

NUCLEAR FUEL SERVICES, INC.
WEST VALLEY REPROCESSING PLANT

QUARTERLY REPORT
FOR
OCTOBER 1, 1980 THROUGH DECEMBER 31, 1980

J. P. DUCKWORTH
GENERAL MANAGER

NUCLEAR FUEL SERVICES, INC.
P. O. BOX 124
WEST VALLEY, NEW YORK 14171

TABLE OF CONTENTS

ENVIRONMENTAL MONITORING

LOW LEVEL LIQUID EFFLUENTS

GASEOUS EFFLUENTS

SURVEILLANCE TESTS

LOW LEVEL LIQUID WASTE TREATMENT PLANT PERFORMANCE

TABLE 1 LIQUID EFFLUENTS - 1980

TABLE 2 GASEOUS EFFLUENTS - 1980

TABLE 3 SURVEILLANCE TESTS

TABLE 4 FILTER REPLACEMENT

PROCESSING SUMMARY

NUCLEAR FUEL SUMMARY

TABLE 5 NUCLEAR FUEL STATUS - DECEMBER 31, 1980

RADIOACTIVE WASTE

FACILITY PERFORMANCE AND MODIFICATIONS

ENVIRONMENTAL MONITORING

As a result of changes in Technical Specifications, sampling milk for ^{131}I was discontinued on September 21, 1973.

Thirty-nine (39) samples were obtained during the fourth quarter from the perimeter monitoring stations and were analyzed for alpha and beta activity. The alpha activity ranged from $1.36 (10^{-16})$ to $7.50 (10^{-16})$ $\mu\text{Ci/ml}$ for an average of $2.46 (10^{-16})$ $\mu\text{Ci/ml}$. The beta activity ranged from $2.39 (10^{-15})$ to $5.19 (10^{-14})$ $\mu\text{Ci/ml}$ with an average of $2.58 (10^{-14})$ $\mu\text{Ci/ml}$.

LOW LEVEL LIQUID EFFLUENTS

The amounts of radioactivity in liquid discharged from the plant during this period and their relationship to the maximum permissible concentration (MPC) in the Cattaraugus Creek are shown in Table 1.

GASEOUS EFFLUENTS

The amount of particulate radioactivity discharged via the plant stack and the relationship to the release limit in the Technical Specifications is shown in Table 2. Change 20 to the Technical Specifications discontinued the requirements of Krypton-85 and Iodine-131 monitoring while plant operations are suspended.

SURVEILLANCE TESTS

During this period, tests were performed in accordance with Section 6 of the Technical Specifications. The completion dates are shown in Tables 3 and 4.

LOW LEVEL LIQUID WASTE TREATMENT PLANT PERFORMANCE

During this period, the LLWT was in operation a total of 41 days and treated 3,227,000 gallons of water. Two hundred and seven (207) drums of concentrated sludge were removed each having a radiation level of <10 mr/hr. Decontamination of waste water continues to be good. All water discharged has been below 2.0×10^{-5} $\mu\text{Ci Cs}^{137}/\text{ml}$. Average removal factors for this period are shown below.

AVERAGE REMOVAL FACTOR

<u>Isotope</u>	<u>Previous Quarter</u>	<u>This Quarter</u>
Cs-137	80.0	72.9
Sr-90	99.5	Not Yet Available
Ru-Rh-106	Below Detection Limits	Below Detection Limits
Gross Beta	97.7	84.1

Low removal factors during this quarter were determined to be caused by the age of the ion exchange resin which was approaching 50 cycles of regeneration. Resin was removed from Bed #2 and replaced with new Cs-100 resin.

Table 1
LIQUID EFFLUENTS--1980
(Curies)

Month	Gross α	Gross β	Tritium	Sr^{90}	I^{129}	% MPC ^a Measured In Cattaraugus Creek
Jan	0.000001	0.00002	0.0010	0.00001	NR ^c	0.33
Feb	0.000001	0.00002	0.0007	0.00001	NR ^c	0.55
Mar	0.000001	0.00002	0.0006	0.00001	NR ^c	0.39
Apr	0.00013	0.019	1.37	0.0025	0.00006	0.29
May	0.000001	0.00003	0.0008	0.00001	NR ^c	0.49
Jun	0.000001	0.00003	0.0009	0.00001	NR ^c	0.88
Jul	0.000001	0.00004	0.0008	0.00001	NR ^c	0.33
Aug	0.00007	0.018	4.87	0.0019	0.00020	0.37
Sep	0.000001	0.00004	0.0005	0.00001	NR ^c	1.05
Oct	0.000001	0.00006	0.0007	0.00001	NR ^c	0.53
Nov	0.00011	0.013	1.22	NA ^b	NA ^b	NA ^b
Dec	0.000001	0.00003	0.0010	NA ^b	NR ^c	NA ^b
1980	0.00032	0.050	7.47	0.0045 ^d	0.00026 ^d	0.52 ^e

^aMPC (β) = $3.0 (10^{-7}) \mu\text{Ci/ml}$ when Sr^{90} analyses are not available
MPC (β) = $1.0 (10^{-5}) \mu\text{Ci/ml}$ when Sr^{90} analyses are included separately
MPC (α) = $5.0 (10^{-6}) \mu\text{Ci/ml}$

^bNot yet available

^cNot required; there were no lagoon 3 effluent releases for the month

^dRelease through October 1980

^eMPC through October 1980

Table 2
PARTICULATE GASEOUS EFFLUENTS - 1980

<u>Month</u>	<u>Curies</u>	<u>% Monthly Limit</u>
January	.00012	0.04
February	.00010	0.04
March	.00008	0.03
April	.00010	0.04
May	.00005	0.02
June	.00004	0.02
July	.00005	0.02
August	.00004	0.01
September	.00005	0.02
October	.00027	0.11
November	.00017	0.06
December	.00013	0.05
1980	.00120	0.038

Table 3
SURVEILLANCE TESTS

<u>Spec. #</u>	<u>Subject</u>	<u>Completed This Quarter</u>	<u>Comments</u>
6.1	Raschig Ring Tanks	-	Tanks are to be scheduled prior to next processing use
6.2	Sump Alarms and Eductors		
	XC-2	10-21, 11-11, 12-12, 12-22	Satisfactory
	XC-3	10-21, 11-11, 12-12, 12-22	Satisfactory
	PPC	10-21, 11-11, 12-12, 12-22	Satisfactory
6.3	Waste Storage Tank Pan Instrumentation		
	8D-1, 8D-2	10-7, 10-28, 11-28, 12-18	Satisfactory
	8D-3, 8D-4	10-7, 10-28, 11-28, 12-18	Satisfactory
6.4	Emergency Utility Equipment		
	30T-1	10-7	Satisfactory
	31K-1	10-7	Satisfactory
	32G-4B	10-7	Satisfactory
	31G-2, 2A	10-12, 12-12	Satisfactory
	31K-2, 2A	10-7, 12-12	Satisfactory
	32G-2A, 2B	10-12, 12-12	Satisfactory
	Diesel Fuel	10-6, 10-13, 10-20, 10-24, 11-3, 11-10, 11-17, 11-24, 12-1, 12-8, 12-15, 12-22, 12-29	Satisfactory
	Propane Fuel	10-6, 10-14, 10-20, 10-27, 11-3, 11-10, 11-21, 11-25, 12-1, 12-8, 12-15, 12-22, 12-30	Satisfactory
	15K-10A	10-7	Satisfactory
	15F-21	10-7	Satisfactory
6.5	Filters	10-7, 10-15, 10-21, 10-24, 11-4, 11-11, 11-24, 12-3, 12-11, 12-18, 12-26, 12-30	Satisfactory
6.6	Dilution Air	Not required this period	
6.7	Boric Acid	Not required this period	
6.8	Locking Out	Not required this period	
6.9	Water Activity Alarms	12-31	Satisfactory
6.10	Poisoned Dissolver Baskets	Not required this period	
6.11	Solvent Analysis	Not required this period	

Table 4

FILTER REPLACEMENT

No filters were replaced during this period.

NUCLEAR FUEL SUMMARY

The following information is based upon nuclear material accountability records and indicates the disposition of nuclear material in fuel at the reprocessing plant.

A. INVENTORY

The total on-site inventory on December 31, 1980 was 166,759 kilograms of uranium and 1,037,940 grams of plutonium. An inventory description by source and material type is presented in Table 5.

B. RECEIPTS AND SHIPMENTS

During the quarter, there were no shipments or receipts of spent fuel assemblies at the West Valley site.

C. MEASURED WASTE AND ADJUSTMENTS

There was no loss of uranium or plutonium during the reporting period as measured waste.

No adjustments for uranium and plutonium to NFS Lot 27A were required.

D. LOSS ON DECAY

Loss on decay is determined semi-annually and will be reported next quarter.

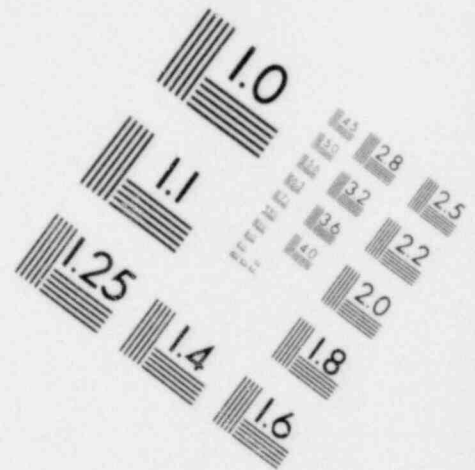
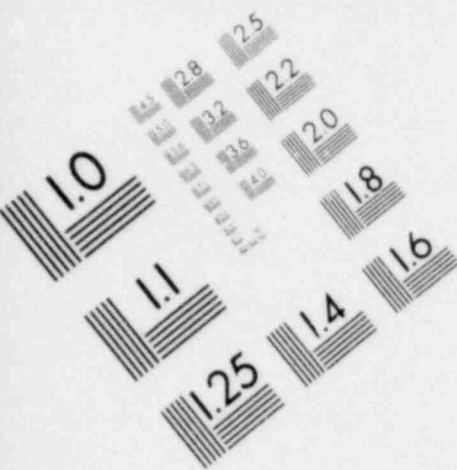
PROCESSING SUMMARY

During this period there was no processing of fuel.

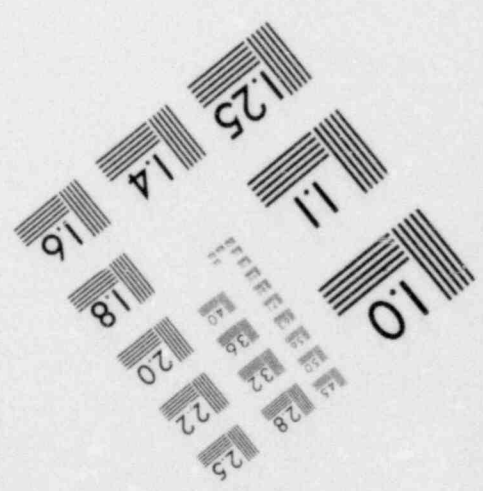
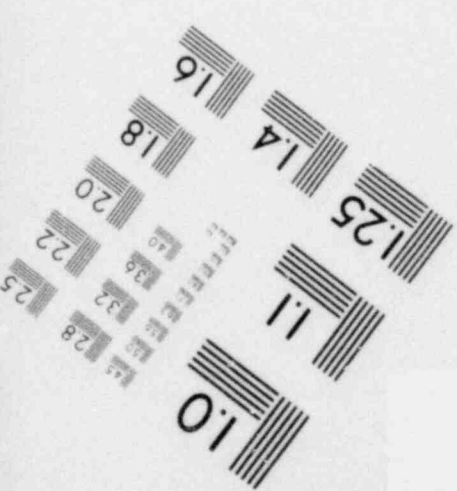
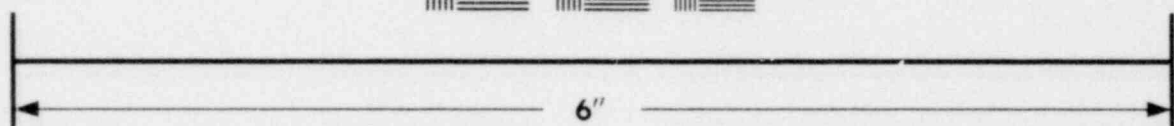
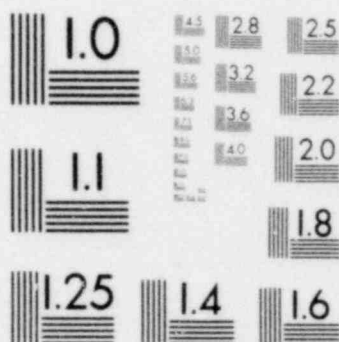
Table 5

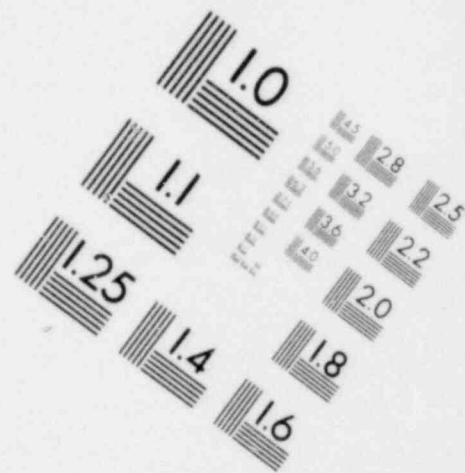
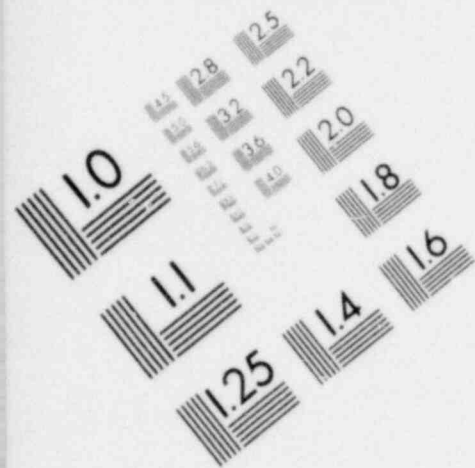
NUCLEAR FUEL STATUS AS OF DECEMBER 31, 1980

		<u>Kilograms</u>			<u>Grams</u>
		<u>Total U</u>	<u>U-235</u>	<u>U-233</u>	<u>Total Pu</u>
I.	<u>INVENTORY</u> (10/1/80)				
	NFS	3,271	8.01	--	306
	Dresden-1	20,429	144.03	0.30	116,658
	RG&E	46,156	722.48	--	285,272
	Consumers	11,130	238.68	--	64,039
	WEPCO	43,017	462.61	--	337,652
	Jersey Central	42,756	463.42	--	234,013
	TOTAL	166,759	2,039.23	0.30	1,037,940
II.	<u>RECEIPTS</u> (10/1/80-12/31/80)	No receipts during this period.			
III.	<u>REMOVALS</u> (10/1/80-12/31/80)				
	A. Measured Waste Lot 27A	0	0	0	0
	B. Adjustments Lot 27A	0	0	0	0
	C. Loss on Decay	0	0	0	0
	TOTAL	0	0	0	0
IV.	<u>INVENTORY</u> (12/31/80)				
	NFS	3,271	8.01	--	306
	Dresden-1	20,429	144.03	0.30	116,658
	RG&E	46,156	722.48	--	285,272
	Consumers	11,130	238.68	--	64,039
	WEPCO	43,017	462.61	--	337,652
	Jersey Central	42,756	463.42	--	234,013
	TOTAL	166,759	2,039.23	0.30	1,037,940

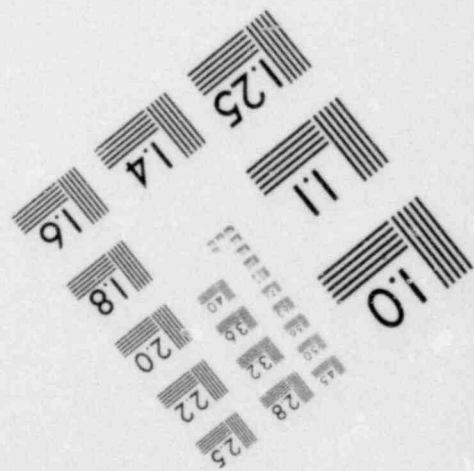
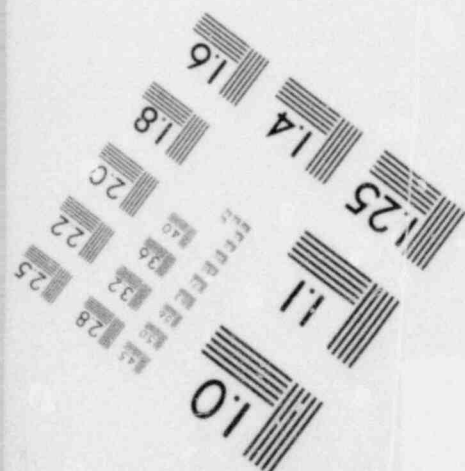
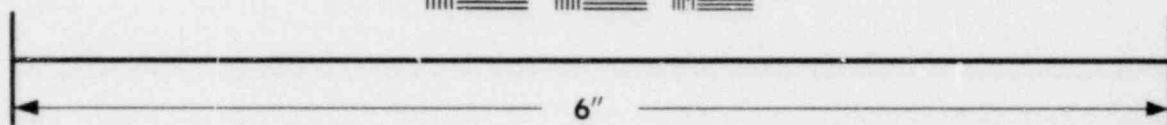
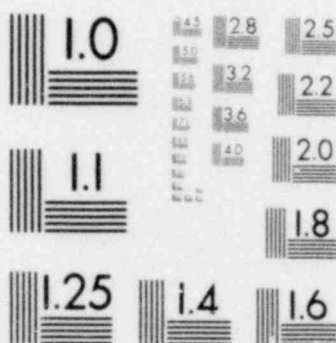


**IMAGE EVALUATION
TEST TARGET (MT-3)**





**IMAGE EVALUATION
TEST TARGET (MT-3)**



RADIOACTIVE WASTE

A. Solid Waste

1. The radioactive plant waste buried during this quarter consisted of 1371.77 cu. ft. containing 2.047 curies. This material was buried in the NRC-licensed burial area.
2. Report No. Fifty-seven dated July 18, 1980 indicated 82.212 curies. The correct curie total is 82.210.

B. High Level Liquid Waste

As of December 31, 1980, the high level storage tank 8D-2 contained 562,000 gallons of neutralized waste with an activity of 4,591 μCi Cs-137/ml and 58 μCi Cs-134/ml.

FACILITY PERFORMANCE AND MODIFICATIONS

This section describes:

- 1.0 Major modifications that were either initiated or completed at the reprocessing plant during the reporting period.

A tornado shield, built to the specifications outlined on NFS Drawing 15DM-1225, was installed on the north side of the Head End Ventilation filter housing.

- 2.0 A description of malfunctions of any equipment listed in Appendices 5.2, 9.51, 9.53, and 9.56 of the final Safety Analysis Report which are important to safety.

- 2.1 Replaced valve 15 PdCh 6Va /n spare (Turbine driven) ventilation system. Steam was leaking through the valve.
- 2.2 Replaced bearings on 15K-10, main exhaust blower, and modified bearing bases.