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Quarterly Operating Report
Third Quarter 1980
DLCS 5000380

Approved by: J. F. Zagorski
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Superintendent

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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 third 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, and 1C 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 Duquesne Light Company System grid including base load and swing load operation. Twelve (12) planned swing load operations were performed on the LWBR Core this quarter to complete the LWBR operating plan of fifty (50) during this operating phase.

On July 12, and again on August 9, the station underwent planned shutdowns to perform test procedure LWBR-DLCS 64601, Bank Reactivity Worth and Temperature and Power Coefficients of Reactivity at Power. The station returned to full power July 14 and August 10 respectively.

During the period of July 25 to July 27, operations were conducted at reduced power to permit cleaning of the 1A and 1B Condenser tubes.

The Station load was decreased to 46% for approximately one hour on August 1 for the performance of test procedure LWBR-DLCS 62101, Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS).

The Station was shutdown on September 12 for the Fall 1980 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.

1. SUMMARY OF OPERATIONS (Cont'd)

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 the Fall 1980 Shutdown subsequent to the arrival of the replacement parts.

The LWBR Core has generated 18,297.98 EFPH from start-up through the end of the quarter.

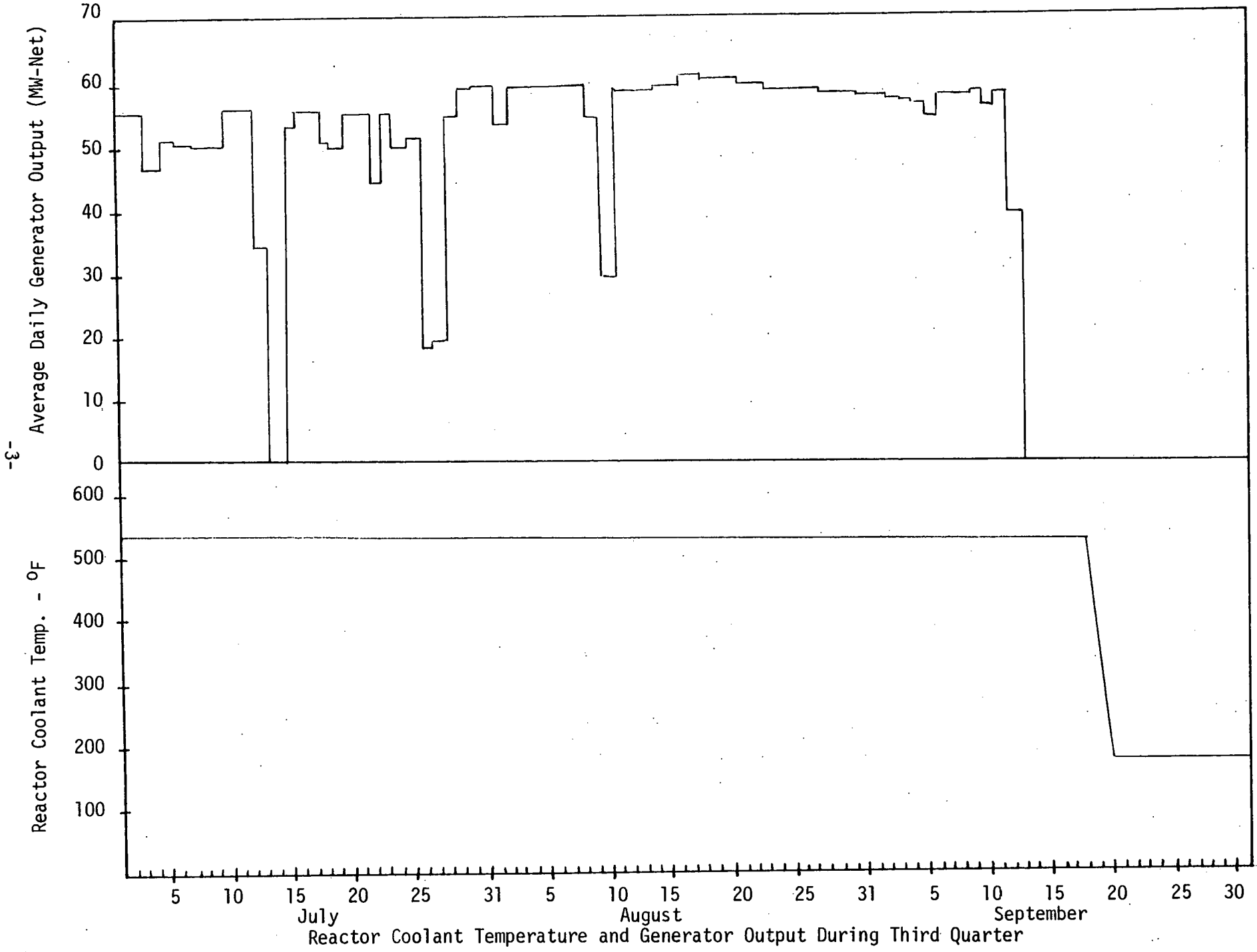
The Reactor Coolant System average leak rate for this quarter was 10.7 gallons per hour when the plant was at normal operating temperature and pressure. The leakage is collected in the Radioactive Waste Processing System and processed as reuse water for the reactor plant water storage tank.

On-Shift Casualty and Emergency Drills were performed during the quarter. The Station Manual Operating Procedures were thoroughly reviewed and various changes were completed to update the manual casualty procedures.

There were no radioactive liquid discharges from the Radioactive Waste Processing System 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, approximately 0.001 curies of Xe 133 activity were released from the station. The radioactivity released from Shippingport Station is far too small to have any measurable effect on the general background environmental radioactivity outside the plant.

During the third quarter of 1980, no radioactive solid waste was shipped off site from the Shippingport Station.



Reactor Coolant Temperature and Generator Output During Third Quarter

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Figure 1

2. SUMMARY OF LWBR STATION PERFORMANCE

Electrical output (Gross) to date	kwhr	1,347,878,000
EFPH to date	hr	18,297.98
EFPH for the quarterly period	hr	1,635.97
Hours reactor critical to date	hr	20,955.48
Hours reactor critical for the quarterly period	hr	1,771.96
No. 1 main unit service hours (quarterly period)	hr	1,729.26
Net Station Output (quarterly period)	kwhr	93,465,000
No. of forced outages*		0

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

3. CHEMISTRY

During the third 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, hot standby, and cold wet layup. Refer to Tables I, II, and III.

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 attributable to the presence of ammonia and hydrazine. No corrective action is required whenever this condition is due to ammonia and hydrazine being present. The hydrazine is added to scavenge oxygen during periods of cold wet layup and ammonia results from the breakdown of hydrazine in the system. Refer to Table VII.

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 two plant startups. During each performance of the test, reactor coolant samples were drawn and analyzed for Gross Iodine and Iodine 131 activities. 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.

Turbine Plant

The Station was placed in three different conditions; that of operating, hot standby, and cold wet layup during the third 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 and 1C boilers exhibited high pH* which has been attributed to the presence of soluble magnesium hydroxide, formed from insoluble magnesium oxide during the transition from hot standby to cold wet layup. Blowdowns were performed which corrected the problem. Refer to Table V.

*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)

Twice during the third quarter the 24-hour chemical addition system pump, employed to continually feed hydrazine and morpholine to the steam generators, manlfunctioned causing out-of-specification conditions in the steam generators. During hot standby, this malfunction resulted in a low pH condition in the 1B Boiler and the morpholine concentration of all four boilers depleted to 0.20 ppm.* During plant operation, the problem caused the morpholine concentration of the 1B Boiler to deplete to 0.40 ppm and the hydrazine concentration of all four boilers to deplete to 0 ppm.* On both of these occasions the malfunctioning pump was repaired and increased quantities of hydrazine and/or morpholine were added, re-establishing chemistry control of the four steam generators within eight hours. Refer to Tables V and VI.

Radioactive Waste Processing

There were no liquid discharges from the Radioactive Waste Processing System (RWPS) to the river during this quarter. Approximately 0.001 curies of radioactivity, mostly Xenon 133, were released from the station. 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 exptected to have had a detrimental effect on plant material.

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

Chemical Conditions	Specifications	Analytical Results min. max.	NH_4OH (liters)	H_2 (Cubic Feet)	Degassification (Hours)
pH @ 25°C	10.10-10.30	10.15-10.25			
Specific Conductance (μmhos/cm)	Consistent with pH	35-45			
Total Gas (cc/kg)	125 cc/kg max.	42.7-48.6			
Hydrogen (cc/kg)	17 cc/kg max.	12.0-16.3			
Oxygen	0.14 ppm max.	NP			
Chloride	0.10 ppm	<0.10			
Chemicals Added			5	12	0

NP-Analysis was not necessary and was not performed

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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	10.15	10.25			
Specific Conductance (μmhos/cm)	Consistent with pH	34	42			
Total Gas (cc/kg)	125 cc/kg max.	48.6	100			
Hydrogen (cc/kg)	10 cc/kg min 60 cc/kg max	13.7	42			
Chloride	0.10 ppm max	<0.1	<0.1			
Chemicals Added				2	10	0

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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	10.28			
Specific Conductance (μmhos/cm)	Consistent with pH	30	45			
Total Gas (cc/kg)	125 cc/kg max.	75	111			
Hydrogen (cc/kg)	60 cc/kg max.	32	54			
Chloride	0.10 ppm max.		<0.1			
Chemicals Added				125	0	37.7

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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 Max. 10.50	9.45 9.72	9.55 9.75	9.55 9.70	9.50 9.72
Specific Conductance	Min. ----- Max. 30 µmhos/cm	14 19	15 19	15 18	14 18
Chloride	Min. ----- Max. 0.20 ppm	<0.1 0.11	<0.1 0.11	<0.1 0.11	<0.1 0.11
Hydrazine	Min. 50 ppm Max. 100 ppm	55 97.5	50 100	50 90	50 100
Chemicals Used (lbs.) N_2H_4		40.4	33.2	26.2	30.0

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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 Max. 9.30	8.65 9.24	8.28* 9.36*	8.67 9.37*	8.70 9.24
Specific Conductance	Min. ----- Max. 10 µmhos/cm	3.4 6.8	3.7 9.9	3.5 9.9	3.6 8.0
Chloride	Min. ----- Max. 0.20 ppm	<0.1 0.11	<0.1 0.10	<0.1 0.11	<0.1 0.10
Morpholine	Min. 0.50 ppm Max. 6.0 ppm	0.20* 6.0	0.20* 6.0	0.20* 6.0	0.20* 6.0
Chemicals Used (lbs.) C_4H_9NO		2.44	2.40	2.38	2.36

*See Turbine Plant Section of QOR

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

Water Conditions	Specifications	Boilers			
		1A	1B	1C	1D
pH @ 25°C	Min. 8.50 Max. 9.30	8.60 9.15	8.60 9.16	8.74 9.15	8.73 9.20
Specific Conductance	Min. ----- Max. 10 µmhos/cm	3.6 6.1	3.5 6.3	3.3 6.1	3.8 6.5
Chloride	Min. ----- Max. 0.20 ppm	<0.1 0.10	<0.1 0.10	<0.1 0.10	<0.1 0.10
Hydrazine	Min. 0.005 ppm Max. 0.125 ppm	0* 0.10	0* 0.087	0* 0.087	0* 0.080
Morpholine	Min. 0.50 ppm Max. 6.0 ppm	0.65 2.70	0.40* 3.50	0.60 2.70	0.65 3.20
Chemicals Used (lbs.) N_2H_4 C_4H_9NO		 24.13 54.75	 24.13 54.75	 24.13 54.75	 24.13 54.75

*See Turbine Plant Secton of QOR.

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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.	550 - 829	0.20 - 0.53	N.P.	<MDA - 3.38×10^{-7}
Coolant Charging Water Specifications	2.50 max.	6.00 - 8.00	N.S.	0.10 ppm max	**	N.S.
Observed	3.0 - 10.1*	8.50 - 9.15*	N.P.	<0.10	<0.005 - 6.8	N.P.
Canal Water Specifications	5.00 max.	8.00	N.S.	N.S.	N.S.	N.S.
Observed	0.96 - 1.5	6.07 - 6.77	N.P.	N.P.	N.P.	1.4×10^{-7} - 2.8×10^{-7}

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.

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4. MAINTENANCE

Scheduled preventive, as well as corrective maintenance, was performed on plant equipment during this report period. The scheduled testing and maintenance shutdown was started this quarter.

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

Turbine Plant

The overhaul of the B Traveling Screen was initiated.

A replacement main steam valve (40-H16-37) was hydrostatically bench tested and installed in the system.

The overhaul of the B Turbine Throttle Valve was initiated.

The 1B Boiler Feedwater Pump Discharge Check Valve (M2-A2) was removed from the system for subsequent replacement.

The Service Air Compressor and Compressor motor were overhauled.

The 3-element Feedwater System Instrumentation was overhauled.

Reactor Plant

The "D" Operation Selector Switch in the Nuclear Protection System was replaced.

The replacement of the 1A and 1D Reactor Coolant Pump D/P Cells was initiated.

Repairs were initiated on a defective portion of the Chemical Shutdown Tie Line.

The replacement of the Air Treatment Hydraulic Pump Discharge Relief Valves was initiated.

The charcoal in the Concrete Enclosure Emergency Filtration System Filters was replaced.

4. MAINTENANCE (Cont'd)

The 1B Component Cooling Water Pump in the RWP System was overhauled.

The Sample Preparation Room Sump Pump was overhauled.

The Well Water Chemical Addition Pump was overhauled.

Removal of damaged Safety Injecton System pipe insulation was initiated.

A replacement brittle fracture relief valve was hydrostatically tested.

Removal of defective Safety Injection System piping heat trace was initiated.

Refueling

Modification of the PWR Extraction Crane was initiatied.

Decontamination of the Canal Fuel Storage Pit was initiated.

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. In addition, two short duration planned shutdowns occurred during the quarter to monitor the value of the flow coefficient of reactivity. The Fall 1980 Shutdown for testing and maintenance began on September 12 and continued through the end of the quarter.

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

The eighth 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 purpose of this test is 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 Test, was satisfactorily performed each month during the quarter. Individual testing of the Boiler Feed Pumps was conducted satisfactorily in September. These pumps are only tested quarterly as specified in the procedure. The flowrates obtained for the new deepwell pump, 53-G2-4009, continued to show a slight decrease in the July, August and September performances. However, the flowrate is still above the minimum acceptance limit of 250 gpm. Troubleshooting and testing will be conducted during the Fall 1980 Shutdown in an attempt to improve the flowrate of the pump. The No. 2 SIS heat exchanger cooling water pumps, 19-G1-1 and 2, were satisfactorily tested in September. These pumps could not be tested in July or August due to a test limitation which prohibits the pumps to be secured if high component cooling water cooler inlet temperatures are observed.

The sixth performance of test procedure LWBR-DLCS 55202, SIS Semiannual Periodic Pump Tests, was satisfactorily completed during the Fall Shutdown. This performance of the test included the Alternate Decay Heat Removal Pump. Other pumps tested included the 1A & 1B Gravity Drain Pumps, the SIS Booster Pump, the SIS Recirculation Pump, the High Pressure Pump and the No. 1 and No. 2 SIS Flooding Pumps. The test continued to verify proper operation of the Safety Injection System pumps.

5. TEST PROGRAM (Cont'd)

The eleventh performance of test procedure LWBR-DLCS 55203, SIS Quarterly Periodic Valve Test, was satisfactorily completed in September. This includes testing of the #1 and #2 SIS Heat Exchanger Outlet Valves, 453-H12-4004 and 4005, which were tested during shutdown conditions. Solenoid valve 453-H12-4001, 1A Boiler Feed Pump SIS Recirculation, continued to operate properly in this performance. The solenoid valve was scheduled for replacement during the Fall 1980 Shutdown, but since it has functioned properly during the last two test performances, it will not be replaced unless further difficulties are encountered.

The fifth performance of test procedure LWBR-DLCS 55204, SIS Semiannual Periodic Valve Test, was satisfactorily completed in September. Various SIS motor-operated and solenoid-operated valves were tested for proper operation using both switch and/or relay control. During the cycling of valve 53-H2-3, problems with the SIS Graphic Display Panel were observed.* Similar problems were observed during the last performance of this test procedure. Troubleshooting again revealed a defective diode, which was replaced and the Panel tested satisfactorily. A review of the design of the Panel has been conducted and has determined the design to be adequate. Another problem was encountered during the cycling of valve 453-H2-4301, SIS Storage Tank/Boiler Feed Pump Suction Isolation Backup Valve. The valve failed to open electrically due to an incorrect packing adjustment during the shutdown. The packing was readjusted. The valve was opened manually and reclosed electrically. The valve was then tested satsifactorily three consecutive times. All valves tested, cycled properly, and all operating times met the acceptance criteria of the test procedure.

The second performance of test procedure LWBR-DLCS 55205, SIS Automatic Operation Checkout, was satisfactorily performed during the Fall 1980 Shutdown. All test acceptance criteria were met as follows:

1. Both 1650 Kw diesel generators started and accepted loads as applied by the load sequencers.

2. All specified valves operated as required.

3. All SIS pumps started automatically and remained operational until intentionally shutdown during plant restoration.

4. A scram signal was generated by the Safety Injection Control System.

5. All circuit breakers and 480 VAC contactors operated as required.

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

5. TEST PROGRAM (Cont'd)

The fourteenth performance of test procedure LWBR-DLCS 58201, Delayed Neutron Loop Monitoring System Checkout Test, was satisfactorily completed during the current shutdown. Various system components, including both flow and activity recorders and electronics drawers, were upgraded prior to this test performance. All test data obtained has been satisfactory, however some intermittent noise has occurred on the activity recorders.* Subsequent troubleshooting has eliminated much of the noise. The recorders will be observed to ensure proper operation during station startup following the current shutdown.

Test procedure LWBR-DLCS 58301, Delayed Neutron Loop Monitoring System (Operation During Station Startup), was performed satisfactorily two 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 60802, Nuclear Protection System (Checkout of Pump Power and LOFA Circuitry) was satisfactorily completed during the current shutdown. All circuit response times met the acceptance criteria of the procedure and no timing resistor adjustments were required.

The ninth performance of test procedure LWBR-DLCS 61301, Periodic Calibration of Reactor Plant Flow Instrumentation, was satisfactorily conducted for the 1B and 1D loop flow instrumentation during the current testing and maintenance shutdown. A calibration check of the AC purification loop flow instrumentation was also conducted during this test performance since maintenance had been performed on the instrument. A faulty microswitch was replaced on the 1D loop flow Norwood*; no other unusual problems were encountered. The "as found" data for all three instruments was in specification and no adjustments were required.

The twentieth and twenty-first 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 conducted in August and September.

The sixth performance of test proceudre LWBR-DLCS 62202, Periodic Calibration of Pressure Switches in the Steam Pressure Instrumentation, was satisfactorily completed during the current shutdown. All twelve pressure switches were adjusted to the new post 18,000 EFPH setpoint of 570 $\pm$ 10 psig.

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

5. TEST PROGRAM (Cont'd)

The seventh performance of test procedure LWBR-DLCS 63201, LWBR Pressure Coefficient of Reactivity, was satisfactorily completed during the physics testing sequence just prior to plant cooldown for the current shutdown. The measured pressure coefficient of reactivity met the acceptance criteria specified in the test procedure.

The sixth performance of test procedure LWBR-DLCS 63202, Flow Coefficient of Reactivity, was satisfactorily completed during the physics testing sequence just prior to plant cooldown for the current shutdown. The measured flow coefficient of reactivity was within the acceptance criteria of the test procedure.

The sixth performance of test procedure LWBR-DLCS 63301, Xenon Reactivity Transient, was satisfactorily completed during the physics testing sequence just prior to plant cooldown for the current shutdown.

The twelfth performance of test procedure LWBR-DLCS 63501, Flux Wire Activations, was satisfactorily completed just prior to the Fall 1980 Shutdown. Ten copper-nickel flux wires were activated at full power during this performance.

The eighth performance of test procedure LWBR-DLCS 64201, Neutron Noise Monitoring Test, was satisfactorily completed in August at approximately 17,750 EFPH.

The seventh performance of test procedure LWBR-DLCS 64501, Reactivity Worth and Temperature Coefficient of Reactivity at Zero Power, was satisfactorily completed during the physics testing sequence just prior to plant cooldown for the current shutdown. The temperature coefficient of reactivity was only required to be measured at 531^{o}F during this performance. An acceptable value was obtained.

The fifteenth, sixteenth and seventeenth performances of test procedure LWBR-DLCS 64601, Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power, were satisfactorily completed in July, August and September. The purpose of this testing is to monitor the value of the flow coefficient of reactivity. All test data obtained met the procedure acceptance criteria. In addition, the seventeenth performance of test included measurement of the relationships between power level and fuel position, average moderator temperature and fuel position, and average moderator temperature and power level.

The third performance of test procedure LWBR-DLCS 66102, Movable Fuel Control System Drive Mechanism and BIF Periodic Test, was satisfactorily completed prior to plant cooldown for the current shutdown.

5. TEST PROGRAM (Cont'd)

Test procedure LWBR-DLCS 79601, Potential Movable Fuel Assembly Stuck Module Test, was performed on a weekly basis between July 2 and September 2. No abnormalities were observed.

Other testing which was incomplete or in progress at the end of quarter included:

The eighth performance of test procedure LWBR-DLCS 56802 Reactor Plant Container Integrity Test (Butterfly Valve Test).

The first performance of test procedure LWBR-DLCS 60102, Source Range Detector Response As A Function of Detector Axial Position.

The eighth performance of test procedure LWBR-DLCS 60901, Periodic Intercalibration of Temperature Sensing Elements.

The second performance of test procedure LWBR-DLCS 62401, Safety Injection Instrumentation Calibration.

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 Third Quarter of 1980

LWBR-DLCS 5000108	Seismic Scram System Functional Test
LWBR-DLCS 5520133-35	SIS Monthly Periodic Pump Tests
LWBR-DLCS 5520206	SIS Semiannual Periodic Pump Tests
LWBR-DLCS 5520311	SIS Quarterly Periodic Valve Tests
LWBR-DLCS 5520405	SIS Semiannual Periodic Valve Tests
LWBR-DLCS 5520502	SIS Automatic Operation Test
LWBR-DLCS 5800129-30	Reactor Coolant Fission Product Monitoring During Reactor Startup
LWBR-DLCS 582014	DN Loop Monitoring System Checkout Test
LWBR-DLCS 5830135-36	DN Loop Monitoring System (Operation During Station Startup)
LWBR-DLCS 6080204	Nuclear Protection System (Checkout of Pump Power and LOFA Circuitry)
LWBR-DLCS 6130109	Periodic Calibration of Reactor Plant Flow Instrumentation
LWBR-DLCS 6210120-21	Periodic Checkout and Calibration of the Inverse Kinetics Simulator (IKS)
LWBR-DLCS 6220206	Periodic Calibration of Pressure Switches in the Steam Pressure Instrumentation
LWBR-DLCS 6320107	LWBR Pressure Coefficient of Reactivity
LWBR-DLCS 6320206	Flow Coefficient of Reactivity
LWBR-DLCS 6330106	Xenon Reactivity Transient
LWBR-DLCS 6350112	Flux Wire Activations
LWBR-DLCS 6420108	Neutron Noise Monitoring Test
LWBR-DLCS 6450107	Reactivity Worth and Temperature Coefficient of Reactivity at Zero Power
LWBR-DLCS 6460115-17	Bank Reactivity Worth and Moderator and Power Coefficients of Reactivity at Power
LWBR-DLCS 6610203	Movable Fuel Control System Drive Mechanism and BIF Periodic Test
LWBR-DLCS 7960101	Potential Movable Fuel Assembly Stuck Module Test

Tests Incomplete or in Progress at the End of the Report Period

LWBR-DLCS 5680208	Reactor Plant Container Integrity Test (Butterfly Valve Test)
LWBR-DLCS 6010201	Source Range Detector Response As A Function of Detector Axial Position
LWBR-DLCS 6090108	Periodic Intercalibration of Temperature Sensing Elements
LWBR-DLCS 6240102	Safety Injection Instrumentation Calibration
LWBR-DLCS 66001	Reactivity Lifetime Test

Performance Dates of Tests Performed During the Third Quarter

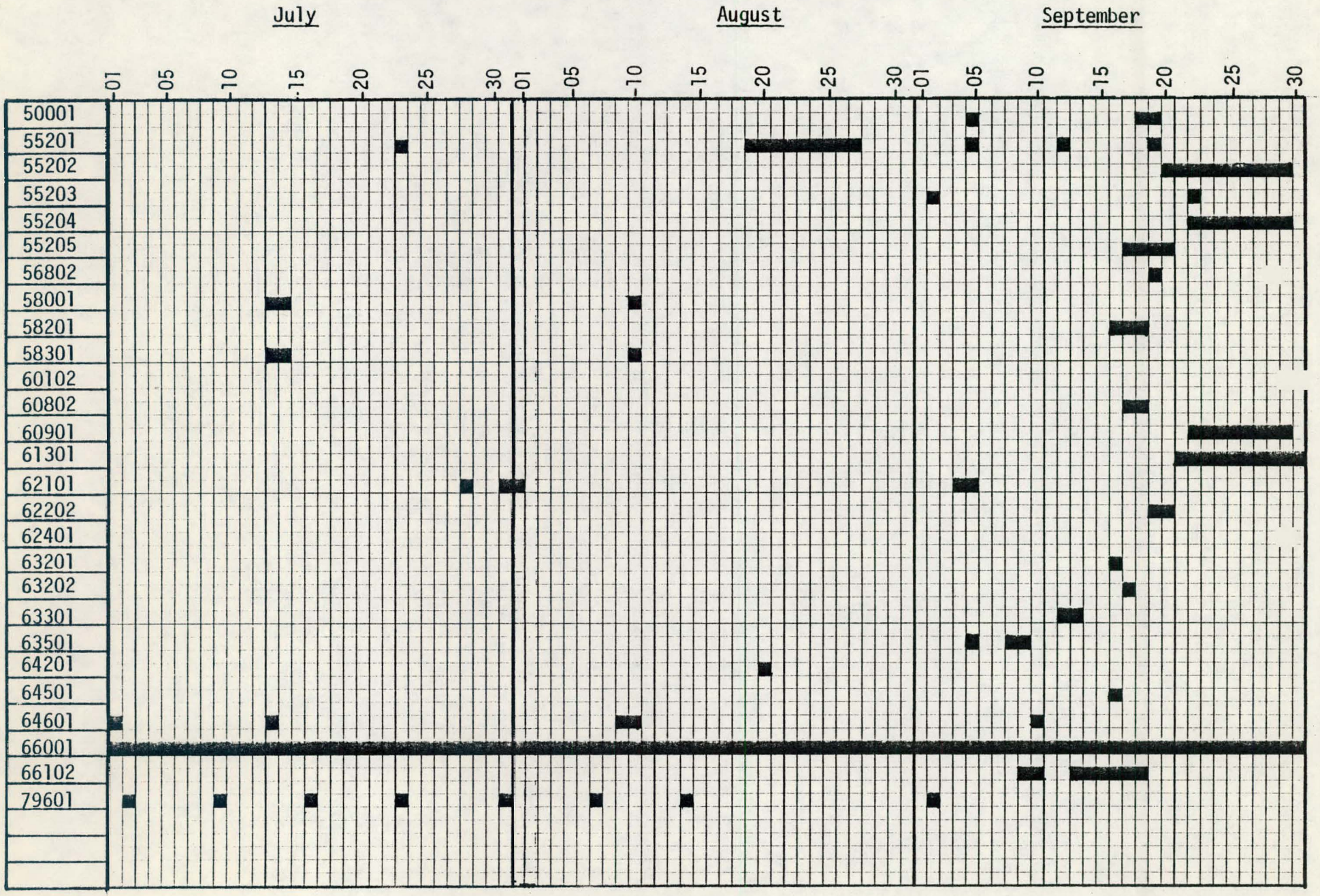

Figure 2

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6. 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

6. 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