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June 10, 1996

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Beaver Valley Power Station, Unit No. 1
BV-1 Docket No. 50-334, License No. DPR-66
Response to NRC Bulletin No. 96-01:
Control Rod Insertion Problems

Attached is the Duquesne Light Company report summarizing the data and documenting the results for Beaver Valley Power Station Unit No. 1 Fuel Cycle 12 beginning of life measurements of the control rod drop times and drag forces for all rodded fuel assemblies. This report is being submitted to satisfy the Required Response (3) of NRC Bulletin 96-01: Control Rod Insertion Problems.

Based on the evaluation of the data obtained for control rod testing at the beginning of Cycle 12 at Beaver Valley Power Station Unit No. 1, no difficulties were encountered with control rods failing to insert completely on a scram signal. In our April 24, 1996, submittal to you on this issue, we reported the results of the testing performed at Beaver Valley Power Station Unit No. 1 (BV-1) at the end of Cycle 11. That testing demonstrated the operability of the control rods in fuel assemblies with maximum burnup of 44,399 MWD/MTU. The projected maximum fuel assembly burnup in rodded fuel assemblies at the end of BV-1 Cycle 12 is 46,743 MWD/MTU. This represents an additional burnup of less than 2,500 MWD/MTU. The successful testing completed for BV-1 Cycle 12 at the beginning of life demonstrates operability of the control rods at the start of the fuel cycle. Throughout BV-1 Cycle 12 lifetime the normal Technical Specification surveillance testing of the control rods will be performed. This testing will demonstrate operability of the control rods in accordance with Technical Specification surveillance requirements. According to information which was presented to the NRC at a Westinghouse Owners Group/Westinghouse/NRC meeting on May 15, 1996, at the NRC offices in Rockville, MD, concerning NRC Bulletin 96-01, there have been over

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540 successful control rod insertions in fuel assemblies with burnup greater than 42,500 MWD/MTU. This includes 87 successful control rod insertions in fuel assemblies with burnup in the range of 47,500 to 52,500 MWD/MTU. As noted earlier the projected maximum burnup of rodded fuel assemblies for BV-1 Cycle 12 is 46,743 MWD/MTU. Thus it is expected, based on the available data, that full insertion of the control rods will occur should a reactor trip be required during BV-1 Cycle 12 lifetime.

If you have any questions concerning this response, please contact Mr. Roy K. Brosi at (412) 393-5210.

Sincerely,

Sushil C. Jain

Attachment

c: Mr. L. W. Rossbach, Sr. Resident Inspector
Mr. T. T. Martin, NRC Region I Administrator
Mr. D. S. Brinkman, Sr. Project Manager

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF BEAVER)

Subject: **Beaver Valley Power Station, Unit No. 1**
BV-1 Docket No. 50-334, License No. DPR-66
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Control Rod Insertion Problems

Before me, the undersigned notary public, in and for the County and Commonwealth aforesaid, this day personally appeared Sushil C. Jain, to me known, who being duly sworn according to law, deposes and says that he is Division Vice President, Nuclear Services of the Nuclear Power Division, Duquesne Light Company, he is duly authorized to execute and file the foregoing submittal on behalf of said Company, and the statements set forth in the submittal are true and correct to the best of his knowledge, information and belief.

Sushil C. Jain

Subscribed and sworn to before me
on this 10th day of June, 1996

Tracey A. Baczek
Notary Public

Notarial Seal
Tracey A. Baczek, Notary Public
Shippingport Boro, Beaver County
My Commission Expires Aug. 16, 1997
Member, Pennsylvania Association of Notaries

DUQUESNE LIGHT COMPANY
Nuclear Power Division

ATTACHMENT 1

Beaver Valley Power Station Unit 1
Cycle 12 Beginning of Life Control Rod Testing

Rod Drop Testing

Between May 8, 1996, and May 10, 1996, Control Rod Drop Time measurements were performed for all 48 rods in the core. Drop times were measured from the beginning of voltage decay on the stationary gripper coil to entry into the dashpot region and from entry into the dashpot region to rod bottom. Each trace was also checked for rod bottom recoil to ensure all rods reached the rod bottom position. All drop times to dashpot entry were within the Technical Specification limit of 2.7 seconds and all rods demonstrated positive evidence of recoil (greater than 4 bounces). A summary of the Beginning of Life (BOL) drop tests for Cycle 11 and 12 are listed below.

	Time to dashpot			Time to rod bottom		
BOL Test	Average	Fastest	Slowest	Average	Fastest	Slowest
Cycle 11	1.22	1.18	1.35	1.74	1.68	1.83
Cycle 12	1.22	1.18	1.35	1.75	1.69	1.95

All rod drop times for the Cycle 12 BOL test with the corresponding BOL assembly burnups are listed in Table 1.

Control Rod Drag Tests

Control rod drag tests were performed from April 20 through April 21, 1996. All 48 rods were drag tested by withdrawing the control rod approximately ten feet out of the assembly and reinserting it. During this time the initial dead weight, maximum weight during withdrawal, and minimum weight during insertion were measured using a spring scale.

Drag measurements for all rods were between 20 and 30 pounds. These values are well within the acceptance criteria of ± 45 pounds in the non-dashpot region and ± 100 pounds in the dashpot region. Drag measurements are listed in Table 1.

Attachment 1
Response to NRC Bulletin 96-01

Table 1.
Beaver Valley Power Station Unit 1
Cycle 12 BOL Rod Drop and Drag Test Results

Core Location	Assembly ID	Assembly Burnup (MWD/MTU)	Drop Time to Dashpot (sec.)	Dashpot to Rod Bottom (sec)	Total Drop Time (sec)	Dead Weight (lbs)	Maximum Weight (lbs)	Drag (lbs)
F6	M25	32523	1.22	0.52	1.74	460	490	30
K6	M12	32523	1.20	0.54	1.74	460	480	20
F10	M24	32523	1.22	0.49	1.71	460	490	30
K10	M02	32523	1.22	0.52	1.74	460	480	20
H6	M14	31488	1.22	0.56	1.78	450	480	30
F8	M22	31488	1.22	0.48	1.70	460	490	30
K8	M17	31488	1.22	0.53	1.75	450	480	30
H10	M13	31488	1.22	0.52	1.74	450	480	30
D6	M56	27801	1.21	0.50	1.71	450	480	30
M6	M44	27801	1.20	0.62	1.82	450	480	30
D10	M59	27801	1.20	0.56	1.76	450	480	30
M10	M34	27801	1.20	0.50	1.70	460	480	20
F4	M58	27065	1.20	0.52	1.72	460	480	20
K4	M38	27065	1.22	0.54	1.76	460	480	20
F12	M36	27065	1.20	0.53	1.73	450	480	30
K12	M37	27065	1.18	0.51	1.69	450	480	30
D4	N48	15234	1.22	0.59	1.81	450	480	30
M4	N38	15234	1.22	0.56	1.78	460	480	20
D12	N43	15234	1.20	0.52	1.72	450	480	30
M12	N37	15234	1.22	0.50	1.72	460	480	20
F2	N40	14954	1.22	0.56	1.78	460	490	30
K2	N41	14954	1.23	0.52	1.75	460	490	30
F14	N45	14954	1.23	0.56	1.79	450	480	30
K14	N42	14954	1.30	0.55	1.85	460	490	30

Attachment 1
Response to NRC Bulletin 96-01

Table 1.
Beaver Valley Power Station Unit 1
Cycle 12 BOL Rod Drop and Drag Test Results

Core Location	Assembly ID	Assembly Burnup (MWD/MTU)	Drop Time to Dashpot (sec.)	Dashpot to Rod Bottom (sec)	Total Drop Time (sec)	Dead Weight (lbs)	Maximum Weight (lbs)	Drag (lbs)
B6	N44	14921	1.35	0.60	1.95	450	480	30
P6	N39	14921	1.22	0.58	1.80	460	490	30
B10	N47	14921	1.28	0.53	1.81	450	470	20
P10	N46	14921	1.21	0.53	1.74	450	480	30
G7	N02	14349	1.20	0.53	1.73	460	490	30
J7	N01	14349	1.20	0.51	1.71	460	480	20
G9	N04	14349	1.18	0.55	1.73	450	480	30
J9	N03	14349	1.24	0.46	1.70	450	480	30
G3	N28	0	1.20	0.50	1.70	460	480	20
J3	N26	0	1.20	0.54	1.74	450	480	30
G13	N31	0	1.20	0.53	1.73	460	480	20
J13	N30	0	1.22	0.51	1.73	460	490	30
C7	N25	0	1.20	0.49	1.69	450	480	30
N7	N35	0	1.20	0.50	1.70	460	480	20
C9	N27	0	1.20	0.56	1.76	450	480	30
N9	N36	0	1.20	0.50	1.70	450	480	30
E5	N34	0	1.20	0.51	1.71	450	480	30
L5	N29	0	1.20	0.51	1.71	450	480	30
E11	N33	0	1.20	0.52	1.72	450	480	30
L11	N32	0	1.22	0.51	1.73	450	480	30
H2	P41	0	1.20	0.52	1.72	450	480	30
B8	P43	0	1.28	0.59	1.87	450	480	30
P8	P42	0	1.20	0.49	1.69	460	490	30
H14	P44	0	1.22	0.51	1.73	460	480	20