



Long
Island
Power
Authority

Shoreham Nuclear Power Station
P.O. Box 628
North Country Road
Wading River, N.Y. 11792

FEB 25 1993

LSNRC-2033

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Semiannual Radioactive Effluent Release Report
Shoreham Nuclear Power Station
Docket No. 50-322

Ref: NRC Facility License NPF-82 (Shoreham), as Amended.

Gentlemen:

Enclosed is a copy of our Semiannual Radioactive Effluent Release Report covering the third and fourth calendar quarters of 1992. This report is in conformance with Technical Specification 6.8.1.4 and is consistent with Sections 6.8.1.4 and 6.15.1 of Part I of the Offsite Dose Calculation Manual (ODCM) and Sections 9.3.1 and 9.4 of the Process Control Program (PCP), and was prepared in accordance with these documents. This report includes information for each type of solid waste shipped offsite to a burial site or to volume reduction facilities. During this period no changes were made to the ODCM.

If you require additional information, please contact this office.

Very truly yours,

L. M. Hill
Resident Manager

MAP/ab
Enclosure

cc: L. Bell
C. L. Pittiglio
T. T. Martin
R. Nimitz

010105

9303010236 930225
PDR ADDCK 05000322
R PDR

JE48

SEMIANNUAL RADIOACTIVE EFFLUENT
RELEASE REPORT

3rd and 4th Quarters of 1992

Facility: Shoreham Nuclear Power Station, Unit 1

Licensee: Long Island Power Authority

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Introduction	1
A. Supplemental Information	1
B. Gaseous Effluents	4
C. Liquid Effluents	8
D. Solid Waste	12
E. Radiological Impact on Man	24
F. Meteorological Data	31
G. ODCM Revisions, REMP Location Changes and Major Changes to Radioactive Waste Treatment Systems	96
H. Miscellaneous Special Report	97

INTRODUCTION

This Semiannual Radioactive Effluent Release Report, submitted in accordance with Technical Specification 6.8.1.4, Offsite Dose Calculation Manual (ODCM) 6.8.1.4 and Sections 9.3.1 and 9.4 of the Process Control Program (PCP), covers the period from July 1, 1992 through December 31, 1992. During the period covered by this report, substantial progress has been made in the decommissioning of the Shoreham Nuclear Power Station. This includes the completed segmentation and removal of the Reactor Pressure Vessel and internal components, and the disposal of Control Rod Blades and Local Power Range Monitors.

A. SUPPLEMENTAL INFORMATION

1. Regulatory Limits

Shoreham's effluent regulatory limits are defined in the Possession Only License NPF-82, Shoreham Nuclear Power Station, Appendix A, Technical Specifications.

- a) Limits for gaseous effluents and noble gases are covered by Technical Specification 6.7.4 and ODCM Controls 3.11.2.1 and 3.11.2.2.
- b&c) Tritium and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents are addressed in Technical Specification 6.7.4 and ODCM Control 3.11.2.3.
- d) Liquid effluent limits are described in Technical Specification 6.7.4 and ODCM Controls 3.11.1.1 and 3.11.1.2.
- e) In addition, with Shoreham's sampling and analysis program the following average minimum detectable activities (MDAs) were achieved or exceeded for the third and fourth quarters in 1992. These MDAs are less than the required lower limits of detection (LLDs):

Liquid:

Ce-141	3.29 E-8	uCi/ml
Ce-144	1.49 E-7	uCi/ml
Co-58	2.89 E-8	uCi/ml
Co-60	4.92 E-8	uCi/ml
Cs-134	3.30 E-8	uCi/ml
Cs-137	3.28 E-8	uCi/ml
Mn-54	3.41 E-8	uCi/ml
Mo-99	1.67 E-8	uCi/ml
Zn-65	7.63 E-8	uCi/ml

Gaseous:

Cs-137	3.03 E-14	uCi/cc
Cs-134	3.22 E-14	uCi/cc
Co-60	3.82 E-14	uCi/cc
Mn-54	2.74 E-14	uCi/cc
Xe-133	3.11 E-08	uCi/cc
Zn-65	8.94 E-14	uCi/cc
Ce-144	1.28 E-13	uCi/cc

2. Maximum Permissible Concentrations

a-d) Maximum permissible liquid effluent concentrations (MPCs) are those specified in 10 CFR 20, Appendix B, Table II, Column 2. If an isotope is listed with values for SOLUBLE and INSOLUBLE states, the more conservative value is utilized. For gaseous effluents, MPCs were not used. Direct calculations of dose were utilized to satisfy the dose rate limitations of Technical Specification 6.7.4 and ODCM Control 3.11.2.1.

3. Average Energy

No isotopes above minimum detectable activities were measured in gaseous effluents. Therefore, there is no reportable average energy for this time period.

4. Measurements and Approximations of Total Radioactivity

a-d) Samples were collected in the manner and with the frequency prescribed in Technical Specification 6.7.4 and ODCM Controls 4.11.1.1.1 and 4.11.2.1.2. Samples were analyzed in accordance with ODCM Controls Tables 4.11.1.1.1-1 (liquid) and 4.11.2.1.2-1 (gaseous) regarding both type of analysis and level of sensitivity. Most samples were analyzed by gamma spectroscopy with a germanium detector. A liquid scintillation counter was used to analyze for H-3 and Fe-55 while Sr-89, Sr-90 analyses were done by proportional counter. Samples analyzed for iron and strontium underwent a chemical separation prior to counting. Approved sample collection and analysis procedures were followed.

Analytical results are examined to ensure that the minimum sensitivity levels required by ODCM lower limits of detection (LLDs) have been met. Any identifiable peaks above background are quantified.

The methods above were used for batch releases. The same

methods were used for continuous discharges, but were combined with gross activity measurements on process streams and total flow for these streams.

No estimate of percent total error is provided in Table 1A because all values for gaseous effluents were determined to be less than required LLDs. Basis for the estimated percent total error for entries in Table 2A is given in Section C.

5. Batch Releases

a)	Liquid		<u>3rd Quarter</u>	<u>4th Quarter</u>
	1. Number of batches		26	29
	2. Total Time	(minutes)	3,812	3,884
	3. Maximum Time	(minutes)	177	178
	4. Minimum Time	(minutes)	39	10
	5. Average Time	(minutes)	147	134
	6. Total Volume Discharged (gal)		4.52 E + 5	4.56 E + 5
	7. Total Dilution Water	(gal)	3.28 E + 7	3.34 E + 7
	8. Average Flow	(gpm)	8.72 E + 3	8.72 E + 3
b)	Gaseous - None			

6. Abnormal Releases

- a) Liquid - None
- b) Gaseous - None