

December 13, 1994

Mr. John J. Barton  
Vice President and Director  
GPU Nuclear Corporation  
Oyster Creek Nuclear Generating Station  
Post Office Box 388  
Forked River, NJ 08731

SUBJECT: NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING - OYSTER CREEK GENERATING STATION, (TAC NO. M90999)

Dear Mr. Barton:

Enclosed is a copy of the subject notice for your information. This notice relates to your application dated November 25, 1994 to revise Technical Specification 5.3.1.E to allow 2645 fuel assemblies to be stored in the fuel pool. This is an increase of 45 fuel assemblies from the current limit of 2600. The 45 additional storage locations currently exist in the racks in the fuel pool. They were included in the re-racking project allowed by License Amendment No. 76 but were not incorporated in the Technical Specifications since, at the time, it was believed they would not be needed.

Sincerely,

Original signed by:

Alexander W. Dromerick, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure: Subject Notice

cc w/encl: See next page

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Mr. John J. Barton  
Vice President and Director

Oyster Creek Nuclear  
Generating Station

cc:

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Resident Inspector  
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Forked River, New Jersey 08731

Kent Tosch, Chief  
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Mr. Paul Gunter, Director  
Reactor Watchdog Project  
Oyster Creek Nuclear Watch  
Nuclear Information and Resource Service  
1424 16th Street, NW, Suite 601  
Washington, DC 20036

UNITED STATES NUCLEAR REGULATORY COMMISSIONGPU NUCLEAR CORPORATIONDOCKET NO. 50-219NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-16, issued to GPU Nuclear Corporation (GPUN/the licensee) for operation of the Oyster Creek Nuclear Generating Station (OCNGS) located in Ocean County, New Jersey.

The proposed amendment would revise Technical Specification 5.3.1.E to allow 2645 fuel assemblies to be stored in the fuel pool. This is an increase of 45 fuel assemblies from the current limit of 2600. The 45 additional storage locations currently exist in the racks in the fuel pool. They were included in the re-racking project allowed by License Amendment No. 76 but were not incorporated in the Technical Specifications since, at the time, it was believed they would not be needed.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously

evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. The operation of the Oyster Creek Nuclear Generating Station, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

There are no changes in the existing provisions for load handling in the vicinity of the spent fuel pool associated with the proposed increase in licensed storage capacity. OCNGS Technical Specification 5.3.1.B limits the loads carried over the spent fuel pool to no greater than the weight of one fuel assembly. Therefore, accidents involving the mispositioning or drop of a fuel assembly establish the extent of accident probability or consequences. The Abnormal Positioning of a Fuel Assembly Outside the Storage Rack and the Dropped Fuel Assembly accident scenarios are addressed as follows:

- a. The probability of occurrence of the above accidents is not affected by the racks themselves or the stored fuel. Since no physical changes are being made to the racks, an increase in licensed storage capacity cannot increase the probability of these accidents.
- b. The consequences of abnormal positioning of a fuel assembly outside the storage rack were evaluated. Since the storage rack criticality calculations were made using an infinite array of storage cells with no neutron leakage, positioning a fuel assembly outside and adjacent to the actual finite rack can add reactivity, but would, because of neutron leakage, result in a lower  $K_{eff}$  than the  $K_{\infty}$  calculated for the infinite array. Thus, additional stored fuel assemblies will not increase consequences of this type of accident than those previously evaluated.
- c. The consequences of a dropped fuel assembly striking either the base of the rack or the top of a storage location and the reactivity effects were also evaluated in the licensing report supporting Amendment 76. In all cases, the evaluated integrity of the racks was not exceeded. Also, the dropped fuel assembly did not constitute a criticality hazard because the infinite multiplication factor of the fuel storage racks was not materially altered. An increase in

fuel enrichment does not increase consequences since the GE-9 assemblies' mechanical specifications are bounded by previous designs and consequences are not dependent on U-235 enrichment. Thus, since no physical alteration of the storage racks is necessary to store 45 additional fuel assemblies the consequences of this type of accident are not increased.

2. The operation of Oyster Creek Nuclear Generating Station, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The increase in licensed spent fuel pool storage capacity involves the addition of 45 fuel assemblies. The increased structural loading has already been accounted for in the analyses reviewed by the NRC staff in support of Amendment 76. There are no physical changes to the fuel pool cooling. These systems are capable of handling the additional duty originating from the additional fuel. Criticality accidents or malfunctions also do not change because the analysis assumes an infinite array of fuel and Boraflex gaps have been conservatively accounted for. Therefore, there is no possibility for an accident or malfunction of a different type than previously evaluated.

3. The operation of the Oyster Creek Nuclear Generating Station, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The margin of safety, when applied to a storage expansion, needs to address nuclear criticality, thermal-hydraulic, mechanical, material and structural adequacy.

#### **Nuclear Criticality**

The acceptance criterion for criticality as established in Technical Specification 5.3.1.A, is that the neutron multiplication factor shall be less than or equal to 0.95, including all uncertainties.

Since the increase in licensed capacity to 2,600 storage locations, the maximum allowable average enrichment was increased twice. The original analysis was for 3.01% U-235 enriched fuel with no credit for  $Gd_2O_3$ . Subsequent analyses increased the maximum allowable enrichment to 3.8% and then 4.0% U-235. Both analyses take credit for  $Gd_2O_3$  requiring a minimum of 7 (seven) rods containing 3.0% or more  $Gd_2O_3$ .

Subsequent to the rack installation, an industry concern was raised with the discovery of the formation of gaps in Boraflex panels. The problem of gap formation in the boraflex and its impact on criticality has been addressed. The criticality

analysis was updated to take into account the presence of gaps, including projected gap formation is coplanar. The fuel pool  $K_{eff}$  for the 4.0% U-235 enriched fuel with at least 7 (seven)  $Gd_2O_3$  rods at peak reactivity is 0.9174 and increases to 0.945 with 3.9 inch coplanar gaps in the Boraflex which is below the 0.95 limit. Oyster Creek maintains a Boraflex surveillance program to ensure the assumptions used in the analysis remain valid.

Since all criticality analyses were performed with an infinite lattice, it is valid for a spent fuel pool capacity of 2,645 fuel assemblies. Therefore, there is no decrease in the margin of safety.

#### **Thermal-Hydraulic**

The heat load analysis performed for the expansion to 2600 licensed storage locations considered all 2,645 actual storage locations filled. Therefore, the initial conclusions are not changed and no re-analysis is required. The thermal-hydraulic calculations, which used 125°F pool water temperature, have shown that the cladding temperatures (<219°F) will be well below the local fuel pool water saturation temperature of approximately 240°F. The maximum cladding temperatures will be low enough to preclude nucleate boiling.

Analysis has demonstrated that with an abnormal heat load from 2,732 fuel assemblies in the spent fuel pool, the temperature of the pool will be maintained within the Technical Specification limit to 125°F. Therefore, since this limit will be maintained, other restrictions such as the temperature differential of the spent fuel pool liner will also be maintained. Thus, there is no reduction in the margin of safety from a thermal-hydraulic point of view.

#### **Mechanical and Structural**

The additional 45 storage locations were part of the fuel pool expansion of which only 2,600 fuel assemblies were licensed for storage. The fuel storage racks are designed to maintain the spent fuel assemblies in a safe configuration through all environmental and abnormal loadings, such as an SSE or impact due to spent fuel assembly drop. Structural and seismic analyses of the racks have established margins against tilting, deflection or movement to preclude impact of the racks with each other or with the pool walls. It is shown that the rack modules will undergo infinitesimal rotations if seismic excitation 50% over the SSE loading are imposed. The threshold of kinematic instability is not even approached.

Analyses performed to arrive at the above conclusions indicate that margins in all areas of structural concern exist. The racks are placed in the pool as individual stand-alone structures, do

not load pool walls directly, and are uncoupled from pool liner temperature rise.

To limit the out-of-phase motion of adjacent racks due to non-symmetric loading of the racks, Oyster Creek procedures for loading spent fuel pool racks require the racks to be loaded symmetrically, i.e. the total fuel assemblies stored in any one quadrant of a rack will not deviate by more than 10% of the average of the four quadrants. This limitation will remain in effect for storage of 2,645 fuel assemblies.

In summary, the additional 45 fuel bundles in storage will not decrease structural margins since there is no associated physical change to the storage facility and the 2,645 fuel assemblies were considered in the original analysis which demonstrated that the acceptance criteria were met.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the FEDERAL REGISTER a notice of issuance and

provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and should cite the publication date and page number of this FEDERAL REGISTER notice. Written comments may also be delivered to Room 6D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By January 19, 1995 , the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Ocean County Library, Reference Department, 101 Washington Street, Toms River, New Jersey 08753. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission

or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion

which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. Where petitions are filed during the last 10 days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 248-5100 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number N1023 and the following message addressed to Phillip F. McKee: petitioner's name and telephone number, date petition was mailed, plant name, and publication date and page number of this FEDERAL REGISTER notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to Ernest L. Blake, Jr., Esquire, Shaw, Pittman, Potts & Trowbridge, 2300 N Street, NW., Washington, DC 20037 attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

The Commission hereby provides notice that this is a proceeding on an application for a license amendment falling within the scope of section 134 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 U.S.C. 10154. Under

section 134 of the NHPA, the Commission, at the request of any party to the proceeding must use hybrid hearing procedures with respect to "any matter which the Commission determines to be in controversy among the parties." The hybrid procedures in section 134 provide for oral argument on matters in controversy, proceeded by discovery under the Commission's rules, and the designation, following argument, of only those factual issues that involve a genuine and substantial dispute, together with any remaining questions of law, to be resolved in an adjudicatory hearing. Actual adjudicatory hearings are to be held on those issues found to meet the criteria of section 134 and set for hearing after oral argument.

The Commission's rules implementing section 134 of the NHPA are found in 10 CFR Part 2, Subpart K, "Hybrid Hearing Procedures for Expansion of Spent Nuclear Fuel Storage Capacity at Civilian Nuclear Power Reactors" (published at 50 FR 41670, October 15, 1985) to 10 CFR 2.1101 et seq. Under those rules, any party to the proceeding may invoke the hybrid hearing procedures by filing with the presiding officer a written request for oral argument under 10 CFR 2.1109. To be timely, the request must be filed within 10 days of an order granting a request for hearing or petition to intervene. (As outlined above, the Commission's rules in 10 CFR Part 2, Subpart G, and 2.714 in particular, continue to govern the filing of requests for a hearing or petitions to intervene, as well as the admission of contentions.) The presiding officer shall grant a timely request for oral argument. The presiding officer may grant untimely request for oral argument only upon showing of good cause by the requesting party for the failure to file on time and after providing the other parties an opportunity to respond to the untimely request. If the presiding officer grants a request for oral argument, any hearing held on the

application shall be conducted in accordance with hybrid hearing procedures. In essence, those procedures limit the time available for discovery and require that an oral argument be held to determine whether any contentions must be resolved in adjudicatory hearing. If no party to the proceedings requests oral argument, or if all untimely requests for oral argument are denied, then the usual procedures in 10 CFR Part 2, Subpart G, apply.

For further details with respect to this action, see the application for amendment dated November 25, 1994, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Ocean County Library, Reference Department, 101 Washington Street, Toms River, New Jersey 08753.

Dated at Rockville, Maryland, this 13th day of December 1994.

FOR THE NUCLEAR REGULATORY COMMISSION



Alexander W. Dromerick, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation