Quarterly Operating Report
First Quarter 1980
DLCS 5000180

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DISCLAIMER

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Preface

This Quarterly Report is prepared and issued by the Duquesne Light Company to disseminate information relative to all significant activities conducted at the Shippingport Atomic Power Station. Consistent with the premise that Shippingport was built to provide information and not power at competitive costs, this report makes no effort to analyze power production costs and makes no deductions regarding costs which might be achieved if Shippingport had been built and operated solely to produce power.

In preparation of these reports, it has been presumed that the reader has a working knowledge of nuclear reactors, reactor technology and/or electric utility generating station operations. The reader is reminded, however, that this is an operating report rather than a technical report. Anyone desirous of obtaining information on recent technical progress related to the nuclear portion of the Shippingport Atomic Power Station is, therefore, referred to the United States Department of Energy, Technical Information Center at Oak Ridge, Tennessee, where this information is readily available.

1. Summary of Operations

At the beginning of the first quarter of 1980, the Shippingport Atomic Power Station was operating with the 1A, 1B, 1C, and 1D reactor coolant loops and the 1AC and 1BD purification loops in service.

The 1A, 1B, 1C, and 1D 991 psig self-actuated steam relief valves remained gagged during the quarter to prevent leakage through the valve seats. The 1D steam relief valve was removed during the Spring 1980 Shutdown for repairs and a blind flange was installed in its place. Gagging and/or removing of redundant relief valves is permitted by ASME Code and approved operating procedures.

During the quarter, the Station was operated for the Duquesne Light Company System in the base mode operation. No swing load operations were conducted this quarter; however, several 15% reactor power cycles were performed for training. The LWBR core has generated 15,129.91 EFPH from startup through the end of the quarter.

The Station load was decreased to 46% for approximately one hour on January 7 for the performance of test procedure LWBR-DLCS 62101, Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS).

On January 8, the main unit generator was shutdown to perform test procedure LWBR-DLCS 64601, Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power. The reactor fuel remained latched during the testing period with the reactor power being maintained in the Source and Intermediate ranges. The Station was returned to maximum output on January 9.

The Station load was reduced to 72% on January 12 for the performance of test procedure LWBR-DLCS 63302, Xenon Stability Test. This load was maintained until January 18, when the load was reduced to zero, and the reactor power was lowered to the Source Range. On January 19, the reactor was again taken critical and the Station returned to maximum output.

On January 25 the Station experienced an unplanned shutdown, due to low river water level, as a result of the evolutions of The U. S. Army Corps of Engineers at an upstream lock. The low river condition was corrected within hours. The Station commenced a startup and returned to full power on January 26.

A planned Station load reduction to approximately 50% for test procedure LWBR-DLCS 62101, Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS) occurred on February 7. The Station returned to full load on the same day.

1. Summary of Operations (Cont'd)

On February 9 the Station underwent a planned shutdown to perform test procedures LWBR-DLCS 64601, Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power and LWBR-DLCS 79201, Valve Operating System Leak Rate Test. The testing was complete on February 10, but the startup was delayed to permit an audit of the Valve Position Status Board. On February 11 the Station returned to full power.

The Station was shutdown on February 29 for the Spring Shutdown and remained in this mode through the end of the quarter.

The remaining irradiated PWR Core 2 core barrel and miscellaneous refueling tools were in storage under shielding water in the deep pit and fuel storage pits of the Fuel Handling Building.

The Reactor Coolant System average leak rate for this quarter was nine gallons per hour when the plant was at normal operating temperature and pressure.

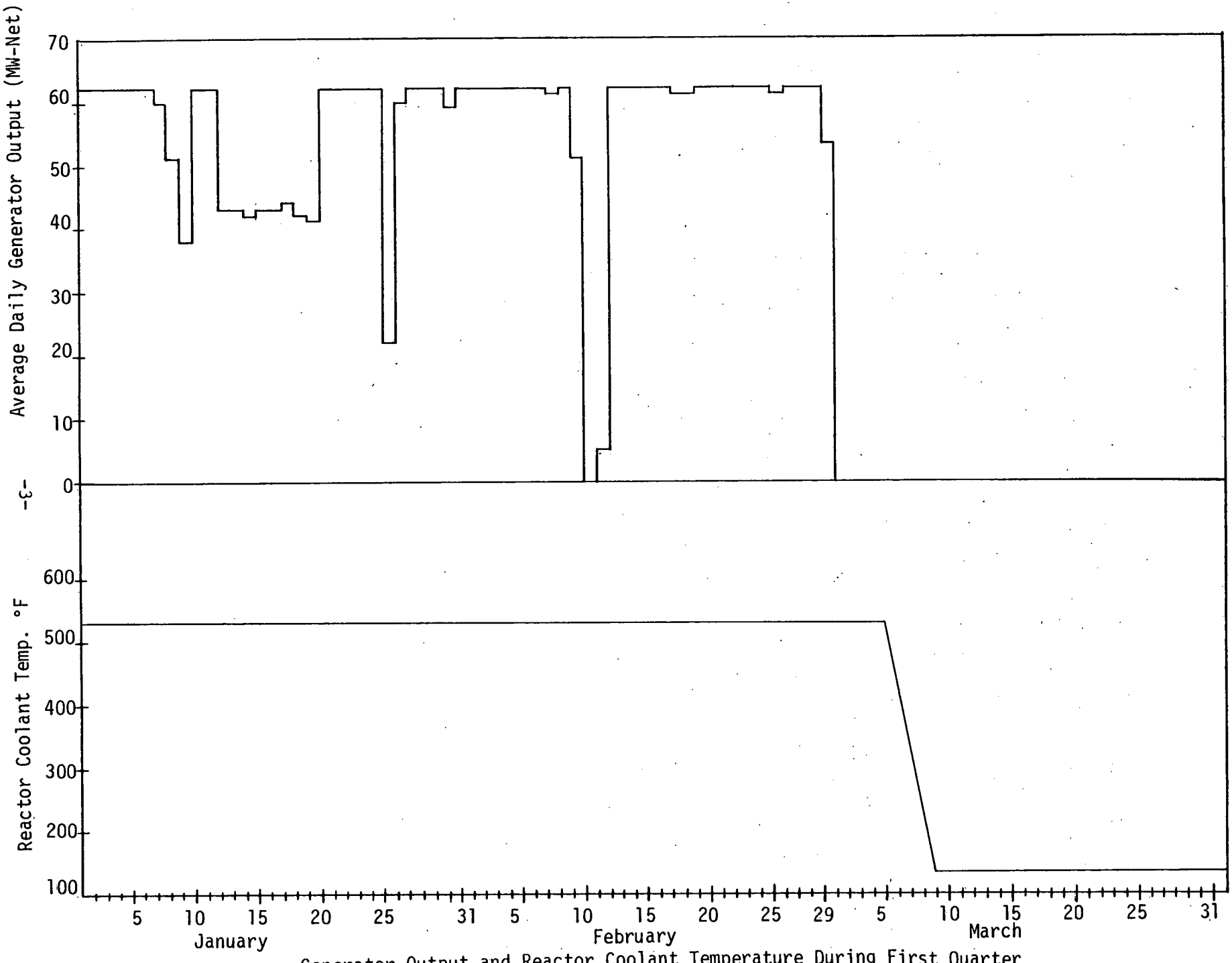
To prevent above normal valve operating system valve seat leakage, the valve operating system water supply valve (15-H16-49) to three-way selector valves for the fail-closed hydraulic valves was closed until required open for valve manipulations. The three-way selector valves will be inspected and repaired during a shutdown subsequent to the arrival of the replacement parts.

There were no radioactive liquid discharges from Radioactive Waste Processing to the river this quarter. The radioactive liquid waste effluent line to the river remained blanked off to prevent inadvertent radioactive liquid waste discharges.

During the quarter 500 cubic feet of gas was discharged from Radioactive Waste Processing containing approximately 0.0002 curies of radioactivity, mostly Xenon 133.

During the first quarter of 1980, 518 cubic feet of radioactive solid waste was shipped out of state for burial. These shipments contained 0.0024 curies of radioactivity.

During the first quarter, on-shift Casualty and Emergency Drills were performed by operating personnel and trainees. Trainees were assigned to observe or perform various evolutions in the normal modes of plant operation.



Generator Output and Reactor Coolant Temperature During First Quarter

DLCS 5000180
Figure 1

2. SUMMARY OF LWBR STATION PERFORMANCE

Electrical output (Gross) to date	kwhr	1,116,756,000
EFPH to date	hr	15,129.91
EFPH for the quarterly period	hr	1,291.56
Hours reactor critical to date	hr	17,405.08
Hours reactor critical for the quarterly period	hr	1,424.24
No. 1 main unit service hours (quarterly period)	hr	1,367.37
Net Station Output (quarterly period)	kwhr	80,790,000
No. of forced outages*		1

* Interruption of electrical output due to protective equipment action and/or operator action.

3. Chemistry

During the first quarter of 1980, the Chemistry section maintained specifications in the various plant systems and fulfilled the Station Manual requirements.

Reactor Plant

The reactor coolant system was maintained within all chemical specifications during periods of operation and hot standby. Refer to Tables II and III. During the period when the plant was in cold layup the reactor coolant system was maintained within all specifications with one exception, that of a high hydrogen concentration*. The high out-of-specification hydrogen concentration was believed to be attributed to the reabsorption of hydrogen gas from the pressurizer. Subsequent degassifications lowered the hydrogen concentration to within specifications. Refer to Table I.

The only out-of-specification conditions which existed in the reactor plant auxiliary systems occurred in the coolant charging water system. The out-of-specification conditions which existed were that of high pH and high conductivity attributed to the presence of ammonia and hydrazine. No corrective action is required whenever this condition is attributable to the presence of ammonia and hydrazine. The hydrazine was added to scavenge oxygen during periods of cold layup. Refer to Table VII. In cold layup the highest oxygen concentration was 1.0 ppm* resulting after the transfer of Reuse Water to the Reactor Plant Water Storage Tank (RPWST). Analysis of the RPWST indicated that even though the oxygen limit was exceeded, there was sufficient hydrazine present to scavenge the excess oxygen once the RPWST water was recirculated and heated.

In addition to operational chemistry analyses during this quarter, Test Procedure LWBR-DLCS 58001, Reactor Coolant Fission Product Monitoring During Reactor Startup, was performed in accordance with test requirements during four plant startups. During each performance of the test, reactor coolant samples were drawn and analyzed for Gross Iodine, Iodine 131 and Iodine 133. The results showed no abnormal peaking of Iodine activities, as the reactor power was increased in accordance with scheduled power range operations, verifying the integrity of the core cladding. No other formal chemistry testing was performed during this quarter.

*All of the out-of-specification conditions were of short duration and are not expected to have had a detrimental effect on plant materials.

3. Chemistry (Cont'd)

Turbine Plant

The Station was placed in three different conditions, that of operating, hot standby and cold wet layup during the first quarter. During the period of cold wet layup, the boilers were maintained within all specifications. Refer to Table IV. During the period of hot standby, the 1B boiler exhibited high pH*, and the 1C boiler exhibited high conductivity*. Both of these out-of-specification conditions are attributable to hydrazine addition required in the transition from hot standby to cold wet layup. Refer to Table V.

During plant operation, the 24-hour chemical addition system, employed to continually feed hydrazine and morpholine to the four boilers, was inadvertently shut-off for approximately fourteen hours causing the hydrazine concentration to deplete to 0.0 ppm*. Immediate action was taken and chemistry control of the four boilers was re-established within eight hours. Refer to Table VI.

Radioactive Waste Processing

There were no liquid discharges from Radioactive Waste Processing System (RWPS) to the river during this quarter. Approximately 500 cubic feet of gas was discharged from the RWPS containing approximately 0.0002 curies of radioactivity, mostly Xenon 133. The radioactivity released from Shippingport is far too small to have any measurable effect on the general background environmental radioactivity outside the plant.

*All of the out-of-specification conditions were of short duration and are not expected to have had a detrimental effect on plant materials.

TABLE I
REACTOR COOLANT SYSTEM
WATER CONDITIONS AND CHEMICAL ADJUSTMENTS
COLD LAYUP (<200°F)

Chemical Conditions	Specifications	Analytical Results min.	Analytical Results max.	NH_4OH (liters)	H_2 (Cubic Feet)	Degassification (Hours)
pH @ 25°C	10.10-10.30	10.12	10.23			
Specific Conductance (μmhos/cm)	Consistant with pH	31	43			
Total Gas (cc/kg)	125 cc/kg max.	24.9	51.8			
Hydrogen (cc/kg)	*No specification	11.7	24*			
Oxygen	0.14 ppm max.	----	.005			
Chloride	0.10 ppm max.		<0.10			
Chemicals Added				5.0	0.0	35.46 + (5 cycles)

* Refer to Reactor Plant Section of the QOR.

TABLE II
REACTOR COOLANT SYSTEM
WATER CONDITIONS AND CHEMICAL ADJUSTMENTS
HOT STANDBY (>200°F)

Chemical Conditions	Specifications	Analytical Results min.	Analytical Results max.	NH_4OH (liters)	H_2 (Cubic Feet)	Degassification (Hours)
pH @ 25°C	10.10-10.30	10.18	10.27			
Specific Conductance (μmhos/cm)	Consistent with pH	38	43			
Total Gas (cc/kg)	125 cc/kg max.	36.2	96.7			
Hydrogen (cc/kg)	10 cc/kg min 60 cc/kg max	11.6	40.5			
Chloride	0.10 ppm max	----	----			
Chemicals Added				1.0	42.0	0

TABLE III
REACTOR COOLANT SYSTEM
WATER CONDITIONS AND CHEMICAL ADJUSTMENTS
OPERATING (>200°F)

Water Conditions	Specifications	Analytical Results min.	Analytical Results max.	NH_4OH (liters)	H_2 (Cubic Feet)	Degassification (Hours)
pH @ 25°C	10.10-10.30	10.10	10.30			
Specific Conductance (μmhos/cm)	Consistent with pH	29	48.5			
Total Gas (cc/kg)	125 cc/kg max.	75.8	110.6			
Hydrogen (cc/kg)	60 cc/kg max.	28.5	49.0			
Chloride	0.10 ppm max.	----	<0.10			
Chemicals Added				102.0	0	28.84

TABLE IV
NON-OPERATING BOILER CHEMISTRY
COLD LAYUP (<200°F) WATER CHEMISTRY

Water Conditions	Specifications	Boilers			
		1A	1B	1C	1D
pH @ 25°C	Min. 9.30	9.33	9.40	9.31	9.40
	Max. 10.50	9.94	9.94	9.89	9.94
Specific Conductance	Min. -----	12	12	12	12
	Max. 30 µmhos/cm	17	17	16	17
Chloride	Min. -----	----	----	----	----
	Max. 0.20 ppm	<0.10	<0.10	<0.10	<0.10
Hydrazine	Min. 50 ppm	54	50	53	54
	Max. 100 ppm	95	95	95	90
Chemicals Used (lbs.)					
N_2H_4		65.8	38.8	50.2	53.3

TABLE V
NON-OPERATING BOILER CHEMISTRY
HOT STANDBY (>200°F) WATER CHEMISTRY

Water Conditions	Specifications	Boilers			
		1A	1B	1C	1D
pH @ 25°C	Min. 8.50	8.73	8.71	8.73	8.74
	Max. 9.30	9.15	9.30	9.33*	9.20
Specific Conductance	Min. ----	4.2	4.2	4.0	4.3
	Max. 10 µmhos/cm	9.1	10.4*	9.6	7.7
Chloride	Min. ----	-----	-----	-----	-----
	Max. 0.20 ppm	<0.10	<0.10	<0.10	<0.10
Morpholine	Min. 0.50 ppm	1.1	1.2	1.2	1.5
	Max. 6.0 ppm	6.0	6.0	6.0	6.0
Chemicals Used (lbs.)					
C_4H_9NO		2.95	2.57	2.56	2.66

* See Turbine Plant Section of QOR.

TABLE VI
OPERATING BOILER CHEMISTRY
OPERATING (>200°F) WATER CHEMISTRY

Water Conditions	Specifications	Boilers			
		1A	1B	1C	1D
pH @ 25°C	Min. 8.50	8.65	8.71	8.71	8.75
	Max. 9.30	9.05	9.08	9.12	9.09
Specific Conductance	Min. -----	3.8	4.0	3.9	4.3
	Max. 10 µmhos	6.7	6.5	6.3	6.4
Chloride	Min. -----	-----	<0.10	-----	-----
	Max. 0.20 ppm	<0.10	0.10	<0.10	<0.10
Hydrazine	Min. .005 ppm	0.00*	0.00*	0.00*	0.00*
	Max. 0.125 ppm	0.115	0.110	0.105	0.125
Morpholine	Min. 0.50 ppm	0.95	1.50	1.45	0.95
	Max. 6.0 ppm	2.15	2.25	2.25	2.25
Chemicals Used (lbs.)					
N_2H_4		14.60	14.60	14.60	14.60
C_4H_9NO		50.85	50.85	50.85	50.85

* See Turbine Plant Section of QOR.

TABLE VII
REACTOR PLANT AUXILIARY SYSTEMS
WATER CONDITIONS

System	Conductivity μmhos/cm	pH @ 25°C	Concentration in ppm			Gross Gamma Activity -μci/ml
			$CrO_4^{=}$	Cl^-	Dissolved O_2	
Component Cooling Specifications	N.S.	8.30 - 10.50	500 - 1000	1.0 ppm Max.	N.S.	N.S.
Observed	N.P.	N.P.	504 - 658	0.1 - 0.3	N.P.	1.4×10^{-7} - <MDA
Coolant Charging Water Specifications	2.50 max.	6.00 - 8.00	N.S.	0.10 ppm max	**	N.S.
Observed	12.5 - 4.2*	9.71 - 8.23*	N.P.	<0.10 - <0.10	7.0**-<.005	N.P.
Canal Water Specifications	5.00 max.	8.00	N.S.	N.S.	N.S.	N.S.
Observed	0.98 - 1.2	5.89 - 5.82	N.P.	N.P.	N.P.	7.87×10^{-7} - <MDA

MDA is 8.39×10^{-8} μCi/ml

N.S.: No limit needed, therefore, no limit has been specified.

N.P.: Analysis is not necessary and not performed.

**Specification is <0.14 ppm for reactor plant cold wet layup.

*Refer to Reactor Plant Section of QOR.

4. Maintenance

Scheduled preventative, as well as corrective maintenance, was performed on plant equipment during this report period. The scheduled testing and maintenance shutdown, which started February 29, 1980, continued through the quarter.

Significant work items completed or in progress during this period are summarized as follows:

Turbine Plant

Boiler feedpump check valve M2-A1 was replaced.

A hydro of feedwater piping and 1B boiler was conducted following weld repairs on the system.

The river at screenhouse suction was dredged.

Reactor Plant

The 1A reactor vessel Differential Pressure (D/P) cell was replaced and recalibrated.

Part of the flush gas line from RWP to the flash tank was replaced.

Modification of the extraction crane to install a jib crane on it was begun. All exterior surfaces of the extraction crane have been decontaminated.

The new Safety Injection System (SIS) deepwell pump was removed, overhauled, and reinstalled.

A new Master Scram Trip Unit (MSTU) (S-28 switch) test switch was installed.

Finally, two new flow condition switches (S-29 and S-30) were installed in the Nuclear Protection System.

5. Test Program

The primary objective of the test program during the quarterly report period was to continue monitoring the LWBR Core characteristics as it depletes for subsequent proof of breeding. Two short duration planned shutdowns occurred during the quarter to monitor the value of the flow coefficient of reactivity. Also, the plant was operated at a reduced power level for a period of seven days for additional planned physics testing. The Spring 1980 Shutdown for testing and maintenance began on February 29 and continued through the end of the quarter.

Forty-nine tests were performed during the report period. Forty-two tests were completed and seven remained in progress or incomplete at the end of the quarter. Table VIII lists these tests and Figure 2 indicates the performance dates.

The seventh performance of test procedure LWBR-DLCS 50001, Seismic Scram System Functional Test, was satisfactorily performed at the beginning of the testing and maintenance shutdown. The vertical sensing mass alignment in Seismic Trigger #2 was found to be out-of-tolerance*, which resulted in replacement of the trigger. The testing was then completed without further problems. The purpose of the test was to align the seismic triggers, verify proper operation of system components and to verify proper interface with the Nuclear Protection System.

Test Procedure LWBR-DLCS 55201, Safety Injection System Monthly Periodic Pump Tests, was satisfactorily performed each month during the quarter. Individual testing of the Boiler Feed Pumps was not required in March since the plant was shutdown. These pumps will be tested during the April performance of the test procedure. Proper flow rate to the SIS heat exchangers from deepwell pumps, 19-G1-1 and 2 was verified during each of the monthly performances of the test. The flowrate obtained for the new deepwell pump, 53-G2-4009, remained constant and above the minimum acceptance limit of 250 gpm for the January and February performances. The pump was removed for inspection and cleaning in March. After the pump was reinstalled, the test was repeated and a slightly higher flowrate (~6 gpm) was observed. Further testing will be conducted each month to determine if the pump's flowrate is stable.

*None of the out-of-specification conditions or equipment problems compromised reactor safety or core protection.

5. Test Program (Cont'd)

The fifth performance of test procedure LWBR-DLCS 55202, SIS Semiannual Periodic Pump Tests, was satisfactorily completed during the month of March. The test continued to verify proper operation of the Safety Injection System pumps. All the pumps were tested during the shutdown with no difficulties encountered.

The ninth performance of test procedure LWBR-DLCS 55203, SIS Quarterly Periodic Valve Test, was incomplete at the end of the quarter. The test, which verifies that various Safety Injection System valves are operational by opening and closing the valves and recording the operating times, was conducted in March for all the valves except: the 1A and 1B Boiler Feed Pump SIS Recirculation Isolation Valves, 453-H13-4001 and 4002. The testing on these valves will be completed in April when the necessary plant conditions can be obtained.

The fourth performance of test procedure LWBR-DLCS 55204 SIS Semiannual Periodic Valve Test, was satisfactorily completed during the quarter. Various SIS motor-operated and solenoid-operated valves were tested for proper operation using both switch and/or relay control. All valves tested cycled properly, and all operating times met the acceptance criteria of the test procedure. However, during cycling of valves 53-H2-1 and 3, a problem with the lights on the Graphics Display Panel was encountered. Troubleshooting revealed a defective diode*, which was replaced, and the test for these valves was repeated to verify that the Panel functioned properly.

The third performance of test procedure LWBR-DLCS 56801, Reactor Plant Container Integrity Test (Containment Isolation Penetrations) was incomplete at the end of the quarter. The objective of the test is to determine the leak rate of the containment isolation valves. All valves scheduled for testing were completed satisfactorily except valves 17-H2-4009 and 17-H2-4010. These valves will be tested as soon as plant conditions permit in April. Some valves required stem adjustments before acceptable leak rates were obtained*. All applicable valves were lockwired to ensure that the valves remain in the required position.

The seventh performance of test procedure LWBR-DLCS 56802, Reactor Plant Container Integrity Test (Butterfly Valve Test) was satisfactorily completed during the shutdown. The test checked proper operation of the air treatment butterfly valves and proper pressurization of the inlet and exhaust interspaces between the butterfly valves.

*None of the out-of-specification conditions or equipment problems compromised reactor safety or core protection.

5. Test Program (Cont'd)

The twelfth performance of test procedure LWBR-DLCS 58201, DN Loop Monitoring System Checkout Test, remained incomplete at the end of the quarter. The test was complete for both Monitors, except for obtaining a background count rate for Monitor #1 and setting the flow rates through the monitors. These steps will be accomplished as soon as plant conditions permit in April.

Test Procedure LWBR-DLCS 58301, DNLM System (Operation During Station Startup), was performed satisfactorily four times during this quarter during each reactor startup. The delayed neutron activity level in the sample flow from the A and B main coolant loops was continuously recorded during each station startup to test for possible fuel assembly cladding defects. The test data obtained thus far is satisfactory and no indications of fuel assembly cladding defects have been detected.

The fourth performance of test procedure LWBR-DLCS 58601, Periodic Radiation Survey of the Reactor Vessel Head, was satisfactorily performed during the shutdown in March after the primary plant temperature had been cooled down to less than 200°F.

The seventh performance of test procedure LWBR-DLCS 60901, Periodic Intercalibration of Temperature Sensing Elements, was incomplete at the end of the quarter. All instruments have been calibrated, but the three temperature checks at 531°F, 539°F and 515°F remain to be performed following plant heatup.

The fifth performance of test procedure LWBR-DLCS 61002, Comparison of Reactor Plant Pressure Instrumentation at Operating Pressure and Temperature, was satisfactorily completed at the beginning of the shutdown in March. The purpose of this test procedure is to identify any reactor plant pressure instrumentation which requires recalibration per test procedure LWBR-DLCS 61001, Periodic Calibration of Pressure Instrumentation. This performance of the test indicated that the Pressurizer Pressure Narrow Range, Pressurizer Pressure Wide Range, Reactor Static Pressure, 1C Loop Pressure and 1D Loop Pressure Instruments required recalibration*. The remaining pressure instrumentation tested met the acceptance criteria of the test procedure. Based on the data obtained in this test, test procedure LWBR-DLCS 61001, Periodic Calibration of Pressure Instrumentation, was satisfactorily performed for the seventh time. The Pressurizer Pressure Narrow Range Instrumentation required minor zero adjustments to the indicating receiver and the auxiliary indicating receiver*, to bring the data into specification. The Pressurizer Pressure Wide Range Instrument calibrated satisfactorily after the Norwood indicating receiver was standardized.* In addition, a microswitch and a transmitting potentiometer were replaced* to permit the lifting of a relief valve in the automatic mode and to facilitate a satisfactory calibration of the Bailey Wide Range Recorder. The 1C Loop Pressure Instrument required minor maintenance

*None of the out-of-specification conditions or equipment problems compromised reactor safety or core protection.

5. Test Program (Cont'd)

and standardization before meeting the test acceptance criteria*. The 1D Loop Pressure Instrument required standardization and a span adjustment on the pressure transmitter before meeting the test acceptance criteria.* Finally, the Reactor Static Pressure Instrument was satisfactorily completed without adjustments.

The second performance of test procedure LWBR-DLCS 61101, Calibration of Core Flow and Pressure Drop Instrumentation, was satisfactorily completed for D/P cells J4-4001 and J4-4004. As found data was acceptable and no adjustments were required.

The fourth performance of test procedure LWBR-DLCS 61201, Periodic Calibration of Pressurizer Level Instrumentation, remained in progress at the end of the quarter. Both the wide range and the narrow range instrumentation is scheduled for calibration.

The eighth performance of test procedure LWBR-DLCS 61301, Periodic Calibration of Reactor Plant Flow Instrumentation, was satisfactorily conducted for the 1A and 1C loop flow instrumentation during the Spring 1980 Shutdown. The "as found" data for both the 1A and 1C loop flow instruments was in specification and no adjustments were required.

The fourth performance of test procedure LWBR-DLCS 61401, Periodic Calibration of Reactor Plant Differential Pressure Instrumentation, was satisfactorily performed on the 1A Reactor Vessel D/P cell after the cell had been replaced during the Spring 1980 Shutdown. Checks performed on the 1A and 1D Reactor Coolant Pump D/P cells have indicated that the cells must be replaced and recalibrated at a future scheduled shutdown. The cells provide information to the Data Acquisition System only, with no control functions or readouts in the Main Control Room; therefore, operation with the instruments out-of-service is considered to be satisfactory.

The thirteenth, fourteenth, fifteenth, sixteenth and seventeenth performances of test procedure LWBR-DLCS 62101, Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS), were satisfactorily completed during the quarter. This testing was required to support planned physics testing. During the thirteenth and fifteenth performances of the test the "D" channel Brown recorder did not meet the acceptance criteria of the test*. Repairs were made in both instances and the appropriate retesting performed in the fourteenth and sixteenth test performances. During this time period the IKS has been operational since only one Brown recorder is required to be in service. Maintenance has been performed on both recorders and both are functioning satisfactorily at this time.

*None of the out-of-specification conditions or equipment problems compromised reactor safety or core protection.

5. Test Program (Cont'd)

The fifth performance of test procedure LWBR-DLCS 62202, Periodic Calibration of Pressure Switches in the Steam Pressure Instrumentation, was required following a Volume I setpoint check. Only two pressure switches, PSA-1 and PSA-2, required adjustment*. All twelve switches are within the test acceptance criteria in the "as left" condition.

The fifth performance of test procedure LWBR-DLCS 63202, Flow Coefficient of Reactivity, remained incomplete at the end of the quarter. The first portion of the test was satisfactorily performed early in the Spring 1980 Shutdown, with the remaining portions scheduled just prior to startup.

Test procedure LWBR-DLCS 63302, Xenon Stability Test, was satisfactorily performed in mid-January in conjunction with test procedure LWBR-DLCS 63501, Flux Wire Activations. Fifteen cooper-nickel fluxwires were activated during this, the ninth, performance of the test.

The tenth performance of test procedure LWBR-DLCS 63501 Flux Wire Activations, was satisfactorily performed just prior to the Spring 1980 Shutdown. Ten copper-nickel flux wires were activated at this time.

The seventh performance of test procedure LWBR-DLCS 64201, Neutron Noise Monitoring Test, was satisfactorily completed in January at approximately 14,000 EFPH.

The tenth, eleventh, twelfth and thirteenth performances of test procedure LWBR-DLCS 64601, Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power, were satisfactorily completed in January and February. The purpose of this testing is to monitor the value of the flow coefficient of reactivity. Test data obtained met the procedure acceptance criteria. In addition, the twelfth performance of the test included the relationships between power level and fuel position, average moderator temperature and fuel position, and average moderator temperature and power level, were determined.

The third performance of test procedure LWBR-DLCS 66101, Movable Fuel Control System Drive Mechanism and BIF Periodic Test, was satisfactorily completed prior to plant cooldown during the Spring 1980 Shutdown.

The fifth performance of test procedure LWBR-DLCS 78501, Movable Fuel Assembly Critical Bank Height in Response to Primary Coolant Temperature Transients, was satisfactorily completed at the beginning of the Spring 1980 Shutdown. Only the required measurement of the 12-module reactivity worth was performed at this time.

*None of the out-of-specification conditions or equipment problems compromised reactor safety or core protection.

5. Test Program (Cont'd)

The first performance of test procedure LWBR-DLCS 78601, Reactor Plant Sound Monitoring Using the Bell and Howell Tape Recorder, was satisfactorily completed on March 6, 1980. The test had been an on-going test and has been performed at various times in August, September, October, November and December of 1979, and finally in March of 1980.

Test procedure LWBR-DLCS 78701, Comparison of Reactor Plant Pressure and Pressurizer Temperature Instrumentation was completed on February 28, 1980. Periodic data has been obtained per this test since July 18, 1979.

The first performance of test procedure LWBR-DLCS 79201, Valve Operating System Leak Rate Test, was satisfactorily completed on February 10, 1980. The purpose of the test was to identify any valves that may require repairs. Four valves are scheduled for repair.

The first performance of test procedure LWBR-DLCS 79301, RWPS Drain Header Hydrostatic Test, was satisfactorily completed during the Spring 1980 Shutdown to verify the integrity of weld repairs that had been made to the system.

The first performance of test procedure LWBR-DLCS 79401, Flush of 1A Charging Pump, was also satisfactorily completed during the Spring 1980 Shutdown following repairs to the pump.

Finally, test procedure LWBR-DLCS 66001, Reactivity Lifetime Test, which is an on-going test, remained in progress at the end of the quarter.

TABLE VIII

Tests Performed During First Quarter of 1980

LWBR-DLCS 5000107	Seismic Scram System Functional Test
LWBR-DLCS 5520127-29	SIS Monthly Periodic Pump Tests
LWBR-DLCS 5520205	SIS Semiannual Periodic Pump Tests
LWBR-DLCS 5520404	SIS Semiannual Periodic Valve Tests
LWBR-DLCS 5680207	Reactor Plant Container Integrity Test (Butterfly Valve Test)
LWBR-DLCS 5800123-26	Reactor Coolant Fission Product Monitoring During Reactor Startup
LWBR-DLCS 5830128-31	DN Loop Monitoring System (Operation During Station Startup)
LWBR-DLCS 5860104	Periodic Radiation Survey of the Reactor Vessel Head
LWBR-DLCS 6100107	Periodic Calibration of Pressure Instrumentation
LWBR-DLCS 6100205	Comparison of Reactor Plant Pressure Instrumentation at Operating Pressure and Temperature
LWBR-DLCS 6110102	Calibration of Core Flow and Pressure Drop Instrumentation
LWBR-DLCS 6130108	Periodic Calibration of Reactor Plant Flow Instrumentation
LWBR-DLCS 6140104	Periodic Calibration of Reactor Plant Differential Pressure Instrumentation
LWBR-DLCS 6210113-17	Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS)
LWBR-DLCS 6220205	Periodic Calibration of Pressure Switches in the Steam Pressure Instrumentation
LWBR-DLCS 6330201	Xenon Stability Test
LWBR-DLCS 6350109-10	Flux Wire Activations
LWBR-DLCS 6420107	Neutron Noise Monitoring Test
LWBR-DLCS 6460110-13	Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power
LWBR-DLCS 6610103	Movable Fuel Control System Drive Mechanism and BIF Periodic Test
LWBR-DLCS 7850105	Movable Fuel Assembly Critical Bank Height in Response to Primary Coolant Temperature Transients
LWBR-DLCS 7860101	Reactor Plant Sound Monitoring Using the Bell and Howell Tape Recorder
LWBR-DLCS 7870101	Comparison of Reactor Plant Pressure and Pressurizer Temperature Instrumentation
LWBR-DLCS 7920101	Valve Operating System Leak Rate Test
LWBR-DLCS 7930101	RWPS Drain Header Hydrostatic Test
LWBR-DLCS 7940101	Flush of 1A Charging Pump

TABLE VIII (Cont'd)

Tests Remaining in Progress at End of Report Period

LWBR-DLCS 5520309	SIS Quarterly Periodic Valve Test
LWBR-DLCS 5680103	Reactor Plant Container Integrity Test (Containment Isolation Penetrations)
LWBR-DLCS 5820112	DN Loop Monitoring System Checkout Test
LWBR-DLCS 6090107	Periodic Intercalibration of Temperature Sensing Elements
LWBR-DLCS 6120104	Periodic Calibration of Pressurizer Level Instrumentation
LWBR-DLCS 6320205	Flow Coefficient of Reactivity
LWBR-DLCS 66001	Reactivity Lifetime Test

Performance Dates of Tests Performed During The First Quarter

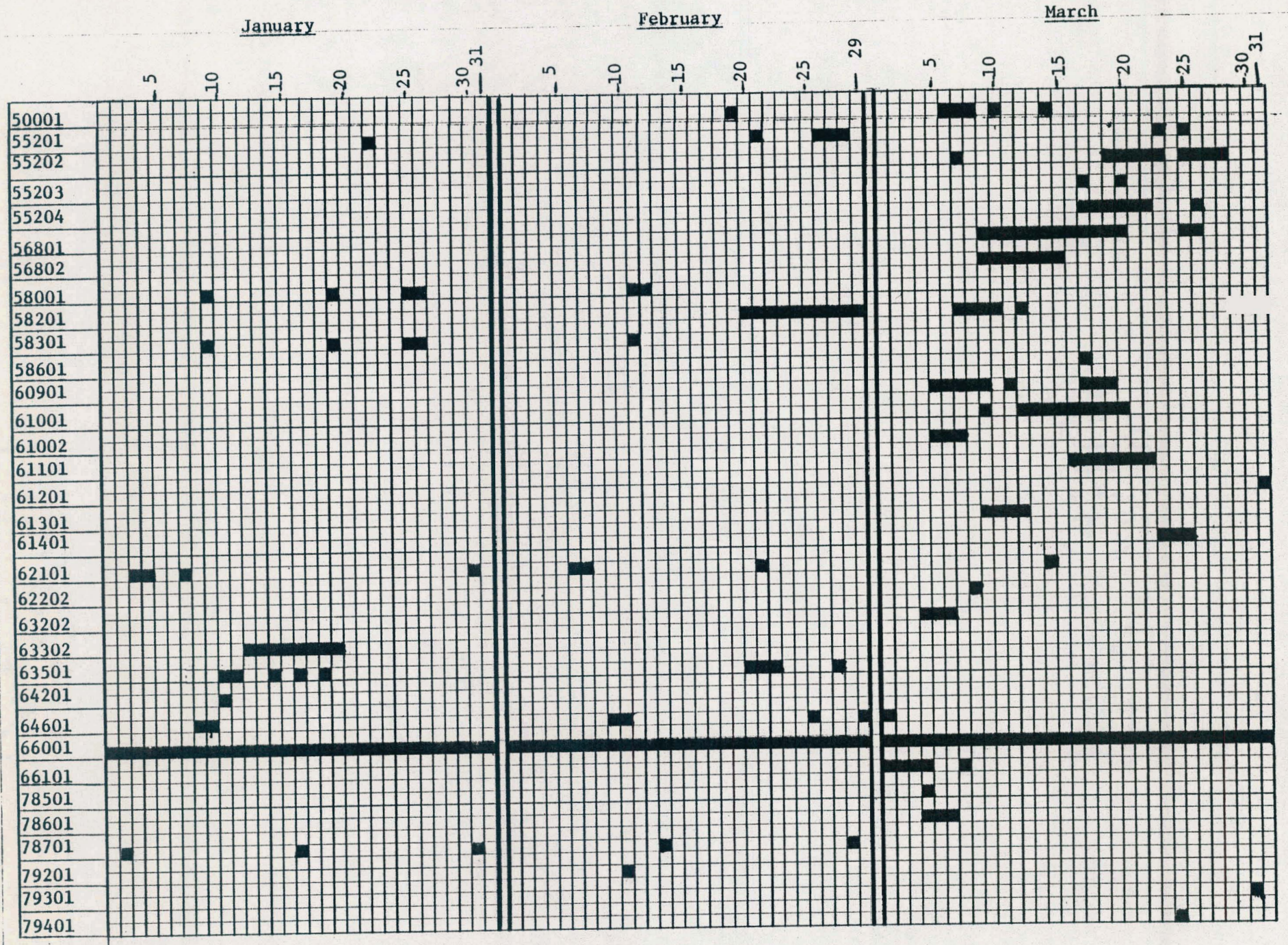


Figure 2

6. HEALTH PHYSICS

External Radiation Exposure

Table IX provides information on radiation exposure experience of Duquesne Light Company personnel at the Shippingport Station. Table IX is based on a standard form used for radiation exposure experience at central station nuclear power plants.

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TABLE IX

Work & Job Function	Number of Personnel (>100 mrem) Station Emp.	Other Emp.*	Total Man-Rem Station Emp.	Other Emp.*
Reactor Operations & Surveillance				
Maintenance Personnel	0		0	
Operating Personnel	17		2.6	
Health Physics Personnel	2		0.7	
Supervisory Personnel	3		0.4	
Engineering Personnel	0		0	
Routine Maintenance				
Maintenance Personnel	21		5.9	
Operating Personnel	0		0	
Health Physics Personnel	9		3.1	
Supervisory Personnel	11		1.9	
Engineering Personnel	0		0	
Inservice Inspection				
Maintenance Personnel	0		0	
Operating Personnel	0		0	
Health Physics Personnel	0		0	
Supervisory Personnel	0		0	
Engineering Personnel	0		0	
Special Maintenance				
Maintenance Personnel	19		5.3	
Operating Personnel	0		0	
Health Physics Personnel	9		3.1	
Supervisory Personnel	7		1.2	
Engineering Personnel	2		0.3	
Waste Processing				
Maintenance Personnel	5		1.4	
Operating Personnel	1		0.2	
Health Physics Personnel	0		0	
Supervisory Personnel	2		0.3	
Engineering Personnel	0		0	
Refueling				
Maintenance Personnel	0		0	
Operating Personnel	0		0	
Health Physics Personnel	0		0	
Supervisory Personnel	0		0	
Engineering Personnel	0		0	
TOTAL				
Maintenance Personnel	45		12.6	
Operating Personnel	18		2.8	
Health Physics Personnel	20		6.9	
Supervisory Personnel	23		3.4	
Engineering Personnel	2		0.3	
GRAND TOTAL	108	0	26.4	0

*Duquesne Light Company employees not regularly assigned to Shippingport Station.

7. GLOSSARY

AIX . . . . . after ion exchanger (outlet)

a/o . . . . . atomic percent

BAPL. . . . . Bettis Atomic Power Laboratory

BIX . . . . . before ion exchanger (inlet)

CIC . . . . . compensated ionization chamber

DAS . . . . . .Data Acquisition System

DE . . . . . demineralizer effluent

DF. . . . . decontamination factor

DOE . . . . . Department of Energy

EFPH . . . . . equivalent full power hour

Hc . . . . . .critical height

LWBR . . . . . .Light Water Breeder Reactor

magamp . . . . . magnetic amplifier

MDA . . . . . .Minimum Detectable Activity

mR . . . . . milliroentgen

mrem . . . . . milliroentgen equivalent man

NIS . . . . . Nuclear Instrumentation System

NPS . . . . . .Nuclear Protection System

ORMS . . . . . .Operational Radiation Monitoring System

PWR . . . . . .Pressurized Water Reactor

QOR . . . . . Quarterly Operating Report

R . . . . . roentgen

7. GLOSSARY (Cont'd)

RC . . . . . resistance capacitance

RCS . . . . . Reactor Coolant System

rem . . . . . .roentgen equivalent man

RPC . . . . . .Reactor Plant Container

RWPS . . . . . .Radioactive Waste Processing System

STP . . . . . .standard temperature and pressure

su . . . . . .smear unit (100 sq. cm)

Tavg . . . . . .average reactor coolant temperature

Tc . . . . . .reactor inlet coolant temperature

Th . . . . . reactor outlet coolant temperature

Ts . . . . . time of sample isolation

μCi . . . . . .microcuries

V/O . . . . . .percent by volume

VOS . . . . . Valve Operating System