GPU Nuclear

GPU Nuclear Corporation
Route 441 South
P.O. Box 480
Middletown, Pennsylvania 17057-0480
(717) 944-7621
Writer's Direct Dial Number:

May 24, 1996
6710-96-2029

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

Gentlemen:

Subject: Saxton Nuclear Experimental Corporation
Operating License No. DPR-4
Docket No. 50-146
1995 Annual Report

The purpose of this letter is to submit, in accordance with Section B.6.b of the Saxton Nuclear Experimental Corporation (SNEC) Technical Specifications, a written report covering the status of the SNEC Facility.

The report is for the period beginning January 1, 1995 through December 31, 1995.

Sincerely,

G. A. Kuehn, II
Program Director, SNEC Facility

WGH
Attachment
cc: Document Control Desk
NRC Project Manager NRR
NRC Project Scientist, Region I

IE47

SAXTON NUCLEAR EXPERIMENTAL CORPORATION

1995

ANNUAL REPORT

FOR THE

SAXTON NUCLEAR EXPERIMENTAL CORPORATION FACILITY

January 1, 1995 - December 31, 1995

EXECUTIVE SUMMARY

During the report period January 1, 1995 through December 31, 1995, various activities were conducted at the SNEC facility to prepare for future decontamination and decommissioning efforts. SNEC Facility staff continued to monitor radiological conditions at the site to assure protection of the health and safety of the general public and site personnel.

A total of 155 entry days into the Containment Vessel (CV) were recorded. These entries were made for Technical Specification quarterly surveys, routine housekeeping, routine maintenance, polar crane inspections/maintenance, telephone line installation, characterization surveys/sampling, decommissioning planning, and management inspections. Entries were also made in support of NRC and public (open house) tours of the facility. All required Technical Specification quarterly radiation surveys were successfully conducted.

In addition, the supplemental environmental monitoring program maintained by GPU Nuclear at the site continued during 1995. Results of these monitoring programs and surveys indicate that there has been no appreciable change in the radiological or environmental conditions at the facility compared to previous years. The facility currently poses no increased risk to the health and safety of the public.

ANNUAL REPORT IN COMPLIANCE WITH PARAGRAPH B.6.b OF THE SNEC TECHNICAL SPECIFICATIONS
JANUARY 1, 1995 - DECEMBER 31, 1995

Introduction

This report is prepared in compliance with Section B.6.b of the Saxton Nuclear Experimental Corporation (SNEC) Technical Specifications. The reporting period covers January 1, 1995 through December 31, 1995. Each section presented corresponds to the appropriate requirements of the Technical Specifications.

A. Information Relating to Changes in those Management and Supervisory Positions Designated in Section B.1.a as being Responsible for the Deactivated Facility. (Section B.6.b(1))

There were no changes to the management and supervisory structure for the deactivated facility during 1995. However, action by the SNEC Board of Directors led to the naming Fred D. Hafer as successor to J. E. Hildebrand as SNEC President and the naming of George A. Kuehn Jr. to the position of SNEC Vice President and General Manager succeeding Beverly A. Good.

B. Summary of Entries in the Containment Vessel (CV) and Reasons for Entry. (Section B.6.b(2))

A summary of the 1995 entries into the Saxton Nuclear Experimental Corporation Facility (SNEC) Containment Vessel is presented below.

1. Five (5) First Quarter Entry Days were performed for:

   A. Quarterly inspection
   B. Radiological surveys
   C. Communications - open house/tour and inspection

2. Thirty-three (33) Second Quarter Entry Days were performed for:

   A. Quarterly inspection
   B. Radiological surveys
   C. Characterization surveys and sampling (core bore/pipe cutting/system opening)
   D. GPUN engineering inspections

E. Communications open house/tour and inspection
F. Routine maintenance and inspection
G. NRC/SNEC management tours
H. Safety equipment installation
I. CV liner hole repair and inspection

3. Fifty-seven (57) Third Quarter Entry days were performed for:

A. Quarterly inspection
B. Radiological surveys
C. Characterization surveys and sampling (core bore/pipe cutting/system opening)
D. GPUN engineering inspections/Decomm. planning
E. NRC tour
F. QA inspection
G. Fire Dept./safety inspection
H. Video inspections
I. CV polar crane maintenance
J. Routine maintenance - move gate
K. GPUN management inspection

4. Thirty-eight (38) Fourth Quarter Entry Days were performed for:

A. Quarterly inspections
B. Radiological surveys
C. Characterization surveys and sampling (core bore/pipe cutting/system opening)
D. GPUN Engineering inspections/Decomm. planning
E. Communications Dept. - tour/inspection
F. CV hole repair/testing/inspections

C. Summary of Maintenance and Design Changes Made to the Deactivated Facility. (Section B.6.b(3))

Maintenance and design changes instituted during 1995 were as follows:

1. A new locking mechanism was installed in the existing Hi-Rad access (grating, 812' el.). This modification allows unlocking the hi-rad gate/door from below without a key (for personnel egress) while (still) requiring a High Radiation Area key for entry.

2. A vehicle gate was installed in the CV Fence just outside the personnel hatch to increase accessibility for equipment installation and removal.
3. Two Reactor Cavity Shield Blocks were removed to provide access to the Storage Well for characterization work. Four steel plates, each weighing approximately 700 lbs., were fabricated to replace the two removed concrete blocks. The steel plates are placed over the canal opening to prevent unauthorized access when no work is in progress in the storage well.

D. Results of Surveys of Radioactivity Levels and Water Sample Analyses - (Section B.6.b(4))

Analysis results of water samples from the CV sump and CV pipe tunnel are presented in Tables I and II respectively. Sample results from the CV sump contain the highest activity. This is consistent with previous data. The water in the CV sump is completely contained and is not in contact with the environment, therefore, there is no threat to the public health and safety. CV sump water originates from condensation on surfaces inside the CV which drains downward into the sump. CV sump capacity is approximately 325 gallons. Water levels are measured at least quarterly and have shown slight increases due to condensation. The sump contained approximately 118 gallons on 12/5/94.

Table III presents the highest waist level dose rates taken around the CV and Penelec perimeter fences during the quarterly surveys. Dose rates around the Penelec perimeter fence is consistent with previous data. Dose rates around the CV (yard) fence is slightly higher than previous data. This is due to installation of a "Sea-van" storage container and staging within of several drums of CV waste awaiting shipment.

The CV High Efficiency Filter was replaced during performance of each quarterly survey. Count rate information obtained from surveys of the filter is presented in Table IV.

Dose rates at the 20 permanent survey points in the CV ranged from less than 0.2 to 3.0 mr/hr. This data is presented in Table V. Smear surveys from the same 20 permanently marked points ranged from less than detectable activity to 8000 dpm/100 cm^2 and is presented in Table VI. The data from these surveys are generally consistent the past results and do not display any adverse trends.

Groundwater was sampled and analyzed on at least a quarterly basis. The monitoring results from wells GEO-3, 4, 6, & 7 are reported in Table VII.

E. Review of the Performance of Access Control and Surveillance measures. (Section B.6.b.(5))

All required access control and surveillance measures were satisfactorily completed. During 1995 there were no break-ins or known attempted break-ins at the SNEC Facility.

TABLE I

SNEC Containment Vessel (CV) Sump Water Analysis Results 1995 (μ Ci/ml)

Radio-Nuclides	1st Qtr 03/24/95	2nd Qtr 06/06/95	3rd Qtr 08/11/95	4th Qtr 10/03/95	4th Qtr 12/05/95
Gross Alpha	< 7.0 E-8	< 7.0 E-8	< 7.0 E-8	< 1.7 E-6	< 1.2 E-6
Gross Beta	3.2 E-3 ± 0.1 E-3	1.6 E-3 ± 0.1 E-3	4.3 E-3 ± 0.1 E-3	4.1 E-3 ± 0.4 E-3	3.4 E-3 ± 0.3 E-3
H-3	3.0 E-4 ± 0.1 E-4	1.2 E-4 ± 0.1 E-4	7.0 E-4 ± 0.1 E-4	7.1E-4± 0.7E-4	4.5 E-4 ± 0.4 E-4
Sr-90	7.4 E-6 ± 0.1 E-6	7.6 E-6 ± 0.1 E-6	2.2 E-4 ± 0.1 E-4	2.0 E-4 ± 0.2 E-4	1.4 E-4 ± 0.1 E-4
Co-60	< 7.0 E-8	4.5 E-7 ± 0.7 E -7	1.5 E-6 ± 0.2 E-6	< 2.0 E-6	< 1.7 E-6
Cs-134	< 3.0 E-7	< 1.0 E-7	< 3.0 E-7	< 6.0 E-6	< 5.0 E-6
Cs-137	3.0 E-3 ± 0.3 E-3	1.5 E-3 ± 0.2 E-3	4.0 E-3 ± 0.4 E-3	4.0 E-3 ± 0.4 E-3	3.3 E-3 ± 0.3 E-3

TABLE II

SNEC (CV) Pipe Tunnel Water Analysis Results 1995 (*u* Ci/ml)

Radio-Nuclides	1st Qtr 03/24/95	2nd Qtr 06/06/95	3rd Qtr 08/11/95	4th Qtr 10/03/95	4th Qtr 12/06/95
Gross Beta	2.2 E-8 ± 0.3 E-8	2.9 E-8 ± 0.3 E -8	2.7 E-8 ± 0.3 E-8	3.0 E-8 ± 0.3 E-8	2.0 E-8 ± 0.3 E-8
H-3	< 1.8 E-7	< 1.9 E-7	< 1.8 E-7	< 1.2E-7	< 1.9 E-7
Co-60	< 1.8 E-9	< 3.0 E-9	< 1.9 E-9	< 4.0 E-9	< 1.3 E-9
Cs-134	< 1.5 E-9	< 2.0 E-9	< 1.5 E-9	< 3.0 E-9	< 1.3 E-9
Cs-137	5.1 E-9 ± 1.6 E-9	8.1 E-9 ± 0.3 E-8	1.0 E-8 ± 0.2 E-8	1.1 E-8 ± 0.3 E-8	7.3 E-9 ± 1.4 E-9

TABLE III

SNEC/Penelec Perimeter Fence Highest Dose Rates 1995

SNEC Site Perimeter Fence Highest Dose Rates (micro-R/hr)	
03/24/95	13
06/06/95	22
08/11/95	40
10/03/95	120
12/05/95	100
SNEC CV Perimeter Fence Highest Dose Rates (micro-R/hr)	
03/24/95	15
06/06/95	Note 1 70
08/11/95	Note 1 160
10/03/95	Note 1 320
12/05/95	Note 1 340
Penelec Perimeter Fence Highest Dose Rates (micro-R/hr)	
03/24/95	15
06/06/95	17
08/11/95	16
10/03/95	20
12/05/95	22

Note 1 - see explanation in "Section D" of this report.

TABLE IV

CV High Efficiency Filter Count Rate Surveys 1995	
3/28/95	< 100 ncpm
06/06/95	< 100 ncpm
8/11/95	NOTE 1 < 100 ncpm
10/3/95	< 100 ncpm
12/6/95	< 100 ncpm

NOTE 1 - equivalent reading by gamma spectroscopy analysis. Reference gamma scan (GPU ID) # 083333, performed at TMI Environmental Radioactivity Laboratory (ERL).

TABLE V

SNEC CV Dose Rates 1995 - 20 Permanent Survey Points (Gamma - mr/hr)

Survey Point #	1st Qtr 03/24/95	2nd Qtr 06/06/95	3rd Qtr 08/11/95	4th Qtr 10/03/95	4th Qtr 12/05/95
1	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
4	< 0.2	< 0.2	0.2	< 0.2	0.2
5	< 0.2	< 0.2	0.8	0.6	0.5
6	< 0.2	< 0.2	0.2	< 0.2	< 0.2
7	< 0.2	< 0.2	0.2	< 0.2	< 0.2
8	0.2	< 0.2	< 0.2	< 0.2	< 0.2
9	< 0.2	0.2	0.2	< 0.2	< 0.2
10	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
11	< 0.2	0.2	0.2	< 0.2	< 0.2
12	0.4	< 0.2	0.2	< 0.2	< 0.2
13	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
14	< 0.2	< 0.2	0.5	0.4	0.8
15	< 0.2	< 0.2	0.2	< 0.2	0.2
16	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
17	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
18	< 0.2	< 0.2	2.5	3.0	0.6
19	< 0.2	< 0.2	0.2	0.2	0.2
20	< 0.2	< 0.2	0.2	< 0.2	0.2

TABLE VI

SNEC CV Dose Rates 1995 - 20 Permanent Survey Points (dpm/100 cm^2)

Survey Point #	1st Qtr 03/24/95	2nd Qtr 06/06/95	3rd Qtr 08/11/95	4th Qtr 10/03/95	4th Qtr 12/05/95
1	< 247	< 248	< 1000	< 1000	< 1000
2	< 247	< 248	< 1000	< 1000	< 1000
3	< 247	< 248	< 1000	< 1000	< 1000
4	< 247	< 248	< 1000	< 1000	< 1000
5	< 247	< 248	< 1000	< 1000	< 1000
6	< 247	< 248	< 1000	< 1000	< 1000
7	< 247	< 248	< 1000	< 1000	< 1000
8	492	< 248	< 1000	< 1000	< 1000
9	< 247	< 248	< 1000	< 1000	< 1000
10	1552	270	1000	1000	1000
11	< 247	< 248	< 1000	< 1000	< 1000
12	3992	490	2000	1000	1000
13	372	290	1000	< 1000	5000
14	632	1030	< 1000	< 1000	1000
15	492	710	1000	< 1000	< 1000
16	512	< 248	3000	1000	8000
17	< 247	< 248	< 1000	< 1000	< 1000
18	1020	< 248	1000	< 1000	< 1000
19	372	< 248	2000	1000	1000
20	< 247	< 248	< 1000	< 1000	< 1000