Commonwealth Edison Company
Zion Generating Station
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Zion, IL 60099-2797
Tel 847-746-2084

ComEd

October 18, 1996

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Attn: Document Control Desk

Subject: Required 30 day Report on Timed Rod Drop Testing
Zion Nuclear Power Station Units 1 and 2;
NRC Docket Numbers 50-295 and 50-304

Reference:
1. NRC Bulletin 96-01, "Control Rod Insertion Problems," dated March 8, 1996
2. J. B. Hosmer letter to Office of Nuclear Reactor Regulation dated April 4, 1996, transmitting Commonwealth Edison's response to NRC Bulletin 96-01
3. Westinghouse Fuel Specification F-5.1, "Instructions, Precautions, and Limitations for Handling Rod Cluster Control Assemblies and Core Component Assemblies," Revision 1, dated January 1, 1986

The purpose of this letter is to comply with Required Response (3) of NRC Bulletin 96-01, as committed to for Zion Station in the Reference 2 letter.

Required Response (3) of NRC Bulletin 96-01 stated, in part, "Within 30 days after completing Requested Action (3) for each outage, submit a report that summarizes the data and that documents the results obtained; this is also applicable to Requested Action (4) when any abnormal rod behavior is observed."

Requested Action (3) stated, in part, "Measure and evaluate at each outage of sufficient duration during calendar year 1996, the control rod drop times and rod recoil 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."

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Requested Action (4) stated, in part, "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."

On September 19, 1996, at approximately 00:40 hours, Zion Unit 2 was tripped from 0% power to begin refueling outage Z2R14. When the reactor was tripped, one rod, N-5, indicated 118 steps withdrawn; all other rods indicated full insertion. Investigation found that the signal conditioning module for Rod Position Indicator (RPI) N-5 had failed. The control rod for position N-5 was verified to be fully inserted, and the RPI for N-5 was repaired.

To meet Requested Actions (3) and (4) of NRC Bulletin 96-01, Zion Station performed the applicable sections of Technical Staff Surveillance (TSS) 15.6.57, "Rod Position Indication Calibration and Rod Drop Timing Surveillance," on September 21, 1996, at the end of Unit 2 Cycle 14, prior to refueling. All rods had acceptable rod drop times and exhibited normal recoil. Included in Attachment 1 are the rod drop times for the Unit 2 beginning and end of Cycle 14 tests. In addition, rod drag forces were measured prior to unlatching control rods from their drive shafts in accordance with Fuel Handling Instruction (FHI)-26, "Full Length Control Rod Drive Unlatching Tool." No drag force was measured to be outside of the forty (40) pound acceptance criterion (reference 3). Included in Attachment 2 are the drag test results.

The fuel assembly with the highest burnup (H8 at the center of the core, 47,651 MWD/MTU) had a slightly increased drop time. The time from loss of stationary gripper coil voltage to entry to dashpot was 14% higher than the time measured at the beginning of the cycle, but still within acceptable bounds. Drag testing on this assembly resulted in a maximum net drag force of only 15 pounds for the approximately ten feet over which the Rod Cluster Control Assembly (RCCA) was withdrawn and reinserted.

I affirm that the content of this transmittal is true and correct to the best of my knowledge, information and belief. In some instances these statements are not based on my personnel knowledge, but on information furnished by other ComEd employees, contract employees and consultants. Such information has been reviewed in accordance with company practices, and I believe it to be correct.

If you have any questions or require further information, please contact John Parker, Rod Control System Engineer, at (847) 746-2084, extension 2300.

Sincerely,

J. H. Mueller
Site Vice President
Zion Station

Subscribed and sworn to before me, a Notary Public in and for the State of Illinois and County of Lake, this 18th day of October, 1996.

Theresa J. Slay
Notary Public

Attachment 1: Rod Drop Test Results
Attachment 2: Drag Test Results

cc: A. B. Beach, Regional Administrator, Region III
C. Y. Shiraki, Zion Project Manager, NRR
Acting Senior Resident Inspector, Zion Station
J. Yesinowski, IDNS Inspector, Zion Station

ZION UNIT 2 ROD DROP TIMING - CYCLE 14

Unit 2 BEGINNING OF CYCLE 14 4/1/1995				Unit 2 END OF CYCLE 14 9/21/1996			
ASSEMBLY LOCATION	TIME TO DASHPOT (SEC)	TOTAL DROP TIME (SEC)	EIGHTH CORE ASSEMBLY BURN-UP	ASSEMBLY LOCATION	TIME TO DASHPOT (SEC)	TOTAL DROP TIME (SEC)	EIGHTH CORE ASSEMBLY BURN-UP
D2	1.28	2.10	21942	D2	1.28	2.02	32154
B12	1.24	1.89	21942	B12	1.29	1.96	32154
M14	1.25	1.96	21942	M14	1.36	2.07	32154
P4	1.29	2.01	21942	P4	1.26	2.02	32154
B4	1.30	1.96	21942	B4	1.32	1.98	32154
D14	1.36	1.98	21942	D14	1.37	2.00	32154
P12	1.28	1.98	21942	P12	1.34	1.98	32154
M2	1.32	2.04	21942	M2	1.39	2.07	32154
G3	1.32	1.96	0	G3	1.33	2.00	22685
C9	1.36	1.98	0	C9	1.35	2.03	22685
J13	1.34	1.88	0	J13	1.36	2.03	22685
N7	1.32	2.02	0	N7	1.36	2.02	22685
C7	1.33	1.95	0	C7	1.37	1.74	22685
G13	1.30	1.95	0	G13	1.36	1.82	22685
N9	1.31	1.96	0	N9	1.34	1.99	22685
J3	1.26	1.94	0	J3	1.34	2.02	22685
E3	1.25	1.96	0	E3	1.33	2.01	22226
C11	1.21	1.92	0	C11	1.35	2.03	22226
L13	1.26	1.96	0	L13	1.39	2.11	22226
N5	1.22	1.90	0	N5	1.36	2.04	22226
C5	1.26	1.95	0	C5	1.35	2.02	22226
E13	1.23	1.91	0	E13	1.35	2.04	22226
N11	1.28	1.90	0	N11	1.33	1.98	22226
L3	1.20	1.93	0	L3	1.35	2.09	22226
H6	1.24	1.99	21220	H6	1.34	2.00	38767
H10	1.24	1.95	21220	H10	1.31	2.03	38767
F8	1.31	1.98	21220	F8	1.40	2.05	38767
K8	1.28	1.95	21220	K8	1.38	2.02	38767
F2	1.36	2.08	0	F2	1.36	2.08	20715
B10	1.32	1.98	0	B10	1.32	1.99	20715
K14	1.34	2.06	0	K14	1.38	2.04	20715
P6	1.30	2.02	0	P6	1.37	2.01	20715
B6	1.31	1.92	0	B6	1.37	2.00	20715
F14	1.28	1.98	0	F14	1.37	2.04	20715
P10	1.31	2.00	0	P10	1.38	2.03	20715
K2	1.32		0	K2	1.39	1.99	20715
H2	1.17	1.94	16895	H2	1.29	1.91	32042
B8	1.24	1.82	16895	B8	1.30	1.91	32042
H14	1.20	1.97	16895	H14	1.33	2.08	32042
P8	1.30	2.06	16895	P8	1.35	2.02	32042
F6	1.30	1.92	22296	F6	1.39	2.19	40775
F10	1.31	1.94	22296	F10	1.32	1.98	40775
K10	1.32	1.84	22296	K10	1.37	2.03	40775
K6	1.32	1.85	22296	K6	1.37	2.09	40775
D4	1.28	1.98	0	D4	1.28	1.92	22461
D12	1.30	2.02	0	D12	1.30	1.96	22461
M12	1.26	2.02	0	M12	1.31	1.99	22461
M4	1.26	2.00	0	M4	1.29	2.02	22461
H4	1.19	1.91	21804	H4	1.30	1.76	39570
D8	1.29	2.02	21804	D8	1.34	1.79	39570
H12	1.25	1.93	21804	H12	1.35	1.77	39570
M8	1.23	1.94	21804	M8	1.39	1.73	39570
H8	1.30	1.96	30929	H8	1.48	2.03	47651

Attachment 2

ZION UNIT 2 EOC 14 RCCA DRAG TEST

UNIT 2 EOC RCCA DRAG TEST				
Core Location	Weight of Tool, Drive Shaft, & RCCA (lbs.)	Drag Test (lbs.) Max	Min	Maximum Net Drag Force (lbs.)
D2	480	485	472	8
B12	480	485	475	5
M14	483	498	478	15
P4	485	497	482	12
B4	480	481	480	1
D14	480	490	475	10
P12	482	488	473	9
M2	485	496	475	11
G3	480	488	465	15
C9	480	485	475	5
J13	480	500	473	20
N7	482	494	476	12
C7	480	483	476	4
G13	480	487	473	7
N9	480	491	472	11
J3	477	494	471	17
E3	480	485	475	5
C11	480	486	469	11
L13	484	500	475	16
N5	486	491	480	6
C5	480	490	475	10
E13	480	486	478	6
N11	483	494	480	11
L3	486	495	476	10
H6	495	505	485	10
H10	485	500	478	15
F8	480	496	470	16
K8	490	502	490	12
F2	480	484	466	14
B10	480	485	476	5
K14	487	499	481	12
P6	480	491	473	11
B6	480	485	475	5
F14	480	490	467	13
P10	484	495	477	11
K2	487	500	478	13
H2	480	496	463	17
B8	480	480	476	4
H14	483	490	475	8
P8	497	507	491	10
F6	480	490	466	14
F10	480	494	462	18
K10	496	507	492	11
K6	485	495	474	11
D4	480	492	468	12
D12	480	493	472	13
M12	484	501	476	17
M4	483	494	468	15
H4	480	491	462	18
D8	480	487	469	11
H12	482	501	470	19
M8	488	504	479	16
H8	500	515	485	15