regulation of spent fuel shipments may be preempted by either the Atomic Energy Act or the Hazardous Materials Transportation Act and LIPA reserves its rights in that respect. Please be assured, however, of our desire to provide all information that you might deem appropriate and to cooperate in every other way as well with New Jersey officials to ensure that the shipments proceed safely and promptly. We are submitting this letter and the attached application in that spirit and look forward to conferring with you as appropriate.

Should you have any questions or require any additional information, please do not hesitate to contact Siva Kumar of my staff. He can be reached at 516-929-4177.

Very truly yours,

L. M. Hill
Resident Manager

SK/ab
Enclosure

Arthur
516 929-8095
Transf. White
Plane in N.Y.

New Jersey Reference No. _____

DEQ-036
1/90

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL RADIATION
CN 415, TRENTON, NEW JERSEY 08625
609-987-2132 or Fax 609-987-6390

APPLICATION FOR CERTIFICATE OF HANDLING Transportation of Radioactive Material

Applicant Long Island Power Authority

I. Materials Information

A. Is this Low Specific Activity (LSA) as per 49 CFR 173.403? Yes ___ No X

B. Is this shipment a Highway Route Controlled Quantity as per 49 CFR 173.403? Yes* ___ No X

C. Is this a shipment of Irradiated Reactor Fuel? Yes* X No ___

D. Is this a shipment of Nuclear Wastes? Yes ___ No X If Yes, does this shipment require advance notification of the Governor as per 10 CFR 71.97 Yes* ___ No ___

E. List characteristics of Radioactive Materials.

	Isotopes ¥	Quantity (Curies)	Physical Form (liquid, solid, encapsulated, etc.)	Special/Normal Form A1 or A2
1.	Slightly Irradiated Fuel --	4070 (Max)	Solid (Uranium Dioxide Ceramic	Normal
2.	Special Nuclear		Pellets with	
3.	Material of Low		Zircaloy Cladding)	
4.	Strategic Significance			
5.	(See Manifest** for Details)			
6.				

F. Does vehicle require placarding as per 49 CFR 172.504? Yes X No ___

G. Packaging Type(s): A ___ B X Other ___
Explain Radioactive Material Package Model No. IF-300; NRC Certificate of Compliance No. 9001; Package Identification No. USA/9001/B ( ) F; Capacity: 17 Shoreham Fuel Assemblies

* Inform Governor's contact person
¥ For spent fuel shipments, enter "Spent Fuel"
** To be forwarded with advance notification to Governor's designee.

COI NUMBER
DATE APPL. RECEIVED
DATE COI ISSUED

IRECO
NUCLEAR WASTE
CHEMIC

MEDICAL
OTHER

II. Transportation Information:

X Daily Certificate Information - Complete Section A
___ Annual Certificate Information - Complete Section B

A. Daily Certificate

1. Shipper: Long Island Power Authority
   a. Name Shoreham Nuclear Power Station
   b. Address North Country Road, Wading River, NY 11792
   c. Telephone (516) 929-8300

2. Carrier:
   a. Name S.C. Loveland Co., Inc.
   b. Address P.O. Box 368, Sunawna Rd., Pennsville, NJ 08070
   c. Telephone (609) 935-8100

3. Driver(s):
   a. Name Charlie Riddick (Tugboat Captain)*

4. Transport Vehicle: Loveland 1721 (or sistership)**
   a. Year 1971
   b. Make Tidewater Equipment Co.
   c. Color Grey
   d. State of Registration Pennsylvania
   e. [redacted] No. 536335

5. Shipment:
   a. Date and time entering N.J. Between 9/23/93 and 9/30/93
   b. Date and time leaving N.J. Between 9/23/93 and 9/30/93
   c. Origin:
      (1) Facility Name Shoreham Nuclear Power Station
      (2) Street North Country Road
      (3) City Wading River
      (4) County Suffolk
      (5) State New York

   d. Destination:
      (1) Consignee Limerick Generating Station
      (2) Street Evergreen & Sanatoga Road
      (3) City Sanatoga
      (4) County Montgomery
      (5) State Pennsylvania

   e. Schedule Route in New Jersey (list all roads/highways in order travelled).
      Delaware Bay
      Delaware River
      (NOTE: No overland travel in New Jersey)

*Alternates: W.E. Landers, D.E. Riddick, W.A. Jones, D.W. Delph
**ABS Class Ocean Deck Barge

B. Annual Certificate

1. Shipper:
   a. Name _____
   b. Address _____
   c. Telephone (_____) _____

2. Carrier:
   a. Name _____
   b. Address _____
   c. Telephone (_____) _____

3. Driver(s) (include attachment [IIB3] listing the name of all drivers)
   a. Name _____

4. Transport Vehicle (include an attachment [IIB4] listing of the following information for all vehicles)
   a. Year _____
   b. Make _____
   c. Color _____
   d. State of Registration _____
   e. License Plate Number _____

5. Shipment:
   a. Days an times (include an attachment [IIB5] listing the days of the week and times shipment should be traveling in New Jersey)

   b. Origin:
      a. Facility Name _____
      b. Street _____
      c. City _____
      d. County _____
      e. State _____

   c. Destination
      a. Consignee _____
      b. Street _____
      c. City _____
      d. County _____
      e. State _____

   d. Scheduled route in New Jersey (list all roads/highways in order travelled).

_____

III. Storage Information

Is this shipment of radioactive material going to be stored in transit as defined in NJAC 7:28-12.2.

__X__ No, proceed to Item IV.

_____ Yes, complete the following section.

A. Location of Storage Site:

Address: _____

City: _____

B. Owner of Storage Site:

Name: _____

Telephone Number: (_____) _____ - _____

C. Type(s) and Maximum Quantity of Each Radioactive Material Stored:

Isotopes	Quantity (Curies)	Physical Form (liquid, solid e.g. encapsulated etc.)	Form Special/Normal A1 or A2

D. Maximum Time of Storage _____

E. Description of Storage Location, Manner and Security:

F. Names, addresses and Telephone Numbers of Authorities in the Municipalities having Jurisdiction over Storage Site Property:

(1) Police Chief: Name _____

Address _____

Telephone Number (____) _____-_____

(2) Fire Chief: Name _____

Address _____

Telephone Number (____) _____-_____

IV. Contact Person(s):
Routine (business hours):

Name Nicholas S. Lizzo
Telephone Number (516) 929 - 8300 Ext. 3430

Emergency (24 Hours/day; 7 days/week for radiological assessment):

Name Shoreham Nuclear Power Station Control Room
Telephone Number (516) 234 - 0702

V. Insurance Information:

The following information relates to insurance to compensate for injury, loss and damage due to radiological emergencies involving this shipment.

Name of Insurance Company American Nuclear Insurers (ANI)

Account Number: Policy Nos. NF-269, MF-115

Limits of Liability: 200,000,000.00 Dollars.

I, heretofore known as the CCH Holder, hereby swear that the information given is correct to the best of my knowledge, And that this shipment complies with all applicable rules and regulations.

S. Schoenwiesner
Name (print or type)

August 9, 1993
Date

Stephen M. Schoenwiesner
Signature

AUG 19 1993

STSB:NLO
71-9001

Pacific Nuclear
ATTN: Mr. Robert D. Quinn
6203 San Ignacio Avenue, Suite 100
San Jose, CA 95199

Dear Mr. Quinn:

As requested by your application dated July 29, 1993, as supplemented August 10, 1993, enclosed is Certificate of Compliance No. 9001, Revision No. 28, for the Model No. IF-300 package. This certificate supersedes, in its entirety, Certificate of Compliance No. 9001, Revision No. 27, dated May 11, 1993.

Changes made to the enclosed certificate are indicated by vertical lines in the margin.

Those on the attached list have been registered as users of the package under the general license provisions of 10 CFR §71.12 or 49 CFR §173.471.

The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of 49 CFR §173.471.

Sincerely, Original Signed by
Cass R. Chappell

Cass R. Chappell, Section Leader
Cask Certification Section
Storage and Transport Systems Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Enclosures:
1. Certificate of Compliance
No. 9001, Rev. No. 28
2. Approval Record

cc w/encl:
Mr. James K. O'Steen
Department of Transportation

Registered Users

9308270047

NRC FORM 618
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. PACKAGE IDENTIFICATION NUMBER	d. PAGE NUMBER	e. TOTAL NUMBER OF PAGES
9001	28	USA/9001/B( )F	1	7

2. PREAMBLE
a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meet the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION
a. ISSUED TO (Name and Address)
Pacific Nuclear Systems, Inc.
1010 South 336th Street
Federal Way, WA 98003

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
General Electric Uranium Management Corporation application dated September 24, 1984, as supplemented.

71-9001
c. DOCKET NUMBER

4. CONDITIONS
This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the operating procedures specified herein.

5.
(a) Packaging

(1) Model No.: IF-300

(2) Description

A stainless steel encased, depleted uranium shielded cask. The cask is cylindrical in shape, 64 inches in diameter and a maximum of 210 inches long with maximum cavity dimensions of 37-1/2 inches in diameter by 180-1/4 inches long. Shielding is provided by 4 inches of depleted uranium, 2-1/8 inches of stainless steel and a minimum of 4-1/2 inches (550 gallons) of a water-ethylene glycol mixture.

Two closure heads are provided for the shipment of BWR and PWR fuel assemblies. The heads are 304 stainless steel forgings and end plates which encase the 3-inch thick depleted uranium shielding. Either closure head may be used for packaging solid irradiated hardware.

The closure heads are secured to the cask body by means of 32, 1-3/4 inch studs and nuts. The cask is sealed with a metallic ring gasket.

The cavity is penetrated by a vent line at the top and a drain line at the bottom. These lines are sealed by bellows stainless steel globe valves and valved quick-disconnect couplings. Stainless steel pipe caps may be used in lieu of the quick-disconnect couplings. The vent line is also equipped with a 350-400 psig rated rupture disk. All valves are housed in protected boxes on the cask exterior.

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5.(a) Packaging (continued)

(2) Description (continued)

Neutron shielding is provided by a liquid-filled, thin-walled, corrugated containment on the cask exterior. This cylindrical structure is separated two longitudinal compartments, each equipped with two expansion tanks, fill relief valves. The fill line from each compartment is terminated by a stai less steel globe valve in a protected box (separate from cavity boxes) on t cask exterior. The stainless steel globe valves may be replaced by stainle steel blind flanges. The vent line from each compartment goes to an expans tank which is provided with a pressure relief valve set at 200 psig.

The cask has four types of fuel baskets which can be interchanged to accom- modate various fuels. The PWR basket holds seven assemblies, the unchannel BWR basket holds eighteen assemblies, the channelled BWR basket holds seven assemblies, and the Shoreham BWR fuel basket holds seventeen Shoreham BWR f assemblies. The channelled and unchannelled BWR fuel baskets may be provic with supplementary shielding (depleted uranium) near the cask closure.

The cask is shipped horizontally with the bottom supported in a tipping cr between two pedestals and the upper end resting in a semi-circular saddle; upper end is pinned to the saddle. The cask supports are welded to the fr of a 37-1/2-foot long by 8-foot wide structural steel skid. The skid may have installed on it an auxiliary cooling system, consisting of two diesel engines driving two blowers which discharge cooling air to the corrugated surface of the cask via common ducting. Neither installation nor operatio all or part of this auxiliary cooling system is a requirement of this pack approval.

The entire cask and cooling system is covered by a retractable aluminum enclosure. Access to the enclosure is via locked panels in the side and a locked door in one end. Although the Model No. IF-300 cask can be transpo for short distances on the highway, its principal mode of transportation i railroad.

The gross weight of the cask is approximately 140,000 pounds. The skid a other external components weigh approximately 45,000 pounds.

(3) Drawings

The Model No. IF-300 shipping cask is described by the following General Electric Company Drawing Nos.: 189C5238 - Sheet 1, Rev. 9; Sheet 2, Rev. Sheet 3, Rev. 9; Sheet 4, Rev. 8; Sheet 5, Rev. 5; Sheet 6, Rev. 8; Sheet Rev. 4; Sheet 8, Rev. 5; Sheet 9, Rev. 8; Sheet 10, Rev. 5; and Sheet 11, 2, and Pacific Nuclear Systems, Inc. Drawing Nos.: 420-11-3000, Sheets 1 through 9, Rev. 0; 420-11-3001, Sheet 1, Rev. 0; 420-11-3002, Sheets 1 an Rev. 0; 420-11-3003, Sheets 1 and 2, Rev. 0; 420-11-3004, Sheets 1 and 2, 0; 420-11-3005, Sheets 1 and 2, Rev. 0; 2045 Sheets 1 to 4, Rev. 1; 2045.3001, Sheets 1 and 2, Rev. 1; 2045.3002, She Rev. 1; and 2045.3003, Sheet 1, Rev. 0.

5.(a)(4) Basic Components

The basic components of the Model No. IF-300 shipping cask that are important to nuclear safety are listed in Section IX, Table IX-1.

(b) Contents

(1) Type and form of material

(i) Irradiated PWR and BWR uranium oxide fuel assemblies. PWR assemblies may be shipped with or without control rods. Partial fuel assemblies, that is, assemblies from which fuel pins are missing, must not be shipped unless dummy fuel pins are used to displace an amount of water equal to that displaced by the original pins. The specific power of each fuel assembly must not exceed 40 kw/kgU and the burnup of each fuel assembly must not exceed 35,000 MWD/MTU. The minimum cooling time of each assembly must be no less than 120 days. Prior to irradiation, the BWR and PWR fuel assemblies must have the following dimensions and specifications:

Group I fuel assemblies

	PWR	BWR
Fuel form	Clad UO_2 pellets	Clad UO_2 pellets
Cladding material	Zr or SS	Zr or SS
Maximum initial U content/assembly, kg	465	198
Maximum initial U-235 enrichment, w/o	4.0	4.0
Maximum bundle cross section, in	8.75	5.75
Fuel pin array	14x14/15x15	7x7
Fuel diameter, in	0.380-0.460	0.500-0.600
Fuel pin pitch range, in	0.502-0.582	0.647-0.809
Maximum active fuel length, in	145	146

5. (b) Contents (continued)

Group II fuel assemblies

	PWR	BWR
Fuel form	Clad UO_2 pellets	Clad UO_2 pellets
Cladding material	Zr or SS	Zr or SS
Maximum initial U content/assembly, kg	475	198
Maximum initial U-235 enrichment, w/o	4.0	4.0
Maximum bundle cross section, in	8.75	5.75
Fuel pin array	16x16/17x17	8x8
Fuel diameter, in	0.376-0.400	0.475-0.505
Fuel pin pitch range, in	0.496-0.507	0.630-0.645
Maximum active fuel length, in	150	150

(11) Irradiated Shoreham BWR fuel assemblies composed of UO_2 fuel rods in an 8 x 8 square array. Each fuel assembly has a maximum average enrichment of 2.19 w/o U-235. The fuel rods have the following nominal dimensions: 0.410-inch fuel pellet diameter, 0.032-inch thick zircalloy cladding, 0.64-inch rod pitch, and 150-inch active fuel length. The maximum assembly burnup is 67.0 MWD/MTU, and the minimum cool time is three years. Fuel assemblies may be shipped with protective packaging as described in Section 1.2.3.1 of application dated February 25, 1993. Fuel assemblies must be positioned within stainless steel channels which have a nominal thickness of 0.0598 inch and a nominal length of 167 inches. For natural uranium fuel assemblies, zircalloy channels, having a nominal thickness of 0.1 inch and a length of approximately 167 inches, may be used in lieu of stainless steel channels.

5.(b) Contents (continued)

(iii) Solid irradiated hardware, which may include fissile material, provided the quantity of fissile material does not exceed a Type A quantity and does not exceed the mass limits of 10 CFR §71.53. As needed, appropriate component spacers must be used when loading irradiated hardware into the cask cavity to limit movement of the contents during accident conditions of transport. Use of a steel liner is authorized provided: (1) its outside dimensions are approximately those of the cask cavity inside dimensions, (2) constructed of single thickness of steel plate with full penetration welds, (3) thickness of steel plate does not exceed one inch, and (4) the liner is provided with a drain and vent to insure water removal.

(2) Maximum quantity of material per package

(i) Maximum decay heat per package not to exceed 40,000 Btu/hr. Maximum 5,728 Btu/hr/PWR assembly. Maximum 2,225 Btu/hr/BWR assembly.

(ii) Seven PWR fuel assemblies, seventeen channelled BWR assemblies, eighteen unchannelled BWR fuel assemblies, or seventeen Shoreham BWR fuel assemblies.

(iii) Above fuel assemblies to be contained in their respective fuel baskets as shown in GE Drawing No. 159C8228 - Sheet 6, Rev. 8, PNSI Drawing No. 420-111-3000, Sheet 1 through 9, Rev. 0, or PNSI Drawing No. 2048.3002, Sheet 1, Rev. 1.

(c) Unloaded package - contents and maximum quantity of material

Greater than a Type A quantity of residual radioactive material consisting of mixed-fission and activation products adhering to interior cavity and fuel basket surfaces.

(d) Fissile Class I

6. The end of life total calculated residual gas that could become available from the fuel pins must not exceed 0.50 lb moles for content 5.(b).

7. The maximum gross weight of the cavity contents must not exceed 21,000 pounds.

8. For the shipment of irradiated fuel assemblies, the cask cavity (containment vessel) must be promptly inerted following removal of the water from the cavity. The cask cavity must be purged at least three times with argon, nitrogen, or helium. Each purge volume must be equivalent to or greater than the cask cavity volume. After the final purge, the cavity must be promptly filled with argon, nitrogen, or helium at 1.0 atm pressure.

9. Known or suspected failed fuel assemblies (rods) and fuel with cladding defects greater than pin holes and hairline cracks are not authorized.

10. Prior to each shipment, the licensee must confirm that the cask contains no more than 1 cubic foot of water in the cavity and the licensee must prepare the cask for shipment, in accordance with Subsection 10.1 of the application.

11. The cask contents shall be so limited that under normal conditions prior to transport, 62 times the neutron dose rate plus 6.3 times the gamma dose rate will not exceed 960 mrem/hr at a distance of six feet from the side of the cask (ten feet from the cask center-line).

12. The neutron shielding tanks must be filled with approximately a 50/50 volume percent mixture of ethylene glycol and water during the months of October through May.

13. Replacement globe valves other than the valve specified on Drawing No. 159C8238-Sheet 4, Rev. 8. must be tested as stated in Subsection 8.6.3.2 of the application.

14. The packaging must be maintained in accordance with the requirements of Subsection 10.2 of the application. During inactive periods, the maintenance and testing frequency may be disregarded provided that the package is brought into full compliance with these requirements prior to the next use of the package.

15. The cask cavity must be equipped with a rupture disk device with a burst pressure within the range of 350-400 psig (443°F) including all tolerances.

16. The uranium shielding material must be separated from all steel surfaces with a minimum copper thickness of 4-mils, except that the stud bolts attaching the shield assemblies to top of the unchannelled BWR basket must be coated with a minimum of 1/2-mil of copper.

17. A shutoff valve must not be installed between each neutron shield tank and its respective thermal expansion tank.

18. The cask may be wrapped with reinforced plastic during shipment, provided that the decay heat of the contents does not exceed 1.5 Kw. The reinforced plastic used to wrap the cask must not be greater than 0.015 inches thick or have a thermal conductivity less than 0.0242 Btu/hr-ft-°F. The reinforced plastic wrapping cannot be used as the cask surface for purposes of complying with 10 CFR §71.87.

19. For transport of Shoreham BWR fuel assemblies, the package may be covered with a tarpaulin. The tarpaulin may not be used as the package surface for purposes of complying with 10 CFR §71.87.

20. The package authorized by the certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.

21. Expiration date: May 31, 1998.

REFERENCES

General Electric Uranium Management Corporation consolidated application dated September 24, 1984.

General Electric supplements dated: February 8, April 4, and May 10, 1985, and March 12, 1990.

Pacific Nuclear Systems, Inc. supplements dated: July 26, 1990; March 28, April 12, July 19, and August 30, 1991; January 3, 1992; and February 25, April 9, July 29, and August 10, 1993.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Cass R. Chappell

Cass R. Chappell, Section Leader
Cask Certification Section
Storage and Transport Systems Branch
Division of Industrial and Medical
Nuclear Safety, NMSS

Date: AUG 19 1993

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. [redacted]

APPROVAL RECORD
Model No. IF-300 Package
Certificate of Compliance No. 9001
Revision No. 28

By application dated July 29, 1993, as supplemented August 10, 1993, Pacific Nuclear (PN) requested an amendment to Certificate of Compliance No. 9001, for the Model No. IF-300 package. PN requested authorization to ship natural uranium Shoreham BWR fuel assemblies with their zircalloy flow channels, in lieu of the stainless steel oversized channels which will be used for other Shoreham BWR fuel assemblies. In addition, PN requested authorization for the package to be covered with a tarpaulin for shipments of all Shoreham BWR fuel assemblies. The tarpaulin may be used to protect the package from salt spray for barge shipments.

SHIELDING

Previously approved Shoreham BWR fuel assemblies were to be transported in protective packaging, which included oversized stainless steel channels. The natural uranium fuel assemblies may be shipped with zircalloy channels, which have been slightly irradiated and which have a greater thickness than the stainless steel channels. The burnup of the natural uranium fuel assemblies is considerably lower than the maximum assembly burnup used previously, which offsets the increase in source term due to the irradiated channels.

The applicant showed that shipping 17 natural uranium fuel assemblies with zircalloy channels instead of the stainless steel channels would not result in higher external dose rates. The applicant used a unit source of one photon/second and performed dose rate calculations for the basket with both stainless steel and zircalloy channels. The dose rate with the zircalloy channels was lower than with the stainless steel channels.

The NRC staff agrees with the applicant's conclusion that the natural uranium assemblies and zircalloy channels will not affect the ability of the package to meet the external radiation standards of 10 CFR Part 71.

CRITICALITY

To demonstrate that the natural uranium assemblies with the zircalloy channels are less reactive than the configuration previously analyzed, the applicant performed a criticality analysis using KENO V.a computer code. The applicant used fuel assemblies enriched to 1.3 w/o U-235, instead of natural uranium, with full density moderation and with the zircalloy channels. The maximum k_{eff} was 0.74134, compared to 0.81709 which was previously calculated for 2.15 w/o U-235 enriched fuel assemblies with stainless steel channels. The applicant concluded that shipment of natural uranium BWR fuel assemblies with zircalloy channels will not affect the criticality safety of the IF-300 package.

The NRC staff agrees with the applicant's conclusion that the shipment of natural uranium fuel assemblies with zircalloy channels will not affect the ability of the package to meet the criticality safety requirements of 10 CFR Part 71.

THERMAL

PN requested authorization to cover the package with a tarpaulin for transport of Shoreham BWR fuel assemblies. To show that the tarpaulin would not adversely affect the temperatures in the package, the applicant performed a thermal analysis based on a decay heat load of 31.9 watts per package, or less than 2 watts per assembly. This heat load was based on 17 fuel assemblies with the highest burnup being loaded in the package. The analysis was performed using the HEATING7.2 code. A full length section of the cask and tarpaulin was explicitly modeled. The applicant performed a thermal analysis for normal conditions of transport, since the package is assumed to separate from the skid under accident conditions.

The results indicate that covering the package with a tarpaulin yields lower cask centerline temperatures, due to reduced solar insolation. The NRC staff agrees with the applicant's conclusion that the package covered by a tarpaulin is bounded by the previous calculations for the Shoreham fuel.

The Certificate of Compliance has been amended to specify that natural uranium Shoreham BWR fuel assemblies may be shipped with zircalloy channels in lieu of stainless steel channels, and to specify the dimensions (thickness and length) of the two types of channels. The Certificate has been amended to include a condition that the package may be covered with a tarpaulin for shipments of Shoreham BWR fuel assemblies. These changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Cass R. Chappell

Cass R. Chappell, Section Leader
Cask Certification Section
Storage and Transport Systems Branch
Division of Industrial and
Medical Nuclear Safety, NMSS

Date AUG 19 1993

State of New Jersey
Department of Environmental Protection and Energy
Office of the Commissioner
CN 402
Trenton, NJ 08625-0402

Jeanne M. Fox
Acting Commissioner

VIA FAX AND REGULAR MAIL

Frank Maloney, Acting Director
U.S. Department of Commerce
National Oceanic and Atmospheric
Administration
Office of Ocean and Coastal Resource
Management
1305 East-West Highway, 11th Floor
Silver Spring, MD 20910

Re: New Jersey Consistency Review of
Long Island Power Authority's U.S.
Coast Guard Approval to Transport
Irradiated Nuclear Fuel From
Shoreham Nuclear Power Station
Through New Jersey Territorial
Waters to Eddystone, Pennsylvania

Dear Mr. Maloney:

This letter shall serve to notify you that the New Jersey Department of Environmental Protection and Energy ("NJDEPE") demands consistency review of the above-referenced activity pursuant to the provisions of the Coastal Zone Management Act, 16 U.S.C. §1451 et seq. ("CZMA"), and New Jersey's approved coastal zone management plan. NJDEPE is entitled to review this activity, which will take place directly within New Jersey's coastal zone, pursuant to the

explicit requirements of the CZMA regarding applications for federal approvals which affect a state's coastal zone. 16 U.S.C. §1456(c)(3)(A).

The applicant in this case has sought a federal agency approval which is listed in New Jersey's guidelines for federal consistency in New Jersey's coastal zone, which guidelines have been submitted to the Office of Ocean and Coastal Resource Management ("OCRM") for approval pursuant to 15 C.F.R. §930.53. Thus, pursuant to 15 C.F.R. §930.53(e), no final federal agency approval of the proposed activity may be issued until NJDEPE completes its consistency review of this activity. Even if the subject approval were not listed pursuant to 15 C.F.R. §930.53, OCRM must approve NJDEPE's request for a consistency review in this case pursuant to 15 C.F.R. §930.54(c) because the proposed activity will take place directly within New Jersey's coastal zone, thereby affecting New Jersey's coastal zone and implicating the enforceable policies of New Jersey's approved coastal zone management plan.

This matter involves the Long Island Power Authority's ("LIPA's") plans to transfer radioactive nuclear fuel from the abandoned Shoreham Nuclear Power Station in Suffolk County, New York, through New Jersey's territorial waters, to Philadelphia Electric Company's ("PECo's") Limerick Generating Station in Limerick, Pennsylvania. LIPA has applied to the U.S. Coast Guard for approval to transport the radioactive nuclear fuel by barge from the Shoreham facility on

Long Island through the Atlantic Ocean around Cape May, New Jersey, through New Jersey's territorial waters in the Delaware Bay and up the Delaware River to Eddystone, Pennsylvania. From Eddystone, the radioactive nuclear fuel will be transported over land to the Limerick Generating Station for use at that facility. LIPA proposes 33 barge shipments of radioactive nuclear fuel to take place over a period of at least seven months. LIPA plans to commence the first shipment on or about September 23, 1993. The radioactive nuclear fuel constitutes "dangerous cargo" under applicable U.S. Coast Guard regulations. See 33 C.F.R. §126.07. Thus, U.S. Coast Guard approval is required for the handling of this material in waterfront facilities and on the waters of the United States. See, generally, 33 C.F.R. Part 6 and Part 126.*

Accordingly, on or about July 7, 1993, LIPA submitted its "Operations Plan for Marine Transportation of Fuel Shipment from Shoreham, NY to Eddystone, Pa" ("Transportation Plan") to the U.S. Coast Guard for approval. (Copy attached as Exhibit A). This Transportation Plan identifies the proposed route of the shipments. Although the exact length of the route which traverses New Jersey's territorial waters is not specified in

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*Various federal Nuclear Regulatory Commission ("NRC") approvals are also required to transport this radioactive nuclear fuel. Some NRC approvals have already been obtained. Specifically, the radioactive nuclear fuel will be packaged for transport at the Shoreham facility in a special cask, the design of which has been approved by the NRC for the proposed shipments. The NRC has also amended PECo's operating license to allow it to receive the proposed shipments at its Limerick facility.

the Transportation Plan, it appears from that document that the proposed nuclear-laden shipments may traverse as much as 50 miles of New Jersey's coastal zone. New Jersey was not notified when LIPA submitted its Transportation Plan to the U.S. Coast Guard.

On July 27, 1993, the U.S. Coast Guard, Captain of the Port Long Island Sound, issued its approval of LIPA's Transportation Plan, contingent on the satisfactory internal structural inspection of the barges to be used for the radioactive nuclear fuel shipments. ("U.S. Coast Guard's contingent approval", copy attached as Exhibit B). Again, New Jersey was not notified when the U.S. Coast Guard issued this approval.

In fact, it was not until on or about August 9, 1993, when LIPA submitted an application for a Certificate of Handling ("COH") to the NJDEPE Radiation Protection Program pursuant to New Jersey's Radiation Protection Act, N.J.S.A. 26:2D-1 et seq., that the NJDEPE actually received notice that the proposed route of the nuclear-laden shipments does, in fact, traverse New Jersey territorial waters in the Delaware Bay and Delaware River, and will therefore affect New Jersey's coastal zone. Moreover, it was not until on or about August 26, 1993, as the COH application was being reviewed, that New Jersey learned of the U.S. Coast Guard's contingent approval of the proposed Transportation Plan. New Jersey finally received a copy of the Transportation Plan on September 3, 1993.

On September 8, 1993, the NJDEPE provided written notice to the U.S. Coast Guard, Captain of the Port Long Island Sound, and to LIPA, pursuant to 15 C.F.R. §930.54(a), that NJDEPE would require a consistency review of this approval pursuant to the CZMA. (Copy attached as Exhibit C). On that same day, a copy of that notice was also provided to the Assistant Administrator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, pursuant to 15 C.F.R. §930.54(b). Finally, on September 9, 1993, a copy of the notice letter that had previously been sent to the U.S. Coast Guard, Captain of the Port Long Island Sound was also sent to U.S. Coast Guard Headquarters, Package Cargo Section, in Washington, D.C., as well as the U.S. Coast Guard, Captain of the Port New York, and Marine Safety Office Philadelphia, as soon as New Jersey was advised by the Captain of the Port Long Island Sound, that these other agency offices are also involved in this matter.

LIPA has sought federal approval of an activity which is proposed to take place directly within New Jersey's coastal zone. Indeed, the proposed nuclear-laden shipments will traverse as much as 50 miles of New Jersey's territorial waters, and, therefore, may expose a significant area of New Jersey's coastal zone to the inherent risks associated with the shipment of such dangerous material. Thus, NJDEPE is entitled to conduct a consistency review of the proposed activity because it affects New Jersey's coastal zone.

Indeed, pursuant to applicable law, because the proposed activity will take place within New Jersey's coastal zone, thereby affecting New Jersey's coastal zone, LIPA should have submitted its Transportation Plan to the NJDEPE for consistency review in the first instance when it was applying to the U.S. Coast Guard for approval. NJDEPE should not be in a position now of having to request OCRM's approval to review this matter. The CZMA explicitly requires that:

> [a]fter final approval by the [U.S.] Secretary [of Commerce] of a state's management program, any applicant for a required Federal license or permit to conduct an activity, in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program. [16 U.S.C. §1456(c)(3)(A); emphasis added.]

In fact, Congress amended this particular provision in 1990 to give states broader ability to participate in federal permitting decisions which impact the coastal zone. Federal regulations define "federal license or permit" to mean "any authorization, certification, approval, or other form of permission which any Federal agency is empowered to issue to an applicant." 15 C.F.R. §930.51 (emphasis added).

New Jersey received federal approval for its coastal zone management program in September 1980. New Jersey's coastal zone management plan contains enforceable policies designed to protect various water and land uses in New Jersey's

coastal zone, including various water and land use goals for the Delaware Bay. See, generally, N.J.A.C. 7:7E-1 et seq. Therefore, pursuant to the explicit mandate of the CZMA, LIPA should have submitted its consistency certification to the U.S. Coast Guard and the NJDEPE when it originally submitted its Transportation Plan to the U.S. Coast Guard for approval. See, Southern Pacific Transportation Co. v. California Coastal Com'n, 520 F.Supp. 800, 803 (N.D. Cal. 1981)("it was Congress' intention to make compliance with the consistency review procedure mandatory as to any applicant for a required federal license or permit").

In addition, federal regulations require states to develop and submit, as part of their coastal zone management programs, a list of those federal approvals which are likely to affect the coastal zone and which the state wishes to review for consistency with its coastal zone management program. 15 C.F.R. §930.53(b). Federal regulations further provide that "[n]o Federal license or permit described on an approved list shall be issued by a Federal agency" until state agency review of the application is completed. 15 C.F.R. §930.53(e).

In or about January, 1991, the NJDEPE submitted its guidelines for federal consistency determinations in New Jersey's coastal zone ("Federal Consistency Guidelines") to the OCRM. (Copy attached as Exhibit D). The Federal Consistency Guidelines include a list which identifies federal licenses and permits for which applicants should consult the NJDEPE for

consistency review pursuant to the CZMA. This list specifically includes U.S. Coast Guard "[p]ermits and authorization for the handling of dangerous cargo by vessels in U.S. ports" (Federal Consistency Guidelines, p.35), the type of approval apparently being sought by LIPA in connection with the transportation of the radioactive nuclear fuel in the present case. Thus, the U.S. Coast Guard's approval of LIPA's Transportation Plan is a "listed" approval in accordance with the Federal Consistency Guidelines that NJDEPE submitted to the OCRM in 1991. Pursuant to 15 C.F.R. §930.53(e), the U.S. Coast Guard must not issue final approval of LIPA's Transportation Plan until the NJDEPE's consistency review of this matter is completed.

Even if the U.S. Coast Guard approval being sought by LIPA in this case were not determined to be a "listed" approval, OCRM must approve NJDEPE's request to review LIPA's Transportation Plan pursuant to 15 C.F.R. §930.54(c) because the proposed activity will take place within and, therefore, will affect New Jersey's coastal zone.

The proposed nuclear-laden shipments will travel through the Atlantic Ocean, outside of but near to New Jersey's territorial waters, for the entire length of New Jersey's Atlantic coast and, more significantly, will directly traverse New Jersey's territorial waters for a significant length of the proposed route through the Delaware Bay and the Delaware River, thus directly affecting New Jersey's coastal zone. New

Jersey's coastal zone management plan includes enforceable policies to protect special areas within New Jersey's coastal zone. N.J.A.C. 7:7E-3.1 et seq. Special areas include, without limitation, shellfish beds (N.J.A.C. 7:7E-3.2), prime fishing areas (N.J.A.C. 7:7E-3.4), finfish migratory pathways (N.J.A.C. 7:7E-3.5), wetlands (N.J.A.C. 7:7E-3.27), endangered or threatened wildlife habitats (N.J.A.C. 7:7E-3.38), critical wildlife habitats (N.J.A.C. 7:7E-3.39), and public open space (N.J.A.C. 7:7E-3.40). All of these special use areas are found in the Delaware Bay region. In addition, New Jersey's coastal zone management plan specifically protects recreational beaches (N.J.A.C. 7:7E-3.22) and specifically makes resort and recreational uses and commercial fisheries uses the highest priority uses in Cape May County (N.J.A.C. 7:7E-7.3).

Thus, specific impacts that the proposed activity may have on New Jersey's coastal zone include: (1) potential adverse effects on all recreational, tourist, and commercial fishing activities on the Atlantic shore and in the Delaware Bay and Delaware River; (2) potential adverse effects on important species in prime commercial and recreational fishing areas (including shad, herring, striped bass, weakfish, drumfish, bluefish, and flounder, as well as shellfish); (3) potential adverse effects on endangered species habitat (including the shortnose sturgeon which is an endangered species on both the federal and the State list); (4) potential adverse effects on marine life that supports avian endangered

species (such as the bald eagle and the peregrine falcon, which are also both listed on the federal and State lists of endangered species); and (5) potential adverse effects on critical wildlife habitat.

Nevertheless, LIPA has not made any attempt to quantify the potential risk of an accidental release of radioactive material in connection with the proposed nuclear fuel shipments in relation to these unique characteristics of New Jersey's coastal zone. LIPA has also failed to present any analysis of alternative routes for the proposed shipments. Such an analysis is critical in this case since the proposed activity may adversely impact the highest priority uses of New Jersey's coastal zone. See N.J.A.C. 7:7E-7.3(b)2. NJDEPE is requiring consistency review of the proposed activity to enable it to evaluate this risk. Even if the probability of an accidental release of radioactive material occurring in connection with the proposed shipments is low, any release at all will have a devastating impact on the protected uses of New Jersey's coastal zone and the economy of the region and the State. Indeed, any mishap in the shipments even short of a release could adversely affect these priority uses.

The Delaware Bay area, in particular, is one of the single most important ecological, commercial and recreational marine resources within New Jersey's coastal zone. Two recent examples illustrate the type of devastating effect that the proposed shipments can have on New Jersey's coastal zone and

coastal zone economy. Specifically, in the late 1980's, New Jersey's coastal community suffered a significant loss of income when many of New Jersey's beaches had to be closed as medical waste washed ashore. Communities that survive on income from tourism and recreational activities were devastated and have just begun to recover. In another incident, the New Jersey fishing industry was significantly impacted when drums of arsenic were accidently released in New Jersey's coastal waters. Despite the fact that the arsenic never escaped from the drums, there was an adverse effect on the State's economy for several months. Regardless of whatever actual danger the waste on the beaches or the "arsenic spill" posed to those who would use the beaches or consume New Jersey's ocean products, the public perception of the danger sufficed to have an enormous adverse impact on tourism and the market for products from New Jersey's fisheries.

For the foregoing reasons, NJDEPE demands consistency review of the proposed activity pursuant to the requirements of the CZMA and New Jersey's approved coastal zone management plan. Pursuant to the CZMA, NJDEPE is entitled to conduct a consistency review of this activity, which will take place directly within New Jersey's coastal zone. The federal approval being sought in connection with the proposed activity is listed in New Jersey's Federal Consistency Guidelines and, therefore, LIPA should have submitted a consistency certification to the NJDEPE in the first instance when it

submitted its Transportation Plan to the U.S. Coast Guard for approval.

Finally, even if the U.S. Coast Guard approval involved in this case were not a "listed" approval pursuant to 15 C.F.R. §930.53, the OCRM must approve NJDEPE's review of this matter pursuant to 15 C.F.R. §930.54, as NJDEPE is seeking to ensure that the established policies and uses set forth in New Jersey's coastal zone management plan are adequately considered before LIPA is permitted to commence shipping radioactive nuclear fuel through New Jersey's coastal zone, an activity affecting land and water uses and the natural resources of that coastal zone. Because LIPA has not yet provided the NJDEPE with sufficient information to enable NJDEPE to thoroughly evaluate the potential risks associated with the proposed shipments, NJDEPE reserves the right to supplement its case as NJDEPE learns more about the proposed activity.

Very truly yours,

Jeanne M. Fox

Jeanne M. Fox, Acting Commissioner
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

DATE: September 15, 1993

cc: U.S. Coast Guard Captain Thad Allen,
Captain of the Port Long Island Sound
(by regular mail)
U.S. Coast Guard Chief E. Pfersich,
Package Cargo Section, U.S. Coast Guard
(by regular mail)
U.S. Coast Guard Chief of Port Operations,
Marine Safety Office Philadelphia
(by regular mail)
U.S. Coast Guard,
Captain of the Port New York
(by regular mail)
Mr. Arthur Bortz, Resident Manager,
Shoreham Nuclear Power Station
(by regular mail)
Richard P. Bonnifield, Esq.,
General Counsel, Long Island Power Authority
(by fax and regular mail)
Mr. George A. Hunger, Jr.,
Philadelphia Electric Company
(with Exhibits B, C, and D only)
(by fax and regular mail)

(Exhibits by regular mail only)

UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	Civil Action No.
	)	
LONG ISLAND POWER AUTHORITY, et al.	)	
	)	
Defendants.	)	

OPPOSITION OF DEFENDANT PHILADELPHIA ELECTRIC COMPANY TO PLAINTIFFS' MOTION FOR A TEMPORARY RESTRAINING ORDER

BACKGROUND

On the afternoon of September 21, 1993, the day before this hearing, counsel for plaintiffs notified the undersigned counsel for defendant Philadelphia Electric Company ("PECo") that this action was being filed and a temporary restraining order would be sought. The papers supporting this application were furnished by facsimile at 6:30 p.m. that evening. Plaintiffs' belated request for temporary relief is completely without merit. It provides no proof of any imminent public health or safety hazard, and is based purely on speculation as to some unspecified, hypothetical environmental impacts associated with the transport of nuclear fuel which has been known to plaintiffs since at least late June, 1993.

Moreover, this Court lacks jurisdiction to grant this request. As demonstrated below, the Court of Appeals has exclusive jurisdiction to grant stays of actions authorized by a Nuclear Regulatory Commission ("NRC") license. Indeed, plaintiffs have

completely ignored administrative remedies before the NRC which, if unsuccessfully pursued, would have led to an appeal to a court of appeals. Because plaintiffs have not satisfied the criteria for obtaining interim relief, and have not even provided a basis for jurisdiction, the temporary restraining order should be denied.

ARGUMENT

I. The Court of Appeals Has Exclusive Jurisdiction Over An Appeal From the Issuance of an NRC License.

It is important to understand the relief plaintiffs are actually seeking. On June 23, 1993, the NRC issued PECo an amendment to Facility Operating License Nos. NPF-39 and NPF-85 for the Limerick Generating Station, a two-unit nuclear power reactor located near Pottstown, Pennsylvania. These amendments permit PECo to receive, possess, and use nuclear fuel originally intended for use at the Shoreham Nuclear Power Station, but irradiated at low-power levels to the equivalent of several full-power days of operation.

In issuing the license amendment, the NRC performed, as plaintiffs acknowledge, an evaluation of the environmental impacts associated with the transportation of this fuel from the Shoreham to the Limerick facility.[1/] This evaluation was documented in a

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1/ By virtue of holding a facility license for a nuclear power reactor, the Shoreham licensee was already authorized, under a general license approved by the NRC, "to deliver [the fuel] to a carrier for transport" in a licensed cask, the mode of transport here. See 10 C.F.R. § 71.12(a). Therefore, PECo's license amendment did not have to include authority for the fuel to be transported, only to receive it.

formal Environmental Assessment, dated May 11, 1993, which included a Finding of No Significant Impact. See 10 C.F.R. § 51.21.[2/]

In the meantime, the NRC had published a Notice of Opportunity for Hearing in conjunction with the proposed license amendment. See 58 Fed. Reg. 16867 (March 31, 1993). No requests for hearing were filed and, following the issuance of the Environmental Assessment as well as a related Safety Evaluation (June 23, 1993), the NRC issued the requested license amendment on that date.

Plaintiffs knew by late June 1993 that Long Island Power Authority (LIPA) was seriously considering shipping the Shoreham fuel by barge rather than rail. Yet, at no point in the next three months did plaintiffs take any action before the NRC to protect their asserted interests in the event the barge option were adopted.

In effect, plaintiffs seek to enjoin PECo from receiving Shoreham fuel as authorized by its amended license for the Limerick facility. It complains that the environmental evaluation performed by the NRC in conjunction with the issuance of the amendment is deficient. Accordingly, plaintiffs are, for all practical purposes, challenging the issuance of the license amendment to PECo. The Third Circuit has emphatically ruled, however, that the

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[2/] By contrast, the NRC has categorically defined those proposed actions "significantly affecting the quality of the human environment" which require a full environmental impact statement ("EIS"). See 10 C.F.R. § 51.20. License amendments do not fall into any of those categories.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, ET AL., Plaintiffs, v. LONG ISLAND POWER AUTHORITY, ET AL., Defendants.	HONORABLE GARRETT E. BROWN, JR. Civil Action No. 93-4269 (GEB) Return Date: September 22, 1993

BRIEF IN SUPPORT OF DEFENDANT LONG ISLAND POWER AUTHORITY'S MOTION TO DISMISS AND IN OPPOSITION TO PLAINTIFF'S APPLICATION FOR TEMPORARY RESTRAINTS AND A PRELIMINARY INJUNCTION

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Second, NOAA has not approved the Guidelines for use in identifying listed activities. Such NOAA approval is required before the purported listing by the DEPE may be effective. 15 C.F.R. § 930.53(b).

Third, the DEPE reliance on its purported listing set forth at page 35 of the Guidelines is not applicable in any event. Pl. Br. at 24. Under the heading of "Permit Description," the provision is as follows:

> Permits and authorization for the handling of dangerous cargo by vessels in U.S. ports — 46 U.S.C. § 170

The cited provision, 46 U.S.C. § 170, was repealed on August 26, 1983. P.L. 98-89, § 4(b), 97 Stat. 599. Further, the only ports which will be entered by the barge are those in New York and Pennsylvania. The State of New Jersey has no authority to attempt to exercise jurisdiction over activities that take place in another state. See Federal Consistency Bulletin, Office of Coastal Zone Management (August 1993).

The DEPE also suggests that certain alleged NRC requirements are "listed" activities requiring consistency certifications and review before such activities are permitted. Pl. Br. at 25. Again, the DEPE misses the mark. The only NRC requirement that the DEPE can point to is the amendment to the Limerick Operating License that PECO obtained to accept delivery of the Fuel. LIPA was not the "applicant" for this license, and so the CZMA cannot apply to LIPA based on this conduct. 16 U.S.C. § 1456(a)(3)(A). More importantly, the DEPE states that the CZMA applies only if

the PECO license amendment authorized the transport of Shoreham fuel through New Jersey's coastal zone. Pl. Br. at 25. It did not; it only authorized receipt of the Fuel.

Finally, the bare assertion by the DEPE that CZMA review is triggered because LIPA was required to amend its license and decommissioning plan in order to transport the fuel is wrong. Pl Br. at 25. The DEPE has failed to point to any legal authority requiring that LIPA obtain such approval, because no such authority exists. Moreover, LIPA did not file such an application, and is therefore not an "applicant" within the meaning of the CZMA. 16 U.S.C. § 1456(a)(3)(A).[11/]

C. The DEPE has Failed to Demonstrate that Irreparable Harm Will, or is even Likely to, Occur in the Absence of Preliminary Relief.

The DEPE has failed to demonstrate that irreparable harm will, or is even likely to occur in the absence of preliminary relief. Again, the burden is on the DEPE to demonstrate the immediacy of irreparable harm. The mere allegation of statutory violations is not enough to meet that burden. Natural Resources Defense Council, Inc. v. Texaco Refining & Marketing, Inc., 906 F.2d 934 (3d Cir. 1990).

11/ Previously, the DEPE had argued to NOAA that even if the Operations Plan was not a "listed activity" within the meaning of the CZMA, the DEPE was entitled to review it as an "unlisted" activity pursuant to 15 CFR § 930.54(a) See Complaint, Ex. H, at 2. Under the regulations, such a right to review is waived if not raised within 30 days of notice of the federal permitting activity. In apparent recognition that the DEPE has known full well that the Coast Guard was considering the Operations Plan, the DEPE has not pursued that argument before the Court.

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(TK-1736)

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY, and JEANNE M. FOX, in her official capacity as Acting Commissioner of the Department of Environmental Protection and Energy, 401 East State Street, Trenton, New Jersey,	)	Civil Action No. 93-4269 (GEB)
Plaintiffs,	)	
v.	)	VERIFIED COMPLAINT
LONG ISLAND POWER AUTHORITY, and THOMAS DeJESU, in his official capacity as Executive Director of the Long Island Power Authority, North Country Road, Wading River, New York,	)	
UNITED STATES NUCLEAR REGULATORY COMMISSION, Washington, D.C., 20555,	)	
UNITED STATES COAST GUARD, within the United States Department of Transportation, 2100 Second Street, Washington, D.C., 20555, and	)	

that it will take at least seven months to complete the shipments.

12. On several occasions during July of 1993, NJDEPE representatives clearly expressed, to both PECo and LIPA representatives, NJDEPE's objections to and serious concerns with the proposed shipment of nuclear fuel from Long Island to Pennsylvania. These concerns were first raised when then Commissioner Scott A. Weiner requested Richard V. Sinding, Assistant Commissioner for Policy and Planning, to contact a representative of PECo to express the State's concerns. On July 8th, 1993, and at least on two other occasions, Assistant Commissioner Sinding participated in telephone conversations with PECo's Director of Public Policy, Mr. Jan Freeman. During these conversations, NJDEPE advised PECo that the State was having an excellent tourist season at the New Jersey shore due in part to improved water quality and enhanced public confidence regarding the safety of the shore. NJDEPE then expressed its serious concerns that 33 shipments of nuclear fuel could potentially have a devastating economic and environmental impact on the State's coastal zone should any one of the shipments be involved in an accident.

Mr. Freeman advised NJDEPE that the shipments would be equipped with various safety features which would protect the State's coastal zone. Mr. Freeman asked whether NJDEPE would require compliance with any environmental requirements. Assistant Commissioner Sinding advised him that there were

various requirements regarding water quality and coastal zone protection which NJDEPE could impose. In one conversation, Assistant Commissioner Sinding expressed NJDEPE's concern that although the barge would be equipped with various safety measures, the State's coastal community including mayors and citizen groups had expressed similar concerns to NJDEPE and as of that time PECo and LIPA had failed to conduct sufficient public discussion with the coastal community in response to their fears and concerns in order to explain the need for the proposed shipment, the reasons why a coastal route was chosen over an inland route, and the various safety measures. Assistant Commissioner Sinding advised Mr. Freeman that if PECo and LIPA could not address NJDEPE's concerns, it would be very difficult for the State to concur with the proposed shipment at that time. Mr. Freeman advised NJDEPE that PECo and LIPA would consider NJDEPE's objection and concerns.

During the July 8th conversation, Dr. Gerald P. Nicholls, the Director of NJDEPE's Division of Environmental Safety, Health and Analytical Programs, which includes NJDEPE's radiation protection program, was with Assistant Commissioner Sinding as part of a conference call. Director Nicholls' staff had previously met with LIPA and PECo representatives, including Mr. Freeman, to discuss the technical details of the possible use of a barge and the staff had been briefed on the safety features.

Upon Mr. Freeman's advice, Assistant Commissioner Sinding also contacted a LIPA representative to similarly express NJDEPE's objection and concerns. When a response from neither PECo nor LIPA was forthcoming, Assistant Commissioner Sinding assumed that the route through the State's coastal zone was abandoned or at least delayed until NJDEPE's concerns were addressed. However, upon return from vacation in the middle of August, 1993, Assistant Commissioner Sinding read in a newspaper article that PECo and LIPA planned to proceed irrespective of NJDEPE's objections. PECo and LIPA's plan was confirmed when he was advised by his staff that LIPA had submitted an application for NJDEPE's Certificate of Handling. Assistant Commissioner Sinding was very surprised to learn of PECo and LIPA's plan to proceed absent NJDEPE's concurrence. (See Certification of Richard V. Sinding and allegation number 20).

13. The proposed barge route for the 33 shipments is a route from Long Island, south through the Atlantic Ocean 15 miles off-shore of the State's coast, around Cape May, through the State's waters in the Delaware Bay and up the Delaware River, finally docking in Eddystone, Pennsylvania.

14. In February 1993, LIPA filed with NRC an "Updated Decommissioning Plan" for Shoreham. (Ex. "A" attached to the Verified Complaint). That plan contained only a brief and tentative discussion of "fuel disposal alternatives," and LIPA acknowledged that as those alternatives emerged it would have

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UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

STATE OF NEW JERSEY, et al.,	:	
	:	Civil Action No.
Plaintiffs,	:	
	:	
v.	:	
	:	
LONG ISLAND POWER AUTHORITY, et al.,	:	
	:	
	:	
Defendants.	:	

RICHARD V. SINDING, of full age, being duly sworn according to law, upon his oath deposes and says:

1. I am an Assistant Commissioner employed by the New Jersey Department of Environmental Protection and Energy ("NJDEPE");

2. As Assistant Commissioner for Policy and Planning I have participated in various discussions regarding the Long Island Power Authority's proposed shipment of nuclear fuel to Pennsylvania along the New Jersey coast, through the Delaware Bay, and up the Delaware River;

3. I have read allegation number twelve (12) in the Verified Complaint on behalf of the New Jersey Department of Environmental Protection and Energy and Jeanne M. Fox attached hereto. As to allegation number twelve (12), I have knowledge of the matters discussed therein. As to allegation number

twelve (12), the factual allegations contained therein are true.

Richard V. Sinding
Assistant Commissioner

Sworn to and Subscribed before me
this 21st day of September, 1993

Attorney of law the State of New Jersey