

**ATTACHMENT I**  
**INDIAN POINT 3 START-UP**  
**SUMMARY REPORT**

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P PDR

INDIAN POINT UNIT 3 CYCLE 9  
ZERO POWER PHYSICS TESTING RESULTS

I. CRITICAL BORON CONCENTRATIONS (PPM)

DESIGN REVIEW CRITERIA(DRC) = -67, +50 PPM

ACCEPTANCE CRITERIA(AC) = WITHIN 1000 PCM. (133 PPM)

	PREDICTED(P)	MEASURED(M)	(M-P)	PASS/FAIL	
				DRC	AC
ARO	1648	1610.0	-38.0	P	P
D-IN	1519	1477.2	-41.8	P	P
DCBA-IN	1189	1165.9	-23.1	P	P

II. CONTROL BANK WORTHS (PCM)

DESIGN REVIEW CRITERIA = INDIVIDUAL BANK WORTHS WITHIN 15%

ACCEPTANCE CRITERIA = TOTAL WORTH IS AT LEAST 90% OF PREDICTED

BANK	PREDICTED(P)	MEASURED(M)	PCT. DIFF*	PASS/FAIL	
				DRC	AC
D	955	971.5	+1.7	P	-
C	569	567.1	-0.3	P	-
B	682	678.8	-0.5	P	-
A	1212	1198.4	-1.1	P	-
TOTAL	3418	3415.8	-0.1	-	P

III. AVERAGE DIFFERENTIAL BORON WORTH (PCM/PPM)

DESIGN REVIEW CRITERIA = WITHIN 15%

PREDICTED(P)	MEASURED(M)	PCT. DIFF*	PASS/FAIL	
			DRC	AC
-7.50	-7.69	+2.5	P	

IV. ISOTHERMAL TEMPERATURE COEFFICIENT (PCM/F)

DESIGN REVIEW CRITERIA = WITHIN 2 PCM/F

	PREDICTED(P)	MEASURED(M)	(M-P)	PASS/FAIL	
				DRC	AC
ARO	-2.58	-2.00	+0.58	P	
D-IN	-3.79	-3.12	+0.67	P	

V. INFERRED MODERATOR TEMPERATURE COEFFICIENT (PCM/F)\*\*

ACCEPTANCE CRITERIA = MTC IS NEGATIVE OR WITHDRAWAL LIMITS IMPOSED

	PREDICTED(P)	MEASURED(M)	(M-P)	PASS/FAIL	
				AC	DRC
ARO	-1.02	-0.44	+0.58	P	
D-IN	-2.23	-1.56	+0.67	P	

ARO: ALL RODS OUT

D-IN: CONTROL BANK D INSERTED

DCBA-IN: ALL CONTROL BANKS (D,C,B,A) INSERTED

\* PERCENT DIFFERENCE =  $100 * (M-P) / P$

\*\* INFERRED MTC IS OBTAINED BY SUBTRACTING DOPPLER COEFFICIENT (-1.56 PCM/F) FROM THE ISOTHERMAL TEMPERATURE COEFFICIENT.

INDIAN POINT UNIT 3 CYCLE 9  
POWER ASCENSION TESTING RESULTS

I. POWER DISTRIBUTION MEASUREMENTS

A) LOW POWER (26.4 %)

TILTS		LARGEST REACTION RATE INTEGRAL DEVIATION - 8.5%
0.9940	0.9995	LIMITING FQ - 2.1887      FQ LIMIT - 4.5781
1.0072	0.9992	HIGHEST FDHN - 1.5172      FDHN LIMIT - 1.9045

B) INTERMEDIATE POWER (49.9 %)

TILTS		LARGEST REACTION RATE INTEGRAL DEVIATION - 7.6%
0.9928	1.0043	LIMITING FQ - 2.0765      FQ LIMIT - 4.5410
1.0031	0.9998	HIGHEST FDHN - 1.5116      FDHN LIMIT - 1.7944

C) FULL POWER (99.8 %)

TILTS		LARGEST REACTION RATE INTEGRAL DEVIATION - 7.7%
0.9949	1.0052	LIMITING FQ - 1.9752      FQ LIMIT - 2.3252
1.0027	0.9972	HIGHEST FDHN - 1.4771      FDHN LIMIT - 1.5610

II. REACTOR COOLANT SYSTEM FLOW MEASUREMENT

MEASURED FLOW - 398143.3 GPM      MINIMUM REQUIRED FLOW - 332240 GPM

III. FULL POWER CRITICAL BORON (PPM)

DESIGN REVIEW CRITERIA(DRC) = WITHIN 50 PPM

ACCEPTANCE CRITERIA(AC) = WITHIN 1000 PCM (117 PPM)

BURNUP (EFPD)	PREDICTED(P)	MEASURED(M)	(M-P)	PASS/FAIL	
				DRC	AC
8.4	1152.6	1055.0	-97.6*	F	P
35.9	1160.0	1105.0	-55.0**	F	P

\*NON-EQUILIBRIUM SAMARIUM.

\*\*EQUILIBRIUM SAMARIUM CONDITIONS.

DUE TO DIFFERENCES IN SAMARIUM MODELING, THE DEVIATION BETWEEN PREDICTED AND MEASURED CRITICAL BORON IS GREATER BEFORE SAMARIUM REACHES EQUILIBRIUM.