Mr. William J. Cahill Jr.
Chief Nuclear Officer
Power Authority of the State
of New York
123 Main Street
White Plains, NY 10601

January , 1997

SUBJECT: NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION AND OPPORTUNITY FOR A HEARING, INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 (TAC NO. M96474)

Dear Mr. Cahill:

The Commission has requested the Office of the Federal Register to publish the enclosed "Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing." This notice relates to your application for amendment dated November 22, 1996, which would revise the Technical Specifications to allow the storage of fuel assemblies with nominal enrichments up to 5.0 weight percent (w/o) Uranium-235 (U-235).

Sincerely,
original signed by S. Bajwa for

George F. Wunder, Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure: As stated

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 9 , 1997

Mr. William J. Cahill, Jr.
Chief Nuclear Officer
Power Authority of the State
of New York
123 Main Street
White Plains, NY 10601

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cc:

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Public Service
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Albany, NY 12223

7590-01-P

UNITED STATES NUCLEAR REGULATORY COMMISSION

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-286

NOTICE 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-64 issued to the Power Authority of the State of New York for operation of the Indian Point Nuclear Generating Station Unit No. 3 (IP3) located in Westchester County, New York.

The proposed amendment would revise the IP3 Technical Specifications (TS) to allow the storage of fuel assemblies with nominal enrichments up to 5.0 weight percent (w/o) Uranium-235 (U-235).

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) Does the proposed license amendment involve a significant increase in the probability or consequences of any accident previously evaluated?

Response:

The proposed license amendment does not involve a significant increase in the probability or consequences of any accident previously evaluated. This statement is based on an evaluation of relevant hypothetical accident scenarios, the NRC's evaluation of Westinghouse extended burnup fuel, and the criticality analysis of the Indian Point 3 fresh and spent fuel pits.

Evaluation of Relevant Hypothetical Accident Scenarios

Increasing the enrichment of fuel stored in the spent fuel pit will not increase the probability of occurrence of the following hypothetical accident scenarios:

1. misload of a fuel assembly;

2. spent fuel assembly drop in the spent fuel pit;

3. spent fuel cask drop;

4. loss of spent fuel pit cooling system flow; or

5. seismic event.

1. Misload of a fuel assembly

Detailed instructions and administrative controls govern refueling operations, precluding the misload of an assembly. The proposed storage of extended burnup fuel will not result in these administrative controls being relaxed in any manner. The probability of inserting an assembly into the wrong location is not impacted by the enrichment and burnup of the fuel. Consequently, the proposed changes will not increase the probability of misloading a fuel assembly.

2. Spent fuel assembly drop in the spent fuel pit

The probability of a spent fuel assembly drop in the spent fuel pit is a function of the structural integrity of the fuel storage building overhead crane and the integrity of the crane-assembly coupling. The probability of such a drop is not affected by the

enrichment or burnup of the fuel. Therefore, the use and storage of extended burnup fuel will not increase the probability of a fuel assembly drop.

3. Spent fuel cask drop

The probability of a spent fuel cask drop will not be affected by the increased enrichment of the fuel. The probability of such an event occurring is a function of the overhead crane's integrity, which will not be affected by this amendment. In addition, administrative controls are in place to preclude the occurrence of such an event.

4. Loss of spent fuel pit cooling system flow

A reevaluation of the Indian Point Unit 3 decay heat removal analysis to address the storage of extended burnup fuel concluded that the existing spent fuel pit cooling system is adequate to handle the heat load associated with extended burnup fuel since any incremental increase in decay heat for extended burnup fuel is more than compensated for by the greater time interval between refueling outages. In the unlikely event the cooling system should experience a failure, adequate time is available to provide an alternate cooling system, which is not affected by the fuel's enrichment. In addition, an existing off normal operating procedure (ONOP) is available to compensate for any postulated loss of spent fuel pit cooling. Consequently, the storage of extended burnup fuel in the spent fuel pit will not involve a significant increase in the probability or consequences of a loss of cooling system flow event.

5. Seismic event

The enrichment of the fuel has no effect on the probability of a seismic event occurring. In support of Amendment 90 to Indian Point 3's Operating License, a seismic analysis of the spent fuel storage racks was performed. This analysis, which was summarized in Reference 3 [See application dated November 22, 1996] is still applicable.

NRC Evaluation of Westinghouse Extended Burnup Fuel

Westinghouse's analysis of the use of extended burnup fuel is documented in WCAP-10125 (Proprietary), "Extended Burnup Evaluation of Westinghouse Fuel". On October 11, 1985, the NRC issued a Safety Evaluation Report (SER) on this WCAP (Reference 2), which concluded that: 1) fuel damage is not expected to occur as a result of normal operation and anticipated operational occurrences (Condition I and II events); 2) fuel damage during postulated accidents (Condition III and IV events)

would not be severe enough to prevent control rod insertion when it is required; and 3) core coolability will always be maintained, even after postulated accidents (Condition III and IV events). These conclusions support the determination that the use of extended burnup fuel will not increase the probability or consequences of any accident previously evaluated.

The consequences from accidents involving extended burnup fuel, both during operations and fuel handling, are evaluated in Reference 6 [See application]. This report, which was the basis for the NRC's determination of no environmental impact, documents the amount of radioactivity released from extended burnup fuel during an accident may be greater than that released from lower burnup fuel. However, the projected offsite dose incurred during accidents with extended burnup fuel is still within 10 CFR 100 criteria. Reference 6 [See application] concludes that since there is an order of magnitude uncertainty in the risk estimates for accidents, any increased risk from the increased fission products in extended burnup fuel is small compared to the uncertainties associated with risk estimates. Consequently, the proposed changes do not significantly increase the consequences of any accident previously evaluated.

Criticality Analysis of the Indian Point 3 Fresh and Spent Fuel Pits

Westinghouse performed a criticality analysis of the Indian Point 3 fresh and spent fuel storage racks to determine whether the storage of Westinghouse 15x15 fuel assembly designs with nominal enrichments up to 5.0 w/o U-235 would result in the effective neutron multiplication factor, K_{eff}, exceeding design and licensing basis criticality limits. The analysis demonstrated that these criteria would be met during design basis conditions using the fuel storage configurations proposed in this submittal.

Although the analysis identified three scenarios which would exceed the criticality limits, each of these scenarios are outside the design and licensing basis, since they entail the occurrence of two, independent, concurrent events. Specifically, the analysis assumes the occurrence of the initiating accident event and the loss of all soluble boron in the spent fuel pit water. However, the analysis also documents that 700 ppm of soluble boron in the spent fuel pit water will maintain K_{eff} within acceptable limits. The Indian Point Unit 3 spent fuel pit boron concentration is maintained at a minimum of 1000 ppm during fuel handling operations, which is more than adequate to offset the potential reactivity increases incurred from even the most limiting criticality accident scenarios. If credit for integral burnable neutron absorbers is taken, the boron concentration to maintain K_{eff} less than or equal to 0.95 is considerably reduced.

Consequently, as supported by the NRC's issuance of similar license amendments to other plants whose criticality analyses have identified similar issues, the proposed amendment does not significantly increase the probability or consequences of any accident previously evaluated.

The administrative changes proposed by this amendment request do not involve a significant increase in the probability or consequences of any accident previously evaluated as they do not involve any plant hardware changes, nor do they change the way the plant systems function.

(2) Does the proposed license amendment create the possibility of a new or different kind of accident from any previously evaluated?

Response:

The proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated. This determination is based on the NRC's SER regarding Westinghouse extended burnup fuel, Indian Point 3 decay heat removal analysis, and spent fuel pit criticality analysis.

The only aspect of the plant that will be physically changed by the proposed amendment will be the enrichment and burnup of the fuel, which will not introduce any new fuel failure mechanisms. While some characteristics of fuel performance change with extended burnup, these considerations have been factored into the design of the fuel. The NRC issued a Safety Evaluation Report (SER) regarding the Westinghouse extended burnup fuel design on October 11, 1985 (Reference 2). In addition, Reference 6 [See application] documents that each fuel vendor has adequately considered the performance of extended burnup fuel to preclude the introduction of a new or different type of fuel failure mechanism.

Two site specific evaluations demonstrate the storage of spent and/or fresh extended burnup fuel will not introduce any new fuel storage accidents at Indian Point Unit 3. First, the Authority has verified the existing spent fuel pit cooling system can adequately handle the heat load associated with extended burnup fuel. Second, the criticality analysis performed by Westinghouse demonstrates the criticality limits will continue to be satisfied during design basis conditions. While three scenarios outside of the design basis have been identified as potentially resulting in an increase in spent fuel pit criticality, spent fuel pit soluble boron concentrations are maintained sufficiently high to preclude even the most limiting criticality scenarios from occurring. Consequently, the proposed amendment will not create a new or different kind of accident from any previously evaluated.

The administrative changes proposed by this amendment request do not create the possibility of a new or different kind of accident from any previously evaluated as the changes do not affect current plant configuration or how the plant operates.

(3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response:

The proposed changes do not involve a significant reduction in a margin of safety. This determination is based on the fact that the spent fuel pit racks are not being physically altered, the results of the Indian Point 3 spent fuel pit criticality analysis, the spent fuel pit decay heat analysis, and the NRC issuance of similar amendments to other licensees.

The main safety function of the fresh and spent fuel racks is to maintain the fuel assemblies in a safe configuration through all normal and abnormal conditions. The proposed changes will not result in any changes to the fresh and spent fuel racks or the manner in which they perform. Thus, the margin of safety associated with the fresh and spent fuel racks' ability to physically maintain the fuel in a safe configuration is not significantly reduced by the proposed changes.

A criticality analysis was performed regarding the Indian Point 3 fresh and spent fuel storage racks' ability to store extended burnup fuel within design and licensing basis criticality limits. The analysis concludes during design basis conditions these limits would not be violated. However, it identified three events outside the design and licensing basis which would violate these limits. Nevertheless, if credit is taken for the soluble boron in the spent fuel pit water, criticality is adequately controlled even during these three events. Consequently, as supported by the NRC issuance of similar license amendments to other plants whose criticality analyses have identified similar issues, the proposed amendment does not involve a significant reduction in the margin of safety associated with the control of criticality.

An evaluation was performed to address the spent fuel pit heat load associated with the storage of extended burnup fuel. The analysis concluded the existing spent fuel cooling system will adequately dissipate the heat. Thus, there is no significant reduction in the margin of safety with regards to spent fuel cooling.

The administrative changes proposed by this amendment request do not involve a significant reduction in a margin of safety.

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 Chief, Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, 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 February 14, 1997, 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 White Plains Public Library, 100 Martine Avenue, White Plains, New York 10610. 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 20555-0001, 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 S. Singh Bajwa: 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 20555-0001, and to Mr. Charles M. Pratt, 10 Columbus Circle, New York, New York 10019, 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).

For further details with respect to this action, see the application for amendment dated November 22, 1996, 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 White Plains Public Library, 100 Martine Avenue, White Plains, New York 10610.

Dated at Rockville, Maryland, this 9th day of January 1997.

FOR THE NUCLEAR REGULATORY COMMISSION

George F. Wunder

George F. Wunder, Project Manager
Project Directorate 1-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation