

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSIONOFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
Robert M. Bernero, Director

In the Matter of )  
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Shipments of Fuel from Long )  
Island Power Authority's )  
Shoreham Nuclear Power Station )  
to Philadelphia Electric )  
Company's Limerick Generating )  
Station )

## DIRECTOR'S DECISION UNDER 10 C.F.R. SECTION 2.206

I. INTRODUCTION

On October 8, 1993, Mr. Fred DeVesa, Esq., Acting Attorney General of New Jersey, filed a Petition with the Commission, on behalf of the New Jersey Department of Environmental Protection and Energy (NJDEPE or Petitioner), requesting that the Commission take immediate action to halt ongoing shipments of fuel from Long Island Power Authority's (LIPA's) Shoreham Nuclear Power Station to Philadelphia Electric Company's (PECo's) Limerick Generating Station, pending consideration of the merits of the Petition. Specifically, the Petition requests that the Commission: (1) amend LIPA's license and approval of LIPA's decommissioning plan to specifically address the transfer and transport of LIPA's fuel to PECO; (2) perform an Environmental Assessment (EA), pursuant to 10 C.F.R. § 51.30, and determination based on the EA, pursuant to 10 C.F.R. § 51.31, regarding the proposed transfer and transport of the fuel by barge from LIPA to PECO which addresses the risks associated with the shipment of the fuel along and through New Jersey's coastal zone; (3) perform a Consideration of Alternatives, in accordance with Section 102(2)(E) of the National Environmental Policy Act (NEPA) and 40 C.F.R.

§ 1509.9(b), which addresses alternative means of transporting fuel from LIPA to PECO; and (4) immediately stay PECO's June 23, 1993, license amendments, the Certificate of Compliance regarding the IF-300 issued to Pacific Nuclear Systems, and LIPA's license and general license to transfer the fuel, pursuant to 10 C.F.R. § 71.12, pending completion of the above actions and compliance with the consistency process under the Coastal Zone Management Act (CZMA).

The Petitioner asserts, in support of these requests, that the U.S. Nuclear Regulatory Commission has violated NEPA, the CZMA, and the Atomic Energy Act (AEA) by allowing the transfer and transport of LIPA's fuel to proceed absent any consideration of the potential effects on New Jersey's coastal zone, any case-specific environmental impact analysis, or any consideration of alternatives to the means of transport. Specifically, the Petitioner asserts that: (1) the NRC failed to consider alternatives under NEPA for the proposed action; (2) the NRC failed to perform an EA for the transfer and barge transport of LIPA's fuel; (3) the NRC's EA for PECO's license amendments was inadequate; (4) the NRC violated NEPA by segmenting the approval of the transfer and transport by barge; (5) the NRC failed to require LIPA to obtain necessary approvals; and (6) the NRC violated the CZMA by failing to require necessary consistency reviews.

By letter to Mr. DeVesa dated October 22, 1993, I acknowledged receipt of the Petition and informed the Petitioner that the request that the Commission take immediate action to halt ongoing shipments of fuel from Shoreham Nuclear Power Station to PECO's Limerick Power Station is denied. I indicated in that letter that the Petitioner made no showing that there is any reason to believe that the shipments pose an immediate or substantial danger to public health and safety, and that the Commission has concluded on several

occasions that its regulations for certifying shipping packages for radioactive material (10 C.F.R. Part 71) are adequate to protect the public against unreasonable risk in the transport of these materials. The shipping package used to transport the Shoreham fuel, the IF-300, has been properly certified as meeting the Commission's standards.

In addition, I noted that the IF-300 shipping package was certified for highly irradiated spent fuel up to 35,000 megawatt days per metric ton (MWD/MTU); the Shoreham fuel, by comparison, has a low degree of irradiation of 87/MWD/MTU (less than 1 percent of the value for which the package is certified).

Review of this denial was raised with the Commission by the Petitioner in its letter of November 5, 1993. In a letter of November 18, 1993, responding to Petitioner's request, the Commission stated that after its consideration of the reasons for my denial of the immediate action, it found no reason to disturb my conclusion that the shipments pose no immediate or substantial danger to the public health or safety.

In the acknowledgment letter of October 22, 1993, I also informed the Petitioner that the Commission would respond to the alternative request that the Petitioner be granted late intervention and a hearing on PEC's license amendment allowing it to receive and possess Shoreham's fuel, and asserting that the Commission erred in not offering intervention and a hearing on LIPA's transfer and transportation of Shoreham fuel. By Memorandum and Order dated December 3, 1993, the Commission denied Petitioner's petition for leave to intervene and request for an adjudicatory hearing, noting that there are no "proceedings" in which the Petitioner may intervene or be provided a hearing and that, even if there were such a proceeding, the Petitioner has failed to

satisfy the Commission rules governing intervention in hearings or reopening of proceedings.<sup>1</sup> I furthermore indicated that the remainder of the Petition had been referred to me pursuant to 10 C.F.R. § 2.206 of the Commission's regulations and that the NRC would take appropriate action, within a reasonable time, regarding the concerns raised in the Petition.

I have decided not to take any action under Section 2.206. Petitioner has offered no technical or other factual information calling into question the safety of the fuel shipments. Petitioner principally raises legal or policy arguments, which are unpersuasive for the reasons discussed below.

My Decision in this matter follows.<sup>2</sup>

## II. BACKGROUND

The Shoreham Nuclear Power Station in Wading River, New York, is being decommissioned pursuant to the NRC's Order Approving Decommissioning Plan and Authorizing Decommissioning of the Facility of June 11, 1992. The Shoreham facility has never been commercially operated, although 30 hours of low power testing were performed in 1987. As part of the decommissioning, the Long Island Power Authority -- a corporate municipal instrumentality and political

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<sup>1</sup> *State of New Jersey* (Department of Law and Public Safety's Requests dated October 8, 1993), CLI-93-25, 38 NRC \_\_\_\_ (1993).

<sup>2</sup> Prior to seeking relief from the NRC, the Petitioner filed a lawsuit in Federal District Court in New Jersey seeking similar relief. The District Court dismissed the claims against the NRC on jurisdictional grounds and the U.S. Court of Appeals for the Third Circuit recently affirmed the dismissal. See *New Jersey v. Long Island Power Authority*, No. 93-4269 (D.N.J., Oct. 12, 1993), *aff'd* No. 93-5613 (3rd Cir., Dec. 1, 1993.) Some of my description and analysis of the controversy is drawn from the government briefs filed in that lawsuit. The NRC staff, while for convenience adopting useful material from the government's court briefs, has re-examined the issues itself and reaches the conclusions discussed below. Cf. *Career Education, Inc. v. Department of Education*, 6 F.3d 817, 820 (D.C. Cir. 1993).

subdivision of the State of New York -- is arranging for the removal of the slightly irradiated nuclear fuel used during the low power testing.<sup>3</sup> LIPA's status as an NRC licensee entitles it -- under a general NRC license conferred by rule -- to transport, or to deliver the fuel to a carrier for transport, in an NRC-certified shipping cask. 10 C.F.R. § 71.12(a).<sup>4</sup>

By February 1993, decommissioning had progressed to the point that the only remaining matter was the removal of the fuel at issue here. On March 1, 1993, LIPA entered into a Fuel Disposition Agreement with PECO and General Electric, pursuant to which PECO agreed to accept delivery of fuel from Shoreham, and therefore complete its decommissioning.

On June 23, 1993, the NRC amended PECO's 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 the slightly irradiated fuel originally intended for use at Shoreham Nuclear Power Station. Prior to issuing the amendments, the NRC evaluated the environmental impacts associated with the Limerick facility license amendments, pursuant to NEPA and the NRC's regulations requiring EAs. 10 C.F.R. § 51.21. In its (EA), dated May 11, 1993, the NRC concluded "...that the proposed action will not have a

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<sup>3</sup> This fuel is considered "special nuclear material" under the AEA and NRC regulations because it contains uranium that is enriched in the U-235 isotope. See 42 U.S.C. § 2014(aa); 10 C.F.R. § 50.2.

<sup>4</sup> That section provides: "A general license is hereby issued to any licensee of the Commission to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance, or other approval has been issued by the NRC."

significant effect on the quality of the human environment." 58 Fed. Reg. 29010, 29012 (May 16, 1993).

On or about July 7, 1993, LIPA submitted to the Coast Guard an "Operations Plan for Marine Transportation of Fuel Shipment from Shoreham, New York to Eddystone, Pennsylvania" (Operations Plan). The Operations Plan details a plan for the transportation of fuel by barge from the Shoreham facility to the Eddystone Power Station located on the Delaware River, in Eddystone, Pennsylvania. The captain of the Port for Long Island Sound responded to this submission in a letter dated July 27, 1993.

The planned barge route for the shipments is around the tip of Long Island, south through the Atlantic Ocean, 15 miles off the New Jersey coast, around Cape May, and through New Jersey State waters in the Delaware Bay and up the Delaware River, docking in Eddystone, Pennsylvania. The slightly irradiated fuel is being shipped in 33 separate shipments over a period of approximately 8 months, beginning on September 25, 1993. The nuclear fuel is then shipped by rail from Eddystone to the Limerick facility. As of December 13, 1993, 17 shipments have arrived at Limerick.

The fuel is being transported in an NRC-approved cask certified pursuant to 10 C.F.R. Part 71. On August 19, 1993, the NRC issued an amendment to the certificate of compliance for radioactive materials packages to non-party Pacific Nuclear Systems for its "IF-300" shipping cask.<sup>5</sup> The Shoreham fuel is being shipped in the IF-300 cask, which is authorized for fuel that has experienced reactor burnup of 35,000 MWD/MTU even though the fuel to be shipped from Shoreham has a reactor burnup of only 87 MWD/MTU of uranium

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<sup>5</sup> The IF-300 cask design was first approved about 20 years ago, but required modification of the support structure within the cask to accommodate the shipment of 17 Shoreham fuel assemblies.



(i.e., less than 1 percent of the value for which the cask is approved).

Similarly, the cask being used for shipment of the Shoreham fuel is authorized for fuel having a total decay heat of up to 11,720 watts per cask. The fuel involved in this shipment has a decay heat of approximately 34 watts per cask. In short, the casks are designed to contain safely material of over 100 times the radioactivity of the fuel being shipped from Shoreham.

On or about August 9, 1993, LIPA submitted an "Application for a Certificate of Handling" (a "COH") to the State of New Jersey, consistent with N.J.A.C. Sec. 7:28-12, which prohibits the transport of certain radioactive materials into or through New Jersey without first obtaining a COH issued by New Jersey.

New Jersey sent a letter dated September 15, 1993, to the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce demanding a CZMA consistency review of the Coast Guard's response to LIPA's Operations Plan. NOAA responded by requesting comments and the position of the Coast Guard and LIPA. On September 28, 1993, New Jersey submitted its reply to NOAA in response to LIPA's and the Coast Guard's positions. After consideration of the positions submitted on October 1, 1993, NOAA concluded that the shipments by LIPA do not involve the issuance of a Federal license or permit by the Coast Guard as defined in the CZMA and, therefore, the shipments are not subject to consistency review.

### III. DISCUSSION

#### A. Applicable Law and Regulations

Petitioner's NEPA claims address two distinct bodies of law: substantive standards established under the AEA and Federal transportation safety statutes that govern the transportation of reactor fuel; and procedural requirements imposed by NEPA that govern the manner in which agencies take account of the environmental effects of proposed actions.

##### 1. Federal Regulation of the Transportation of Radioactive Materials.

The Federal government regulates the transport of radioactive materials under standards devised and administered by the NRC and by the U.S. Department of Transportation (DOT). A 1979 Memorandum of Understanding (MOU) between the NRC and the DOT, adopted to promote "...consistent and comprehensive regulations and requirements for the safe transportation of radioactive materials," delineates these agencies' respective roles.<sup>6</sup> The agreement gives the NRC, acting under the authority of the AEA and other statutes, a narrower role than the DOT. The NRC, in consultation with the DOT, is charged with "...develop[ing] safety standards for design and performance of packages: for certain higher-level radioactive materials,..." including nuclear reactor fuel. 44 Fed. Reg. at 38,690.<sup>7</sup> The DOT, acting under authority of the

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<sup>6</sup> See "Memorandum of Understanding Between the U.S. DOT and the U.S. NRC for Regulation of Safety in the Transportation of Radioactive Materials," 44 Fed. Reg. 38,690, (1979); see also *Shipments of High-Level Nuclear Power Plant Waste Through and to Illinois*, DD-83-12, 18 NRC 713, 713-16 (1983) (elaborating on the division of responsibility between the NRC and DOT).

<sup>7</sup> The NRC bears primary responsibility for packaging used to transport "...fissile materials and for quantities of other radioactive materials (other than [low specific activity] materials) exceeding Type A limits." *Id.* The partially irradiated  
(continued...)



Hazardous Materials Transportation Act (HMTA) (49 U.S.C. § 1801 et seq.<sup>8</sup>) is responsible for developing, in consultation with the NRC, standards for classifying and labeling radioactive materials, packaging certain low-level radioactive materials, and handling containers of radioactive materials during transport. In addition, the agreement assigns the DOT general responsibility for developing "...all other safety requirements except those..." specifically assigned to the NRC. 44 Fed. Reg. at 38,690.

Together, these regulations are designed to ensure safety in transporting radioactive materials through adequate containment of the radioactive material, adequate control of the radiation emitted by the material, and prevention of nuclear criticality (i.e., prevention of a nuclear chain reaction). Primary reliance for safety in transport of radioactive material is placed on the packaging. The NRC regulations establishing the requirements for packaging, preparation for shipment, and transportation of licensed material are set forth in 10 C.F.R. Part 71. The other parts of Title 10 that most directly pertain to radioactive material transportation are Parts 20, 70, and 73, which deal with "Standards for Protection Against Radiation," "Special Nuclear Material," and "Physical Protection of Plants and Materials."

Under the MOU, the NRC administers regulations for "Type B" radioactive materials packages. The Shoreham fuel is being transported in Type B

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<sup>7</sup>(...continued)  
reactor fuel at issue here contains uranium-235. It therefore qualifies as a "fissile material" as that term is defined in the NRC packaging regulations. (See 10 C.F.R. § 71.4.)

<sup>8</sup> HMTA empowers the Secretary of Transportation " . . . to protect the nation adequately against the risks to life and property which are inherent in the transportation of hazardous materials in commerce." 49 U.S.C. § 1801.

packages. NRC approval for the package design requires a finding that the package can withstand the performance tests in 10 C.F.R. Part 71 without releasing its contents, without emitting radiation in excess of strictly defined limits, and without occurrence of a nuclear chain reaction. See 10 C.F.R. Part 71, Subparts E and F.

NRC's Part 71 regulations provide a "general license" which authorizes any licensee of the Commission to transport or to deliver to a carrier for transport, licensed materials in approved packages. 10 C.F.R. § 71.12; see also 49 C.F.R. § 173.416. This general license may only be used by NRC licensees with programs in place to ensure compliance with NRC operating requirements. 10 C.F.R. § 71.12(b). The NRC issues "certificates of compliance" to designers of packages for transport of nuclear material that meet the NRC safety criteria in 10 C.F.R. Part 71.

Except in circumstances not applicable here, NRC regulations do not provide for review of the routes over which radioactive materials are to be transported.<sup>9</sup> While the regulations augment packaging and operating requirements, in some limited situations, with rules limiting routes and modes of transportation,<sup>10</sup> nothing in the regulations applicable to the type of

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<sup>9</sup> The NRC's Part 73 regulations, which prescribe measures for the protection of special nuclear material against theft and sabotage, require advance approval by the NRC of transportation routes for certain highly irradiated reactor fuel -- defined as material capable of delivering an external radiation dose in excess of 100 rems per hour at a distance of 3 feet under unshielded conditions. 10 C.F.R. § 73.37(a)(1), (b)(7). The Shoreham fuel, which has an external radiation dose of less than 25 rems per hour at 3 feet unshielded, falls far short of this standard. Long Island Power Authority Security Plan for the Shipment of Fuel From the Shoreham Nuclear Power Station to the Limerick Generating Station, Rev 1, June 15, 1993, P. 5.

<sup>10</sup> See, e.g., 10 C.F.R. § 71.88 (NRC restrictions on air transport of plutonium).

nuclear material a\* issue here requires case-specific administrative review of transportation routes.

## 2. Evaluation of the Environmental Effects of Agency Actions Under NEPA

Under Section 102(2)(C) of NEPA, when a Federal agency undertakes a "...major federal action significantly affecting the quality of the human environment," it must prepare an environmental analysis of that action. 42 U.S.C. § 4332(2)(C). The environmental analysis ensures that an agency has considered the potential environmental consequences before undertaking a major Federal action; and it affords the public access to information on those consequences. See *Baltimore Gas & Electric Co. v NRDC*, 462 U.S. 87, 97 (1983); NEPA does not control the substantive choice that an agency makes once it has adequately examined potential environmental consequences.

In 1978, the Council on Environmental Quality ("CEQ") established, by regulation, a general framework for Federal agency compliance with NEPA. See 40 C.F.R. Part 1500. These regulations, which the courts have looked to for guidance in applying NEPA,<sup>11</sup> direct Federal agencies to identify three categories of actions for NEPA purposes: Actions that normally do not require case-specific analysis; actions that normally require an EA to determine whether they will significantly affect the environment, but not necessarily a detailed "Environmental Impact Statement" (EIS); and actions that normally require an EIS. See 40 C.F.R. § 1507.3. Actions within the first class are

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<sup>11</sup> See, e.g., *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 355-56 (1989); *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979).

said to be "categorically excluded" from NEPA provisions requiring detailed, case-specific environmental analysis.<sup>12</sup>

NRC has promulgated its own regulations implementing NEPA.<sup>13</sup> See 10 C.F.R. Part 51. They include provisions for sorting NRC licensing and regulatory actions into the categories described by the CEQ. See 10 C.F.R. § 51.21.

B. Petitioner's Claims

Petitioner's NEPA claims are concerned with how NEPA might apply to a hypothetical barge-routing decision that, in Petitioner's view, some Federal regulators should make. But NEPA only requires analysis associated with an action the Federal agency actually proposes to take that is "major" and that might significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C). The requirements of NEPA are triggered when there is a proposal for "major federal action." Without such an "overt action," the environmental analysis requirements do not come into play.<sup>14</sup>

Petitioner, apparently, would prefer that Federal regulators promote transportation safety not only through general packaging and operating requirements, but also through case-by-case reviews of transportation routes,

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<sup>12</sup> See 40 C.F.R. §§ 1507.3(b)(2)(ii), 1508.4; see also, *Pyramid Lake Paiute Tribe of Indians v. United States Department of the Navy*, 898 F.2d 1410, 1420 (9th Cir. 1990); *National Trust for Historic Preservation v. Dole*, 828 F.2d 776, 780 (D.C. Cir. 1987); *City of Alexandria v. Federal Highway Administration*, 756 F.2d 1014, 1018 (4th Cir. 1985).

<sup>13</sup> The NRC does not consider itself bound by the CEQ regulations, but has committed "to take account" of them. 10 C.F.R. § 51.10(a); see Final Rule 49 Fed. Reg. 9352, 9359-60 (1984); *Limerick Ecology Action v. NRC*, 869 F.2d 719, 725, 743 (3d Cir. 1989).

<sup>14</sup> See *Cross-Sound Ferry Services, Inc. v. Interstate Commerce Comm'n* 934 F.2d 327, 334 (D.C. Cir. 1991); *Defenders of Wildlife v. Andrus*, 627 F.2d 1238, 1245, 1246 (D.C. Cir. 1980).

focusing on the comparative risks of alternative routes. The State's complaint really lies not with the implementation of existing regulations, but with perceived deficiencies in the overall regulatory scheme.

Under the existing regulatory scheme, a licensee's transport of nuclear fuel is by general license. No NRC approval of the specific route by which the Shoreham fuel is transported to Limerick is required. Because route selection is a private decision not requiring Federal approval, no route-specific NEPA analysis is necessary. In *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-90-8, 32 NRC 201, 207-08 (1990), the Commission held that where a licensee can act without NRC approval, there is no Federal action requiring an environmental review under NEPA. In that case the challenged action was the decision not to operate the Shoreham facility. Here the action was the selection of a transport means and route of the fuel shipments from Shoreham. In either case there was no Federal action triggering NEPA or requiring submission of a consistency certification under CZMA, and no basis to say that an AEA, NEPA or CZMA review was necessary. See also *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-91-2, 33 NRC 61, 70 (1991).

Petitioner is free to argue that existing regulations are inconsistent with authorizing statutes when seeking redress through appropriate means, such as a petition for rulemaking under 10 C.F.R. § 2.802(a) for changes to the NRC packaging and transportation regulations. Even if there were merit in the Petitioner's asserted deficiencies in the current regulatory scheme, however, I am not empowered to alter it in response to a 10 C.F.R. § 2.206 petition. Moreover, Petitioner has not offered any safety reason to alter the terms or conditions of the NRC licenses authorizing the transfer and the transport of

the Shoreham fuel. In order to obtain further NRC review of the Shoreham shipment, Petitioner advances a number of arguments that challenge the adequacy of the NRC's environmental review of its transportation regulations in general and of the PECO amendment in particular. Each of those arguments is addressed below.

1. PETITIONER'S CLAIM THAT THE NRC FAILED TO CONSIDER ALTERNATIVES UNDER NEPA

Petitioner claims that the NRC failed to comply with NEPA requirements because alternative means of transporting LIPA's fuel from Shoreham to Limerick were not analyzed. In Petitioner's view, the NRC was required to consider the mode and route by which the fuel is shipped in the EA of PECO's amendment permitting receipt and possession of the fuel.

The Staff's EA of PECO's amendment concluded that the receipt and use of Shoreham's fuel at the Limerick plant would have no significant environmental effects. This conclusion rested in part upon a finding that any impact from the transportation of fuel is within the bounds of Table S-4.<sup>15</sup> The S-4 Table is premised upon a generic determination that the transport of nuclear fuel to and from power reactor sites would not cause significant environmental effects. Transportation of nuclear fuel was an anticipated necessary event in connection with licensing each nuclear reactor. Three basic safety requirements were established to ensure safety in transport: adequate containment of the material; adequate control of the radiation emitted by the materials; and prevention of nuclear criticality, *i.e.*, that no nuclear chain

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<sup>15</sup> See U.S. Atomic Energy Commission, WASH-1238, "Environmental Survey of Transportation of Radioactive Materials to and from Nuclear Power Plants" (1972); see also NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes" (1977).



reaction occurs. For irradiated fuel in transit, the means to satisfy the safety objectives lie primarily in the protection provided by an NRC-certified cask. See generally, 10 C.F.R. Part 71.

The original expectation was that unirradiated nuclear fuel would be brought in for initial operation of each reactor and for refueling, and that fully-used irradiated spent fuel would be removed from the site for disposal. Comprehensive generic studies demonstrated that transportation in accordance with NRC requirements would be extremely safe. The environmental effect of transporting unirradiated nuclear fuel to the reactor and irradiated fuel in certified casks from the reactor was determined to be minimal. To avoid wasteful repetition of litigation in individual proceedings, the NRC established generic values for the environmental impacts of fuel transport in its S-4 Rule, 10 C.F.R. § 51.52.

Generic NRC resolution of environmental issues -- and the consequent preclusion of case-specific reviews -- is fully lawful. For example, the NRC evaluated generically the environmental impact of the fuel cycle in Table S-3. The Supreme Court upheld the NRC's "generic method" as "clearly . . . appropriate." *Baltimore Gas & Electric Co*, 462 U.S. 87, 101. The Court pointed to the "[a]dministrative efficiency" and "consistency of decision" furthered by generic environmental review. *Id.*; see also *Ecology Action v. AEC*, 492 F.2d 998, 1002 (2d Cir. 1974).

The regulation implementing the S-4 Table provides that the transportation of fuel and radioactive wastes shall be considered in the environmental report prepared for the construction permit stage of a nuclear reactor. 10 C.F.R. § 51.52. That statement does not imply that the effects of transportation need not be considered later on, at the operating license

stage or at the time of an amendment that requires an environmental review under NEPA.<sup>16</sup> Likewise, the statement does not imply that the S-4 Table is not applicable at such times.

When, as in this case, a Federal action requires analysis of environmental effects of transporting irradiated fuel, the NRC must consider whether the potential consequences are within the "envelope" of those that have already been evaluated. The analysis supporting the S-4 Table considered the environmental effects that would be expected over the operating life of a reactor. WASH-1238 at 3. The S-4 Table is the means to evaluate the impacts of particular fuel shipments that are made during operation of the plant. The "envelope" of environmental impacts therefore includes shipments of fuel that occur during operation of the plant. Indeed, for it to have any useful purpose, application of the Table cannot be limited to the construction permit phase of a reactor since no fuel shipments can be made until after construction is complete.

The analysis that formed the basis of the S-4 Table took into account shipments by barge. Accident probability was estimated on the basis of 310 million barge miles to be about 1.8 accidents per million miles. WASH-1238 at 68. An extreme accident was found to be so unlikely as to be incredible. *Id.* Overall, the probability of a barge accident was found to be lower than for truck or rail for each category of accident considered. *Id.* at 70. Moreover, the likelihood of cargo damage in the event of a barge accident was determined

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<sup>16</sup> At the operating licensing stage, each applicant is required to submit an environmental report specifically addressing the environmental effects of the transportation of fuel and waste to the extent that they differ from those considered in the final environmental impact statement prepared in connection with the construction permit. 10 C.F.R. § 51.53(a) and see 10 C.F.R. § 51.25 with regard to the Staff's need to prepare an EIS or EA.

to be much lower than in the case of rail accidents. In sum, the potential consequences of a barge accident were thoroughly considered and found to be less than those of either a rail or truck accident. Petitioner's desire for more specific information does not provide any basis for concluding that the analysis was inadequate or that another environmental analysis is necessary.

The risk analysis in Table S-4 is applicable here despite the fact that fuel is only slightly irradiated and partially spent fuel, rather than fully spent fuel. Table S-4 is equally applicable to the shipment of fully irradiated spent fuel between reactors as to the shipment of such fuel from a reactor for waste disposal. *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 793 (1985); *accord*, *Carolina Power & Light Company* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986). The language of the S-4 Rule does not explicitly cover the transfer of the barely used fuel rods from Shoreham to Limerick simply because it was not originally anticipated that a reactor would be shipping out slightly irradiated fuel after low-power testing to another reactor. The fact that LIPA is shipping slightly irradiated fuel is a distinction that increases the conservatism of 10 C.F.R. § 51.52 (see Table S-4) as to the level of safety and environmental impact of the transportation event. Thus, the circumstances of this shipment of irradiated fuel make it predictably much safer than the typical approved safe transport of irradiated fuel.

In short, this fuel shipment is well within the bounds of the shipments encompassed by the S-4 Rule and by the original EIS' for both Shoreham and Limerick. The fuel was in use for 3 days at power under five percent, in contrast to typically irradiated spent fuel that had supported full power operation for 3 years. Due to the fact that the fuel had cooled down for

several years, it is considerably safer, in the highly unlikely event of an accident, than if it had only been cooled for the minimum 90-day period authorized by the rule.

Because this shipment falls within the "envelope" of environmental consequences that have already been analyzed either generically or in the original impact statements for the specific plants at issue here, NEPA does not require any further evaluation of alternatives. Thus, no NRC analysis of other potential routes or means for transporting the Shoreham fuel to Limerick is required.

The decision by LIPA to transport the fuel by barge instead of rail or any other means does not impose any NEPA requirements on the NRC. NEPA requirements are triggered only by Federal action. The determination of the route and mode by which the fuel is to be transported is within the purview of LIPA and PECO, not the Federal Government. Thus, the cases cited by Petitioner in support of its claim that alternative routes must be considered for the shipping of nuclear materials are inapposite. In both of those cases, a Federal agency -- the Department of Energy -- directed the shipment of the materials. See *Sierra Club v. Watkins*, 808 F. Supp. 852 (D.D.C. 1991) and *Public Service company of Colorado v. Andrus*, 825 F. Supp. 1483 (D. Idaho 1993). The decisions regarding the routing and means of transporting nuclear materials were, therefore, federal actions requiring NEPA review. In this case, by contrast, those decisions were made by private parties.

## 2. PETITIONER'S CLAIM THAT THE NRC FAILED TO PERFORM AN EA FOR THE TRANSFER AND BARGE TRANSPORT OF LIPA'S FUEL

Petitioner claims that the NRC should have performed an EA of the transfer and transport the Shoreham fuel as part of the issuance of a general

license to transport licensed material. A general license to transport licensed material is conferred under 10 C.F.R. § 71.12 to any licensee of the Commission, as long as certain provisions are met, provided the licensee obtains approval of the package under other provisions of Part 71. The premise for Petitioner's claim is that because the general license issued pursuant to Section 71.12 is not categorically excluded from NEPA review, its environmental impacts must be reviewed.

The NRC's NEPA review of the general license to transport fuel was performed generically in the Final Environmental Statement (FES) issued as part of a comprehensive review of the Commission's rules and procedures pertaining to transportation.<sup>17</sup> That review was initiated by the NRC soon after its inception under the Energy Reorganization Act of 1974. The purpose of the NRC's generic evaluation was to consider the environmental impacts of all transportation of radioactive materials within the United States, specifically including all fuel cycle shipments. In addition, the FES provided technical data necessary for the NRC to re-evaluate the existing rules governing transportation of radioactive materials. Thus, while the Petitioner is correct in asserting that LIPA's general license to transport fuel is not categorically excluded, an environmental review of that license has been performed.

LIPA's general license to transport fuel was not issued for the transport of fuel from Shoreham to Limerick. Rather, the general license is conferred by regulation for all shipments of nuclear fuel in NRC-certified

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<sup>17</sup> See "Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes", NUREG-0170, December 1977. Preparation of the FES was directed as part of a re-evaluation of the NRC's transportation regulations which was initiated as part of a rulemaking proceeding concerning air transportation of radioactive materials. 40 Fed. Reg. 23768, 23769.

casks. Under that license, LIPA is authorized to transport its nuclear fuel without obtaining NRC approval for each specific shipment.<sup>18</sup> As stated by the Commission, "[a] general license ... is granted by rule and may be used by anyone who meets the terms of the rule, 'without the filing of applications with the Commission or the issuance of licensing documents to particular persons' . . . . Thus ... LIPA was not required to obtain an individual license or license amendment for transporting the Shoreham fuel to PECO." CLI-93-25, slip. op. at 7. Because no NRC approval for this shipment was required, no case-specific NEPA review is necessary.

3. PETITIONER'S CLAIM THAT THE NRC'S EA FOR PECO'S LICENSE AMENDMENT WAS INADEQUATE

Petitioner claims that the NRC's EA of PECO's amendments<sup>19</sup> was inadequate because it relied on the S-4 Table. In Petitioner's view, the S-4 Table does not account for the environmental effects of barge shipments, in general, because it was not premised on data specific to barges or of the Shoreham shipment in particular. Petitioner also argues that the S-4 Table does not apply to PECO's amendment because it pertains only to transportation of fuel being removed from a reactor site for disposal.

The S-4 Table, 10 C.F.R. § 51.52, specifically provides that it applies when "irradiated fuel is shipped from the reactor by truck, rail, or barge" (emphasis added). The provisions of Table S-4 encompass the environmental

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<sup>18</sup> Moreover, NRC approval of the route selected by LIPA to ship its nuclear fuel is not required. The NRC only requires case-specific review of the routing of shipments involving certain highly irradiated materials not present here. See 10 C.F.R. § 73.37(a)(1), (b)(7).

<sup>19</sup> The amendments revised PECO's operating license to allow receipt and possession, but not to separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station. Under 10 C.F.R. § 51.21, this action required an EA.



impacts of the shipment of fuel from one reactor to another, regardless of whether those impacts are being contemplated as part of NRC action concerning the reactor receiving the fuel or the reactor from which the fuel is being shipped. See *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 793 (1985); accord, *Carolina Power & Light Company* (Shearon Harris Nuclear Power Plant), ALAB-837, 23 NRC 525, 544 (1986).

The study that provided the data for Table S-4 analyzed the effects of transportation by barge. See discussion at pp. 17-20, *supra*. Because barge shipments were clearly contemplated in the development of the S-4 Table and in the implementing regulation, application of Table S-4 to the Shoreham shipment was proper.

Furthermore, the environmental effects of the Shoreham shipment are within the "envelope" of risks encompassed in the S-4 Table. The factors that affect risk were considered in the EIS and are incorporated into the provisions of the rule.<sup>20</sup> For example, the environmental survey that supported the S-4 Rule estimated the likelihood that a loaded cask would be involved in an accident when transported by barge as only once in 170 reactor years. In contrast, the likelihood of an accident when transported by truck

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<sup>20</sup> Petitioner relies on *Limerick Ecology Action, Inc. v. NRC*, 869 F.2d 716 (3d Cir. 1989) to argue that transportation of fuel and wastes cannot be treated generally. In *Limerick*, the Court invalidated an NRC generic policy statement that precluded consideration of severe accident mitigation design alternatives in individual licensing proceedings. The Court found that precluding consideration of such a matter must be premised on a judgment that the issue could not affect the ultimate decision, i.e., whether to license the plant. *Id.* at 737. Because the NRC had not made that judgment, the Court found that precluding the matter from consideration was an abuse of discretion. *Id.* at 738. In this case, by contrast, the NRC has determined that transporting fuel and waste in NRC-certified containers will, in all likelihood, have no significant environment impacts regardless of the mode of transport. Where impacts may differ from site to site but never rise to the level of a significant impact at any site, generic NEPA consideration is appropriate.

was estimated as once in 20 reactor years. WASH-1238 at 45. Even in the event of an accident, the probability of a release of radiation was found to be so small as to be practically incredible. *Id.* at 47.

4. PETITIONER'S CLAIM THAT THE NRC VIOLATED NEPA BY SEGMENTING THE APPROVAL OF THE TRANSFER AND TRANSPORT BY BARGE

Petitioner's claim that the NRC improperly segmented approval of the Shoreham shipment route fails because it is based on a false premise -- that LIPA's decision to ship the fuel by barge along the New Jersey coast is subject to NRC approval. As discussed above, LIPA is authorized to transport fuel under a general license as long as it uses NRC-approved casks. Except in a very limited number of circumstances, not applicable here, NRC approval of specific shipments is not required. Because there is no Federal action associated with LIPA's decisions in this matter, no NEPA requirements are triggered. Thus, the simple answer to Petitioner's claim is that NRC approval is not being segmented because NRC approval is not necessary.<sup>21</sup>

5. PETITIONER'S CLAIM THAT THE NRC FAILED TO REQUIRE LIPA TO OBTAIN NECESSARY APPROVALS

Once again Petitioner argues that the NRC should have required LIPA to obtain approval of the decision to ship the fuel by barge along the New Jersey coast. According to the Petitioner, although LIPA is permitted to transport fuel under its general license, LIPA must obtain NRC approval to transfer the fuel to PECO. Petitioner concludes that the NRC must perform an environmental

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<sup>21</sup> Because no federal action approving LIPA's decision to transport fuel by barge is necessary, this case is distinguishable from *Susquehanna Valley Alliance v. Three Mile Island*, 619 F.2d 231 (1980). In that case, the Court expressed the concern that segmentation could delay the preparation of an impact statement required by federal action until after the status quo had been changed to an extent that the view of agency would be distorted. *Id.* at 240.

analysis before approving the transfer, presumably to consider alternative means of transporting the fuel.

NRC regulations, however, do not require such approval. Transfer of the fuel from LIPA to PECO is expressly authorized by 10 C.F.R. § 70.42, which provides that any licensee may transfer nuclear material to an individual authorized to receive such material under terms of a specific or general license issued by the Commission. LIPA's authority to transfer the Shoreham fuel to PECO under that general license was explicitly acknowledged by the Commission in CLI-93-25, slip op. at 7, n.3. Because NRC regulations authorize both the transfer and the transport of nuclear materials by licensees in general, specific approval of individual shipments is not required. *Id* at 7-8.

The environmental impacts of transporting radioactive materials were considered by the NRC in conjunction with the issuance of the Shoreham operating license<sup>22</sup> and the generic evaluation of NRC transportation regulations. Thus, the environmental implications of these shipments have been fully considered by the NRC. This is true even when the shipment is transported in order to effectuate the "transfer" of fuel from one plant to another.

6. PETITIONER'S CLAIM THAT THE NRC VIOLATED THE COASTAL ZONE MANAGEMENT ACT BY FAILING TO REQUIRE CONSISTENCY REVIEWS

The main purpose of the CZMA is to encourage and assist States in preparing and implementing management programs to preserve, protect, develop,

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<sup>22</sup> See "Final Environmental Statement Related to Operation of Shoreham Nuclear Power Station," September 1972, at 5.3.

and restore the resources of the coastal zone of the United States.<sup>23</sup>

Accordingly, the CZMA grants to States the opportunity to develop coastal management programs in order to coordinate not only state and local planning, management, and development activities, but Federal activities as well.

Most significantly for the claims of the instant Petition, where a State has an approved program, the CZMA provides for submission of a consistency certification to obtain a required Federal license or permit.<sup>24</sup>

After final approval by the Secretary 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 \* \* \* No license or permit shall be granted by the Federal agency until the state or its designated agency has concurred with the applicant's certification or until, by the state's failure to act, the concurrence is conclusively presumed \* \* \*.

16 U.S.C.A. § 1456(c)(3)(A) (Supp. 1993) (emphasis added).

Part 930 of 15 C.F.R. sets forth the regulations governing consistency determinations.

The Petitioner points out that the regulations (15 C.F.R. § 930.53(b)) require that States develop a list of Federal license and permit activities that are likely to affect the coastal zone. Consistent with this requirement, the State of New Jersey developed a list that included NRC "[p]ermits and licenses required for the construction and operation of nuclear facilities

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<sup>23</sup> See S. Rep. No. 753, 92nd Cong., 2d Sess., 1 (1972), *reprinted in* 1972 U.S. Code Cong. & Admin. News 4776.

<sup>24</sup> New Jersey's Coastal Management Program was approved in September 1980.

under the Atomic Energy Act of 1954, Sections 6,7,8 and 10."<sup>25</sup> Based on this listing, the Petitioner claims that the NRC should have obtained consistency certifications.<sup>26</sup>

The flaw in the Petitioner's argument is that the activity it is concerned about is the coastal route that was selected by LIPA for the transportation of the Shoreham fuel. This route is not regulated by the NRC. No application was made for the coastal route. The NRC did not issue any license or permit for LIPA's selection of a coastal route. Route selection, except in circumstances not applicable here, is a decision made by a private entity. It is not an activity for which LIPA or PECO applied for a "required Federal license or permit." 16 U.S.C.A. § 1456 (c)(3)(A) (Supp.1993) Because the NRC does not regulate the route selection, no NRC action fell within the CZMA. Accordingly, Petitioner's claim is without merit.

#### IV. CONCLUSION

For the reasons discussed above, the Petitioner has provided no basis for its request to halt the ongoing shipments of fuel from LIPA's Shoreham Nuclear Power Station to PECO's Limerick Generating Station or the related requests concerning the adequacy of LIPA's decommissioning plan and the compliance of

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<sup>25</sup> New Jersey Coastal Management Program (August 1980), at page 248.

<sup>26</sup> A consistency certification is required to be submitted to the licensing agency with respect to an application for a Federally licensed activity affecting the coastal zone. 15 C.F.R. § 930.57 provides in part:

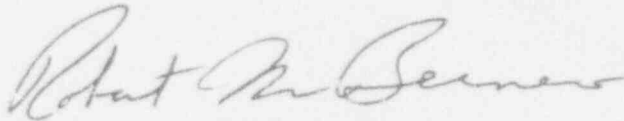
##### Consistency certifications

(a) When satisfied that the proposed activity meets the Federal consistency requirements of this subpart, all applicants for Federal licenses or permits subject to State agency review shall provide in the application to the Federal licensing or permitting agency a certification that the proposed activity complies with and will be conducted in a manner consistent with the State's approved management program. At the same time, the applicant shall furnish to the State agency a copy of the certification.

the NRC with NEPA, AEA and CZMA. Furthermore, no basis exists for taking any action in response to the Petition as no substantial health or safety issues have been raised by the Petition. See Consolidated Edison Co. of New York (Indian Point, Units 1, 2 and 3), CLI-75-8, 2 NRC 173, 176 (1975), and Washington Public Power Supply System (WPPSS Nuclear Project No. 2), DD-84-7, 19 NRC 899, 923 (1984). Accordingly, no action pursuant to 10 C.F.R. § 2.206 is being taken in this matter.

As provided by 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

Dated at Rockville, Maryland,  
this 23rd day of December 1993.



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As provided by 10 C.F.R. § 2.206(c), a copy of this Decision will be filed with the Secretary of the Commission for the Commission's review.

FOR THE NUCLEAR REGULATORY COMMISSION

ORIGINAL SIGNED BY

Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

Dated at Rockville, Maryland,  
this 23 day of December 1993.

EKraus review 12/17/93

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DATE	12/20/93		12/20/93	12/20/93		12/16/93		12/16/93	12/24/93

OFC	IMNS	EDO	EDO
NAME	Paperiello	GArlotto	RBernero
DATE	12/22/93	12/ /93	12/23/93

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