

**Indian Point 3  
Nuclear Power Plant**  
P.O. Box 215  
Buchanan, New York 10511  
914-736-8000



April 8, 1996  
IPN-96-042

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Subject: Indian Point 3 Nuclear Power Plant  
Docket No. 50-286  
License No. DPR-64  
**Response to NRC Bulletin 96-01**

Reference: NRC Bulletin 96-01, "Control Rod Insertion Problems," dated March 8, 1996.

Dear Sir:

This letter provides the response requested by the referenced bulletin. The New York Power Authority (Authority) has taken steps to alert personnel to the problems encountered at other facilities in which control rods failed to completely insert upon the scram signal. The Authority has assessed the operability of control rods, particularly in high burnup fuel assemblies and concludes that no operability concern exists at the IP3 facility.

Attachment I provides the response to requested actions (1) and (2). Attachment II lists the actions planned for implementing requested actions (3) and (4). The commitments made by the Authority in this letter are in Attachment III. The Authority plans to meet the intent of requested actions (2), (3) and (4) from NRC Bulletin 96-01 by following the actions described in the attachments until such time as Westinghouse and Westinghouse Owners Group (WOG) have identified the appropriate data required to support a root cause determination. The Authority will provide an update to Bulletin 96-01 response if the plans for implementing the requested actions are modified.

As requested, Enclosure I is a report that documents the control rods are determined to be operable. The report provides, in Table 6, a core map of rodded fuel assemblies indicating fuel type and current and projected end of cycle burnup of each rodded assembly for the current cycle 9. The core map of rodded fuel assemblies indicating fuel type and current and projected end of cycle burnup of each rodded assembly for cycle 10 will be provided when available. The report also describes the information for RCCA R89, removed from assembly U64, during the insert change out in 1992.

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To assist in determining the significance of this Bulletin with respect to the IP3 facility, the following important factors are summarized. The shutdown margin of 3.2% $\Delta\rho$  for IP3 is greater than the required margin of 1.3% $\Delta\rho$  in the IP3 Technical Specification. The control rod drop times measured prior to mid cycle starting in June 1995, were all between 1.23 and 1.37 seconds which are below the Technical Specification maximum of 1.8 seconds. Operator action, to initiate emergency boration when two or more control rods do not fully insert, is prescribed in Emergency Operating Procedures.

As described in the attachments and enclosure to this letter, the Authority has taken steps and, where necessary, formulated ongoing action plans which will respond in a proactive manner to recent and subsequent industry events to insure operability. Therefore, the Authority concludes that there is no concern that the required shutdown margins and rod drop times may be exceeded at the IP3 facility.

If you have any questions regarding this response, please call Mr. Ken Peters at (914) 736-8029.

Very truly yours,



Robert J. Barrett  
Plant Manager  
Indian Point 3 Nuclear Power Plant

Attachments I, II & III  
Enclosure I

cc: Mr. Thomas T. Martin  
Regional Administrator  
Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406-1415

Mr. George Wunder, Project Manager  
Project Directorate I-1  
Division of Reactor Projects I/II  
U.S. Nuclear Regulatory Commission  
Mail Stop 14 B2  
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission  
Resident Inspectors' Office  
Indian Point 3 Nuclear Power Plant

State of New York  
County of Westchester

Robert J. Barrett, being duly sworn, deposes and says:

I am the Plant Manager of the Indian Point 3 Nuclear Power Plant of which the Power Authority of the State of New York is the owner and operator under Facility Operating License DPR-64. I have read the foregoing "Response to NRC Bulletin 96-01" and know the contents thereof; and that the statements and matters set forth therein are true and correct to the best of my knowledge, information and belief.

  
Robert J. Barrett

Subscribed and sworn to before me  
this 8 day of April, 1996

  
Notary Public

**BARBARA ANN TAGGART**  
NOTARY PUBLIC, State of New York  
No. 4851437  
Qualified in Putnam County  
Commission Expires Jan. 27, 1998

Response to Requested Actions (1) and (2).

1. Promptly inform operators of recent events (reactor trips and testing) in which control rods did not fully insert and subsequently provide necessary training, including simulator drills, utilizing the required procedures for responding to an event in which the control rods do not fully insert upon reactor trip (e.g., boration of a pre-specified amount).

Prior to the issuance of IEB 96-01, an Operations Shift Order was issued on March 5, 1996 for the events at South Texas and Wolf Creek. The Operations Shift Order indicated that corrective action for rods failing to insert after a trip is found in IP3 EOPs. If a reactor trip occurs and some rods fail to insert after the trip, the operator will be directed to Emergency Subguideline ES-0.1, if Safety Injection has not occurred. ES-0.1 will direct the operator to initiate Emergency Boration in accordance with Off Normal Operating Procedure ONOP-CVCS-3, if more than 1 rod fails to fully insert. If a Safety Injection has occurred Emergency Boration is not required.

During "just in time" training for operating crews in preparation for reactor criticality the above Shift Order was discussed.

Training will develop and conduct a simulator scenario to insure that operators are aware of the potential of the rods to stop when they reach the dashpot (within the tolerance  $\pm 12$  steps) and that they know what to do if it happens. Training is scheduled to be completed by the end of June, 1996, as part of licensed operator re-qualification.

2. Promptly determine the continued operability of control rods based on current information. As new information becomes available from plant rod drop tests and trips, licensees should consider this new information together with data already available from Wolf Creek, South Texas, North Anna, and other industry experience, and make a prompt determination of control rod operability.

The enclosed report provides the basis for operability of the Indian Point Unit 3 control rods. The New York Power Authority plans to follow the actions described above, with respect to this issue, until such time as Westinghouse and WOG have identified the appropriate data required to support a root cause determination.

Attachment II

Response to Requested Actions (3) and (4).

3. Measure and evaluate at each outage of sufficient duration during calendar year 1996 (end of cycle, maintenance, etc.), the control rod drop times and rod recoil data for all control rods. If appropriate plant conditions exist where the vessel head is removed, measure and evaluate drag forces for all rodded fuel assemblies.
  - a. Rods failing to meet rod drop times in the Technical Specifications shall be deemed inoperable.
  - b. Rods failing to bottom or exhibiting high drag forces shall require prompt corrective action in accordance with Appendix B to Part 50 of Title 10 of the Code of Federal Regulations (10 CFR Part 50).

Enclosure I contains a report which summarizes the Authority's evaluation of recent rod drop tests. Since the last series of tests performed in June, 1995, IP3 operated approximately 60 EFPDs prior to our current outage, so no further testing was done. For future outages of sufficient length in 1996, the Authority plans to test and evaluate rod drop data as requested in Actions (3); except for intervals less than 2,500 MWD/MTU burnup since the last measurement. The Authority also plans to perform rod drop tests at the end of current operating cycle (cycle 9). The Authority will submit within 30 days after completing Requested Action (3) for each outage, a report that summarizes the data and that documents the results obtained.

4. For each reactor trip during calendar year 1996, verify that all control rods have promptly fully inserted (bottomed) and obtain other available information to assess the operability and any performance trend of the rods. In the event that all rods do not fully insert promptly, conduct tests to measure and evaluate rod drop times and rod recoil.

Actions for verifying control rods are fully inserted are part of the IP3 EOPs. Operations Shift Order was issued on March 25, 1996 to alert and advise operators to include these evaluation requirements after the exit from the EOPs, until Administrative Procedure AP-21.2, "Post Trip Review" is revised.

If any abnormal rod behavior is observed after completing Requested Action (4) for each outage of sufficient duration, the Authority will submit within 30 days a report that summarizes the data and that documents the results obtained.

COMMITMENT LIST

Number	Commitment	Due
IPN-96-042-01	Requested Actions (2), (3) and (4) from NRC Bulletin 96-01 will be followed until Westinghouse and WOG have identified the appropriate data required to support a root cause determination. A revision to this response will be submitted if the plans for implementing these actions are modified.	As needed
IPN-96-042-02	The core map of rodded fuel assemblies indicating fuel type and projected end of cycle burnup of each rodded assembly for cycle 10 will be provided to the NRC.	When available
IPN-96-042-03	Develop and conduct a simulator scenario to insure that operators are aware of: 1) the potential of the rods to stop when they reach the dashpot (within the tolerance $\pm 12$ steps) and 2) the actions required if the rods fail to stop.	June, 1996
IPN-96-042-04	For future outages of sufficient length in 1996, the Authority plans to test and evaluate rod drop data as requested in Actions (3); except for intervals less than 2,500 MWD/MTU burnup since the last measurement.	As needed
IPN-96-042-05	The Authority will submit within 30 days after completing Requested Action (3) of Bulletin 96-01 for each outage, a report that summarizes the data and documents the results obtained.	30 days after end of each outage
IPN-96-042-06	Drop times will be measured at the end of Cycle 9 when there will be 21 control rods over high burnup assemblies.	EOC 9
IPN-96-042-07	Administrative Procedure AP-21.2 will be revised to require operators to include the evaluation the requirements of Action (4) of Bulletin 96-01.	May 1, 1996
IPN-96-042-08	If any abnormal rod behavior is observed after completing the Requested Action (4) of Bulletin 96-01 for each outage, the Authority will submit within 30 days a report that summarizes the data and documents the results obtained.	30 days after end of each outage

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IPN-96-042  
Enclosure I  
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**REPORT ON CONTROL ROD INSERTION PROBLEM**

Actions contained in this document are not part of the Commitments in this letter.