Docket File

FEBRUARY 25 1980

Docket No. 50-286

Mr. George T. Berry, Executive Director
Power Authority of the State of New York
10 Columbus Circle
New York, New York 10019

Dear Mr. Berry:

During the last several years, data have begun to indicate that the fission gas release rate from LWR fuel pellets is increased (enhanced) with burnup. Many of the current fuel performance analyses do not consider the impact of burnup-enhanced release on safety. By letters dated November 23, 1976, the NRC staff requested all LWR licensees to assess the higher fission gas release for fuel burnups above 20,000 Megawatt-day per metric ton (MWD/t).

Also, by NRC staff letter dated January 18, 1978, all U. S. LWR fuel suppliers were requested to revise their fuel performance analyses to include the enhancement of fission gas release at higher burnups.

All responses to the November 23, 1976 letters have been reviewed. We have concluded that no immediate licensing action is required for operating reactors. This conclusion is valid for typical reported LWR fuel bundle and batch burnups. Any extension of these burnups or other factors which significantly affect fission gas release, LOCA PCT or fuel rod internal pressure is outside the scope of the conclusion.

Westinghouse was the only fuel supplier calculating that the increased release would cause internal fuel rod pressure to exceed coolant system pressure. The staff has approved revised design criteria which allow internal rod pressures greater than system pressure. The staff is also completing the review of a Westinghouse revised fuel performance code. The staff, in evaluating reloads, has been requesting licensees using Westinghouse fuel to quantify the burnup when the newly approved design criteria will be violated. In the reloads evaluated thus far, there appears to be a significant burnup margin to the newly approved evaluated design criteria to compensate for modifications which may result from the staff's review of the Westinghouse revised fuel performance code.

Inasmuch as you and/or the staff will be evaluating all future reloads against fuel vendors' revised fuel performance codes which provide for increase in fission gas release at higher burnups, we consider this a satisfactory resolution of this concern.

Sincerely,

Original Signed By

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

4 cys rec'd

8003130026

OFFICE	DOR:ORB#1:C				
SURNAME	ASchwencer:pa				
DATE	2/20/80				

NRC FORM 318 (9-76) NRCM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1978 - 260-769

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

FEBRUARY 25 1980

Docket No. 50-286

Mr. George T. Berry, Executive Director
Power Authority of the State of New York
10 Columbus Circle
New York, New York 10019

Dear Mr. Berry:

During the last several years, data have begun to indicate that the fission gas release rate from LWR fuel pellets is increased (enhanced) with burnup. Many of the current fuel performance analyses do not consider the impact of burnup-enhanced release on safety. By letters dated November 23, 1976, the NRC staff requested all LWR licensees to assess the higher fission gas release for fuel burnups above 20,000 Megawatt-day per metric ton (MWD/t).

Also, by NRC staff letter dated January 18, 1978, all U. S. LWR fuel suppliers were requested to revise their fuel performance analyses to include the enhancement of fission gas release at higher burnups.

All responses to the November 23, 1976 letters have been reviewed. We have concluded that no immediate licensing action is required for operating reactors. This conclusion is valid for typical reported LWR fuel bundle and batch burnups. Any extension of these burnups or other factors which significantly affect fission gas release, LOCA PCT or fuel rod internal pressure is outside the scope of the conclusion.

Westinghouse was the only fuel supplier calculating that the increased release would cause internal fuel rod pressure to exceed coolant system pressure. The staff has approved revised design criteria which allow internal rod pressures greater than system pressure. The staff is also completing the review of a Westinghouse revised fuel performance code. The staff, in evaluating reloads, has been requesting licensees using Westinghouse fuel to quantify the burnup when the newly approved design criteria will be violated. In the reloads evaluated thus far, there appears to be a significant burnup margin to the newly approved evaluated design criteria to compensate for modifications which may result from the staff's review of the Westinghouse revised fuel performance code.

Inasmuch as you and/or the staff will be evaluating all future reloads against fuel vendors' revised fuel performance codes which provide for increase in fission gas release at higher burnups, we consider this a satisfactory resolution of this concern.

Sincerely,

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

cc: See next page

Mr. George T. Berry
Power Authority of the State of New York

FEBRUARY 25 1980

cc: White Plains Public Library
100 Martine Avenue
White Plains, New York 10601

Mr. Vito J. Cassan
Assistant General Counsel
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

Anthony Z. Roisman
Natural Resources Defense Council
917 - 15th Street, N.W.
Washington, D. C. 20005

Dr. Lawrence D. Quarles
Apartment 51
Kendal at Longwood
Kennett Square, Pennsylvania 19348

Mr. George M. Wilverding
Licensing Supervisor
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

Mr. P. W. Lyon
Manager - Nuclear Operations
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

Mr. J. P. Bayne, Resident Manager
Indian Point 3 Nuclear Power Plant
P. O. Box 215
Buchanan, New York 10511

Mr. J. W. Blake, Ph.D., Director
Environmental Programs
Power Authority of the
State of New York
10 Columbus Circle
New York, New York 10019

Theodore A. Rebelowski
U. S. Nuclear Regulatory Commission
P. O. Box 38
Buchanan, New York 10511

Ms. Ellyn Weiss
Sheldon, Harmon and Weiss
1725 I Street, N.W.
Suite 506
Washington, D. C. 20006