10 CFR 50.90

PHILADELPHIA ELECTRIC COMPANY

NUCLEAR GROUP HEADQUARTERS

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NUCLEAR SERVICES DEPARTMENT

March 8, 1993

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC. 20555

Subject: Limerick Generating Station, Units 1 and 2
Operating License Change Request 93-03-0

Gentlemen:

Philadelphia Electric Company (PECo) requests a change to Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station, (LGS) Unit 1 and Unit 2, respectively. The proposed change revises paragraph 2.B.(5) to allow LGS, Unit 1 and Unit 2, to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station (SNPS).

PECo requests this change to authorize it, as the licensee for LGS, Unit 1 and Unit 2, to receive and possess the slightly irradiated SNPS fuel. SNPS never commenced commercial operation and is currently being decommissioned. Our objective is to obtain the enriched SNPS fuel for eventual use in the LGS Unit 1 and Unit 2 reactors.

Attachment 1 contains information supporting a finding that the proposed change does not involve a Significant Hazards Consideration and information supporting an Environmental Assessment. Attachment 1 also contains a description of the SNPS fuel, an assessment of its general suitability for future use at LGS, and the protective packaging and shipping methods that will be used if this proposed change is approved. Attachment 2 contains the Operating License pages showing the proposed change.

We request the NRC's prompt attention to this matter due to schedular considerations related to the movement of the fuel from the SNPS site to the LGS site, and the refueling schedules for LGS Unit 1 and Unit 2. If approved, we request that the amendments be made effective by June 1, 1993.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

G. A. Hunger, Director
Licensing Section

Attachments

cc: T. T. Martin, Administrator, Region I, USNRC w/attachments
T. J. Kenny, USNRC Senior Resident Inspector, LGS w/attachments
W. P. Dornsife, Director, PA Bureau of Radiological Protection, w/attachments

COMMONWEALTH OF PENNSYLVANIA :
: ss.
COUNTY OF CHESTER :

G. R. Rainey, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company, the Applicant herein; that he has read the foregoing Application for Amendment of Facility Operating License Nos. NPF-39 and NPF-85 (Operating License Change Request No. 93-03-0) to allow Limerick Generating Station to receive and possess fuel assemblies and fuel channels from the Shoreham Nuclear Power Station, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

G R Rainey
Vice President

Subscribed and sworn to
before me this 8th day
of March 1993.

Erica A. Santon

Notarial Seal
Erica A. Santon, Notary Public
Tredyffrin Twp., Chester County
My Commission Expires July 10, 1995

ATTACHMENT 1

LIMERICK GENERATING STATION
Units 1 and 2

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

OPERATING LICENSE CHANGE REQUEST

"Allow Receipt and Storage of
Fuel Assemblies and Fuel Channels from
Shoreham Nuclear Power Station"

Supporting Information for Changes - 14 pages

Philadelphia Electric Company (PECo), licensee under Facility Operating License Nos. NPF-39 and NPF-85 for Limerick Generating Station (LGS), Unit 1 and Unit 2, requests that these licenses be amended as proposed herein to allow LGS to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station (SNPS).

This Operating License Change Request for LGS, Unit 1 and Unit 2, provides a discussion and description of the proposed change, a safety assessment, information supporting a finding of No Significant Hazards Consideration, and information supporting an Environmental Assessment.

We request that, if approved, the change to the Operating Licenses for LGS, Unit 1 and Unit 2, be effective by June 1, 1993.

Discussion and Description of the Proposed Change

Paragraph 2.B.(5) of Operating License Nos. NPF-39 and NPF-85 states that LGS is authorized:

> "Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility."

The word "facility," as used in these licenses, refers to LGS, Unit 1 and Unit 2. This wording limits possession of any byproduct and special nuclear materials in fuel elements to that which is produced at LGS, Unit 1 and Unit 2.

The Long Island Power Authority (LIPA) is the holder of NRC Possession Only License (POL) No. NPF-82 for SNPS. SNPS never commenced commercial operation and is presently undergoing decommissioning while in a non-operating, defueled condition with all fuel (i.e., 560 fuel assemblies) stored in the spent fuel pool.

Approval of the following proposed change to paragraph 2.B.(5) of Operating License Nos. NPF-39 and NPF-85 will authorize receipt and possession of the slightly irradiated SNPS fuel assemblies and fuel channels at LGS, Unit 1 and Unit 2. Approval of the proposed change will result in the beneficial use of the SNPS fuel by its eventual use in the LGS Unit 1 and Unit 2 reactors. We expect to use only the enriched SNPS fuel in the LGS Unit 1 and Unit 2 reactor cores in the future. Also, approximately 76

of the SNPS fuel channels may be shipped to LGS and used to channel the natural uranium assemblies in the LGS spent fuel pools. The slightly irradiated SNPS zircaloy fuel channels will be shipped separately from the SNPS fuel as radioactive material in accordance with the requirements of 49 CFR 172 and 49 CFR 173. The SNPS fuel channels will not be used in the LGS reactors.

The proposed change to paragraph 2.B.(5) of Operating License Nos. NPF-39 and NPF-85 would authorize LGS:

> "Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility, and to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station."

Safety Assessment

The purpose of these proposed changes is to authorize PECo to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the 560 slightly irradiated fuel assemblies and fuel channels from the SNPS.

LIPA is the licensee for SNPS and would be responsible for the transportation of the fuel from SNPS to LGS. The following is a description of the SNPS fuel, an assessment of its general suitability for future use at LGS, and the packaging, shipping, handling and storage methods that will be employed to ensure that the enriched fuel can be safely handled and stored at LGS, Unit 1 and Unit 2, and to ensure that the enriched fuel remains suitable for future use.

A. Description of the SNPS Fuel

The SNPS fuel consists of 560 GE6 (P8x8R) pressurized, C-lattice, non-barrier fuel assemblies fabricated by the General Electric (GE) Company. Of the 560 SNPS fuel assemblies, 340 are enriched to 2.19 weight percent (w/o) U-235, 144 are enriched to 1.76 w/o U-235, and the remaining 76 are natural uranium (i.e., 0.711 w/o U-235). These fuel assemblies are similar to the LGS Unit 1 initial core described and evaluated in the LGS Final Safety Analysis Report (FSAR).

The SNPS fuel has been operated intermittently at low power (i.e., less than 5% of the SNPS full power rating of 2436

megawatts thermal) for testing purposes only. The fuel has been irradiated to a core average exposure of approximately 48 megawatt days per metric ton (MWD/MT). The SNPS fuel was removed from the reactor and placed in the SNPS spent fuel pool in August 1989. As of June 1992, the calculated decay heat rate for the entire core was 265 watts (i.e., 900 Btu/hr). The fission product inventory for the entire SNPS core is less than 0.02% of the source term assumed in the analysis of the design basis loss of coolant accident described in the LGS Updated Final Safety Analysis Report (UFSAR).

A detailed inspection of two of the SNPS fuel assemblies was performed during August 1990. This inspection included eddy current testing of a number of individual fuel and water rods and a visual inspection of the whole fuel assembly. This inspection, performed by GE, determined that the SNPS fuel is in excellent condition and is suitable for future use.

An evaluation of the water chemistry history of both the SNPS reactor and spent fuel pool was performed to assess the impact on the fuel. This evaluation determined that while in the reactor or spent fuel pool at SNPS, the fuel was not exposed to an adverse environment that would preclude its future use.

B. Packaging and Shipping Criteria

The SNPS fuel will be transported in the IF-300 Series spent fuel cask. This cask is designed in accordance with all NRC and Department of Transportation (DOT) regulations governing the shipment of radioactive material of this type (i.e., 10 CFR 71 and 49 CFR 173). The cask is operational under NRC Certificate of Compliance 9001. The IF-300 Series spent fuel cask will be used with a 17 element (i.e., fuel assembly) basket designed to accommodate the shipment of slightly irradiated fuel that is intended for reuse. The holder of NRC Certificate of Compliance 9001 is requesting an amendment of the Certificate of Compliance to reflect the design of the basket and packaging.

Special packaging designed to protect the fuel from damage during shipment will be used inside the IF-300 cask basket. This packaging will consist of a special stainless steel shipment channel and plastic cluster separators. The plastic cluster separators will be inserted between the rods in each fuel assembly to support the rods while the fuel assembly is horizontal. The stainless steel channel will support and protect each fuel assembly and hold the plastic cluster separators in place.

The plastic cluster separators consist of ribbed polyethylene mounted to a polyethylene outer shell. The separators are made of the same material as the separators used during shipment of new fuel. The separators are inserted from opposite faces and each extends halfway across the assembly width. A total of 32 pairs of cluster seperators will be used per fuel assembly. A specially designed installation device will be used to push one cluster separator at a time into position while supporting and aligning the assembly. The separators will be inserted while the fuel is in the SNPS spent fuel pool.

After the cluster separators are inserted and the installation is inspected, the fuel assembly will be moved to the SNPS fuel prep machine and a stainless steel channel will be installed over the fuel assembly containing the cluster separators. The stainless steel shipment channel is similar to a normal zircaloy channel but has a larger inside dimension. The top of the stainless steel fuel channel will have corner clips similar to the normal zircaloy fuel channel. The top of the channel will be bolted to the fuel assembly upper tie plate to provide support to the tie plate. The bottom of the channel will slide over the existing fuel assembly finger springs and terminate below the finger springs in the machined area of the lower tie plate.

C. Handling of the Cask and Irradiated Fuel

Upon arrival at the LGS site, the IF-300 cask with the SNPS fuel assemblies will be lifted from the railcar by the reactor enclosure (RE) main hoist to the refueling floor through the equipment hatch. All cask handling and fuel handling activities are consistent with the methods described in LGS UFSAR Section 9.1.4.2.10, "Description of Fuel Transfer." The SNPS fuel is of the same mechanical design as originally described and evaluated in the LGS FSAR and is compatible with all existing LGS fuel handling equipment.

The RE main hoist is designed to handle loads with a maximum weight of 125 tons while maintaining a safety factor of five (5). The IF-300 cask weighs approximately 85 tons, including the basket, the 17 fuel assemblies, and the redundant cask lifting yoke. The RE main hoist is designed so that the failure of any single component does not result in a sudden displacement or dropping of the load. The single failure proof design of the RE main hoist is described in Section 9.1.5.4 of the LGS UFSAR and was reviewed and approved by the NRC in section 9.1.5 of NUREG-0991, Supplement 4, "Safety Evaluation Report Related to the Operation for Limerick Generation Station, Units 1 and 2," dated May, 1985. While handling the IF-300 cask, the requirements of

NUREG-0554, "Single Failure Proof Cranes for Nuclear Power Plants" and NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants" will be met by the use of a single failure proof redundant yoke and by restricting the critical load of the RE main hoist to 110 tons.

Restricting the RE main hoist critical load to 110 tons and the use of single failure proof equipment satisfies the single failure criteria and precludes a cask drop due to a single failure. Therefore, as stated in UFSAR Section 15.7.5, an analysis of the spent fuel cask drop is not required. At no time will the cask be lifted or carried over spent fuel or the reactor cores.

D. Storage of Irradiated Fuel

New fuel and spent fuel are stored in the LGS spent fuel pool as described in the LGS UFSAR, Section 9.1.2, "Spent Fuel Storage." Spent fuel pool cooling capacity, storage capacity, and the effects of the SNPS fuel assembly packaging material on spent fuel pool criticality have been evaluated.

The contribution of the SNPS fuel to the spent fuel pool heat load is negligible. The spent fuel pool cooling system is designed to accommodate a heat load of 16.3×10^6 Btu/hr. The maximum heat rate of the spent fuel for a one-third core discharge during refueling is approximately 13×10^6 Btu/hr. As of June 1992, the full core calculated decay heat rate of the SNPS fuel was approximately 900 Btu/hr.

The capacity of each of the LGS spent fuel pools is 2,040 spaces. Currently, a total of 3,336 spaces have been installed in both pools and 1,692 spaces contain discharged fuel assemblies. Storage of the SNPS fuel in the LGS Unit 1 and Unit 2 spent fuel pools will not exceed the Technical Specification (TS) limit for the spent fuel pools and will not preclude full core discharge until approximately the end of 1996. Plans are currently being made to re-rack the spent fuel pools to increase capacity.

LGS UFSAR Section 9.1.2.3.1 describes the criticality analysis for the LGS spent fuel pool. This analysis assumed fuel assemblies with uniform 3.5 w/o enriched U-235. This analysis also assumed the presence of zircaloy channels which is a more reactive configuration than a fuel assembly stored without zircaloy channels. The worst case value of k_{eff} under these conditions was determined to be 0.933. The SNPS fuel has a significantly lower enrichment than the enrichment assumed in the LGS fuel pool criticality analysis. The highest average assembly

enrichment of the SNPS fuel is 2.19 w/o U-235 and the maximum planar enrichment is 2.33 w/o U-235. Therefore, the criticality analysis in UFSAR Section 9.1.2.3.1 bounds the storage of the SNPS fuel because of the much lower enrichment of the SNPS fuel compared to the enrichment assumed in the LGS fuel pool criticality analysis.

The SNPS fuel will arrive at LGS packaged with polyethylene spacers and a protective stainless steel channel. A criticality analysis performed by GE evaluated the effect of the polyethylene spacers and stainless steel channels on fuel pool criticality. The presence of the polyethylene spacers will increase the hydrogen concentration in the vicinity of the fuel and, therefore, neutron moderation. However, the lower enrichment of the SNPS fuel compared to the enrichment used in the UFSAR criticality analysis causes a much greater negative effect on reactivity than the positive reactivity resulting from the presence of the polyethylene spacers. Therefore, SNPS fuel containing the polyethylene spacers is bounded by the criticality analysis in LGS UFSAR 9.1.2.3.1. Furthermore, the stainless steel channels add negative reactivity and, in all cases, the presence of stainless steel channels lowers the spent fuel pool k_{eff}.

The GE analysis determined that storage of the SNPS fuel in the LGS spent fuel pool, including storage with or without the polyethylene spacers and/or stainless steel channels, will not result in a k_{eff} equal to or greater than the limit of 0.95 delineated in LGS TS Section 5.5.1.1.

E. General Suitability for Future Use

The acceptance criteria for the shipment of the SNPS fuel will be the same as applied to the shipment of new GE fuel, and is specified in GE topical report NEDE-23542 P, "Fuel Assembly Evaluation of Shipping and Handling Loads" dated March 1977. GE has determined that if the maximum acceleration and loading acceptance criteria for a fuel assembly are not exceeded during handling and shipping, the SNPS fuel will be maintained in a condition suitable for future use at LGS.

To ensure that the SNPS fuel assemblies arrive in a condition suitable for future use, a dummy test assembly will be inspected after being subjected to a shaker table test to simulate the loading and accelerations expected during shipment. During shipment, each cask will be instrumented to measure accelerations to determine compliance with the shipping criteria discussed above. Additionally, one or more fuel assemblies from the first

shipment will be disassembled and inspected before and after shipment. A procedure for this inspection process will be established. This inspection procedure may be repeated on selected fuel assemblies from subsequent shipments if determined necessary.

All the fuel assemblies shipped from SNPS to LGS will be visually inspected with optical equipment or closed circuit television before packaging to provide a record of the fuel assembly condition on film or video tape. After packaging, all fuel assemblies will be visually re-inspected to confirm all required plastic cluster separators are in place.

After arrival at LGS, all assemblies will be inspected to the same acceptance criteria used for the receipt inspection of new fuel. Any SNPS fuel assembly that does not meet the acceptance criteria established for these inspections will be excluded from future use in the LGS reactor cores unless it is repaired and meets appropriate acceptance criteria.

At the time the SNPS fuel is considered for use in either the LGS reactor cores, a cycle-specific core nuclear analysis will be performed. This analysis will be based on the latest NRC approved revision of GE licensing topical report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel GESTAR II." The effect of the SNPS fuel on the thermal-hydraulic stability of the reactor core will also be evaluated in accordance with our commitments in response to NRC Generic Letter 88-07, Supplement 1, "Power Oscillations in Boiling Water Reactors (BWR)." These are the same evaluations that would be performed for all reactor reload core designs.

An evaluation was performed to determine if any changes are required to the cycle-specific core nuclear analysis to account for the prior operating history, handling, and transportation of the SNPS fuel. Each GESTAR II criterion and licensing bases was assessed to determine if any special evaluations will be required to utilize the SNPS fuel in the LGS reactor cores. The conclusion was that the SNPS fuel will meet all the licensing bases documented in the NEDE-24011-P-A. Therefore, no exceptions to GESTAR II will be needed when the SNPS fuel is analyzed for use in the LGS reactors.

Preliminary calculations were performed using the GENIE computer code, an NRC approved methodology, to evaluate the feasibility of using the SNPS fuel in the LGS reactor cores. The conclusion of these calculations was that the SNPS fuel can be used in the LGS reactor cores and will result in significant fuel cost savings. Reactor core designs using the SNPS fuel will limit the number of

SNPS fuel assemblies utilized each cycle and will use the SNPS assemblies only in low duty locations in the reactor core. Only the enriched fuel assemblies will be used in the LGS, Unit 1 and Unit 2, reactor cores.

Information Supporting a Finding of
No Significant Hazards Consideration

We have concluded that the proposed change that authorizes PECo to receive and possess the slightly irradiated SNPS fuel assemblies and fuel channels at LGS, Unit 1 and Unit 2, does not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three standards set forth in 10 CFR 50.92 is provided below.

1) The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

As explained below, the receipt and storage of the SNPS fuel and fuel channels at LGS, Unit 1 and Unit 2, will not increase the probability of occurrence of any accident previously evaluated in the LGS UFSAR.

The SNPS fuel is similar to fuel previously received, stored, and used at LGS, and the SNPS fuel is the same mechanical design as originally evaluated for Unit 1 in the FSAR. Handling of the SNPS fuel will not differ significantly from the fuel handling procedures described in LGS UFSAR Section 9.1.4, "Fuel Handling System." The impact on the LGS spent fuel pool criticality is bounded by the fuel pool criticality analysis in LGS UFSAR Section 9.1.2.3.1. Furthermore, the impact of the SNPS fuel decay heat on the LGS spent fuel pool cooling capacity is negligible. The radiological consequences of a dropped fuel assembly involving the slightly irradiated Shoreham fuel are bounded by the fuel handling accident involving highly irradiated spent fuel described in LGS UFSAR Section 15.7.4 "Fuel Handling Accident." The physical consequences of a dropped fuel assembly (i.e., on fuel assemblies and structures) are within the scope of LGS UFSAR Section 9.1.2.3.2.3, "Dropped Fuel Bundle Analyses." Restricting the RE main hoist critical load to 110 tons and the use of single failure proof equipment precludes a cask drop due to single failure. Therefore, as stated in LGS UFSAR Section

15.7.5, an analysis of the spent fuel cask drop is not required.

At the time the SNPS fuel is considered for use in either of the LGS reactor cores, a cycle-specific core nuclear analysis will be performed, and will include the effect on the thermal-hydraulic stability in accordance with NRC Generic Letter 88-07, Supplement 1. The SNPS fuel will be used only if the results of the cycle specific analysis are acceptable.

Therefore, the proposed change does not involve an increase in the probability or consequences of an accident previously evaluated.

2) The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

No physical alterations of plant configuration, changes to set points, or changes to operating parameters are involved in implementing the proposed change. The receipt, handling, and storage of the irradiated SNPS fuel is essentially the same as the movement of irradiated fuel using a spent fuel cask that is discussed in UFSAR Section 9.1.4.2.1, "Spent Fuel Cask." The impact of the SNPS fuel and its packaging material on the LGS spent fuel pool criticality is bounded by the fuel pool criticality analysis in LGS UFSAR Section 9.1.2.3.1. Furthermore, the impact of the SNPS fuel decay heat on the LGS spent fuel pool cooling capacity is negligible.

The proposed change does not affect the function or operation of any system or equipment; therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) The proposed change does not involve a significant reduction in a margin of safety.

The margin of safety established in the UFSAR and maintained by compliance with the Technical Specifications will be maintained. The effect of the SNPS fuel on LGS spent fuel pool cooling capability, storage capacity, and criticality is bounded by existing analyses in the UFSAR as discussed

above. Because the fuel is only slightly irradiated and of a similar design to that used at LGS, the movement of the SNPS fuel does not involve any changes in fuel handling practices, types of fuel handling accidents that need to be considered, or occupational radiation exposure from spent fuel pool operations or fuel transfer. The proposed change does not increase the risk or degree of radiological dose to the general public from that previously evaluated.

The operating limits established in the Core Operating Limits Report (COLR) will be submitted to the NRC as required by TS Section 6.9.1.9 prior to using the SNPS fuel in the LGS reactor cores.

Therefore, the proposed change will not involve a reduction in a margin of safety.

Information Supporting an Environmental Assessment

The proposed changes have been evaluated against the criteria in 10 CFR 51.21 for the identification of licensing and regulatory actions requiring an environmental assessment. We have concluded that the proposed changes do not meet the criteria for categorical exclusion as defined in 10 CFR 51.22(c)(9). Therefore, in accordance with the requirements in 10 CFR 51.30, the following information is provided to support an Environmental Assessment.

1) Need for the Proposed Change

The proposed change is requested because transfer of the SNPS fuel to LGS would benefit PECo and its customers by providing a low cost source of fuel for LGS.

Additionally, the proposed change to the LGS Operating Licenses would benefit the environment and is in the National interest because of benefits that would accrue from the transfer and utilization of the SNPS fuel at LGS. These benefits include: recovery of the available energy from the fuel that might otherwise be lost; reduction in the need to mine and process uranium and fabricate fuel assemblies that would otherwise be required; and, reduction in the amount of spent nuclear fuel that would otherwise require storage and disposal at a Federal high level waste repository. Finally, the transfer of the SNPS fuel to LGS facilitates the decommissioning of the SNPS.

2) Alternatives and Alternative Use of Resources

If the proposed change to the LGS Operating Licenses is not approved, the LGS reactors will continue to operate using new fuel obtained from existing sources. If the proposed change is not approved for the transfer the SNPS fuel to LGS or to another facility, the SNPS fuel will eventually be disposed of at a Federal high level waste repository without the beneficial utilization of the energy in the fuel, or will be reprocessed at an overseas facility for eventual reconstitution into fuel. Compared with reprocessing at an overseas facility, the proposed change would require less resources for transportation, and would avoid expenditure of additional resources associated with the reprocessing activities prior to the beneficial utilization of the energy in the fuel.

Inasmuch as there are no unresolved conflicts concerning the availability or use of alternative resources associated with the proposed change, no further evaluation of alternatives is required.

3) Environmental Impact of the Proposed Action

The approval of the proposed change to the LGS Operating Licenses will result in no significant effect on the human environment. This conclusion considers the potential impact of: normal transport and transportation accidents; the uranium fuel cycle; radioactive effluents; low level radioactive waste; and, occupational exposure.

The impact of the transportation of the slightly irradiated fuel from the SNPS site to the LGS site is minimal. 10 CFR 51.52, Table S-4, "Environmental Impact of Transportation of Fuel and Waste to and from Light Water-Cooled Nuclear Power Reactor," addresses the impact of transporting irradiated fuel and radioactive waste including normal transport and possible accidents. The proposed shipments meet the conditions specified in 10 CFR 51.52(a); and, therefore, the environmental impact of the proposed shipments is as set forth in Table S-4. In any event, the low level of radiation and the substantial elapsed time since the low power operation of the SNPS fuel make the assumptions used in Table S-4 conservative relative to the proposed shipments. Therefore, Table S-4 bounds the environmental impact of the transportation of the SNPS fuel.

The impact of the transfer of SNPS fuel to LGS on the uranium fuel cycle is neutral or positive. The NRC's original evaluation of this impact is documented in NUREG-0974, "Final Environmental Statement related to the operation of Limerick Generating Station, Units 1 and 2," dated April, 1984. NUREG-0974 used 10 CFR 51.51, "Uranium Fuel Cycle Environmental Data -- Table S-3," to assess the effect of the uranium fuel cycle on the operation of LGS Unit 1 and Unit 2. Transfer of the slightly irradiated SNPS fuel to LGS and the subsequent future use of this fuel results in a reduction in total amount of uranium mined and fabricated into fuel and a reduction in the amount of spent fuel that will eventually be stored at a Federal high level waste repository. Therefore, with regard to the uranium fuel cycle, the evaluation in NUREG-0974 remains unchanged.

The impact on the radioactive effluents discharged from the LGS site is neutral whether or not the SNPS fuel is used. The shipment of the SNPS fuel assemblies will meet the packaging and shipping criteria required for shipments of new fuel, so there will be no increase in fuel failure probability due to the shipping process. Specifically, an increase in fuel failures either due to shipping effects on the fuel or the design of the fuel is not likely as a result of the shipping criteria and inspections that will be employed. Finally, no increase in radioactive liquid and gaseous effluents is expected as a result of the receipt, unpacking, and inspection of the SNPS fuel.

The impact of the transfer of SNPS fuel to LGS on the generation of low level radioactive waste will be low. Solid waste in the form of Dry Active Waste (DAW) including fuel assembly packaging materials will be shipped offsite for volume reduction and disposal. The volume of DAW will be minimized, wherever possible, by the re-use of packaging and shipping material for the multiple shipments required to transfer all of the SNPS fuel.

The impact of the transfer of SNPS fuel to LGS on occupational exposure will be within existing estimates for LGS. The slightly irradiated Shoreham fuel will be packaged inside shipping casks designed to handle highly irradiated spent fuel assemblies. The casks will be opened and unloaded while submerged in the LGS cask storage pit, and handling of the slightly irradiated fuel will be the same as handling the highly irradiated fuel during refueling operations. Appropriate actions to maintain exposure as low as reasonably achievable (ALARA) will be taken.

Non-radiological impacts at the LGS site are limited to removal of paving material sufficient to permit wheel clearance on 600 feet of existing rail spur and the replacement of a number of railroad ties. Since the work is minor and the site area was previously disturbed during site preparation and construction, this type of environmental impact has been previously addressed and no further environmental assessment of this activity is required.

Therefore, we have concluded that the NRC does not need to prepare a supplemental environmental impact statement in connection with the issuance of this amendment to the LGS Operating Licenses in accordance with criteria of 10 CFR 51.22(b).

Conclusion

The Plant Operations Review Committee and the Nuclear Review Board have reviewed this proposed change to the Operating Licenses for LGS, Unit 1 and Unit 2, and have concluded that the changes do not involve an unreviewed safety question, do not involve a significant hazards consideration, and do not endanger the health and safety of the public.

ATTACHMENT 2

LIMERICK GENERATING STATION
Units 1 and 2

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

PROPOSED OPERATING LICENSE CHANGE

List of Attached Pages

License No. NPF-39
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License No. NPF-85
Page 1 - For Information Only
Pages 3 and 4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PHILADELPHIA ELECTRIC COMPANY
DOCKET NO 50-352
LIMERICK GENERATING STATION, UNIT 1
FACILITY OPERATING LICENSE

License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for license filed by Philadelphia Electric Company (the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Limerick Generating Station, Unit 1 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-106 and the application, as amended, the provisions of the Act and the regulations of the Commission;

   C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);

   D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);

   E. The licensee is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

   F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements", of the Commission's regulations;

   G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;

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(3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproducts, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility, and to receive and possess, but not separate, such source, byproduct, and special nuclear materials as contained in the fuel assemblies and fuel channels from the Shoreham Nuclear Power Station.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission;s regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below) and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at reactor core power levels not in excess of 3293 megawatts thermal (100% rated power) in accordance with the conditions specified herein and in Attachment 1 of this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications and The Environmental Protection Plan.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

FACILITY OPERATING LICENSE

License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for license filed by Philadelphia Electric Company (the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Limerick Generating Station, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-107 and the application, as amended, the provisions of the Act and the regulations of the Commission;

   C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);

   D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);

   E. The licensee is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

   F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

   G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;