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November 28, 1997

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 97-22-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station PI-137
Washington, DC 20555

The attached Licensee Event Report 97-22-00 is hereby submitted in accordance with the requirements of 10CFR 50.73.

Very truly yours,

Paul H. Kinkel

Attachment

C: Mr. Hubert J. Miller
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Jefferey Harold, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
US Nuclear Regulatory Commission
Mail Stop 14B-2
Washington, DC 20555

Senior Resident Inspector
US Nuclear Regulatory Commission
PO Box 38
Buchanan, NY 10511

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PDR ADOCK 05000247
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LICENSEE EVENT REPORT (LER)

EXPIRES: 4/30/92

ESTIMATED BUDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BUDGET ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), THE NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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Indian Point Unit No. 2	0 5 0 0 0 2 4 7	1 OF 0 4

TITLE (4) Westinghouse Fuel Rod Internal Pressure / Oxidation Calculation

EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES					DOCKET NUMBER(S)						
1	0	2 8 9 7	9 7	- 0 2 2	- 0 0	1 1	2 8 9 7							0	5	0	0	0		
OPERATING MODE (9)			N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR5: (Check one or more of the following) (11)																
POWER LEVEL (10)			0 0 0	20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)				
				20.405(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)				
				20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 836A)				
				20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)								
				20.405(a)(1)(iv)				X 50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)								
				20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)								

LICENSEE CONTACT FOR THIS LER (12)																		
NAME								TELEPHONE NUMBER										
								AREA CODE										
Dr. Arthur Ginsberg, Engineer								2	1	2	4	6	0	-	4	3	3	1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR	
<input checked="" type="checkbox"/>	YES (If yes, complete EXPECTED SUBMISSION DATE)		<input type="checkbox"/>	NO	05	31

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On October 28, 1997, with the unit in cold shutdown mode, Westinghouse informed Con Edison, along with other utilities, of issues regarding fuel rod internal pressure (RIP), the status of the Westinghouse PAD code, and concerns with fuel rod design criteria. When initially notified, Con Edison was advised that Westinghouse could not preclude the possibility that plants with Zircaloy-4 clad integral burnable absorber fuel (IFBA) may be outside their design criteria due to fuel clad gap reopening, in that the 17 percent maximum cladding oxidation limit, as delineated in 10 CFR 50.46, may be exceeded.

Since that time, and based on the LOCA analyses which have been performed to date by Westinghouse, an initial pre-transient 12 percent oxidation has been established as a screening criteria to permit assessment of plants regarding compliance with the 17 percent maximum cladding oxidation criterion of 10CFR 50.46. Based on the screening criteria, plants with integral burnable absorber fuel rods (IFBA) in the first half of their operating cycle or returning from refueling outage are determined to be compliance due to either no gap reopening or low levels of pre-transient oxidation due to steady-state corrosion accumulation. Indian Point 2 (IP2) will not complete the first half of the current operating cycle until approximately mid-1998. Prior to mid-1998, site specific analyses will be completed. Westinghouse has notified Con Edison that IP2 will not have a concern with this issue at least until mid-cycle. A long term plan has been presented by Westinghouse to the NRC to resolve the PAD code concerns and implement the code improvements.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

PLANT AND SYSTEM IDENTIFICATION:

Westinghouse 4-Loop Pressurized Water Reactor

IDENTIFICATION OF OCCURRENCE:

Receipt of Revised Westinghouse Analysis regarding 10CFR 50.46 cladding calculations

EVENT DATE:

October 28, 1997

REPORT DUE DATE:

November 28, 1997

REFERENCES:

CITRS # 97-E03772, Westinghouse Letter # NSD-NRC-97-5404, dated October 28, 1997, and Telecon on 10-28-97

PAST SIMILAR OCCURRENCE:

None

DESCRIPTION OF OCCURRENCE:

IP 2 was notified by Westinghouse that when the effects of increased Zircaloy-4 (Zirc-4) corrosion are incorporated into the current licensed version of Westinghouse fuel performance code, called PAD, gap reopening may be predicted for high duty (determined by power histories and coolant temperatures) integral burnable absorber fuel rods as early as the second half of their second duty cycle. One of the fuel design criteria for Westinghouse fuel is that pellet clad gap reopening will not occur.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

ANALYSIS OF OCCURRENCE:

Reporting of the revised Zirc-4 corrosion rates is made pursuant to 10CFR 50.73(a)(2)(ii) because the unit potentially operated in a condition outside the fuel rod design criteria.

Westinghouse has performed a generic safety assessment which evaluates the consequences of gap reopening concern and has had ongoing discussions with the NRC of the condition. Westinghouse has assessed the implications of this pre-condition for the analyzed events and concluded that plant safety is maintained at the same levels as considered in the original design basis evaluation. Further, it was concluded that no new accident scenarios were created by the gap reopened conditions.

The results show that plant safety analyses remain bounding in all areas (LOCA transient, non-LOCA transient, thermal-hydraulic analyses, core neutronic analyses, and fuel rod performance assessments), except for the potential to exceed the no-gap reopening design criteria and, because of the gap reopening potential, a potential to exceed the 17 percent maximum cladding oxidation criterion of 10CFR 50.46. Since gap reopening does not lead to fuel rod failures and since previously analyzed design basis accident scenarios remain bounding, Westinghouse has concluded that gap reopening is of low safety significance.

CAUSE OF OCCURRENCE:

When the effects of the new corrosion model, as developed by Westinghouse, are incorporated into the current licensed PAD code, gap reopening may be predicted for high duty integral burnable absorber fuel rods (IFBA). Consequently, the 17 percent maximum cladding oxidation criterion delineated in 10CFR 50.46 may be exceeded.

CORRECTIVE ACTION:**IMMEDIATE Action**

Westinghouse has informed Con Edison that since IP2 is in the first half its operating cycle, it is in compliance due to either no gap reopening or low levels of pre-transient oxidation due to steady state oxidation accumulation. The screening criteria will not be exceeded before 11,300 MWD/MTU burnup (approximately mid-1998). Continued operation past 11,300 MWD/MTU burnup is anticipated with subsequent Westinghouse analysis.

LONG-TERM Resolution Plan

Westinghouse has developed a comprehensive plan to resolve the fuel rod internal pressure issue. This plan of resolution involves three steps: (1) review and improvement of analytical models; (2) gathering of additional data; and (3) performance of plant-by-plant assessments.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The focus of this Westinghouse plan will be on the fuel performance methodology and models. Westinghouse believes that sufficient conservatism exists in the PAD code to compensate for the increased corrosion feedback effects.