MASTER

DUQUESNE LIGHT COMPANY
SHIPPINGPORT ATOMIC POWER STATION

TEST RESULTS

DLCS 1560108
T-612081

XENON TRANSIENT
761.3 EFPH

CORE 1 SEED 2

TEST RESULTS

DLCS 1560108

T-612081

XENON TRANSIENT

761.3 EFPH

CORE I SEED 2

Purpose

To determine if there is sufficient excess reactivity in the core to override a peak xenon transient and to obtain data for rod worth calculations.

Conclusion

Upon completion of 761.3 EFPH of Station operation on Core I, Seed 2, there was sufficient excess reactivity in the core to override the peak xenon transient which occurred 9 hours after Station shutdown. At that time the controlling rod group, Group II, was at a height of 38.43 inches while the Group I rods were fully withdrawn and the Group III and IV rods were fully inserted.

The rod worth values for the Group II rods have decreased with increasing EFPH for Core I, Seed 2, for the first 20 inches of rod withdrawal.

Description of Test Equipment and Test Procedure

This test was performed in accordance with Approved Test Procedure DLCS 15601, Eighth Issue, dated April 20, 1960. Equilibrium xenon was established prior to Station shutdown by operating the Station at 60 MW net electrical power for 445.5 continuous hours. The Station was then shutdown in accordance with DLCS 34401, Rapid Station Shutdown, and the neutron flux level was reduced to approximately 1×10^{-10} amperes on the intermediate range of the Nuclear Instrumentation System. The xenon transient caused by Station shutdown was followed by periodically withdrawing and inserting the control rods to obtain various start-up rates and measuring the reactor period by timing the neutron flux buildup using a micro-microammeter and a stop watch. This procedure was continuously repeated until 60 hours after shutdown.

Results

DLCS 1560108, Xenon Transient, was started at 1813 hours on June 10, 1960, when the turbine throttle valves were tripped. At that time Core I, Seed 2 had accumulated a total of 761.3 EFPH. The xenon build-up and decay was followed for approximately 60 hours until June 13, 1960. All data taken during this test is presented in Tables I through V.

Figure 1 is a graph showing a sample plot of reactivity, ρ , versus time after shutdown plotted from the data tabulated in Table I. This figure also shows the method used to determine rod worth.

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Figure 2 is a plot of the calculated rod worths versus rod height. The values of rod worth were calculated as shown in Figure 1. It can be seen from Figure 4 that the rod worth of the Group II rods decreased from the seventh performance of this test, performed at 149.8 EFPH on Core I, Seed 2, for the first 20 inches of rod withdrawal. Figure 5 indicates that the rod worth for the Group I rods remained essentially unchanged for the first two performances of this test during Seed 2.

Figure 3 is a plot of reactivity versus rod height determined by integrating the rod worth curves shown in Figure 2. This total rod worth curve is an indication of the total amount of excess reactivity tied-up by the total poisoning during the xenon transient. From Figure 3, the excess reactivity tied-up by the poisoning between the equilibrium xenon condition and the peak xenon condition was found to be approximately 3.8 per cent. The excess reactivity tied-up during the xenon decay transient from peak xenon to essentially a xenon free condition was approximately 6.4 per cent. Since the test was run for approximately 60 hours after Station shutdown, the xenon concentration had decayed to a relatively low level approaching a xenon free condition.

Figure 6 is a plot of reactivity, ρ , versus time after shutdown during peak xenon override. Two controlling rod bank heights were used during the test to better define the time after shutdown when peak xenon occurred. The time of peak xenon was determined by periodically withdrawing the controlling group of rods to a specific height to obtain various start-up rates. After converting start-up rate values to reactivity values and plotting versus time, it can be seen from Figure 6 that for a constant rod height, minimum reactivity occurs at peak xenon poisoning. Peak xenon occurred at 9 hours after Station shutdown with Group II rods controlling at approximately 38 inches, Group I rods at their upper program limit and Group III and IV rods fully inserted in the core.

Figure 7 is a plot of critical bank height versus time after shutdown. Group II rods controlled after shutdown, through peak xenon and until they were positioned on the bottom of the reactor. The remaining xenon decay was then followed by the Group I rods until the end of the test. Rod Groups III and IV remained fully inserted throughout the test. The critical rod bank heights for the Group I and II control rods have been plotted on one graph in order to give an overall perspective of the xenon transient and to show the relationship of the Group I and II rods during the xenon transient. The inflection in the curve between the two controlling groups of rods can be attributed to the relatively low rod worth at the top and bottom portions in the core.

Figure 8 is a plot of total reactivity versus time after shutdown. This curve was plotted using information obtained from Figures 3 and 7. This curve shows the effect of total poisoning during the xenon transient.

Table I is a tabulation of the recorded and calculated data used in determining rod worth for the Group I and II control rods. Table II is a tabulation of the principle plant parameters prior to shutdown.

Table III is a tabulation of plant parameters during peak xenon build-up. Table IV is a tabulation of the reactor coolant loop pressures and flows recorded

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during each test run. Table V is a tabulation of Norwood Th's and calibrating Tc's recorded during each test run.

It should be noted that the transient following the Station shutdown was due to the radioactive decay of total core poisons and not to xenon poisoning alone. Samarium is an important core poison but its affect is small as compared to xenon poisoning; therefore, no attempt was made to determine the separate effects of the two poisons.

The average reactor coolant temperature and pressure were corrected to 500 F and 1800 psig by using a temperature coefficient of $-2.09 \times 10^{-4} \Delta\rho/F$ obtained from DLCS 1510205 and a pressure coefficient of $+2.48 \times 10^{-6} \Delta\rho/psi$ obtained from DLCS 1510109. Tables based on a delayed neutron fraction of 0.0064 were used to obtain reactivity values.

FIGURE 6

REACTIVITY ρ VS. TIME DURING PEAK XENON

-10-

FIGURE 7

CRITICAL BANK HEIGHT
VERSUS
CRITICAL TIME DURING XENON

Transient - 761.3 EFPH
Group III and IV at one (1) in.
Average Temperature - 500 F
Average Pressure - 1800 psig

TABLE I

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp.	Avg. Press.	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
			F	psig					ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/10/60	6*	2115	500.1	1820	28.66	21.8 22.9 19.0	17.403 16.937 18.737	17.170	.1	+ .209	20	- .496	16.865	
	7	2123	500.2	1820	28.66	60.1 76.9	9.225 7.716	8.470	.2	+ .418	20	- .496	8.392	2130
	9	2139	499.9	1820	29.91	26.8 29.0 23.0	15.492 14.794 16.734	15.673	.1	- .209	20	- .496	14.968	2153
	10	2147	500.0	1820	29.91	73.9 105.3	7.947 6.065	7.020	--	-----	20	- .496	6.524	
	11	2157	500.5	1820	30.91	30.9 32.8 27.4	14.245 13.739 15.294	14.426	.5	+ 1.045	20	- .496	13.845	2215
	12	2205	500.3	1820	30.91	63.4 79.8	8.881 7.506 8.194	8.194	.3	+ .627	20	- .496	8.051	
	14	2219	499.8	1820	32.16	23.0 18.5	16.896 19.002	17.949	.2	- .418	20	- .496	17.035	2241
	15	2228	499.6	1820	32.16	42.4 46.7 41.2	11.723 10.967 11.906	11.532	.4	- .836	20	- .496	10.200	
	17	2245	500.0	1820	33.16	25.9 27.8 21.8	15.860 15.492 17.403	16.232	--	-----	20	- .496	15.736	2302
	18	2251	499.9	1820	33.16	44.2 50.1 43.2	11.373 10.336 11.545	11.084	.1	- .209	20	- .496	10.379	
	19	2300	499.5	1820	34.16	16.1 16.9 13.5	20.408 19.912	20.160	.5	- 1.045	20	- .496	18.619	2336
	20	2309	499.9	1820	34.16	29.2 26.0	14.734 15.765	15.250	.1	- .209	20	- .496	14.545	
	21	2319	500.2	1820	34.16	54.9 62.3 56.0	9.827 8.932 9.692	9.484	.2	+ .418	20	- .496	9.406	
	22	2328	499.8	1820	35.16	19.7 15.4	18.381 20.868	19.624	.2	+ .418	20	- .496	19.546	0005
	23	2338	499.6	1820	35.16	28.0 28.4 23.0	15.102 14.977 16.896	15.658	.4	- .836	20	- .496	14.376	
	24	2350	499.7	1820	35.16	55.5 63.1 67.6	9.753 8.911 8.481	9.048	.3	- .627	20	- .496	7.925	
6/11/60	25	0006	499.5	1820	36.16	24.1 23.6 24.5 24.7	16.499 16.655 16.308 16.233	16.424	.5	- 1.045	20	- .496	14.883	0049
	26	0017	499.5	1820	36.16	37.1 36.8 40.1 41.2	12.729 12.795 12.116 11.906	12.386	.5	- 1.045	20	- .496	10.845	

* Runs 1 - 5 were deleted from these Test Results due to poor or inconsistent data. This applies to all omitted runs.

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	27	0034	499.4	1820	36.16	77.1 84.7 97.0	7.701 7.177 6.468	7.115	.6	- 1.254	20	- .496	5.365	0213
	28	0058	499.5	1820	37.38	23.5 22.2 23.1 23.6	16.694 17.230 16.855 16.655	16.858	.5	- 1.045	20	- .496	15.317	
	29	0110	499.4	1820	37.38	30.1 29.4 30.4 31.3	14.470 14.674 14.885 14.135	14.541	.6	- 1.254	20	- .496	12.791	
	30	0123	499.6	1820	37.38	42.0 40.9 43.2 43.1	11.759 11.963 11.545 11.563	11.708	.4	- .836	20	- .496	10.376	
	31	0133	499.6	1820	38.00	22.1 22.5 22.7	17.273 17.103 17.019	17.162	.4	- .836	20	- .496	15.830	
	32	0147	499.6	1820	38.00	28.0 28.3 28.2 28.4	15.102 15.008 15.039 14.977	15.032	.4	- .836	20	- .496	13.700	
	33	0159	499.5	1820	38.25	22.5 23.3 23.4 23.3	17.103 16.774 16.734 16.774	16.846	.5	- 1.045	20	- .496	15.305	
	34	0210	499.7	1820	38.00	39.0 40.8 39.9 39.5	12.333 11.982 12.155 12.233	12.176	.3	- .627	20	- .496	11.053	
	35	0223	499.9	1820	38.25	32.6 32.2 33.0	13.791 13.895 13.688	13.791	.1	- .209	20	- .496	13.086	
	36	0234	500.0	1820	38.75	17.0 17.5 17.4 18.0	19.852 19.559 19.617 19.275	19.576	--	-----	20	- .496	19.080	
	37	0246	500.0	1820	38.25	38.1 36.7 37.3 37.3	12.517 12.817 12.686 12.686	12.676	--	-----	20	- .496	12.180	
	38	0256	500.0	1820	38.75	19.5 19.0 19.2	18.481 18.737 18.634	18.617	--	-----	20	- .496	18.121	
	39	0305	500.1	1820	38.25	40.3 39.7 41.8	12.077 12.194 11.795	12.022	.1	+ .209	20	- .496	11.735	
	40	0313	500.0	1820	38.75	19.0 18.9 18.8 19.6	18.737 18.790 18.842 18.431	18.700	--	-----	20	- .496	18.204	
	41	0324	500.4	1820	38.25	41.7 42.2 43.5	11.814 11.723 11.493	11.677	.4	+ .836	20	- .496	12.017	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	42	0338	500.4	1820	38.75	21.1 19.6 19.9	17.715 18.431 18.283	18.376	.4	+ .836	20	- .496	18.716	
	43	0344	500.4	1820	38.25	38.1 36.9 37.9	12.517 12.773 12.559	12.616	.4	+ .836	20	- .496	12.956	
	44	0352	500.5	1820	38.75	18.2 18.2 18.4 18.3	19.165 19.165 19.056 19.110	19.124	.5	+ 1.045	20	- .496	19.673	
	45	0405	500.3	1820	38.25	32.3 30.5 31.0	13.868 14.356 14.217	14.147	.3	+ .627	20	- .496	14.278	
	46	0420	500.0	1820	37.75	80.0 61.1 58.4 59.7	7.492 9.118 9.413 9.268	9.266	--	-----	20	- .496	8.770	
	47	0432	500.1	1820	38.25	24.4 23.4 22.7	16.346 16.734 17.019	16.700	.1	+ .209	20	- .496	16.513	
	48	0442	500.3	1820	37.75	47.0 44.0 43.9 42.0	10.920 11.407 11.424 11.759	11.378	.3	+ .627	20	- .496	11.509	
	49	0453	500.2	1820	38.25	17.8 17.5 17.8	19.388 19.559 19.388	19.445	.2	+ .418	20	- .496	19.367	
	50	0503	500.2	1820	37.75	30.8 31.2 30.0	14.272 14.162 14.499	14.311	.2	+ .418	20	- .496	14.233	
	51	0518	499.8	1820	37.25	50.3 48.1 48.4	10.433 10.753 10.708	10.631	.2	- .418	20	- .496	9.717	
	52	0532	499.7	1820	37.75	18.3 17.6 17.1 17.0	19.110 19.501 19.793 19.852	19.564	.3	+ .627	20	- .496	18.441	
	53	0549	500.0	1820	37.18	26.5 25.8 26.2 25.4	15.593 15.835 15.696 15.977	15.775	--	-----	20	- .496	15.279	0426
	54	0603	500.0	1820	36.67	44.0 41.0 41.9 40.0	11.407 11.944 11.777 12.135	11.816	--	-----	20	- .496	11.320	0512
	55	0613	499.8	1820	37.18	15.0 15.9 15.4 15.8	21.142 20.537 20.868 20.602	20.878	.2	- .418	20	- .496	19.873	
	56	0629	500.0	1820	36.67	23.0 22.2 21.0 21.9	16.896 17.230 17.761 17.359	17.312	--	-----	20	- .496	16.816	
	57	0639	499.9	1820	36.19	35.3 35.8 35.0 35.4	13.132 13.017 13.201 13.109	13.114	.1	- .209	20	- .496	12.409	0546

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	58	0649	500.0	1820	36.19	27.3 27.5 27.1 27.1	15.327 15.327 15.393 15.393	15.360	--	-----	20	- .496	14.864	
	59	0702	500.0	1820	36.19	20.8 19.6 19.8 19.6	17.853 18.431 18.282 18.431	18.249	--	-----	20	- .496	17.753	
	60	0713	500.1	1820	35.42	48.8 47.0 47.8 45.4	10.649 10.920 10.798 11.176	10.886	.1	+ .209	20	- .496	10.599	0634
	61	0727	499.8	1820	35.42	30.0 27.7 28.2 27.2	14.499 15.198 15.039 15.360	15.199	.2	- .418	20	- .496	14.285	
	64	0837	499.6	1820	33.92	32.1 29.9 29.3 29.0	13.921 14.528 14.704 14.794	14.448	.4	- .836	20	- .496	13.156	0801
	65	0849	499.6	1820	33.92	21.4 21.8 21.4 21.0	17.580 17.403 17.580 17.761	17.581	.4	- .836	20	- .496	16.249	
	66	0902	499.6	1820	33.17	48.0 45.1 44.8 42.4	10.768 11.223 11.273 11.687	11.238	.4	- .836	20	- .496	9.906	0834
	67	0913	499.6	1820	33.17	29.7 30.0 29.4	14.586 14.479 14.674	14.586	.4	- .836	20	- .496	13.254	
	66	0922	499.6	1820	33.17	22.6 22.4 22.7	17.061 17.145 17.019	17.075	.4	- .836	20	- .496	15.743	
	69	0934	499.4	1820	32.42	50.1 46.0 45.0 42.8	10.461 11.078 11.240 11.616	11.099	.6	- 1.234	20	- .496	9.349	0911
	70	0944	499.9	1820	32.42	33.2 33.9 33.1 33.0	13.638 13.464 13.663 13.688	13.613	.1	- .209	20	- .496	12.908	
	74	1117	499.9	1820	30.17	45.4 42.7 42.5 40.1	11.174 11.633 11.669 12.116	11.648	.1	- .209	20	- .496	10.943	1048
	75	1126	500.1	1823	30.17	28.9 29.5 28.3	14.824 14.643 15.008	14.825	.1	+ .209	23	- .570	14.464	
	76	1134	500.1	1828	30.17	20.7 19.1 21.4	17.900 18.686 17.580	18.055	.1	+ .209	28	- .694	17.570	
	77	1145	500.3	1813	29.42	62.1 56.6 54.6 49.2	9.013 9.621 9.864 10.590	9.493	.3	+ .627	13	- .322	9.804	1120

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	78	1156	499.7	1820	29.42	31.5 30.6 31.7 30.2	14.081 14.328 14.027 14.442	14.220	.3	- .627	20	- .496	13.097	
	79	1207	499.9	1820	29.42	19.9 19.5 19.6	18.283 18.481	18.398	.1	- .209	20	- .496	17.693	
	82	1245	499.8	1820	27.92	65.5 65.0 59.6 55.1	8.676 8.724 9.279 9.802	9.120	.2	- .418	20	- .496	8.206	1224
	83	1257	499.9	1822	27.92	36.5 37.6 35.8 34.9	12.861 12.622 13.017 13.225	12.931	.1	- .209	22	- .546	12.176	
	84	1307	499.7	1822	27.92	22.5 23.5 22.6 22.8	17.103 16.694 17.061 16.978	16.959	.3	- .627	22	- .546	15.786	
	85	1216	499.7	1822	27.92	16.4 16.0 15.0	20.219 20.472 21.142	20.611	.3	- .627	22	- .546	19.438	
	86	1327	499.6	1822	27.18	40.8 40.5 38.9 38.8	11.982 12.039 12.353 12.374	12.187	.4	- .836	22	- .546	10.805	1258
	87	1337	499.6	1822	27.18	25.5 24.9 24.2 24.1	15.941 16.159 16.422 16.460	16.246	.4	- .836	22	- .546	14.864	
	88	1346	499.8	1822	27.18	17.2 18.0 18.9 17.9	19.734 19.275 18.790 19.331	19.282	.2	- .418	22	- .546	18.318	
	89	1357	499.5	1820	26.42	45.0 45.2 44.4 43.3	11.240 11.207 11.340 11.528	11.329	.5	- 1.045	20	- .496	9.788	1331
	90	1407	500.0	1823	26.42	30.8 31.8 30.4 29.6	14.272 16.000 14.385 14.615	14.318	--	-----	23	- .570	13.748	
	91	1417	500.0	1823	26.42	21.4 20.6	17.580 17.946	17.763	--	-----	23	- .570	17.193	
	92	1428	500.0	1820	25.67	57.0 60.0 53.3 51.4	9.574 9.236 10.029 10.281	9.780	--	-----	20	- .496	12.944	1404
	93	1438	499.7	1823	25.67	34.0 32.4 31.2 23.2	13.440 13.842 14.162 16.814	13.814	.3	- .627	23	- .570	12.617	
	94	1449	499.8	1823	25.67	21.2 21.6 20.7	17.670 17.491 17.900	17.687	.2	- .418	23	- .570	16.699	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta p \times 10^{-4}$	ΔP psig	Press. $\Delta p \times 10^{-4}$		
6/11/60	96	1515	499.8	1823	24.92	28.5 29.1 29.3 28.0	14.946 14.764 14.704 15.102	14.870	.2	- .418	23	- .570	13.882	1438
	97	1525	499.8	1817	24.92	19.8 20.0 20.3	18.332 18.234 18.089	18.218	.2	- .418	17	- .422	17.378	
	98	1537	499.8	1827	24.17	54.0 55.5 52.4 45.6	9.939 9.753 10.147 11.142	9.946	.2	- .418	27	- .670	8.858	1513
	99	1554	500.0	1827	24.17	27.2 24.7 25.6 24.5	15.360 16.233 15.906 16.308	16.149	--	-----	27	- .670	15.479	
	100	1603	500.2	1827	24.17	17.8 18.2 17.8 17.8	19.388 19.165 19.388 19.388	19.332	.2	+ .418	27	- .670	19.080	
	101	1613	500.2	1823	23.42	57.8 54.2 51.6	9.481 9.914 10.254	9.883	.2	+ .418	23	- .570	9.731	1547
	102	1626	500.3	1823	23.42	31.2 30.5	14.162 14.356	14.259	.3	+ .627	23	- .570	14.316	
	103	1639	500.3	1825	23.42	19.0 19.0 19.5 19.6	18.737 18.737 13.481 18.431	18.596	.3	+ .627	25	- .620	18.603	
	104	1647	500.8	1827	22.67	69.4 65.9 62.0	8.321 8.638 9.024	8.661	.8	+ 1.672	27	- .670	9.663	1621
	105	1709	500.1	1827	22.67	24.8 23.0 23.2 22.0	16.196 16.896 16.814 17.316	16.806	.1	+ .209	27	- .670	16.345	
	106	1716	499.8	1827	21.92	83.8 76.7 70.5	7.235 7.731 8.226	7.731	.2	- .418	27	- .670	8.819	1655
	107	1726	500.1	1827	21.92	44.6 45.2 44.0	11.306 11.207 11.407	11.307	.1	+ .209	27	- .670	10.846	
	108	1739	499.9	1827	21.92	25.8 25.6 25.0	15.835 15.906 16.122	15.954	.1	- .209	27	- .670	15.075	
	109	1747	500.0	1827	21.92	15.5 18.4 20.0 19.2	20.801 19.056 18.234 18.634	18.641	--	-----	27	- .670	17.971	
	111	1806	499.8	1827	21.17	35.8 37.2 36.2 35.8	13.017 12.708 12.927 13.017	12.917	.2	- .418	27	- .670	12.829	1732
	112	1814	499.9	1827	21.17	26.5 25.7 26.0	15.593 15.870 15.765	15.743	.1	- .209	27	- .670	14.864	
	113	1821	499.9	1827	21.17	20.4 19.6	18.041 18.431	18.236	.1	- .209	27	- .670	17.357	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	114	1834	499.9	1827	20.42	59.0 56.3 55.7	9.345 9.656 9.729	9.577	.1	- .209	27	- .670	8.698	1812
	115	1848	500	1827	20.42	35.1 33.7 33.1	13.178 13.514 13.663	13.452	--	-----	27	- .670	12.782	
	116	1854	500.1	1827	20.42	24.8 23.8 24.3	16.196 16.576 16.384	16.385	.1	+ .209	27	- .670	15.924	
	117	1902	500	1827	20.42	17.0 17.4 17.0	19.852 19.617 19.852	19.774	--	-----	27	- .670	19.104	
	118	1912	499.8	1827	19.67	47.4 50.1 48.1 46.0	10.859 10.461 10.753 11.078	10.788	.2	- .418	27	- .670	9.700	1844
	119	1921	499.9	1827	19.67	34.7 33.8 32.9	13.272 13.489 13.714	13.492	.1	- .209	27	- .670	12.822	
	120	1927	499.9	1827	19.67	20.4 23.3 23.7 23.0	18.041 16.774 16.615 16.896	16.762	.1	- .209	27	- .670	15.883	
	121	1939	499.9	1827	18.92	80.8 86.1 77.6 72.8	7.436 7.088 7.664 8.035	7.556	.1	- .209	27	- .670	6.677	1920
	122	1952	500.2	1827	18.92	46.6 48.8 47.8	10.983 10.649 10.798	10.810	.2	+ .418	27	- .670	10.558	
	123	2003	500.2	1827	18.92	22.5 30.3 30.1 29.3	17.103 14.413 14.470 14.704	14.529	.2	+ .418	27	- .670	14.277	
	125	2028	499.6	1827	18.17	35.5 40.7 39.8 38.9	13.086 12.001 12.174 12.353	12.176	.4	- .836	27	- .670	10.670	1958
	127	2039	499.8	1827	18.17	26.6 26.7 26.5	15.559 15.526 15.593	15.559	.2	- .418	27	- .670	14.471	
	128	2051	499.8	1827	17.42	65.3 83.8 75.1 69.4	8.695 7.235 7.853 8.321	8.026	.2	- .418	27	- .670	6.938	2028
	129	2103	499.4	1827	17.42	40.0 41.9 41.7 41.8	12.135 11.777 11.814 11.795	11.880	.6	- 1.254	27	- .670	9.956	
	130	2112	500.0	1830	19.92	86.2 91.7 79.2	7.082 6.755 7.548	7.128	--	-----	30	- .744	6.384	
	131	2120	499.8	1830	17.42	22.3 20.7 22.9 23.0	17.187 17.900 16.937 16.896	17.230	.2	- .418	30	- .744	16.068	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/11/60	132	2130	500	1830	16.92	38.3 42.0 40.7 39.1	12.476 11.759 12.001 12.313	12.137	--	-----	30	- .744	11.393	2052
	133	2141	499.9	1827	16.42	69.1 69.3 64.4 61.4	8.347 8.330 8.782 9.086	8.636	.1	- .209	27	- .670	7.757	2017
	134	2150	499.9	1827	16.92	18.9 19.3	18.790 18.583	18.686	.1	- .209	27	- .670	17.807	
	135	2157	499.8	1827	16.42	33.8 33.1	13.489 13.663	13.576	.2	- .418	27	- .670	12.488	
	136	2206	499.8	1827	15.92	61.2 59.3 56.6	9.107 9.312 9.621	9.347	.2	- .418	27	- .670	8.259	2138
	137	2214	500.1	1827	16.42	15.5 17.2 17.0	20.801 19.734 19.852	19.795	.1	+ .209	27	- .670	19.334	
	138	2221	500.2	1827	15.92	36.0 35.9	12.972 12.995	12.984	.2	+ .418	27	- .670	12.732	
	139	2228	500.2	1827	15.55	49.4 50.8 49.2	10.561 10.363 10.590	10.505	.2	- .418	27	- .670	9.417	2150
	140	2242	499.8	1827	15.92	16.1 16.4	20.408 20.219	20.314	.2	- .418	27	- .670	19.226	
	141	2248	499.9	1827	15.55	25.7 24.5	15.870 16.308	16.089	.1	- .209	27	- .670	15.210	
	143	2307	499.7	1827	14.71	38.1 37.4	12.517 12.665	12.591	.3	- .627	27	- .670	11.294	2228
	144	2314	499.7	1827	14.71	29.7 29.7	14.586 14.586	14.586	.3	- .627	27	- .670	13.289	
	145	2324	499.9	1827	14.71	23.1 22.6	16.855 17.061	16.958	.1	- .209	27	- .670	16.079	
	146	2336	499.8	1827	13.92	43.4 43.4 41.2	11.510 11.510 11.906	11.372	.2	- .418	27	- .670	10.284	2301
	147	2354	499.9	1827	13.92	24.9 24.3 23.7 23.0	16.159 16.384 16.615 16.896	16.514	.1	- .209	27	- .670	15.635	
6/12/60	148	0016	499.8	1827	13.17	30.0 28.6 28.6 27.7	14.499 14.913 14.913 15.198	14.881	.2	- .418	27	- .670	13.793	2326
	149	0032	499.6	1827	13.17	17.8 17.0 17.2 17.0	19.388 19.859 19.734 19.859	19.710	.4	- .836	27	- .670	18.204	
	150	0053	499.6	1827	11.92	35.1 31.9 33.2	13.178 13.974 13.638	13.596	.4	- .836	27	- .670	12.090	0006
	151	0107	499.6	1827	11.92	22.4 21.5 22.2	17.145 17.535 17.230	17.303	.4	- .836	27	- .670	15.797	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group II Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta p \times 10^{-4}$	ΔP psig	Press. $\Delta p \times 10^{-4}$		
6/12/60	152	0123	499.9	1827	9.93	96.8 83.2	6.478 7.274	6.876	.1	- .209	27	- .670	5.997	0100
	153	0140	500.0	1827	9.93	50.8 48.1 48.0	10.363 10.753 10.768	10.628	--	-----	27	- .670	9.958	
	154	0157	500.2	1827	9.93	31.3 29.2 29.5	14.135 14.734 14.645	14.505	.2	+ .418	27	- .670	14.253	
	155	0217	500.0	1827	9.93	16.8 16.2 15.5	19.973 20.345 20.801	20.373	--	-----	27	- .670	19.703	
	156	0237	500.1	1827	7.98	30.3 28.5 29.5	14.413 14.916 14.645	14.658	.1	+ .209	27	- .670	14.297	0134
	157	0252	500.0	1827	7.98	19.9 19.5 19.6	18.283 18.481 18.431	18.398	--	-----	27	- .670	17.728	
	158	0316	500.2	1827	1.05	51.9 48.0 49.0	10.213 10.768 10.619	10.533	.2	+ .418	27	- .670	10.281	0231
	159	0331	499.8	1827	1.05	30.6 28.3 29.1	14.328 15.008 14.764	14.700	.2	- .418	27	- .670	13.612	
	160	0345	499.9	1827	1.05	21.1 21.0 20.8	17.715 17.761 17.853	17.776	.1	- .209	27	- .670	16.897	
	161*	0415	499.9	1827	63.92	71.8 66.0 64.8	8.117 8.629 8.744	8.497	.1	- .209	27	- .670	7.618	0341
	162	0426	499.6	1827	63.92	45.5 45.2 45.6	11.158 11.267 11.142	11.189	.4	- .836	27	- .670	9.683	
	163	0440	499.8	1827	63.92	33.6 32.1 32.5	13.538 13.921 13.816	13.758	.2	- .418	27	- .670	12.670	
	164	0504	500.0	1827	63.92	20.0 19.4 19.2 19.2	18.234 18.532 18.634 18.634	18.508	--	-----	27	- .670	17.838	
	165	0617	499.9	1818	59.89	39.8 37.6 39.0	12.114 12.622 12.333	12.356	.1	- .209	18	- .446	11.701	0523
	166	0629	500.1	1818	59.43	46.4 44.2 41.6	11.014 11.373 11.832	11.406	.1	+ .209	18	- .446	11.169	0531
	167	0639	499.8	1822	59.89	21.6 22.4 21.4	17.491 17.145 17.580	17.405	.2	- .418	22	- .546	16.441	
	168	0650	499.5	1822	59.43	23.8 23.2 23.2	16.537 16.814 16.814	16.722	.5	- 1.045	22	- .546	15.131	
	169	0705	499.5	1822	58.43	34.2 32.6 32.8 32.2	13.392 13.791 13.739 13.895	13.704	.5	- 1.045	22	- .546	12.113	0600

* Group I rods controlling for all of the following runs.

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group I Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/12/60	170	0717	499.4	1822	57.43	62.0 59.0 59.8	9.024 9.345 9.257	9.209	.6	- 1.254	22	- .546	7.409	
	171	0725	499.4	1822	58.43	21.2 21.6 21.4	17.670 17.491 17.580	17.580	.6	- 1.254	22	- .546	15.780	
	172	0736	499.4	1822	57.43	37.6 37.0 37.6 37.2	12.622 12.751 12.622 12.708	12.676	.6	- 1.254	22	- .546	10.876	0640
	173	0758	499.6	1822	57.43	24.8 23.1 23.8 22.7	16.196 16.855 16.576 17.019	16.662	.4	- .836	22	- .546	15.280	
	174	0813	499.7	1820	55.92	85.4 60.0 60.4 59.8	7.132 9.236 9.192 9.257	9.228	.3	- .627	20	- .496	8.105	0728
	175	0834	499.7	1820	55.18	87.1 85.0 80.0	7.026 7.157 7.492	7.225	.3	- .627	20	- .496	6.102	0801
	176	0847	499.5	1820	55.92	25.2 27.0 26.9	16.049 15.426 15.459	15.645	.5	- 1.045	20	- .496	14.104	
	177	0859	499.6	1820	55.18	39.9 39.9 39.6	12.155 12.155 12.213	12.174	.4	- .836	20	- .496	10.842	
	178	0908	499.7	1818	55.92	18.6 18.4 18.2 13.8	18.948 19.056 19.156	19.053	.3	- .627	18	- .446	17.980	
	179	0920	499.9	1820	55.18	26.5 26.9	15.593 15.459	15.526	.1	- .209	20	- .496	14.821	
	180	0935	499.7	1820	54.49	36.6 37.8 36.2	12.838 12.580 12.927	12.782	.3	- .627	20	- .496	11.659	0828
	181	0947	499.8	1820	53.49	88.3 87.2 81.7	6.953 7.020 7.375	7.116	.2	- .418	20	- .496	6.202	0913
	182	0958	499.8	1820	54.49	21.8 23.9 23.4	17.403 16.537 16.734	16.891	.2	- .418	20	- .496	15.977	
	183	1008	499.8	1820	53.49	46.6 47.0 45.0	10.983 10.920 11.240	11.048	.2	- .418	20	- .496	10.134	
	184	1026	499.8	1818	52.74	73.9 69.9 70.4	7.947 8.278 8.235	8.153	.2	- .418	18	- .446	7.289	0945
	185	1034	499.8	1818	53.49	26.1 27.0 26.3	15.730 15.426 15.662	15.606	.2	- .418	18	- .446	14.742	
	186	1045	499.5	1818	52.74	41.2 39.3 39.4	11.905 12.273 12.253	12.144	.5	- 1.045	18	- .446	10.653	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp.	Avg. Press.	Average Rod Height Group I	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
			F	psig	Inches				ΔT F	Temp. $\Delta p \times 10^{-4}$	ΔP psig	Press. $\Delta p \times 10^{-4}$		
6/12/60	187	1052	499.4	1818	53.49	18.2 17.9 18.0	19.165 19.331 19.275	19.257	.6	- 1.254	18	- .446	17.557	
	188	1102	499.4	1818	52.74	26.5 28.4 28.0 27.7	15.593 14.977 15.102 15.198	15.218	.6	- 1.254	18	- .446	13.618	
	189	1114	499.5	1818	51.74	62.6 64.0 60.5	8.962 8.822 9.182	8.989	.5	- 1.045	18	- .446	7.498	1028
	190	1126	499.5	1818	52.74	19.0 18.8 18.5	18.737 18.842 19.002	18.860	.5	- 1.045	18	- .446	17.369	
	191	1137	499.5	1818	51.74	36.3 38.0 36.4 36.7	12.905 12.538 12.883 12.817	12.786	.5	- 1.045	18	- .446	11.295	
	192	1150	499.5	1818	50.74	92.1 97.7 97.0	6.738 6.432 6.458	6.546	.5	- 1.045	18	- .446	5.055	1118
	193	1200	499.5	1818	51.74	25.0 24.3 25.2	16.122 16.384 16.049	16.185	.5	- 1.045	18	- .446	14.694	
	194	1212	499.5	1818	50.74	52.2 53.4 52.9	10.173 10.016 10.081	10.090	.5	- 1.045	18	- .446	8.599	
	195	1220	499.5	1820	51.74	16.7 17.4 17.6	20.033 19.607 19.501	19.714	.5	- 1.045	20	- .496	18.173	
	196	1230	499.5	1818	50.74	33.4 35.3 36.5 35.3	13.588 13.132 12.861 13.132	13.178	.5	- 1.045	18	- .446	11.687	
	197	1248	499.6	1818	49.97	66.2 63.5 63.7 61.6	8.610 8.871 8.851 9.065	8.849	.4	- .836	18	- .446	7.567	1200
	198	1258	499.7	1818	50.74	22.2 24.0 23.5	17.230 16.499 16.694	16.808	.3	- .627	18	- .446	15.735	
	199	1307	499.8	1818	49.97	43.6 45.3 43.5	11.476 11.191 11.493	11.387	.2	- .418	18	- .446	10.523	
	200	1317	499.3	1818	50.74	15.5 16.3 16.0 16.0	20.801 20.281 20.472 20.472	20.506	.7	- 1.463	18	- .446	18.598	
	201	1330	499.5	1818	49.97	26.1 27.3 26.6	15.730 15.327 15.559	15.539	.5	- 1.045	18	- .446	14.048	
	202	1341	499.6	1818	49.21	52.0 50.6 51.2	10.200 10.391 10.308	10.300	.4	- .836	18	- .446	9.010	1243

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group I Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta p \times 10^{-4}$	ΔP psig	Press. $\Delta p \times 10^{-4}$		
6/12/60	203	1350	499.7	1818	49.97	20.0 19.6 20.4	18.234 18.431 18.041	18.235	.3	- .627	18	- .446	17.162	
	204	1359	499.8	1818	49.21	36.4 40.1 37.2 37.0	12.883 12.116 12.708 12.751	12.614	.2	- .418	18	- .446	11.750	
	205	1410	499.8	1818	48.42	80.5 83.1 79.3	7.457 7.281 7.541	7.426	.2	- .418	18	- .446	6.562	1323
	206	1421	499.7	1818	49.21	24.4 24.4 24.6	16.346 16.346 16.270	16.321	.3	- .627	18	- .446	15.248	
	207	1431	499.7	1818	48.42	49.7 48.4 49.0 47.0	10.518 10.708 10.619 10.920	10.691	.3	- .627	18	- .446	9.618	
	209	1450	499.8	1818	48.42	36.0 36.3 36.1	12.972 12.905 12.950	12.942	.2	- .418	18	- .446	12.078	
	210	1502	499.9	1818	47.74	77.0 79.3 77.0	7.709 7.541 7.709	7.653	.1	- .209	18	- .446	6.998	1405
	211	1512	499.9	1818	48.42	24.7 26.8 26.0 25.7	16.233 15.492 15.765 15.870	15.840	.1	- .209	18	- .446	15.185	
	212	1525	499.9	1818	47.74	49.4 45.8 46.0 42.8	10.561 11.110 11.078 11.616	11.091	.1	- .209	18	- .446	10.436	
	213	1535	499.8	1818	48.42	17.6 17.7 17.6	19.501 19.444 19.501	19.482	.2	- .418	18	- .446	18.618	
	214	1549	499.8	1818	47.74	31.0 31.2 30.8	14.217 14.162 14.272	14.194	.2	- .418	18	- .446	13.477	
	215	1557	499.8	1818	46.99	68.3 67.8 68.6	8.418 8.472 8.391	8.427	.1	- .209	18	- .446	7.772	1456
	216	1614	500.1	1820	47.74	24.8 23.0 23.6 23.4	16.196 16.896 16.655 16.734	16.528	.1	+ .209	20	- .496	15.731	
	217	1625	500.6	1817	46.99	52.8 54.4 54.4 54.2	10.094 9.889 9.889 9.914	9.946	.6	+ 1.254	17	- .421	10.779	
	218	1659	500.5	1827	46.99	30.2 28.4 29.8 29.0	14.442 14.977 14.557 14.794	14.692	.5	+ 1.045	27	- .670	15.067	
	219	1712	500.6	1823	46.24	59.6 58.4 53.8	9.279 9.413 9.965	9.552	.6	+ 1.254	23	- .570	10.236	1544

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp.	Avg. Press.	Average Rod Height Group I	Reactor Period	Uncorrected Reactivity	Average Uncorrected Reactivity	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity	Criticality Time
			F	psig	Inches				ΔT	Temp.	ΔP	Press.		
						Sec.	$\rho \times 10^{-4}$	$\rho \times 10^{-4}$	F	$\Delta \rho \times 10^{-4}$	psig	$\Delta \rho \times 10^{-4}$	$\rho \times 10^{-4}$	
6/12/60	220	1722	499.6	1823	46.99	19.0 18.4 18.2	18.737 19.056 19.165	18.986	.4	- .836	23	- .570	17.580	1655
	221	1733	499.9	1823	46.24	39.6 39.6 39.0	12.213 12.213 12.333	12.253	.1	- .209	23	- .570	11.474	
	222	1745	500.4	1823	45.49	122.6 123.0 117.6	5.372 5.358 5.555	5.428	.4	+ .836	23	- .570	5.694	
	223	1759	499.8	1827	46.24	25.2 26.2 25.8 26.0	16.049 15.696 15.835 15.765	15.836	.2	- .418	27	- .670	14.748	
	224	1808	499.8	1827	45.49	56.0 55.6 54.8	9.692 9.741 9.839	9.757	.2	- .418	27	- .670	8.669	
	225	1818	499.6	1827	46.24	20.8 19.2 19.4	17.853 18.634 18.532	18.340	.4	- .836	27	- .670	16.834	
	226	1833	499.6	1827	45.49	39.0 37.0 38.6 36.6	12.333 12.751 12.414 12.838	12.584	.4	- .836	27	- .670	11.078	
	227	1854	499.3	1827	44.74	75.8 69.2 70.4 66.8	7.799 8.338 8.235 8.554	8.232	.7	- 1.463	27	- .670	6.099	
	228	1907	499.7	1827	45.49	24.6 25.8 25.6 24.8	16.278 15.835 15.906 16.196	16.054	.3	- .627	27	- .670	14.757	
	229	1916	499.8	1823	44.74	61.0 62.0 63.8	9.128 9.024 8.841	8.998	.2	- .418	23	- .570	8.010	
	230	1927	500.1	1823	44.49	21.8 21.4 21.6	17.403 17.580 17.491	17.491	.1	+ .209	23	- .570	17.130	
	231	1949	499.7	1827	44.74	35.6 37.0 36.0 35.8	13.063 12.751 12.972 13.017	12.951	.3	- .627	27	- .670	11.654	
	232	2016	500.0	1827	43.99	83.2 84.6 79.6	7.274 7.183 7.520	7.326	--	-----	27	- .670	6.656	
	233	2037	500.2	1827	44.74	24.0 23.0 23.0 23.0	16.499 16.896 16.896 16.896	16.796	.2	+ .418	27	- .670	16.544	
	234	2054	500.0	1827	44.74	18.8 17.8 17.6 18.2 18.2	18.842 19.388 19.501 19.165 19.165	19.305	--	-----	27	- .670	18.635	
	236	2117	500.2	1823	43.99	35.6 35.2 35.8	13.063 13.155 13.017	13.078	.2	+ .418	23	- .570	12.926	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group I Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/12/60	237	2143	499.7	1823	43.99	24.6 24.4 24.8	16.278 16.346 16.196	16.273	.3	- .627	23	- .570	15.176	2014
	238	2152	500.0	1823	43.24	62.6 68.0 67.2 66.0	8.962 8.445 8.518 8.629	8.638	--	-----	23	- .570	8.068	
	239	2201	499.8	1823	43.99	21.2 20.8	17.670 17.853	17.761	.2	- .418	23	- .570	16.773	
	240	2225	499.7	1823	43.24	43.2 41.2 42.0 41.0 41.2	11.545 11.906 11.759 11.944 11.906	11.812	.3	- .627	23	- .570	10.615	
	241	2244	500.1	1823	43.24	38.2 35.4 37.2 36.0	12.497 13.109 12.708 12.972	12.821	.1	+ .209	23	- .570	12.450	
	242	2255	499.6	1823	42.74	58.2 58.6 56.8 55.6	9.435 9.390 9.597 9.741	9.541	.4	- .836	23	- .570	8.135	
	243	2304	499.5	1823	43.24	25.8 26.2 26.6	15.835 15.696 15.559	15.697	.5	- 1.045	23	- .510	14.082	
	244	2314	499.7	1823	42.74	50.2 50.2 49.8	10.447 10.447 10.504	10.466	.3	- .627	23	- .570	9.269	
	245	2326	499.5	1823	42.24	20.8 21.8 21.0 21.4	17.853 17.403 17.761 17.580	17.649	.5	- 1.045	23	- .570	16.034	
	246	2338	499.3	1820	42.74	34.2 33.8 35.8 35.6 35.8	13.392 13.489 13.017 13.063 13.017	13.196	.7	- 1.463	20	- .496	11.337	
	247	0015	500.0	1820	42.18	59.6 57.3 59.2 57.1	9.279 9.539 9.323 9.562	9.426	--	-----	20	- .496	8.930	
	248	0027	500.2	1820	42.74	25.5 26.9 26.1 25.6	15.941 15.459 15.730 15.906	15.759	.2	+ .418	20	- .496	15.681	
	249	0056	499.8	1820	42.18	36.7 34.6 36.3 34.9	12.817 13.296 12.905 13.225	13.061	.2	- .418	20	- .496	12.147	
	250	0107	499.9	1820	42.74	17.7 17.7 17.4	19.444 19.444 19.617	19.502	.2	- .418	20	- .496	18.588	
	251	0134	499.9	1820	42.18	26.9 26.2 26.7	15.459 15.696 15.526	15.560	.1	- .209	20	- .496	14.855	

TABLE I (cont'd)

XENON TRANSIENT TESTS

Date	Run No.	Mean Time	Avg. Temp. F	Avg. Press. psig	Average Rod Height Group I Inches	Reactor Period Sec.	Uncorrected Reactivity $\rho \times 10^{-4}$	Average Uncorrected Reactivity $\rho \times 10^{-4}$	Reactivity Corrections To 500 F and 1800 psig				Corrected Reactivity $\rho \times 10^{-4}$	Criticality Time
									ΔT F	Temp. $\Delta \rho \times 10^{-4}$	ΔP psig	Press. $\Delta \rho \times 10^{-4}$		
6/13/60	252	0158	499.9	1820	41.74	44.2 41.9 43.6 42.0	11.373 11.777 11.476 11.759	11.596	.1	- .209	20	- .496	10.891	2312
	253	0210	499.9	1820	42.24	20.5 20.1 20.6	17.994 18.185 17.946	18.042	.1	- .209	20	- .496	17.337	
	254	0222	499.9	1820	41.74	34.0 35.5 34.8 34.3	13.440 13.086 13.248 13.368	13.286	.1	- .209	20	- .496	12.581	
	255	0252	500.2	1820	41.24	64.9 62.8 64.9	8.734 8.942 8.734	8.803	.2	+ .418	20	- .496	8.725	0032
	256	0310	500.2	1821	41.74	26.0 24.9 26.1	15.765 16.149 15.730	15.881	.2	+ .418	21	- .521	15.778	
	257	0326	500.1	1820	41.24	46.2 44.2 45.8	11.046 11.373 11.110	11.176	.1	+ .209	20	- .496	10.889	
	258	0411	500.0	1820	41.74	16.6 16.4 16.4	20.095 20.219 20.219	20.178	--	-----	20	- .496	19.682	
	259	0421	500.1	1820	41.24	29.0 29.5 29.8	14.794 14.645 14.557	14.665	.1	+ .209	20	- .496	14.368	
	260	0502	499.9	1820	40.74	44.6 42.6 43.3	11.306 11.651 11.528	11.495	.1	- .209	20	- .496	10.790	0146
	261	0512	499.9	1820	41.24	19.4 20.2 20.4	18.532 18.137 18.041	18.237	.1	- .209	20	- .496	17.532	
	262	0542	499.7	1820	40.74	31.4 33.0 32.0 31.9	14.108 13.688 13.947 13.974	13.929	.3	- .672	20	- .496	12.806	
	263	0612	499.7	1820	40.74	26.7 26.5 26.6	15.526 15.593 15.559	15.559	.3	- .627	20	- .496	14.436	

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TABLE II

PLANT PARAMETERS IMMEDIATELY PRIOR TO SHUTDOWN

Effective Full Power Hours (6567.4 - 5806.1)	761.3 hours
Time Shutdown Started	1813 hours
Time Shutdown Completed (Zero Load)	1815 hours
Loops in Service	4 loops
Pumps on Fast Speed (A, B, C)	3 pumps
Pressurizer Temperature	623.0 F
Pressurizer Pressure	1790 psig

Average Control Rod Bank Heights at Shutdown - Group II Controlling	
Control Rods - 2's	14.77 inches
Control Rods - 6's	14.86 inches
Control Rods - 1's, 3's, 5's, 7's	68.98 inches
Control Rods - 4's, 8's	1.00 inches

Reactor Coolant Loops	1A	1B	1C	1D
Reactor Coolant Temperature - Th (F)	512.5	516.0	515.0	474.0
Reactor Coolant Temperature - Tc (F)	488.0	486.5	487.0	485.0
Reactor Coolant Pressure (psig)	1800	1850	1810	1860
Reactor Coolant Flow (lbs/hr)	00S	7.65	7.65	00S
Reactor Power - NIS (per cent)	101.5	105.5	103.0	103.0

Gross Generator Load for Forty Hours Prior to Shutdown											
Date	Time	Load	Date	Time	Load	Date	Time	Load	Date	Time	Load
6/9/60	0230	67.9	6/9/60	1330	66.9	6/10/60	0030	67.0	6/10/60	1130	67.1
	0330	67.0		1430	67.3		0130	67.0		1230	67.0
	0430	67.5		1530	67.1		0230	66.9		1330	67.5
	0530	66.9		1630	67.0		0330	66.8		1430	67.5
	0630	67.1		1730	67.0		0430	67.1		1530	67.7
	0730	67.2		1830	67.7		0530	67.1		1630	67.7
	0830	66.9		1930	57.6		0630	66.8		1730	67.5
	0930	67.1		2030	67.6		0730	66.9		1813	Shutdown
	1030	67.3		2130	67.8		0830	67.1			
	1130	67.3		2230	67.5		0930	67.3			
	1230	67.3		2330	67.6		1030	66.7			

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TABLE II (cont'd)

Control Rod Heights Six Hours Prior to Shutdown									
Time Hours	Control Rod Height (Inches) Group II-								
	21	22	23	24	61	62	63	64	Avg.
1230	14.77	14.82	14.63	14.74	14.94	14.72	14.79	14.87	14.79
1330	14.81	14.85	14.66	14.78	14.97	14.75	14.83	14.90	14.82
1430	14.81	14.85	14.66	14.78	14.97	14.75	14.83	14.90	14.82
1530	14.81	14.85	14.66	14.78	14.97	14.75	14.83	14.90	14.82
1630	14.73	14.77	14.58	14.70	14.89	14.67	14.75	14.82	14.75
1730	14.73	14.77	14.58	14.70	14.89	14.67	14.75	14.82	14.75
1800	14.74	14.78	14.59	14.71	14.90	14.67	14.76	14.83	14.76
Group I (2's, 3's, 5's, 6's) at average height 68.98 in. Group III and IV (4's and 8's) at average height 1.00 in.									

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TABLE III

PLANT PARAMETERS DURING PEAK XENON BUILD-UP

Time Hours	Control Rod Height - Inches - Group II Controlling								
	21	22	23	24	61	62	63	64	Avg.
1850	11.77	11.82	11.62	11.75	11.51	11.29	11.37	11.35	11.56
1855	12.02	12.07	11.88	12.00	11.77	11.54	11.63	11.70	11.83
1900	12.73	12.77	12.58	12.70	12.51	12.29	12.37	12.45	12.55
1905	12.73	12.77	12.58	12.70	12.51	12.29	12.37	12.45	12.55
1910	12.73	12.77	12.58	12.70	12.51	12.29	12.37	12.45	12.55
1915	12.90	12.94	12.75	12.87	12.71	12.49	12.56	12.64	12.73
1920	13.14	13.19	13.01	13.08	12.98	12.76	12.84	12.91	12.99
1925	13.14	13.19	13.01	13.08	12.98	12.76	12.84	12.91	12.99
1930	13.14	13.19	13.01	13.08	12.98	12.76	12.84	12.91	12.99
1935	12.95	12.99	12.81	12.93	13.01	12.97	12.89	12.94	12.94
1940	12.95	12.99	12.81	12.93	13.01	12.97	12.89	12.94	12.94

Coolant Loop Temperatures and Pressures

Time Hours	Mueller Bridge Temp. Tc				Norwood Temp. Indicator Th				Reactor Coolant Loop Pressure psig			
	1A (F)	1B (F)	1C (F)	1D (F)	1A (F)	1B (F)	1C (F)	1D (F)	1A	1B	1C	1D
1900	499.7	499.1	498.7	OOS	497.8	500.0	500.4	OOS	1810	1840	1810	OOS
1915	499.5	499.7	499.7		498.0	500.5	500.8		1810	1850	1830	
1930	500.7	500.7	500.7		498.6	501.0	501.2		1820	1850	1810	

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TABLE IV

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
1	1810	1850	1800	7.50	7.50
2	1810	1850	1800	7.50	7.50
3	1810	1840	1800	7.51	7.50
4	1810	1840	1810	7.51	7.50
5	1810	1840	1810	7.51	7.50
6	1810	1840	1810	7.50	7.50
7	1810	1840	1810	7.51	7.51
8	1810	1840	1810	7.51	7.51
9	1810	1840	1810	7.51	7.51
10	1810	1840	1810	7.51	7.51
11	1810	1840	1810	7.51	7.50
12	1810	1840	1810	7.51	7.50
13	1810	1840	1810	7.51	7.50
14	1810	1845	1805	7.51	7.50
15	1810	1845	1805	7.51	7.50
16	1810	1845	1805	7.51	7.50
17	1810	1845	1805	7.51	7.50
18	1810	1845	1805	7.51	7.50
19	1810	1845	1805	7.51	7.50
20	1810	1845	1805	7.50	7.50
21	1810	1845	1805	7.50	7.50
22	1810	1845	1805	7.50	7.50
23	1810	1845	1805	7.50	7.50
24	1810	1845	1805	7.50	7.51
25	1810	1845	1805	7.51	7.51
26	1810	1845	1805	7.51	7.51
27	1810	1845	1805	7.51	7.51
28	1810	1845	1805	7.51	Not
29	1810	1845	1805	7.51	Recorded
30	1810	1845	1805	7.51	7.51
31	1810	1845	1805	7.51	7.51
32	1810	1845	1805	7.51	7.51
33	1810	1845	1805	7.51	7.51
34	1810	1845	1805	7.51	7.51
35	1810	1845	1805	7.51	7.51
36	1810	1845	1805	7.51	7.51
37	1810	1845	1805	7.51	7.51

NOTE: 1D Coolant Loop Pressure and 1A and 1D Coolant Loop Flow out of service.

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TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
38	1810	1845	1805	7.51	7.51
39	1810	1845	1805	7.51	7.51
40	1810	1845	1805	7.51	7.51
41	1810	1845	1805	7.51	7.51
42	1810	1845	1805	7.51	7.51
43	1810	1845	1805	7.51	7.51
44	1810	1845	1805	7.51	7.51
45	1810	1845	1805	7.51	7.51
46	1810	1845	1805	7.51	7.51
47	1810	1845	1805	7.51	7.51
48	1810	1845	1805	7.51	7.51
49	1810	1845	1805	7.51	7.51
50	1810	1845	1805	7.51	7.51
51	1810	1845	1805	7.51	7.51
52	1810	1845	1805	7.51	7.51
53	1810	1845	1805	7.51	7.51
54	1810	1845	1805	7.51	7.51
55	1810	1845	1805	7.51	7.51
56	1810	1845	1805	7.51	7.51
57	1810	1845	1805	7.51	7.51
58	1810	1845	1805	7.51	7.51
59	1810	1845	1805	7.51	7.51
60	1810	1845	1805	7.51	7.51
61	1810	1845	1805	7.51	7.51
62	1810	1845	1805	7.51	7.51
63	1810	1845	1805	7.51	7.51
64	1810	1845	1805	7.51	7.51
65	1810	1845	1805	7.51	7.51
66	1810	1845	1805	7.51	7.51
67	1810	1845	1805	7.51	7.51
68	1810	1845	1805	7.52	7.52
69	1810	1845	1805	7.52	7.52
70	1810	1845	1805	7.52	7.52
71	1830	1850	1840	7.51	7.52
72	1830	1850	1840	7.51	7.50
73	1810	1850	1820	7.51	7.50
74	1805	1845	1810	7.52	7.51

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TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
75	1810	1840	1820	7.51	7.50
76	1810	1845	1830	7.56	7.51
77	1800	1840	1800	7.50	7.50
78	1820	1840	1800	7.50	7.51
79	1810	1845	1805	7.50	7.51
80	1810	1845	1810	7.50	7.51
81	1810	1845	1805	7.50	7.51
82	1810	1845	1805	7.50	7.51
83	1810	1845	1810	7.50	7.51
84	1810	1845	1810	7.50	7.51
85	1810	1845	1810	7.50	7.51
86	1810	1845	1810	7.50	7.51
87	1810	1845	1810	7.50	7.51
88	1810	1845	1810	----	----
89	1810	1840	1810	----	----
90	1810	1840	1820	7.51	7.51
91	1810	1840	1820	7.52	7.50
92	1810	1840	1810	7.51	7.51
93	1810	1840	1820	7.50	7.52
94	1810	1840	1820	7.50	7.50
95	1810	1840	1800	7.51	7.50
96	1810	1840	1820	7.51	7.50
97	1810	1840	1820	7.52	7.50
98	1810	1850	1820	7.52	7.51
99	1810	1850	1820	7.50	7.50
100	1810	1850	1820	7.51	7.51
101	1810	1840	1820	7.51	7.51
102	1810	1840	1820	7.51	7.51
103	1820	1840	1820	7.51	7.51
104	1820	1840	1820	7.51	7.51
105	1820	1840	1820	7.52	7.51
106	1820	1840	1820	7.52	7.51
107	1820	1840	1820	7.52	7.51
108	1820	1840	1820	7.51	7.51
109	1820	1840	1820	7.51	7.50
110	1820	1840	1820	7.51	7.50
111	1820	1840	1820	7.51	7.50

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TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
112	1820	1840	1820	7.51	7.51
113	1820	1840	1820	7.51	7.51
114	1820	1840	1820	7.51	7.50
115	1820	1840	1820	7.52	7.50
116	1820	1840	1820	7.51	7.51
117	1820	1840	1820	7.51	7.51
118	1820	1840	1820	7.51	7.51
119	1820	1840	1820	7.51	7.50
120	1820	1840	1820	7.52	7.51
121	1820	1840	1820	7.51	7.50
122	1820	1840	1820	7.51	7.51
123	1820	1840	1820	7.51	7.51
124	1820	1840	1820	7.52	7.51
125	1820	1840	1820	7.52	7.51
126	1820	1840	1820	7.52	7.51
127	1820	1840	1820	7.51	7.51
128	1820	1840	1820	7.51	7.51
129	1820	1840	1820	7.52	7.51
130	1820	1850	1820	7.51	7.51
131	1820	1850	1820	7.52	7.51
132	1820	1850	1820	7.51	7.51
133	1820	1840	1820	7.52	7.51
134	1820	1840	1820	7.52	7.51
135	1820	1840	1820	7.52	7.51
136	1820	1840	1820	7.52	7.51
137	1820	1840	1820	7.52	7.51
138	1820	1840	1820	7.51	7.51
139	1820	1840	1820	7.51	7.50
140	1820	1840	1820	7.51	7.51
141	1820	1840	1820	7.52	7.50
142	1820	1840	1820	7.52	7.51
143	1820	1840	1820	7.51	7.50
144	1820	1840	1820	7.52	7.51
145	1820	1840	1820	7.51	7.51
146	1820	1840	1820	7.51	7.51
147	1820	1840	1820	7.51	7.51
148	1820	1840	1820	7.51	7.51

TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
149	1820	1840	1820	7.51	7.51
150	1820	1840	1820	7.51	7.51
151	1820	1840	1820	7.51	7.51
152	1820	1840	1820	7.51	7.51
153	1820	1840	1820	7.51	7.51
154	1820	1840	1820	7.51	7.51
155	1820	1840	1820	7.51	7.51
156	1820	1840	1820	7.51	7.51
157	1820	1840	1820	7.51	7.51
158	1820	1840	1820	7.51	7.51
159	1820	1840	1820	7.51	7.51
160	1820	1840	1820	7.51	7.51
161	1820	1840	1820	7.51	7.51
162	1820	1840	1820	7.51	7.51
163	1820	1840	1820	7.51	7.51
164	1820	1840	1820	7.51	7.51
165	1815	1840	1800	7.51	7.51
166	1815	1840	1800	7.51	7.51
168	1815	1840	1810	7.51	7.51
169	1815	1840	1810	7.51	7.51
170	1815	1840	1810	7.51	7.51
171	1815	1840	1810	7.51	7.51
172	1815	1840	1810	7.51	7.51
173	1815	1840	1810	7.51	7.51
174	1810	1840	1810	7.51	7.51
175	1810	1840	1810	7.50	7.51
176	1810	1840	1810	7.51	7.51
177	1810	1840	1810	7.51	7.51
178	1810	1840	1805	7.51	7.51
179	1810	1840	1810	7.51	7.51
180	1810	1840	1810	7.51	7.51
181	1810	1840	1810	7.51	7.51
182	1810	1840	1810	7.51	7.51
183	1810	1840	1810	7.51	7.51
184	1810	1840	1805	7.50	7.51
185	1810	1840	1805	7.51	7.51
186	1810	1840	1805	7.51	7.51
187	1810	1840	1805	7.51	7.51

DUQUESNE LIGHT COMPANY
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TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
188	1810	1840	1805	7.51	7.51
189	1810	1840	1805	7.51	7.51
190	1810	1840	1805	7.51	7.51
191	1810	1840	1805	7.51	7.51
192	1810	1840	1805	7.50	7.51
193	1810	1840	1805	7.51	7.51
194	1810	1840	1805	7.51	7.51
195	1810	1840	1810	7.51	7.51
196	1810	1840	1805	7.51	7.51
197	1810	1840	1805	7.51	7.51
198	1810	1840	1805	7.50	7.51
199	1810	1840	1805	7.51	7.51
200	1810	1840	1805	7.51	7.51
201	1810	1840	1805	7.50	7.51
202	1810	1840	1805	7.50	7.51
203	1810	1840	1805	7.50	7.51
204	1810	1840	1805	7.50	7.51
205	1810	1840	1805	7.50	7.51
206	1810	1840	1805	7.50	7.51
207	1810	1840	1805	7.50	7.51
208	1810	1840	1805	7.50	7.51
209	1810	1840	1805	7.50	7.51
210	1810	1840	1805	7.50	7.51
211	1810	1840	1805	7.50	7.51
212	1810	1840	1805	7.50	7.51
213	1810	1840	1805	7.50	7.51
214	1810	1840	1805	7.50	7.51
215	1810	1840	1805	7.50	7.51
216	1810	1840	1810	7.50	7.51
217	1810	1840	1800	7.50	7.51
218	1810	1850	1820	7.50	7.50
219	1810	1840	1820	7.50	7.51
220	1810	1850	1810	7.51	7.51
221	1810	1840	1820	7.51	7.51
222	1810	1850	1810	7.50	7.51
223	1810	1850	1820	7.50	7.51
224	1810	1850	1820	7.50	7.51

DUQUESNE LIGHT COMPANY
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TABLE IV (cont'd)

REACTOR COOLANT LOOP FLOWS AND LOOP PRESSURES

Run No.	Coolant Loop Pressure (psig)			Coolant Loop Flow (lbs/hr x 10 ⁶)	
	1A	1B	1C	1B	1C
225	1810	1850	1820	7.50	7.51
226	1810	1850	1820	7.50	7.51
227	1810	1850	1820	7.50	7.51
228	1810	1850	1820	7.50	7.51
229	1810	1840	1820	7.50	7.51
230	1810	1840	1820	7.50	7.51
231	1810	1850		7.50	7.51
232	1810	1850	1820	7.50	7.51
233	1810	1850	1820	7.50	7.51
234	1810	1850	1820	7.51	7.51
235	1810	1840	1820	7.50	7.51
236	1810	1840	1820	7.50	7.51
237	1810	1840	1820	7.50	7.51
238	1810	1840	1820	7.50	7.51
239	1810	1840	1820	7.50	7.51
240	1810	1840	1820	7.50	7.51
241	1810	1840	1820	7.50	7.51
242	1810	1840	1820	7.50	7.51
243	1810	1840	1820	7.50	7.51
244	1810	1840	1820	7.50	7.51
245	1810	1840	1820	7.50	7.51
246	1810	1840	1810	7.50	7.51
247	1810	1840	1810	7.51	7.51
248	1810	1840	1810	7.51	7.51
249	1810	1840	1810	7.50	7.51
250	1810	1840	1810	7.50	7.51
251	1810	1840	1810	7.51	7.51
252	1810	1840	1810	7.51	7.51
253	1810	1840	1810	7.50	7.51
254	1810	1840	1810	7.50	7.51
255	1810	1840	1810	7.50	7.51
256	1810	1844	1810	7.50	7.51
257	1810	1840	1810	7.50	7.51
258	1810	1840	1810	7.50	7.51
259	1810	1840	1810	7.50	7.51
260	1810	1840	1810	7.50	7.51
261	1810	1840	1810	7.50	7.51
262	1810	1840	1810	7.50	7.51
263	1810	1850	1800	7.50	7.50

DUQUESNE LIGHT COMPANY
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TABLE V
REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
1	500.1	500.1	500.1	498.0	500.2	501.0
2	499.9	499.9	499.9	498.0	500.1	500.8
3	499.7	499.7	499.7	497.8	500.0	500.6
4	500.3	500.3	500.3	498.0	500.5	501.0
5	500.3	500.1	500.3	498.2	500.6	501.0
6	499.9	500.5	499.7	498.0	500.1	500.9
7	500.3	500.3	500.1	498.2	500.5	501.3
8	500.1	499.9	500.1	498.2	500.2	501.0
9	499.9	499.7	499.9	498.0	500.0	500.8
10	499.9	499.9	500.1	498.0	500.1	501.0
11	500.5	500.5	500.7	498.2	500.8	501.5
12	500.3	500.3	500.3	498.5	500.8	501.4
13	500.1	499.9	500.1	498.0	500.0	500.8
14	499.9	499.7	499.9	498.0	500.0	500.8
15	499.7	499.5	499.7	497.9	500.0	500.9
16	499.7	499.7	499.9	497.8	500.0	500.8
17	500.1	499.9	500.1	498.0	500.3	501.0
18	499.9	499.9	499.9	498.0	500.2	501.0
19	499.5	499.5	499.5	497.8	500.0	500.7
20	499.9	499.9	499.9	497.7	500.1	500.7
21	500.1	500.1	500.3	497.9	500.3	500.9
22	499.7	499.7	499.9	497.9	500.1	500.8
23	499.5	499.5	499.7	497.6	499.8	500.4
24	499.7	499.7	499.7	497.7	500.0	500.7
25	499.5	499.5	499.6	497.8	499.8	500.5
26	499.5	499.5	499.6	497.8	499.8	500.5
27	499.3	499.4	499.5	497.8	499.7	500.7
28	499.5	499.5	499.6	497.8	499.7	500.8
29	499.4	499.4	499.5	497.8	499.6	500.8
30	499.6	499.6	499.7	497.8	499.6	500.8
31	499.6	499.6	499.7	497.8	499.7	500.8
32	499.6	499.6	499.7	497.8	499.7	500.8
33	499.4	499.4	499.6	497.9	499.7	500.8
34	499.7	499.7	499.8	498.0	499.8	500.9
35	499.9	499.8	500.0	498.0	499.9	501.0
36	500.0	499.9	500.1	498.3	500.1	501.2
37	500.0	499.9	500.1	498.3	500.1	501.2

NOTE: 1D Mueller Bridge Tc and 1D Norwood Indicator Th out of service.

TABLE V (cont'd)

REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
38	500.0	499.9	500.1	498.3	500.1	501.2
39	500.1	500.1	500.2	498.2	500.0	501.1
40	500.0	499.9	500.1	498.4	500.1	501.0
41	500.4	500.2	500.5	498.6	500.5	501.3
42	500.6	500.2	500.5	498.9	500.6	501.5
43	500.5	500.3	500.4	499.0	500.6	501.5
44	500.6	500.1	500.6	499.0	500.6	501.5
45	500.4	500.0	500.3	499.0	500.6	501.4
46	500.1	500.1	500.0	498.7	500.2	501.0
47	500.2	500.3	500.1	498.7	500.2	501.0
48	500.3	500.2	500.3	498.7	500.3	501.2
49	500.2	500.2	500.2	498.6	500.3	501.1
50	500.2	499.8	500.2	498.6	500.3	501.0
51	499.7	499.6	499.8	498.4	500.0	500.8
52	499.6	500.0	499.8	498.3	500.0	500.5
53	500.0	500.0	500.1	498.4	500.0	500.9
54	499.9	499.8	500.0	498.4	500.0	500.9
55	499.7	500.0	499.9	498.4	500.0	500.9
56	499.9	499.9	500.0	498.4	500.0	501.0
57	499.8	500.0	499.9	498.4	500.0	501.0
58	500.0	500.0	500.0	498.4	500.0	501.0
59	500.0	500.0	500.1	498.4	500.0	501.0
60	500.0	500.1	500.2	498.4	500.0	501.0
61	499.8	499.7	499.8	498.4	500.0	500.8
62	498.9	499.1	499.8	497.8	499.3	500.0
63	499.7	499.7	499.9	498.2	499.8	500.7
64	499.5	499.5	499.7	498.2	499.8	500.2
65	499.5	499.5	499.7	498.2	499.8	500.1
66	499.5	499.5	499.7	498.2	499.8	500.2
67	499.5	499.5	499.7	498.2	499.8	500.2
68	499.5	499.5	499.7	498.2	499.8	500.2
69	499.4	499.3	499.5	498.0	499.7	500.1
70	499.7	500.0	499.9	498.2	500.0	500.4
71	497.8	498.0	498.0	496.3	497.8	498.5
72	499.7	499.9	499.9	497.4	500.0	500.6
73	499.9	499.7	499.7	498.4	500.0	500.4
74	500.0	499.9	499.9	498.3	500.0	500.6

TABLE V (cont'd)

REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
75	500.1	500.1	500.1	498.3	500.0	500.8
76	500.2	500.1	500.1	498.3	500.0	501.0
77	500.3	500.3	500.2	498.6	500.2	500.9
78	499.8	499.7	499.7	498.6	500.0	500.5
79	499.9	499.9	499.9	498.3	500.0	500.4
80	499.9	499.7	499.9	498.3	500.0	500.4
81	499.7	499.7	499.7	498.2	500.0	500.2
82	499.8	499.7	499.9	498.2	500.0	500.3
83	499.8	499.9	499.9	498.2	500.0	500.2
84	499.5	499.7	499.9	498.0	499.8	500.1
85	499.6	499.7	499.7	498.0	499.9	500.1
86	499.5	499.5	499.7	498.0	499.8	500.1
87	499.5	499.5	499.7	498.0	499.8	500.1
88	499.8	499.7	499.9	498.0	500.0	500.3
89	499.5	499.5	499.6	498.0	499.8	500.2
90	499.9	499.9	500.1	498.2	500.0	500.6
91	500.0	499.9	500.1	498.3	500.0	500.8
92	500.1	499.9	500.1	498.5	500.1	500.8
93	499.7	499.7	499.7	498.2	499.9	500.5
94	499.7	499.7	499.9	498.2	500.0	500.6
95	499.9	499.9	500.1	498.2	500.0	500.6
96	499.7	499.7	499.9	498.2	500.0	500.4
97	499.7	499.7	499.9	498.2	500.0	500.6
98	499.7	499.7	499.9	498.2	500.0	500.4
99	499.9	499.9	500.1	498.2	500.0	500.5
100	500.1	500.1	500.3	498.2	500.0	501.0
101	499.6	500.3	500.3	498.5	500.2	501.0
102	499.5	500.5	500.7	498.9	500.5	501.3
103	499.5	500.7	500.7	498.9	500.5	501.3
104	500.7	500.7	500.9	499.0	500.8	501.6
105	500.1	500.1	500.1	498.5	500.1	500.9
106	499.9	499.9	499.9	498.2	500.0	500.8
107	500.1	500.1	500.1	498.2	500.2	501.1
108	499.9	499.9	499.8	498.3	500.1	500.8
109	499.9	500.1	500.1	498.2	500.1	501.0
110	499.9	499.9	500.1	498.2	500.0	500.9
111	499.7	499.7	499.9	498.2	500.0	500.8

TABLE V (cont'd)

REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
112	499.9	499.9	499.9	498.2	500.0	500.7
113	499.9	499.9	499.9	498.2	500.0	500.7
114	499.9	499.9	499.9	498.2	500.0	500.7
115	499.9	499.9	500.1	498.2	500.0	500.9
116	500.1	500.1	500.1	498.2	500.1	501.0
117	500.1	499.9	500.1	498.3	500.1	500.9
118	499.9	499.7	499.9	498.1	500.0	500.9
119	499.9	499.9	499.9	498.3	500.0	500.9
120	499.9	499.9	499.9	498.1	500.0	500.9
121	499.9	499.9	499.9	498.2	500.0	500.9
122	500.1	500.2	500.3	498.2	500.0	501.1
123	500.2	500.2	500.3	499.0	500.5	501.1
124	499.9	499.9	499.9	498.5	500.0	501.1
125	499.7	499.7	499.5	498.2	500.0	500.5
126	499.5	499.7	499.5	498.0	499.9	500.2
127	499.7	499.9	499.7	498.0	499.9	500.5
128	499.9	499.9	499.7	498.1	500.0	500.8
129	499.3	499.5	499.3	498.0	499.5	500.2
130	500.1	499.9	500.1	498.5	500.0	500.1
131	499.7	499.7	499.9	498.4	500.0	500.9
132	500.1	499.9	500.1	498.3	500.0	501.0
133	499.9	499.7	500.1	498.3	500.0	500.9
134	499.9	499.7	500.1	498.3	500.0	500.7
135	499.9	499.7	499.9	498.4	500.0	500.6
136	499.9	499.9	499.7	498.2	500.0	500.7
137	500.2	500.2	500.1	498.4	500.3	501.0
138	500.2	500.2	500.1	498.4	500.3	501.0
139	500.2	500.2	500.1	498.5	500.3	501.1
140	499.7	499.7	499.9	498.2	500.0	500.7
141	499.9	499.9	499.9	498.2	500.0	500.7
142	500.1	500.1	500.1	498.3	500.1	500.8
143	499.7	499.7	499.7	498.0	499.9	500.6
144	499.7	499.7	499.7	498.0	499.8	500.6
145	499.9	499.9	499.9	498.0	499.8	500.6
146	499.7	499.7	499.9	498.0	499.8	500.6
147	499.9	499.9	499.9	498.2	499.9	500.7
148	499.7	499.7	499.9	498.2	499.9	500.7

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TABLE V (cont'd)

REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
149	499.5	499.5	499.7	498.1	499.9	500.6
150	499.5	499.5	499.7	498.2	499.8	500.6
151	499.5	499.5	499.7	498.0	499.7	500.6
152	499.9	499.9	499.9	498.2	499.9	501.0
153	500.1	499.9	500.1	498.4	500.0	501.0
154	500.1	500.3	500.1	498.5	500.1	501.2
155	499.9	499.9	500.1	498.5	500.0	500.9
156	500.1	500.1	500.1	498.4	500.0	501.1
157	499.9	499.9	500.1	498.5	500.1	501.1
158	500.1	500.1	500.3	498.5	500.1	501.3
159	499.7	499.7	499.9	498.5	499.9	500.8
160	499.9	499.9	499.9	498.5	499.9	500.7
161	499.9	499.9	499.9	498.5	499.9	500.8
162	499.5	499.7	499.7	498.3	499.8	500.5
163	499.7	499.7	499.9	498.3	499.8	500.5
164	499.9	499.9	500.1	498.3	499.9	500.8
165	499.9	500.1	499.9	498.3	499.5	500.3
166	500.1	500.1	500.1	498.7	500.2	500.8
167	499.7	499.7	499.9	498.5	499.9	500.5
168	499.5	499.5	499.5	498.3	499.7	500.5
169	499.5	499.5	499.5	498.0	499.5	500.2
170	499.4	499.4	499.5	498.0	499.5	500.2
171	499.4	499.4	499.5	498.1	499.5	500.2
172	499.4	499.4	499.5	498.1	499.5	500.3
173	499.5	499.5	499.7	498.0	499.5	500.5
174	499.6	499.7	499.7	498.2	499.8	500.7
175	499.7	499.5	499.9	498.2	499.8	500.8
176	499.4	499.5	499.6	498.5	499.8	500.5
177	499.5	499.5	499.7	498.5	499.8	500.5
178	499.7	499.6	499.8	498.5	499.8	500.8
179	499.9	499.7	500.0	498.5	500.0	501.0
180	499.7	499.8	499.7	498.5	499.8	500.6
181	499.7	499.9	499.9	498.5	499.8	500.8
182	499.7	499.9	499.9	498.5	499.8	500.8
183	499.7	499.9	499.9	498.5	499.8	500.8
184	499.7	499.8	499.9	498.5	499.8	500.8
185	499.7	499.7	499.9	498.5	499.8	500.8
186	499.4	499.4	499.6	498.3	499.5	500.5
187	499.3	499.4	499.6	498.3	499.5	500.5

TABLE V (cont'd)

REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
188	499.3	499.4	499.6	498.3	499.5	500.5
189	499.4	499.4	499.6	498.3	499.5	500.5
190	499.4	499.4	499.6	498.3	499.5	500.5
191	499.4	499.5	499.6	498.3	499.5	500.5
192	499.4	499.5	499.6	498.3	499.5	500.5
193	499.4	499.4	499.6	498.3	499.8	500.5
194	499.4	499.5	499.6	498.3	499.5	500.5
195	499.4	499.4	499.6	498.3	499.5	500.5
196	499.4	499.4	499.6	498.3	499.5	500.5
197	499.6	499.7	499.6	498.3	499.5	500.5
198	499.7	499.8	499.6	498.3	499.7	500.7
199	499.8	499.8	499.8	498.5	499.8	500.8
200	499.3	499.3	499.4	498.3	499.5	500.5
201	499.4	499.4	499.6	498.3	499.5	500.5
202	499.5	499.5	499.7	498.3	499.5	500.5
203	499.7	499.6	499.8	498.3	499.5	500.5
204	499.7	499.7	499.9	498.3	499.7	500.6
205	499.8	499.8	499.9	498.5	499.9	500.8
206	499.7	499.7	499.7	498.5	499.8	500.7
207	499.7	499.7	499.7	498.5	499.8	500.7
208	499.7	499.7	499.7	498.5	499.8	500.8
209	499.8	499.8	499.9	498.5	499.8	500.8
210	499.9	499.9	500.0	498.5	499.8	500.8
211	499.9	499.9	500.1	498.5	500.0	501.0
212	499.9	499.7	500.1	498.5	500.0	501.0
213	499.7	499.7	499.9	498.7	499.8	500.8
214	499.8	499.7	499.9	498.7	500.0	501.0
215	499.9	499.7	499.9	498.8	500.0	501.0
216	499.4	500.1	500.2	498.8	500.2	501.4
217	500.5	500.5	500.7	499.1	500.5	501.8
218	500.5	500.5	500.5	499.0	500.4	501.5
219	500.7	500.5	500.5	499.5	500.5	501.5
220	499.7	499.7	499.5	499.8	499.9	500.8
221	499.9	500.1	499.7	498.6	500.0	501.0
222	500.3	500.5	500.3	499.0	500.5	501.4
223	499.9	499.9	499.7	499.0	500.0	501.0
224	499.9	499.9	499.5	498.8	500.0	500.8

TABLE V (cont'd)
REACTOR COOLANT LOOP TEMPERATURES

Run No.	Mueller Bridges Tc (F)			Norwood Indicator Th (F)		
	1A Tc	1B Tc	1C Tc	1A Th	1B Th	1C Th
225	499.7	499.7	499.4	498.4	499.7	500.4
226	499.7	499.7	499.5	498.5	500.0	500.8
227	499.3	499.3	499.3	498.4	499.5	500.5
228	499.7	499.8	499.7	498.4	499.8	500.8
229	499.9	499.9	499.7	498.7	500.0	510.0
230	500.2	500.1	500.1	499.0	500.4	501.4
231	499.8	499.7	499.5	498.8	499.8	500.8
232	500.1	499.9	500.1	498.8	500.0	500.8
233	500.3	500.1	500.3	498.9	500.1	501.1
234	499.9	499.9	500.1	498.9	500.0	501.0
235	500.1	500.1	500.1	498.9	500.0	501.0
236	500.1	500.1	500.3	499.0	500.1	501.0
237	499.7	499.7	499.7	499.0	500.0	501.0
238	499.9	499.9	500.1	498.8	500.0	501.0
239	499.9	499.7	499.7	498.8	500.0	501.0
240	499.7	499.7	499.7	498.8	500.0	500.9
241	500.1	500.1	500.2	499.0	500.0	501.0
242	499.7	499.5	499.5	498.8	499.8	500.5
243	499.5	499.5	499.5	498.8	499.7	500.5
244	499.7	499.7	498.7	498.8	500.0	500.8
245	499.5	499.5	499.5	498.8	499.8	500.3
246	499.3	499.3	499.3	498.5	499.5	500.3
247	499.9	499.9	500.1	499.0	500.0	501.8
248	500.1	500.1	500.3	499.0	500.1	501.0
249	499.7	499.7	499.9	498.8	500.0	500.6
250	499.7	499.7	499.9	498.7	499.9	500.6
251	499.9	499.9	499.9	498.7	500.0	500.7
252	499.9	499.9	499.9	498.7	500.0	500.8
253	499.9	499.9	499.9	498.7	500.0	500.8
254	499.9	499.9	499.9	498.5	499.9	500.7
255	500.1	500.1	500.3	498.8	500.2	500.9
256	500.1	500.1	500.3	498.8	500.2	500.8
257	500.1	500.1	500.2	498.8	500.2	500.8
258	499.9	500.1	499.9	498.8	500.1	500.7
259	500.1	500.1	500.0	498.8	500.1	500.7
260	499.9	499.9	499.9	498.6	499.9	500.6
261	499.9	499.9	499.9	498.5	499.9	500.6
262	499.7	499.7	499.8	498.5	499.9	500.5
263	499.7	499.7	499.9	498.5	499.9	500.5

TEST RESULTS DLCS 1560108

T-612081

XENON TRANSIENT TESTS

Results Prepared By Salvatore J. Ravo

Results Reviewed By Ronald A. Kravinski

Approved (Duquesne Light Company) [Signature] Date 12-9-60