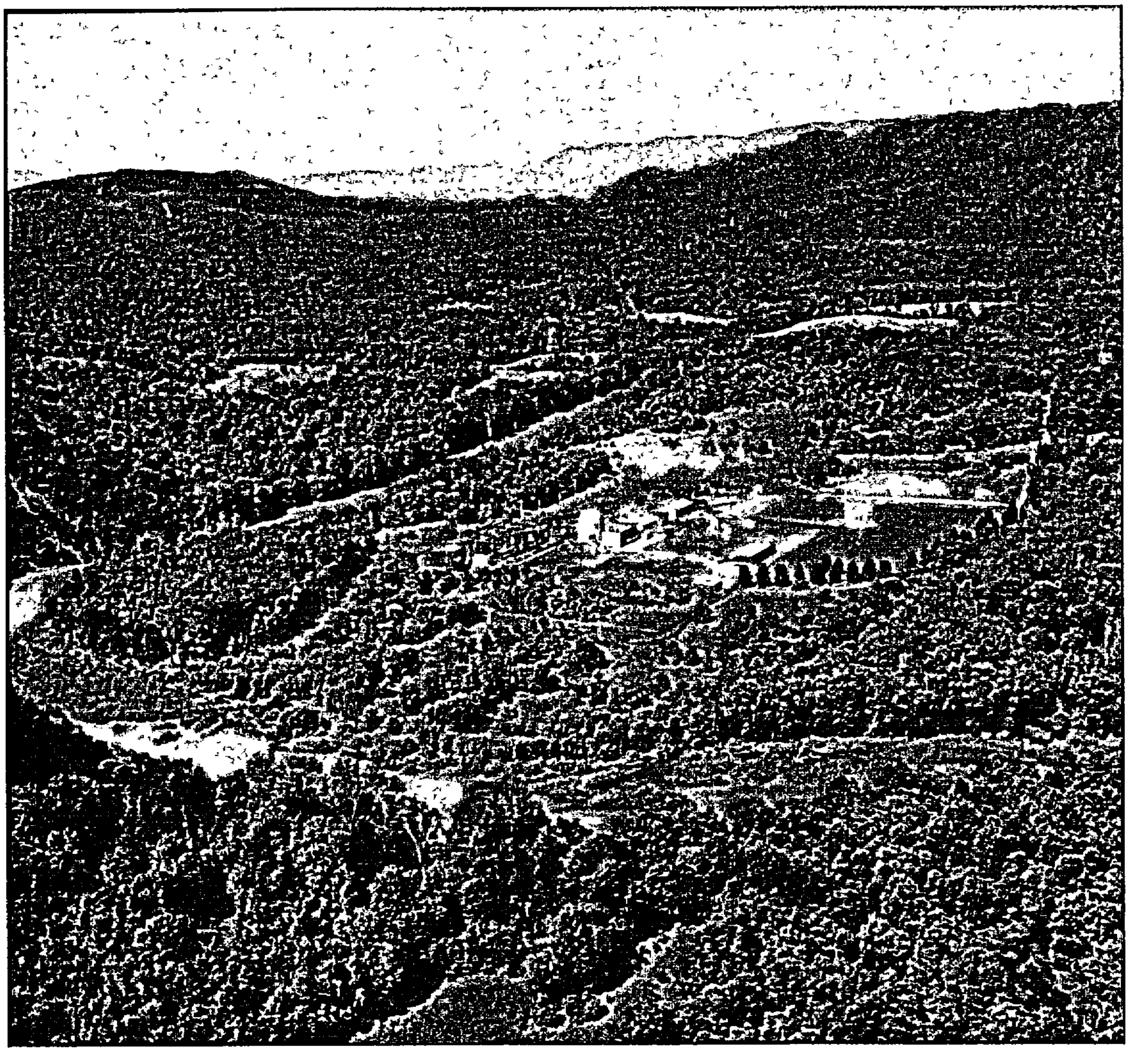
Saxton Nuclear Experimental Corporation Facility

License Termination Plan

Rev. 1



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Prepared by GPU Nuclear, Inc.

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SEPTEMBER 2002

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1.0 GENERAL INFORMATION

1.1 PURPOSE

The Saxton Nuclear Experimental Corporation (SNEC) Facility License Termination Plan (LTP) has been prepared in accordance with the requirements of 10 CFR 50.82, "Termination of License" (Reference 1-1) and the guidance provided in Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors" (Reference 1-2). The SNEC Facility License Termination Plan is maintained as a supplement to the SNEC Facility Updated Final Safety Analysis Report (USAR) (Reference 1-3) in accordance with 10 CFR 50.82(a)(9)(i).

This plan demonstrates that the remainder of the decommissioning activities at the SNEC Facility site will be performed in accordance with the regulations in 10 CFR 50.82. These activities will not be inimical to the health and safety, common defense and security of the public and will not have a significant effect on the quality of the environment.

1.2 HISTORICAL BACKGROUND

The Saxton Nuclear Experimental Corporation (SNEC) facility, is a deactivated pressurized water reactor (PWR), which was licensed to operate at 23.5-megawatt thermal (23.5 MWTh). It is owned by the Saxton Nuclear Experimental Corporation (SNEC) and is supported by GPU Nuclear Inc. The SNEC Facility is maintained under a Title 10 Part 50 License and associated Technical Specifications. In 1972, the license was amended to possess but not operate the SNEC reactor.

The facility was built from 1960 to 1962 and operated from 1962 to 1972 primarily as a research and training reactor. After shutdown in 1972, the facility was placed in a condition equivalent to a status later defined by the NRC as SAFSTOR. Since then, it has been maintained in a monitored condition. The fuel was removed from the Containment Vessel (CV) in 1972 and shipped to the Atomic Energy Commission (AEC) (now Department of Energy) facility at Savannah River, SC., who remains as owner of the fuel. As a result, neither SNEC nor GPU Nuclear Inc. has any responsibility relative to the spent fuel from the SNEC Facility. In addition, the control rod blades and the superheated steam test loop assemblies were shipped off-site. Following fuel removal, equipment, tanks, and piping located outside the CV were removed The buildings and structures that supported reactor operations were partially decontaminated from 1972 through 1974.

Additional information on the SNEC Facility history is provided in Chapter 2 of this plan.

1.3 PLAN SUMMARY

This SNEC Facility License Termination Plan describes the process by which decommissioning will be completed and the SNEC Facility site released for unrestricted use. The plant activities described in the SNEC Facility License Termination Plan are consistent with the activities that already may be conducted under the approved SNEC Facility Technical Specifications. As specified in the accompanying License Amendment application GPU Nuclear Inc. may make changes or revisions to this plan without U.S. NRC approval provided the proposed changes or revisions do not:

1. Involve a change to the Technical Specifications or require NRC approval pursuant to 10 CFR 50.59;

2. Violate the criteria of 10 CFR 50.82(a)(6);

3. Reduce the coverage requirements for scan measurements;

4. Increase the derived concentration guideline level (DCGL)[a] and related minimum detectable concentrations for scan measurements;

5. Result in significant environmental impacts not previously reviewed;

6. Use a statistical test other than the Sign test or Wilcoxon Rank Sum test for evaluation of the final status survey;

7. Increase the radioactivity level, relative to the applicable derived concentration guideline level, at which investigation occurs;

8. Increase the Type I decision error;

9. Decrease an area classification (i.e., impacted to nonimpacted; Class 1 to Class 2; Class 2 to Class 3; Class 1 to Class 3)

Footnote:

a) While drinking water DCGLs will be used by SNEC to meet the drinking water 4 mrem/yr goal, only the DCGL values that constitute the 25 mrem/yr regulatory limit will be controlled under this LTP and the NRC's approving license amendment.

The following subsections provide a brief summary of the chapters presented in the License Termination Plan.

1.3.1 Summary of Chapter 1 - General Information

This chapter provides the purpose of and regulatory basis for the SNEC Facility License Termination Plan, as well as a brief overview of each chapter contained in the plan.

1.3.2 Summary of Chapter 2 - Site Characterization

In accordance with 10 CFR 50.82(a)(9)(ii)(A), this chapter provides a description of the radiological conditions at the SNEC Facility site. The SNEC Facility site characterization incorporates the results of scoping and characterization surveys conducted to quantify the extent and nature of contamination at the SNEC Facility. The results of the scoping and characterization surveys have been and continue to be used to identify areas of the site that will require remediation, as well as to plan remediation methodologies and costs. Characterization data has been used to classify areas as to the magnitude of radiological impact for Final Status Survey and to guide remediation efforts. General findings are presented and explanation as to the impact on remediation is given.

1.3.3 Summary of Chapter 3 - Identification of Remaining Site Dismantlement Activities

In accordance with 10 CFR 50.82(a)(9)(ii)(B), this chapter identifies the major dismantlement and decontamination activities that remain at SNEC Facility. This information includes those areas and equipment that need further remediation to allow an estimation of the radiological conditions that may be encountered during remediation of equipment, components, structures, and outdoor areas. The majority of radiologically contaminated systems and components have been dismantled and dispositioned as radioactive waste. Concrete decontamination commenced and continued into 2000 until it was determined that complete removal of the concrete from the Containment Vessel (CV) would be required in order to release the site in accordance with NRC Regulations (10 CFR Part 20.1402, "Radiological Criteria for Unrestricted Use"). Concrete removal is currently underway.

1.3.4 Summary of Chapter 4 - Remediation Plans

In accordance with 10 CFR 50.82(a)(9)(ii)(C), this chapter describes how remediation actions may be applied to various areas on the SNEC Facility site. It also identifies likely remediation methodologies to be used, and demonstrates that the remediation methodologies are adequate to ensure that the site release criteria of 10 CFR 20.1402 are met. Verification of the site release criteria is detailed further in Chapter 5, Final Status Survey Plan.

1.3.5 Summary of Chapter 5 - Final Status Survey Plan

In accordance with 10 CFR 50.82(a)(9)(ii)(D), the SNEC Facility Final Status Survey Plan describes the methods and criteria that will be used to demonstrate that the SNEC Facility site meets the radiological release criteria for unrestricted use specified in 10 CFR 20.1402. This plan includes a description of control measures implemented in accordance with approved plant procedures to preclude the recontamination of clean areas. The SNEC Facility Final Status Survey Plan also incorporates measures to ensure that final survey activities are planned and discussed with the Nuclear Regulatory Commission sufficiently in advance to allow the scheduling of inspection activities.

1.3.6 Summary Of Chapter 6 - Compliance with the Radiological Criteria for License Termination

The decommissioning objective at the SNEC Facility site is to reduce residual radioactivity to a level that permits release of the site for unrestricted use. In accordance with 10 CFR 20 and Regulatory Guide 1.179, this chapter and Chapter 5, Final Status Survey Plan, demonstrate that the radiological criteria of 10 CFR 20.1402 for unrestricted release will be met.

1.3.7 Summary of Chapter 7 - Updated Site-Specific Estimate of Remaining Decommissioning Costs

In accordance with 10 CFR 50.82(a)(9)(ii)(F), this chapter provides an updated site-specific estimate of decommissioning costs, a comparison of these estimated costs with the present funds set aside for decommissioning, and a description of the means for ensuring adequate funds to complete decommissioning.

1.3.8 Summary Of Chapter 8 - Evaluation of Environmental Effects of License Termination

In accordance with 10 CFR 50.82(a)(9)(ii)(G), this chapter compares the impacts associated with SNEC Facility site-specific license termination activities as described in the SNEC Facility License Termination Plan with previously analyzed termination activities in the SNEC Facility Environmental Report. The evaluation in this chapter finds that the activities described in the SNEC Facility License Termination Plan result in no significant environmental changes not bounded by the NRC's Generic Environmental Impact Statement. This evaluation satisfies the requirement of 10 CFR 51.53(d)(Reference 1-4), to reflect any new information or significant environmental changes associated with proposed decommissioning activities. Additionally, a revision to the SNEC Facility Environmental Report is submitted to document the current conditions at the SNEC Facility site.

1.4 REFERENCES

1-1 Code of Federal Regulations, Title 10, Part 50.82, "Application for Termination of License."

1-2 Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors," January 1999.

1-3 SNEC Facility USAR

1-4 Code of Federal Regulations, Title 10, Part 51.53, "Post-Operating License Stage Environmental Reports."

2.0 SITE CHARACTERIZATION

2.1 INTRODUCTION

2.1.1 Purpose

In accordance with the requirements of 10 CFR 50.82(a)(9)(ii)(A), (Reference 2-1) and guidance contained in USNRC Regulatory Guide 1.179 (Reference 2-2), this chapter of the SNEC License Termination Plan (LTP) provides a description of the radiological conditions at the SNEC Facility site and its immediate surroundings. The main goal of SNEC Facility characterization activities has been to determine the nature and extent of radiological contamination of the site and where appropriate the immediate surroundings. Extensive soil characterization efforts were undertaken in 1994 in support of the SNEC Soil Remediation Project. These results were provided to the NRC in the "1994 Saxton Soil Remediation Project Report" (Reference 2-3). Characterization of the remaining SNEC Facility structure, the Containment Vessel (CV), which housed the reactor pressure vessel (RPV) and associated Nuclear Steam Supply System (NSSS) components, was completed in 1996 and documented in the report, "SNEC Facility Site Characterization Report" (Reference 2-6) This report was provided to the NRC in July 1996. The environmental radiological status of the site and surrounding environment was provided to the NRC in the updated "SNEC Decommissioning Environmental Report", Revision 2, September 2002 (Reference 2-29).

Supplemental characterization has taken place from 1996 to present and will continue through remediation and during Final Status Survey activities. The characterization information provided in the LTP is intended to show the current radiological status of the SNEC Facility. As such, information on areas that have been remediated is current. Information on systems, components and structures, which have been removed, is not provided in this plan.

2.1.2 Site Characterization Methodology

The purpose of this chapter (2.0) is to describe the results of radiological surveys that have been conducted to characterize the extent and magnitude of contamination at the SNEC Facility. Characterization data has been used to classify areas as to the magnitude of radiological impact for Final Status Survey and to guide remediation efforts. General findings are presented and explanation as to the impact on remediation is given.

Surveys and sampling work performed during characterization activities have been conducted using guidance provided by SNEC procedure No. 6575-PLN-5420.06, "SNEC Site Characterization Plan" (Reference 2-4). In addition, field use documents such as SNEC Facility "Station Work Instructions" were prepared to obtain samples and provide specific instructions to survey personnel (Reference 2-5). Field and laboratory instruments are calibrated and operated in accordance with written procedures. Calibration of instruments is carried out using the National Institute of Standards and Technology (NIST) traceable sources/standards.

Extensive preremediation characterization survey and sampling results are presented in the "SNEC Facility Site Characterization Report" (Reference 2-6) submitted to the NRC, July 1996. The majority of the scoping, characterization surveys, and sample collections were performed at the SNEC Facility from May 1994 through 1997. However, earlier survey results were reviewed to plan characterization activities. Continued sampling and survey work have been necessary to accurately estimate the type and amount of radioactive material for waste disposal and shipping purposes and to satisfy the information needed for continued remediation. Site characterization surveys and sampling efforts, further defining the extent and magnitude of contamination at the SNEC Facility, will continue throughout the decommissioning process.

2.1.3 Data Use

The results of scoping and characterization surveys were used to identify areas of the site that may require remediation. Contamination levels were compared against guideline values to determine if the resulting dose under a given scenario would exceed the site release criteria of ≤25 mrem/year. NUREG-1575 (Reference 2-7) defines these guideline values as Derived Concentration Guideline Levels (DCGL's). For individual radionuclides, DCGL's will generally be derived from the RESRAD, or DandD computer codes as described in CHAPTER 6.0. Other regulatory guidance documents may also be used to define initial estimates. Site characterization survey results have been used in accordance with NUREG-1575 to classify Final Status Survey areas as "Impacted Class 1, 2 or 3" or as "non-impacted". SNEC Facility surface soil area classifications are shown in Figure 5-1, these classifications will dictate the survey measurement frequency for Final Status Surveys. Further discussion of area and structure classification is contained in CHAPTER 5.0, (see Table 5-2).

2.2 SNEC FACILITY RADIOLOGICAL STATUS

2.2.1 SNEC Facility History

The Saxton Nuclear Experimental Corporation (SNEC) Facility, is a deactivated pressurized water reactor (PWR), which was licensed to operate at 23.5-megawatt thermal power (23.5 MWTh). It is owned by the Saxton Nuclear Experimental Corporation (SNEC) and is supported by GPU Nuclear. The SNEC Facility is maintained under a Title 10 Part 50 License and associated Technical Specifications. In 1972, the license was amended to possess but not operate the SNEC Facility reactor.

The facility was built from 1960 to 1962 and operated from 1962 to 1972 primarily as a research and training reactor. Three fuel cycles were completed with a total of 1,005.16 effective full power days accumulated. After shutdown in 1972, the facility was placed in a condition equivalent to a status later defined by the NRC as "SAFSTOR". Since then, it has been maintained in a monitored condition. The nuclear fuel was removed from the Containment Vessel (CV) in 1972 and shipped to the Atomic Energy Commission (now U.S. Department of Energy) facility at Savannah River, SC., who remains as the owner of the fuel. Therefore, neither SNEC nor GPU Nuclear has any responsibility relative to the spent fuel from the SNEC Facility. In addition, the control rod blades and the superheated steam test loop assemblies were shipped off-site. Following fuel removal, equipment, tanks, and piping located outside the CV were removed. The buildings and structures that supported reactor operations were partially decontaminated from 1972 through 1974. The radiological condition of the facility following shutdown was documented in a report titled "Decommissioned Status of the SNEC Reactor Facility" (Reference 2-8) forwarded to the United States Nuclear Regulatory Commission (NRC) on February 20, 1975.

After the formation of the GPU Nuclear Corporation in 1980, SNEC entered into an agreement with GPU Nuclear to use GPU Nuclear and its resources to maintain, repair, modify, or dismantle SNEC facilities as may be required. Both SNEC and GPU Nuclear are subsidiaries of the same parent company, FirstEnergy Corp. (FE). While SNEC remains the owner of the facility, a license amendment has been approved designating GPU Nuclear as a co-licensee. GPU Nuclear has responsibility to comply with the license and associated Technical

Specifications. GPU Nuclear is carrying out the SNEC Facility decommissioning on behalf of the site owner, SNEC.

Decontamination of reactor support structures and buildings was performed in 1987, 1988, and 1989, in preparation for demolition of these structures. This included the decontamination of the Control and Auxiliary Building, the Radioactive Waste Disposal Facility, yard pipe tunnel, the Filled Drum Storage Bunker, and the removal of the Refueling Water Storage Tank. A comprehensive final release survey was conducted from October 1988 to June 1989, to verify that residual contamination was within NRC guidelines for unrestricted use. The final release survey was conducted using the guidance contained in NUREG/CR-2082 (Reference 2-9). Details of the decontamination activities and final survey results were provided to the NRC in the report: "Saxton Nuclear Power Plant Final Release Survey of Reactor Support Buildings" (Reference 2-10). The NRC contracted with Oak Ridge Associated Universities (now the Oak Ridge Institute for Science and Education) to perform a confirmatory radiological survey in support of their review of the GPU Nuclear final survey. Their report, "Confirmatory Radiological Survey for Portions of the Saxton Nuclear Experimental Facility, Saxton, Pa.", dated June 1991 (Reference 2-11), provides additional radiological information.

In concert with these decommissioning activities, the NRC suggested and GPU Nuclear agreed to contact the U. S. Department of Energy (DOE) to study the feasibility of performing an aerial survey of the SNEC Facility and the surrounding area. At the request of GPU Nuclear, DOE contracted EG&G Energy Measurements to perform *in situ* soil surveys to determine the feasibility of an aerial survey. This work was completed in June 1988 and reported in Reference 2-27. The *in situ* surveys showed no indication of Cs-137, the predominant nuclide, at levels greatly above background. The study recommended additional *in situ* measurements rather than an aerial survey but did say that an aerial survey might be useful in assuring that no significant localized contamination exists as a result of bulk removal of contaminated material from the site. The NRC then requested that DOE have an aerial survey performed. DOE again contracted with EG&G Energy Measurements to perform an aerial survey over the SNEC Facility and the surrounding area. This survey was performed in July 1989 and covered an 83-square-kilometer area around the plant. The results were reported in Reference 2-28. This report concluded that, "The Cs-137 activity inferred from aerial data was within the limits of the deposition of worldwide fallout. No other man-made contaminates were detected in the survey area."

The reactor support buildings and structures were demolished in 1992, following acceptance of the final release survey and revision of the Technical Specifications by the NRC. Subsequent pathways analysis of the demolished structures was performed in an effort to correlate their release with current dose based criteria (≤25mrem/yr. all pathways). The most conservative radionuclide mix present was used and the demolished building surface areas were assumed to be contaminated to the limit of USNRC REGULATORY GUIDE RG 1.86 (Reference 2-12) for the radionuclide mix present. The pathways analysis was performed using the computer code RESRAD 5.82 (Reference 2-22) with a combination of default and site specific parameters. This conservative analysis results in a 1,000 year Total Effective Dose Equivalent (TEDE) of 3.5 x 10^{-2} mrem/yr. This is well below the current criteria of ≤25mrem/yr. The report detailing this analysis (Reference 2-19) was provided to the NRC in June 2000.

The original release survey of the reactor support buildings and structures followed a plan written to comply with NUREG/CR-2082. The objective was to meet the prescriptive release criteria of RG 1.86. In addition, volumetric and dose rate criteria were imposed which went beyond the standards of RG 1.86. This resulted in overall release criteria which were deterministic in nature and generally more restrictive than current requirements. The survey was conducted using written procedures with extensive QA/QC monitoring including replicate surveys. The survey process was reviewed and its conduct inspected by NRC Region 1 and the NRC's independent verification contractor, Oak Ridge Associated Universities (ORAU).

Confirmatory surveys of these structures were performed by ORAU for NRC. As documented in Reference 2-33, the NRC Region 1 found that..."ORAU survey results indicate the Control and Auxiliary Building, the Radioactive Waste Disposal Facility, the Refueling Water Storage Tank concrete pad and the yard pipe tunnel structures meet the established values contained in Regulatory Guide 1.86 and can be released for unrestricted use." The NRC staff, in granting the license amendment (number 11) to permit demolition of these facilities/structures, concluded that..."The staff has determined that the outbuildings will meet the criteria identical to those used to terminate reactor licenses. Therefore, the staff has determined that the buildings can be removed from the description of the Saxton site without affecting the health and safety of the public or the environment." (Reference 2-33)

In November 1994, the SNEC Soil Remediation Project was completed. This was a comprehensive project involving soil surveys, sampling, excavation, packaging and shipment of slightly contaminated site soil. This program successfully reduced radioactive soil contamination levels over the majority of the site to less than NRC current and presently proposed levels required to meet site cleanup criteria for unrestricted use. The project involved extensive surface (0-15cm) and subsurface soil sampling in preparation for remediation. The report of this work, titled "1994 Saxton Soil Remediation Project Report" was forwarded to the NRC, July 1995 (Reference 2-3).

From 1996 through 1997, site preparations were made to support full scale decommissioning efforts. Support systems such as temporary power, compressed air, HEPA filtered exhaust ventilation and lighting were installed. The Decommissioning Support Facility (DSF) was erected south of the Containment Vessel (CV) and was physically connected to the CV. The site layout has not changed appreciably since that time and is shown in detail in Figures 2-11 and 2-12.

The NRC approved the start of full scale decommissioning in April 1998 and operations began in May 1998. Up to that time selected loose material, spare components, asbestos insulation and electrical components had been removed with the NRC's permission. Following approval in April 1998, the main focus of decommissioning efforts was on making all necessary preparations for the removal of the nuclear steam supply system components, namely the reactor pressure vessel, the single steam generator, the pressurizer and the main coolant pump.

The SNEC Large Component Removal Project (LCRP) was completed November 22, 1998. This involved the preparation, removal, packaging, shipment and disposal of the SNEC Facility Pressurizer (PZR) Steam Generator (S/G) and Reactor Pressure Vessel (RPV) Project planning began in June 1997; the major project milestones are listed below:

- Shipment exemption submittal to USDOT – June 1998
- Remove RPV from CV – October 14, 1998
- Remove S/G from CV – October 16, 1998

- Remove PZR from CV – October 23, 1998
- USDOT approval of exemption application – October 30, 1998
- Road shipment of PZR & S/G to rail siding – November 2, 1998
- Road shipment of RPV to rail siding – November 3, 1998
- All three components depart by train for Barnwell SC – November 16, 1998
- The train carrying the three components arrives at the Chem-Nuclear Systems Waste Consolidation Facility in Barnwell SC – November 20, 1998
- All three components placed in their permanent place in the disposal trench – November 22, 1998

All three vessels were shipped as low specific activity (LSA) packages "or equivalent" under 49 CFR 173. The radiological aspects of the shipment met the "normal conditions of transport" as defined by 49 CFR 173. The shipment of these components removed over 85% of the estimated site radioactive material inventory.

Following removal and shipment of the SNEC Facility large components, decommissioning activities focused on the removal and shipment of the remaining permanent mechanical and electrical equipment, systems and components. This work was completed by May of 1999. All permanent mechanical and electrical systems and components have been removed and shipped off-site for processing/disposal in accordance with all applicable regulations. The only remaining systems are small piping system sections where they penetrate the CV steel liner and site storm drains. The CV piping system remnants will be removed and disposed of. Site storm drains have been radiologically characterized and will be included in the Final Status Survey.

Since May 1999, the focus has been on Containment Vessel concrete remediation work. As a result of extensive penetration of contamination into the various concrete surfaces in the CV, all of the interior CV concrete will be removed. This concrete will be sent to approved offsite disposal facilities. This will result in the CV steel liner as the only portion of the CV structure remaining when concrete removal is complete. Remaining dismantlement activities are described in Chapter 3.0. Chapter 4.0 discusses remediation plans for the CV.

Table 2-1 lists the estimated total site radionuclide inventory as of the date of this submittal.

2.2.2 Effluents

During the operational period from 1962 through 1972 and the initial period of decommissioning from 1972 through 1974, radioactive liquid and airborne effluents were released in accordance with the Plant Technical Specifications. Airborne effluents were released via an elevated stack through a high efficiency particulate air filtration system. Liquid discharges were via the former Saxton Steam Generating Station discharge tunnel, the SNEC Facility sewage treatment system and storm drain outfall to the Raystown branch of the Juniata River. Effluent releases made during this period were quantified and reported to the Atomic Energy Commission (AEC).

IN 1974, effluent releases stopped until decommissioning efforts resumed in late 1986. At that time 205,800 gallons of slightly contaminated groundwater from the below grade structures was batch released to the Raystown branch of the Juniata River, this release was completed in January 1987. A total of 115 μCi of Cs-137 was discharged (Reference 2-20).

With the resumption of full scale decommissioning activities in May 1998, airborne effluent releases resumed in accordance with the Plant Technical Specifications and the SNEC Offsite Dose Calculation Manual (Reference 2-13). Annual reports are made to the NRC detailing the releases in accordance with the ODCM.

No liquid effluent discharges have been made since decommissioning resumed in 1998.

2.2.3 Operational Events

GPU Nuclear has performed an extensive review of operational events to determine those which could possibly impact decommissioning and unrestricted release of the facility. Primary sources used to determine the SNEC Facility radiological history were plant operating logs and reports, correspondence files, periodic and event reports to the AEC and NRC, press releases, interviews and written questionnaires of plant operating and maintenance personnel. Records of plant operational details are maintained in accordance with the requirements of 10 CFR 50.75. Much greater detail on the historical situation of the facility is presented in the "SNEC Facility Historical Site Assessment" (Reference 2-14) which was submitted to the NRC June 23, 2000.

The following is a listing of events in chronological order, which have had an impact on the decommissioning of the SNEC Facility site:

Event	Date
Initial Criticality	April 13, 1962
First Electricity Generated	November 16, 1962
Liquid Spill Outside Seal Injection Pump House (~1 gal. ~10uCi's)	November 26, 1968
Storage Well Leaks, Possibly Resulting In Extensive Contamination of Internal CV Concrete Structures	1968 through 1973
Unplanned Gas Releases	
<0.002 Curies	August, 1963
7.32 Curies	May 14, 1970
0.034 Curies	August 26, 1970
80.2 Curies	November 29, 1971
19.7 Curies	December 15, 1971
Experiments With Mixed Oxides Fuel, Fuel Cladding Intentionally "Failed" (Last Fuel Cycle)	December 1969-May 1972
Final Shutdown	May 1, 1972
Nuclear Fuel and Other Removable "Special Nuclear Materials" Shipped Off Site	July - November, 1972
By-Product Material Removed From Site (With Exception of Material in Exclusion Areas)	November 1972-Early 1974
Facility Placed In A "SAFSTOR" Condition	February 1975
Groundwater Removed From RWDF and Yard Pipe Tunnel (115μCi of Cs-137)	Late 1986–January 1987
Decontamination of Control & Auxiliary Building RWDF, RWST, and Yard Pipe Tunnel	1987 & 1988
Final Release Survey of C&A Building, RWDF, RWST, and Yard Pipe Tunnel	October 1988-June 1989
EG&G/DOE *in-situ* Soil Survey	July 1988
Pennsylvania State University Soil Characterization	December 1988–January 1989
EG&G/DOE Aerial Survey	July 1989

Event	Date
Comprehensive Radiological Survey of CV (Scoping Survey)	1991
Demolition of C&A Building, RWDF, RWST Pad and Yard Pipe Tunnel	May 1992–October 1992
Soil Remediation Project	June 1994-November 1994
Site Characterization of CV & Remaining Facilities	1995 - Present
Construction of Decommissioning Support Facility (DSF)	August 1996-November 1996
Asbestos Abatement Program	August 1996 - March 1997
Removal of Non-System Related Loose Materials and Electrical Components in CV	July-September 1997
Installation of CV Ventilation System	March 1997 - May 1998
Large Component Removal Project (LCRP)	March 1997-November 1998
NRC Approval of License Amendment - Start of Decommissioning	April 1998
Mechanical and Electrical Systems and Component Removal	May 1998 – May 1999
CV Concrete Remediation/Removal	May 1999 - Present
Characterization to support LTP & MARSSIM	June 1999 - Present
Remediation & Survey of Remaining Site Facilities	Late 1999 to Present

Of these events, the liquid spill in 1968, the storage well leaks from 1968 to 1973 and the failed fuel experiments from 1969 to 1972 have had the most adverse effect on the site from a radiological perspective. See reference 2-14 for additional information.

The unplanned gaseous releases were reported to the Atomic Energy Commission in accordance with the requirements at the time. The releases principally consisted of noble gases and are thought to have had little impact on the environment. The maximum exposure to a member of the public at the site boundary for any of these releases was calculated to be 4.28 mrem (the November 29, 1971 release). See reference 2-14 for additional information.

The liquid spill and likely other non-documented spill events contributed to the widespread soil contamination found in and around the site. Some staged radwaste packages stored for shipment leaked leading to additional soil contamination. As late as 1992 some areas of soil contamination were as high as 10 mrem/hr. Extensive remediation of the impacted soil has been completed and only small areas near the CV remain that require removal These will be addressed during the CV remediation as access permits.

The reactor storage well and spent fuel pool leaks from 1968 to 1973 occurred through cracks and construction defects in the CV concrete. Since the spent fuel pool and reactor storage well (a common area) is not lined, this allowed leakage to penetrate the concrete surface wherever a crack or surface defect occurred. Contamination migrated completely through the eighteen-inch (18") thick concrete outer wall of the reactor storage well and spent fuel pool into several locations. The CV outer steel liner prevents further migration into the environment. The four foot six inch (4'-6") inner wall dividing this area from the auxiliary and primary compartments was extensively cracked and had areas of poorly placed concrete. This has lead to extensive contamination through the wall in numerous locations. Other wetted surfaces such as the CV sump do not appear to have significant subsurface contamination.

The failed fuel experiments conducted from December 1969 through plant shut down in May 1972 caused extensive fission product inventory to be distributed through the facility. The later fuel loading included "mixed oxide" fuel containing plutonium oxide.

Since plant shutdown in May 1972, site decommissioning efforts have significantly reduced the radioactive contamination onsite. The remaining inventory of radioactive materials consists mainly of contaminated and activated concrete in the CV; low level contaminated soil in and near the site, and infiltrated water and sediment in two tunnels. The CV interior concrete was contaminated and activated from operation of the reactor and remediation is in progress. The following section describes in more detail the specific radiological conditions of the CV, soil, tunnels and other site structures.

2.2.4 Radiological Status of the SNEC Facility and Surroundings

Area Designations

The remaining SNEC Facility consists of eight principal locations (see Figures 2-1 through 2-5), designated as follows:

Area 1 - CV Basement

Southwest, Southeast, and Northwest Quadrants of Containment Vessel (CV) between elevations 765'-8" (concrete floor) and El. 777'-8" (concrete ceiling) in southwest quadrant, El. 779'-0" (steel platform) in southeast quadrant, and El. 775'-2" (concrete ceiling of the "Rod Room") in northwest quadrant. This area also includes the three and one half-foot deep sump located in the floor, and a 4-foot wide concrete ledge (El. 768'-3") extending around the circumference of the area.

Area 2 - Primary Compartment

The Southwest quadrant of the CV between elevations 779'-8" (Concrete Floor) and 814'-6" (Concrete Ceiling).

Area 3 - Auxiliary Compartment

The Southeast quadrant of the CV between elevations 781'-4" (steel platform) and 810'-0" (concrete ceiling). One additional steel platform is installed at elevation 795'-2". Both steel platforms extend over the entire area of the quadrant, each containing an 8-foot by 8-foot open hatch. There is a similar opening in the concrete ceiling.

Area 4 - Operating Floor

The concrete operating floor of the CV (El. 812'-0" & 818'-0"), and surfaces up to the top of the CV dome. The area includes three access hatches (equipment, personnel, and escape); the concrete walls and platform located in the southwest quadrant; the polar bridge crane; and a steel platform (El. 818'-0").

Area 5 - Pipe Tunnel

The below grade concrete tunnel, which wraps around the outer circumference of the containment vessel between azimuths 35 degrees and 270 degrees.

Area 6 - Reactor Storage Well & Spent Fuel Pool

This area is comprised of the Northwest and Northeast quadrants (reactor storage well and spent fuel pool, respectively) of the CV between elevations 765'-8" (concrete floor) and 807'-0" (concrete ceiling).

Area 7 - Outside of CV Dome

The outside of the steel liner of the CV extending from Grade Level (El. 811') to the top of the CV Dome. This area also includes the concrete shield structure located around the circumference of the CV between azimuths 270° and 35° (El. 811' to about 822')

Area 8 - SNEC Facility Yard Areas

This area is the exterior of the CV and includes remaining SNEC Facility structures and components.

Figures 2-1 through 2-5 and Tables 2-2 through 2-16 illustrate the radiological conditions of these areas in more detail.

With the planned total removal of all CV concrete, the characterization performed to evaluate the nature and extent of fixed and loose surface contamination on the CV concrete surfaces will no longer be applicable. The information is provided here, as removal is not yet complete. As part of the characterization, numerous concrete core bores were obtained to evaluate subsurface contamination and activation of the concrete. In addition, characterization scoping and remediation support surveys have been performed on these surfaces. Figures 2-1 through 2-5 show the CV layout and radiological conditions just prior to the start of the current total CV concrete removal project.

Figures 2-6 through 2-10 show the location of concrete core bores taken of the CV and other site areas. Tables 2-10, 2-12 and 2-13 provide the results of the analysis of these core bores. The results of these surveys and samples formed the basis for the decision to remove all of the CV interior concrete. Total removal is underway as of the date of this submittal. As such, descriptions of the survey classification of the CV interior concrete have been removed from Table 5-2, as removal will preclude inclusion in the Final Status Survey.

2.2.4.1 Structures

Structures were surveyed to determine general area and contact exposure rate values, loose and total surface contamination. Where needed, core bores were taken to evaluate the extent of penetration of contaminants into porous surfaces such as concrete and to assess activation levels. The surveys employed both systematic location selection and bias selection. Bias sample locations focused on those areas most likely to contain residual radioactivity.

For each structure, remaining dismantlement activities are described in Chapter 3.0. Chapter 4.0 describes remediation plans and Chapter 5.0 provides the survey classifications that result from characterization data.

2.2.4.1.1 Containment Vessel (CV)

The SNEC Facility Containment Vessel (CV) is the only remaining original structure on the SNEC Facility site. This building housed the nuclear steam supply system components. These components included the reactor pressure vessel, steam generator, pressurizer, main coolant pump, primary coolant piping and support systems and ventilation equipment. All of this equipment has been removed and shipped off-site for processing and or disposal. Additionally, floor gratings and structural steel has been removed. As such, characterization data for these systems and components is no longer relevant.

What remains of the CV is the outer steel shell and portions of the interior concrete. Much of the concrete has been removed as of the date of this submittal. In its present state, the most important characterization attributes for the CV are the surface contaminants and potential activation of the CV steel liner.

Over 45 core bore samples were taken of concrete inside the CV. Comprehensive surveys of the steel dome were taken and paint samples analyzed to determine the radiological condition of the CV. Figures 2-1 through 2-5 provide information on general area and contact radiation along with contamination levels in areas of the CV including the exterior surfaces. Table 2-4 provides the CV paint sample results. At this time, removal of the upper CV dome and shell down to approximately the 804.5' elevation (~7 feet below grade) are planned prior to license termination. Tables 2-10 through 2-13 provide detailed information on the core bore sample results while Figures 2-6 through 2-10 show the core bore locations.

The exterior of the CV liner that is above grade is free of contamination. The exterior section of the CV below elevation 797.6' is non-impacted. This portion of the CV exterior is below grade and has not been directly surveyed directly. Contamination of this area could have only resulted from contact with contaminated adjacent soil. Section 2.2.4.2 "Soil", justifies the non-impacted classification of this area. The interior portion below the 804.5' elevation is inaccessible for extensive surface contamination characterization due to the concrete removal process and remaining concrete. However, remediation support surveys indicate the presence of surface contamination in excess of the proposed DCGL for building surfaces. Additionally, the activation sample results reported in Table 2-33 include the presence of Cs-137. This indicates it is present on the inner CV steel liner as a surface contaminant. The portion of the CV steel liner that will remain has been designated as a survey class 1 impacted area. Decontamination of the interior CV steel liner will be performed and this surface will be included in the Final Status Survey.

The CV steel liner is activated as a result of neutron flux during reactor operation. Characterization of the area adjacent to the reactor shows the presence of expected activation products such as Co-60 and Ni-63.

The activation zone of the SNEC CV steel liner is assumed to be centered horizontally at the site of closest approach of the former SNEC reactor vessel. Twenty-one (21) locations were selected on the steel shell for purposes of collecting samples in this area as shown on Figure 2-33. These samples were collected above the operational water line in the reactor cavity starting at about the 791' elevation and extending upward about twelve feet. In all, a twenty by ten-foot area and a zone below the 792' elevation CV support ring were sampled.

The majority of these steel liner samples averaged <2 pCi/g for Co-60. Only one sample contained measurable Ni-63 at 20.23 pCi/g. The sample results are provided in Table 2-33. Sample locations and Co-60 results are shown on Figure 2-33. Additional sampling and measurements are planned when this area becomes available for more extensive examination.

Tables 2-1, 2-7, 2-8 and 2-29 show the radionuclide mix at SNEC.

2.2.4.1.2 Decommissioning Support Facility (DSF)

This "Butler type" prefabricated building was erected in 1996 to support decommissioning operations. The DSF is subdivided into three areas known as the Decommissioning Support Building (DSB), the Material Handling Bay (MHB) and the Personnel Access Facility (PAF). The DSF is in use at this time to support decommissioning. Prior to license termination this building will either be remediated and included in the Final Status Survey or demolished and removed from the site. Figure 2-12 shows the location of the DSF. Characterization information is provided in Tables 2-6 and 2-6a following this section.

2.2.4.1.3 Penelec Line Shack, Penelec Garage, Penelec Warehouse, Penelec Switchyard Building

These buildings are located off the SNEC Facility property but are on adjoining Penelec property. These structures were not directly associated with operation of the SNEC Facility. However, they have been used by SNEC for storage, staging and other such activities. These buildings (except the small switchyard building) were included in the scope of the comprehensive final release survey, which was conducted from October 1988 to June 1989. The results of those surveys were reported to the NRC in the report: "Saxton Nuclear Power Plant Final Release Survey of Reactor Support Buildings" (Reference 2-10).

Since the time of that survey (1989), decommissioning activities may have impacted these structures and as such further characterization was performed. Figures 2-19 through 2-22 show these buildings in detail and give the general area exposure rate measurements taken in each building. Direct and smear surveys for surface contamination were performed in each structure. No surface contamination greater than 1000 dpm/100cm^2 beta/gamma or 20 dpm/100cm^2 alpha was detected. The elevated exposure rate measurements noted in the Penelec Warehouse were previously addressed in Reference 2-10. Laboratory analysis of building structural materials showed an elevated level of naturally occurring radioactive materials in these building materials. Based on the results of characterization surveys, no remediation of these areas is expected, however, due to their classification, they will be included in the Final Status Survey plan. In the case of the Penelec Garage and Penelec Warehouse, current plans are to demolish these structures prior to performance of the Final Status Survey. Table 2-6 shows the average values for the surveys taken during characterization.

2.2.4.1.4 Saxton Steam Generating Station (SSGS) Discharge Tunnel

The Saxton Steam Generating Station (SSGS) Discharge Tunnel is contaminated as a result of radioactive liquid effluent discharges from the SNEC Facility. This tunnel was the routine discharge point for liquid radioactive effluents. Ground water and several inches of silt on the floor of this below grade structure have been removed. It was necessary to remove the water and silt to adequately survey this area for characterization and final release.

Characterization results of this structure indicate that extensive remediation will not be needed to meet final release criteria. However, several piping sections were removed as they were near or above initial DCGLs provided in Chapter 5.0 of the SNEC LTP. One pipe in the East Seal Chamber (Seal Chamber # 1) was found to contain significant levels of contamination. Specifically, a pipe believed to be the original SNEC Facility liquid effluent discharge line. This line was sampled and contained 4800 pCi/g Cs-137 and 30 pCi/g Co-60 entrapped within the pipe as a surface deposition.

Figure 2-18 shows this tunnel in detail and contains the general area exposure rate results. Table 2-3 lists some of the sediment and water sample results. Table 2-6 shows the average values for the surveys taken during characterization. Tables 2-3e through 2-3g provide more recent characterization information in a summarized format. Table 5-2 of Chapter 5.0, provides the survey classifications as a result of the more recent characterization data from this area.

The floor of the Discharge Tunnel from the point of entry near the SNEC CV, to the elbow that turns North toward the river is listed as a Class 1 area (the first 150'). The reason for this classification is entirely because of elevated concentrations of sediment that was removed from the floor surface in this area. The middle section of the floor (~235') is listed as a class 2. The last section of the floor from the elbow to the river discharge point (the last ~315'), is listed as a Class 3 survey area. This region also contained sediment exhibiting Cs-137 contamination but at much lower levels than the Class 1 area. The ceiling of the Discharge Tunnel to the ninety degree elbow (~ the first 150') is listed as a Class 2 survey area. This is because of a sample of concrete rubble that exhibited a 1.4 pCi/g Cs-137 result and because of the close proximity of the Seal Chambers which were SSGS and nuclear plant release points. The last ~550' of Discharge Tunnel ceiling is listed as a Class 3 survey area. The walls of the Discharge Tunnel to the ninety-degree elbow are Class 1 survey areas because of elevated characterization survey results presented in Table 2-3e. The walls in the first ~150' of Discharge Tunnel have areas of elevated contamination present particularly at the Seal Chamber openings. The remainder of the walls to the river discharge point (the last ~550') are listed as a Class 3 survey area. Tunnel classifications are given in Table 5-2.

Two (2) sediment samples were taken from the Seal Chambers. One sample was taken from Seal Chamber # 2 from a penetration on the South wall. The other was a composite of six (6) debris drums from Seal Chamber # 3. The highest activity found was 17.1 pCi/g Cs-137. Co-60 was at a value of < 0.04 pCi/g. Two (2) concrete core bore samples were taken in Seal Chamber # 2 and two were taken in Seal Chamber # 1 at non-biased locations. The highest activity was found in Seal Chamber # 2. These values were 0.3 pCi/g Cs-137 & < 0.3 pCi/g Co-60. Cs-137 did not penetrate greater than ½ inch into the concrete surface. Rubblized concrete was collected from Seal Chamber # 2. The highest activity sample was 1.3 pCi/g Cs-137 and <0.03 pCi/g Co-60. Water from Seal Chamber # 3 was sampled and showed 31 pCi/L Cs-137,

< 11 pCi/L Co-60 and < 307 pCi/L H-3. All smears taken in this area indicated <1000 dpm per 100 centimeter square area (beta/gamma). The Seal Chambers are listed as Class 1 survey areas.

The 18" tie line between the Discharge Tunnel and the Intake Tunnel was sampled out to the area of near the screens in the Intake Tunnel. Cs-137 was present in this line as described in Tables 2-3e, 2-3h and 2-29 with the highest concentration at approximately 4 pCi/g.

The purpose of the Spray Pump Pit, located at the corner of the ninety degree turn in the Discharge Tunnel, was to supply Discharge Tunnel water to the Spray Pond area and may have contained slightly contaminated water from this source. Therefore the floor is a Class 1 survey area, the walls up to 795' elevation a Class 2 and the walls above 795' elevation a Class 3. See Table 5-2 for classification information.

2.2.4.1.5 Saxton Steam Generating Station (SSGS) Footprint

The Saxton Steam Generating Station (SSGS) Footprint and Discharge Tunnel area includes several structures that exhibit somewhat different levels of radiological contamination (see Figures 2-25, 2-26 and 2-27). The upper level concrete slab (~811' El) of the SSGS Facility originally called the "Boiler Pad", has been surveyed and sampled and was found to be free of residual contamination. A system of piping that drained the slab area contained little or no radiological contamination above background levels normally found in off-site soils. Forty (40) sediment samples were taken from floor drains and open piping that was removed from below the Boiler Pad. The highest activity found was 3.1 pCi/g Cs-137 in drain # 4. Co-60 was <0.15 pCi/g for the same drain. The remaining sample results for these radionuclides were largely within the range of natural background values for off-site soils. Seven (7) concrete core bore samples were also taken from the Boiler Pad area at non-biased locations. No activity was found above the MDA value for Cs-137 or Co-60. All smears taken from this area indicated <1000 dpm per 100 centimeter square area (beta/gamma).

The next lower elevation in the SSGS footprint called the "Firing Aisle" (~806' El), also contained little or no contaminated surfaces. However, several drain lines contained levels of Cs-137 that was discernable above typical background values. The majority of this piping will be removed during the remediation process. Any impacted piping that is to be left behind will be sampled and surveyed in accordance with SNEC site procedures.

The final area of the SSGS Facility that was characterized was the SSGS Basement Area, this area was surveyed and sampled in stages because of elevated ground water levels which would have normally resided to a depth several feet above the below grade floor (~790' El). Water was pumped from region to region at this elevation to allow the completion of the characterization process on the walls and floor sections of the basement area. Results from surveys and sampling in this region show somewhat contaminated surfaces exist on the floor and in the sump areas at this lower elevation. Tie lines (piping) between sumps were also contaminated and were cut out. Surface drain lines and miscellaneous piping were removed if impacted and accessible. Other piping in this region has also shown elevated levels of residual contamination and will be treated in accordance with SNEC site procedures.

Characterization results for the SSGS area are presented in Tables 2-3a through 2-3d and 2-29. This is a complex structure both physically and radiologically, Chapter 5.0 and Table 5-2 provide the survey classifications that result from the complete characterization data for this area.

Reference 2-30, submitted to the NRC on September 4, 2001 contains additional information on the characterization of the SSGS.

2.2.4.1.6 SSGS Discharge Tunnel Surrounding Environs

Investigations of soils at several locations in the vicinity of the SSGS Discharge and Intake Tunnels and the SSGS area are reported in Table 2-3i. There is no evidence of elevated contamination in these results above that which results from natural background radiation. Soils removed in the vicinity of the SSGS Discharge Tunnel during soil type investigations contained only background levels of radionuclides normally associated with plant operation.

2.2.4.1.7 SSGS Intake Tunnel

During operation of the SSGS, water was drawn from the Raystown Branch of the Juniata River. A dam was utilized to impound the river in the area of the intake structure, which included the Intake tunnel. The intake water system only provided intake of river water to the SSGS and no discharges to the river were made via this pathway. During freezing weather, warm water from the SSGS Discharge Tunnel was diverted and allowed to flow into the SSGS Intake Tunnel via a pathway that utilized the Spray Pond supply piping. This configuration was established in order to prevent ice formation on the intake tunnel screen wash and filtration system components. This flow path, by use of discharge tunnel water, would have provided a mechanism for low level radioactivity to enter the SSGS intake tunnel. Figures 2-25, 2-26 and 2-28 show the SSGS Intake Tunnel in detail.

2.2.4.1.7.1 Intake Tunnel characterization Results

Table 2-26 lists the Intake Tunnel characterization results. Figure 2-28 shows the SSGS Intake Tunnel distances related to sampling point locations. Sample locations from Table 2-26 are also plotted on Figures 2-26 and 2-28. Table 2-29 provides TRU/HTDN analysis results from this area.

Sediment Sampling: A total of 174 sediment samples were taken throughout the Intake Tunnel. Of these, 142 samples showed positive Cs-137 above MDC. The average Cs-137 value is 0.46 pCi/g and the highest is 1.8 pCi/g (SSGS North Intake Tunnel North Wall / MID-SECTION at 85'). All sediment samples were <MDC for Co-60 activity.

Concrete Core Bore Sampling: Fourteen (14) concrete core bore samples were obtained throughout the tunnel. All core samples were found to be <MDC.

Concrete Samples – Material debris: Sample number SX-CF-2245 core disk crumbled when sliced and was counted as Concrete Debris. Results were <0.27 pCi/g Cs-137 and <0.4 pCi/g Co-60. No other debris samples were collected.

Water Sampling: Five (5) water samples were obtained throughout the intake tunnel. Sample results were <MDC for Cs-137, Co-60, and Tritium.

Loose Surface Contamination (Smear Surveys): At least 1 smear was obtained for every 100 square feet of concrete tunnel surface area. A total of 335 smears were obtained throughout the tunnel. All smears were <1000 dpm/100cm^2 beta-gamma and <MDC alpha.

Surface Scans Using an E-140N with a HP-210/260 Probe: Survey scan measurements were obtained every 10 feet of tunnel length. Approximately 1 square foot of surface area was surveyed. All Surface Scan survey results were <100 NCPM.

Static Measurements Using a Bicron Micro-Rem: Dose rates were obtained throughout the tunnel approximately every 10 feet at 3 feet from the floor. Dose rates were 2-4 uR/hr throughout the intake tunnel.

Reference 2-31, submitted to the NRC on January 11, 2002 contains additional information on the characterization of the SSGS intake tunnel.

The intake tunnel from the river intake to the second clean-out (~440') is classified as non-impacted. The balance of the intake tunnel floors and walls are classified as a class 2 area while the ceiling is a class 3. The trash rack and intake screen areas are classified as non-impacted. Chapter 5.0 and Table 5-2 provide more information on the intake tunnel classification.

2.2.4.1.8 Systems

Only those systems that will remain following remediation and fall under the Final Status Survey program were characterized. This precluded characterization of such systems as the CV ventilation system, piping that penetrates the CV into the service tunnel, and temporary systems installed to support decommissioning such as compressed air, electrical power, rigging fixtures, etc. All of these systems will be removed prior to the Final Status Survey and are not included in its scope.

One system that was characterized, as it will remain and be included in the Final Status Survey, is the complex site storm drain system. This system collects surface water and building drains from structures in the Penelec property and directs it to the Raystown Branch of the Juniata River.

The Saxton Steam Generating Station (SSGS) was demolished along with segments of its supporting yard drainage systems over twenty five (25) years ago. However, several sections of underground drainage piping still exist in the South and West sides of the SSGS in-ground structure. These piping systems continue to channel rain water and site run-off away from the site.

Drainage systems surrounding the SNEC CV area have largely been removed as a result of the excavation of contaminated soils in the vicinity of the SNEC CV, including the Weir system piping to the Juniata River in its entirety. In addition, a septic system drain field has been excavated on the South side of the Penelec Warehouse.

2.2.4.1.8.1 Yard Drains - Initial Inspection Results

An inspection and sampling of remaining segments of SSGS Yard System Drainage piping has been performed in two (2) phases. The initial phase involved an effort to investigate and understand the various interconnections that exist between piping segments within the larger 100 acre Penelec site area and the enclosed ~10 acre inner area that surrounds the former coal fired SSGS footprint and existing SNEC Facility structures.

Robotics and video camera equipment was used to probe and examine existing piping segments and establish their interconnections. The investigation phase also located access points and established existing water flow patterns from these systems. Because water flows away from the site (toward the Juniata River), it was decided that a thorough investigation and sampling of remaining underground piping systems should be performed to rule out the possibility elevated levels of radionuclide contamination having been introduced into the environs through these systems.

The Shoup Run Shunt Line is a 600 foot long 42 inch diameter line that was originally used to channel water from Shoup Run to below the SSGS dam on the Juniata River thus bypassing the SSGS Intake Tunnel. All of the remaining SSGS area drainage lines on the south and west sides of the SSGS area connect at different points along the Shoup Run Shunt Line.

At the South edge of the SSGS Boiler Pad, a pipe section was discovered and unearthed that appears to have been a storm drain line originating at the old SSGS Facility. This line continues South toward the Penelec Warehouse where it connects with the grated yard drain opening by this structure. This pipe section then continues further South past the Warehouse into the open field beyond the ~10 acre fenced in Penelec property. It continues South toward Shoup Run and passes into and out of two (2) access openings. At this point the line is approximately 6 to 8 feet below the surface (grade level). At the second of the two access openings, the drain line turns toward the Southwest and terminates into the Shunt Line.

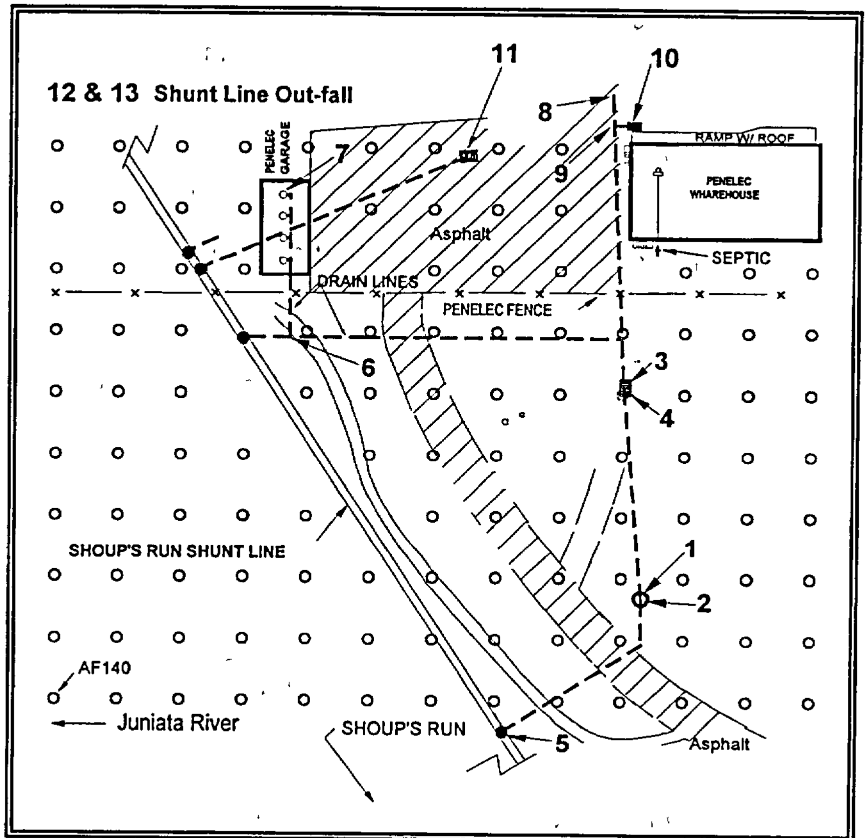
The small four (4) bay Penelec Garage has four (4) sumps (1 per bay). Each of these sumps connect to a common header that passes below the garage floor toward the South and then connects to a ~12" diameter line that ties directly into the Shunt Line. This 12" line runs parallel with the South fence that surrounds the ~10 acre Penelec property, and is assumed to connect at some point with the line running by the Penelec Warehouse.

About in the middle of the asphalt covered parking area between the Small Garage and the Warehouse, is a second grated drainage collection point that connects with the Shunt Line through a subsurface pipe traveling West toward and past the Penelec Garage. From robotics inspection efforts it appears to travel very close to or beneath the Penelec Garage on its way to the Shunt Line.

Another connection with the Shunt Line (about 10 feet further northwest and beyond the previous connection) was discovered during a robotic inspection of the interior of the Shunt Line. This pipe serviced an unknown portion of the SSGS area but it is assumed to have been another yard drainage system tie-in that was destroyed during the initial SSGS demolition effort. All the Yard Drain piping sections are depicted in **Figure 2A-1.**

Figure 2A-1

SNEC Site Grid Map Segment Yard Drain Lines



2.2.4.1.8.2 Initial Sampling Results (Phase 1)

First phase sampling of Yard Drain piping access points was performed at the time of the initial exploration and mapping of these systems. These samples were grab samples of materials that had collected in these drainage system pipe sections since plant shutdown. GPU Nuclear personnel have assayed these materials and these analysis results are reported in tables 2-5 and 2-5a.

2.2.4.1.8.3 Discussion of Initial Sampling and Inspection Results

First phase sampling results did not detect any significant or elevated levels of Cs-137 or Co-60 in any of the Yard Drain system piping that was accessed during this work effort. However, a sample taken from within sump number four (4) of the Penelec Garage did show a Cs-137 concentration of 6 pCi/g. This elevated level of Cs-137 may have be the result of radiological work performed in the Penelec Garage during previous site remediation efforts.

2.2.4.1.8.4 Phase 2 Sampling and Measurement Effort

After reviewing the results from the phase one investigation effort, it was decided that a more rigorous investigation of the yard drain piping systems would be appropriate. The reasons for this are as follows:

- Grab samples from within an operational drainage system continually collect sediment and washout materials, i.e., materials that have washed into the systems since the time of facility demolition. Potentially contaminated materials from the time of site operation have most likely been lost by washing through the system and are no longer available for sampling.

- Grab samples alone, without internal measurements can easily miss encrusted or fixed contamination within a piping system.

- Some sections of drainage piping were not accessed during phase one activities.

- A more rigorous survey approach would be needed to meet Final Status Survey release criteria.

To satisfy these concerns, a second phase sampling and measurement effort was conducted. Measurements were made over accessible lengths of pipe and samples were taken from each piping system. The results were compared with previous sampling results. No further actions are planned for Final Status Survey since there were no significant findings in these systems. Characterization results from this phase are summarized in table 2-5b.

2.2.4.1.8.5 Conclusions

During October 2001, in-situ gamma spectroscopy measurements and scale/sediment sampling was performed as part of a study of radioactive contamination in embedded piping found at the SNEC site. One hundred and twenty seven (127) spectra were collected in approximately 10 pipes and drainage areas. Additionally, 39 QA/QC spectra were collected, and 29 scale/sediment samples were collected and analyzed in the on-site GPU Nuclear laboratory. The results show that radioactivity levels are well within site release limits (DCGLs), even using conservative assumptions regarding calculations of in situ radionuclide concentrations. Sampling data compare favorably with measurement results.

Phase 2 measurements confirm that the Yard Drain piping system is below the DCGL's for releasing the site. In addition, measurements of significant sections of this system suggest that no major source of contamination was released to this system during past site operations. As such, this piping will not need to be resurveyed as part of the Final Site Survey. This piping is located under open land areas already classified as impacted Class 2 or 3 and these areas are documented in Figure 5-1 of the SNEC LTP.

Because of the history of the site as evidenced by the HSA (Reference 2-14), and the soil contamination on-site, this system was felt to be "impacted" and was surveyed and sampled. Robotics was employed for the majority of this work as the small diameter pipes as the confined spaces and presence of water made manned entry difficult. Figures 2A-1, 2-11 and 2-12 show the location of these drains. Tables 2-5, 2-5a and 2-5b list the sample results. Chapter 5.0 provides the survey classifications that result from the characterization data.

Reference 2-31, submitted to the NRC on January 11, 2002 contains additional information on the characterization of the yard drain piping.

2.2.4.2 Soil

In addition to the CV, contaminated soil in and around the SNEC Facility site will require remediation. As described in Section 2.2.1, the SNEC Soil Remediation Project, completed in 1994, removed contaminated soil from the site in an effort to reduce Cs-137 levels to <1pCi/g average. While this project achieved its goal, contaminated soil near the CV and the surrounding support tunnel could not be removed until these structures were removed. Additionally, soil conditions and pervasive ground water near the surface prevented an assessment of soil contamination below about three feet deep in these areas.

In order to survey the areas not covered by the 1994 soil project and to investigate potentially impacted areas identified by the HSA (Reference 2-14) a major surface and subsurface soil sampling program was completed in 1999. In addition to random points, biased sample locations were selected based on the HSA and previous survey results. Cs-137 was the only nuclide attributed to licensed operations which was detected. The surface sample results are reported in Table 2-14, while the sample locations are shown on Figures 2-13 and 2-14. The information has been used in concert with historical information to classify the survey units as described in Chapter 5.0. The data has resulted in some areas off the SNEC Facility site but within the surrounding Penelec property being classified as impacted.

In addition to the 55 surface sample locations, 42 subsurface sample locations were sampled. These were generally biased samples located in areas where below grade tanks, piping, ducts, spills, and or structures were once present. The results of subsurface sampling are presented in Table 2-15. Subsurface sample locations are shown on Figures 2-15 and 2-16. As a compliment to the subsurface sampling, gamma bore logging was performed at these same locations. The use of two different techniques allows for the differentiation of possible soil contamination at a location from the presence of buried radioactive components. The results of the gamma bore logging are presented in Table 2-16. Subsurface gamma bore logging locations are shown on Figures 2-15 and 2-16. Results of the subsurface sampling and gamma logging indicate the need to remediate soil to a depth at least ten (10) feet deep on the north side of the CV, this has been completed. The gamma bore logging results show that some radioactive components were present at this depth in this location (holes #10, 11 & 13), these have been removed. Gamma bore logging will not be used as a stand alone technique for characterization or Final Status Survey but rather as a compliment to sampling.

The CV Pipe Tunnel concrete structure has largely been removed, allowing characterization of the soil beneath it. The top of the tunnel started at grade elevation (~811'-6") and ended approximately ten (10) feet below grade. The walls, ceiling and floor of the CV Pipe Tunnel were 8 to 14 inches thick in most areas.

The interior tunnel surface was contaminated from leaks in piping within the tunnel area during facility operation. Additionally, there are a number of contaminated pipe penetrations that extend through the CV steel shell wall and entered into the CV Pipe Tunnel. Many of these penetrations, which were initially cut and capped, leaked over the years since plant shutdown. These leaks resulted in contaminated water penetrating the seam between the CV Tunnel floor and wall sections, and at other structural defect areas within the CV Tunnel, which caused contamination in soils at select locations below and adjacent to the CV Tunnel floor.

Based on the difficulty of surveying this contaminated and water filled structure, it was determined that removal of the CV Tunnel would be necessary. As a result of this decision, the majority of the CV Tunnel has now been removed. Only a small section of the CV Tunnel remains which supports the floor of the Material Handling Bay (MHB) portion of the DSF. The MHB is still in use and will be removed at a later time. The section of the CV Tunnel supporting the MHB floor will be surveyed and released before backfill operations. Soil volumes below the remaining section of the CV Pipe Tunnel floor (below the MHB) have been sampled by drilling through the floor to allow access to this area.

Figures 2-29, 2-30 and 2-32 show the approximate location of CV Tunnel and the currently excavated area surrounding the CV. The depth of the current excavation ranges from grade (~811' El.) down to approximately the 795' elevation and covers an area of about 1300 square meters that includes the CV. Characterization information is provided in Tables 2-27, 2-29, 2-30 and 2-31.

Some soil, particularly that surrounding the CV will require remediation. Some subsurface samples and surveys indicate that remediation of soil north of the CV may be required to a depth of ten (10) feet below the dominant grade. In an effort to justify the classification of the backfill surrounding the CV below the 797.6' elevation and under the CV as non-impacted, an extensive characterization and sampling project was conducted in this area. Approximately 857 samples were obtained and analyzed from 112 locations around the CV. Depths of these samples ranged from the surface to 150' deep. Sample media included soil, soil like materials, bedrock, groundwater and concrete from the exterior CV saddle. Of the 857 samples analyzed, 35 of those detected positive activity. Of those 35 positive results, only five (5) indicated Cs-137 above background. These five ranged from 0.6 pCi/gm to a high of 0.9 pCi/gm, all well below the applicable DCGL. No positive results were detected >10' below the surface being sampled. A complete listing of the analysis results is given in Table 2-30. Due to the volume of data with no positive activity, a separate table, 2-31 provides a listing of all positive results.

Transuranic (TRU) radionuclides and strontium-90 were positively identified by off-site analysis in several samples from the CV excavation area. SNEC sample number SX5SD99202 was taken at a depth of 4-6 feet within the CV North yard area. This sample contained Am-241 at a concentration of 0.012 pCi/g. Another North yard area sample that was collected from soil bag number 34L (packaged for disposal), contained a combined TRU concentration of approximately 0.2 pCi/g and exhibited a strontium-90 concentration of 0.27 pCi/g. Finally a sample of sediment from within the CV Pipe Tunnel (before remediation), contained strontium-90 at a concentration of about 9.7 pCi/g. The latter two sample materials both contained measurable amounts of Cs-137 and Co-60 as well. Selected samples from on-site areas are routinely sent for a more complete analysis supporting SNEC remediation efforts.

The surface areas and subsurface to one meter deep below the current excavation surrounding the CV are classified as class 1 survey areas. Chapter 5.0 provides the survey classifications that result from the characterization data, see Table 5-2.

2.2.4.3 Pavement

Paved and unpaved roads are indicated on Figures 2-11 and 2-12. The pavement area south of the DSF has had subsurface sampling and gamma logging performed (sample location #14 and 15 in tables 2-15 and 2-16, shown on Figure 2-16). Results of sampling and gamma logging in these two locations showed no activity related to licensed operations. Site access roads (paved and unpaved) extend over the SNEC Facility property as well as Penelec area properties. Scan surveys of these surfaces were performed using 2" diameter by 2" long sodium iodide (NaI) detectors. Because of the variability of natural occurring site radionuclides, background values were determined by re-evaluation on a location by location basis, supported by sample collection and analysis of the major gamma emitters, Cs-137 and Co-60.

The main access roadway to the site enters the Penelec property from Power Plant Road from Pennsylvania Route 913. The entrance road extends approximately 1/8 mile onto the site before terminating at a trailer complex. Various side roads branch from this main site access road into other areas of the site. An old access roadway to the Saxton Steam Generating Station (SSGS) west of the nuclear station also was included in the survey coverage. Much of this old roadway was required to be uncovered due to overburden soils and fly-ash that were deposited during previous SSGS demolition efforts. There are two main paved areas at the site. One area lies between the Penelec warehouse and Penelec garage areas (South and Southwest of the site). The second is a paved area by the Decommissioning Support Facility. Figures 2-11, 2-12 and 5-1 show these features in detail.

Current and abandoned site access roads, including paved and unpaved surfaces and sub-pavement soils have been characterized and the results summarized in Table-2-28. A comparison of these results indicates the site paved and unpaved surfaces and sub-pavement soil radioactivity levels are consistent with similar materials offsite (non-impacted). The radiological characterization results of these areas indicate they should be non-impacted. However, the survey classification of these areas as impacted is based on Historical Site Assessment information as to the use and history of these areas and a very conservative application of such classification from MARSSIM guidance.

Chapter 5.0 provides the preliminary survey classifications that result from the characterization data, see Table 5-2.

2.2.4.4 Environment (REMP)

GPU Nuclear conducts a comprehensive radiological environmental monitoring program (REMP) at SNEC to measure levels of radiation and radioactive materials in the environment. The information obtained from the REMP is then used to determine the effect of SNEC operations, if any, on the environment and the public.

The NRC has established regulatory guides that contain acceptable monitoring practices. The SNEC REMP was designed on the basis of these regulatory guides along with the guidance provided by the NRC Radiological Assessment Branch Technical Position for an acceptable radiological environmental monitoring program (Reference 2-26).

The important objectives of the REMP are:

- To assess dose impacts to the public from the SNEC Facility.
- To verify decommissioning controls for the containment of radioactive materials.
- To determine buildup of long-lived radionuclides in the environment and changes in background radiation levels.
- To provide reassurance to the public that the program is capable of adequately assessing impacts and identifying noteworthy changes in the radiological status of the environment.

- To fulfill the requirements of the SNEC Facility License and associated Technical Specifications.

In addition to its role in determining the effect of operations, the REMP data provides valuable current and historic information on the radiological conditions of the environment surrounding the site. This information will be used to compliment the characterization survey data to assess the classification of off-site areas and the possible need for any remediation.

2.2.4.4.1 Sampling

The program consists of thermoluminescent dosimeter measurements and collection of samples from the environment, analyzing them for radioactivity content, and then interpreting the results. These samples include, but are not limited to, air, water, sediment, soil, vegetation and groundwater. Thermoluminescent dosimeters (TLDs) are placed in the environment to measure gamma radiation levels. The SNEC Offsite Dose Calculation Manual (ODCM), (Reference 2-13) defines the sample types to be collected and the analyses to be performed.

Sampling locations are established by considering topography, meteorology, population distribution, hydrology, and areas of public interest. The sampling locations are divided into two classes, indicator and control. Indicator locations are those which are expected to show effects from SNEC activities, if any exist. These locations were selected primarily on the basis of where the highest predicted environmental concentrations would occur. The indicator locations are typically within the site boundary, along the perimeter fence or a few miles from the SNEC Facility.

Control stations are located generally at distances greater than 10 miles from SNEC. The samples collected at these sites are expected to be unaffected by SNEC operations. Data from control locations provide a basis for evaluating indicator data relative to natural background radioactivity and fallout from prior nuclear weapon tests. Figure 2-24 shows the current sampling locations around the facility. The most recent REMP aquatic sediment sampling results for 2001 are presented in Table 2-19. Sample locations A1-1 and C1-1 are in impacted class 1 surface soil areas. TLD results are provided in Table 2-20.

2.2.4.4.2 Analysis

In addition to specifying the media to be collected and the number of sampling locations, the ODCM also specifies the frequency of sample collection and the types and frequency of analyses to be performed. Also specified are analytical sensitivities (detection limits) and reporting levels.

Measurement of low radionuclide concentrations in environmental media requires special analysis techniques. Analytical laboratories use state-of-the-art laboratory equipment designed to detect all three types of radiation emitted (alpha, beta, and gamma). This equipment must meet the analytical sensitivities required by the ODCM. Examples of the specialized laboratory equipment used are germanium detectors with multichannel analyzers for determining specific gamma-emitting radionuclides, liquid scintillation counters for detecting tritium (H-3), low level proportional counters for detecting gross alpha and beta radioactivity and alpha spectroscopy for determining specific transuranic isotopes.

Calibrations of the counting equipment are performed using standards traceable to the National Institute of Standards and Technology (NIST). Computer hardware and software used in conjunction with the counting equipment performs calculations and provides data management.

2.2.4.5 Groundwater

Groundwater monitoring is conducted to check for water leakage, if any, from the SNEC Containment Vessel and residual radioactivity from previously demolished structures. In addition, due to the site history of spills, soil contamination and previously demolished structures, monitoring of ground water is an important element in site characterization. An investigation was performed to define the depth of the bedrock surface and the orientation of the bedrock groundwater flow pathways (Reference 2-15). The site is immediately underlain by a fill-layer composed of flyash, cinders and/or silt and sand-size sediment. A layer of boulders in a silty clay matrix underlies this fill-layer. The surface of the bedrock lies beneath this boulder layer at a depth between approximately 7.5 to 18 feet.

The results of this investigation indicate that the overburden groundwater occurs at a depth ranging from approximately 4 to 16 feet. Groundwater elevation contour maps indicate that the groundwater within the overburden soil flows west toward the Raystown Branch of the Juniata River. Groundwater movement within the bedrock beneath the site is predominately controlled by fractures in the bedrock. There are two major fracture patterns; one trends northeast to southwest, and dips moderately toward the northwest. The second fracture pattern trends northwest to southeast, and dips steeply toward the southwest (Reference 2-16). Groundwater also moves within the spaces (bedding planes) between the individual layers of the siltstone bedrock at Saxton.

In 1994, eight overburden groundwater wells were installed. Four of the wells were located hydraulically downgradient of the containment vessel (GEO-3, GEO-6, GEO-7, and GEO-8). The other four wells (GEO-1, GEO-2, GEO-4, and GEO-5), were located hydraulically upgradient of the containment vessel. GEO-9 is not sampled as it is used for level monitoring by means of a piezometer.

Two bedrock wells (MW-1 and MW-2) were also monitored. As part of the analysis performed by the contracted hydrogeologic consultants (GEO Engineering), it was determined that bedrock monitoring wells should be installed at an angle in order to maximize the interception of fractures and bedding planes. The boreholes were drilled into bedrock at an angle of approximately 25 degrees from vertical to accomplish this. Filling the annular space with a sand filter pack, a bentonite pellet seal and cement grout allows these wells to monitor only the significant fractures and bedding planes of the bedrock ground water.

In May of 1998, three additional monitoring wells were drilled. Two bedrock wells (MW-3 and MW-4) were installed to determine if there was subsurface contamination in the vicinity of the former Radwaste Disposal Facility Building. This area was monitored by well GEO-5, which in the past was the only well to show positive tritium levels, the only nuclide associated with licensed operations ever detected in the ground water. An additional overburden well (GEO-10) was installed to supplement the existing monitoring wells to monitor for the possible migration of trace amounts of tritium or other contaminants.

In addition, two off-site (potable water) samples are collected. One site monitors the well water from the Penelec Line Shack located adjacent to the SNEC Facility site. The other sample is collected from a resident in the borough of Saxton. All Saxton borough residents get their water from one of two sources. Putts Hollow reservoir is the primary source, but during low water levels, the township switches to the Seton Plant water supply, which draws from the Juniata River upstream of the SNEC Facility. Neither of these samples have ever detected any radioactive contaminates.

Remediation activities have resulted in several monitoring wells being removed from service. Additional wells have been added as a result of discussion with NRC representatives to monitor the upgradient and downgradient ground water. Of particular note, at the request of the NRC a deep angle well was installed in March 2002 adjacent to and hydraulically downgradient of the CV. This well is intended to monitor for potential ground water and subsurface contamination originating from the CV or from migration of contaminants down through the backfill adjacent to the CV. The location of all wells, both in-service and abandoned is shown on Figures 2-17 and 2-32.

2.2.4.5.1 Groundwater Results

Locations of the onsite groundwater stations sampled are shown in Figures 2-17 and 2-32. Historically the results from the analyses performed on these samples indicated no radioactive contamination from plant-related radionuclides, other than tritium. Of the 57 groundwater samples collected in 2001, none showed positive tritium. The results are well below the USEPA's Primary Drinking Water Standard of 20,000 pCi/L (Reference 2-18). Tritium analysis requires a minimum sensitivity of 2000 pCi/L. Required sensitivities for Co-60, Cs-134, and Cs-137 (gamma emitting radionuclides) are 15 pCi/L. Year 2001 groundwater monitoring results are given in Table 2-17a. Year 2002 data was not available at the time of this submittal.

As stated earlier, GEO-5 originally was the only well to show positive tritium levels. The first sample obtained from GEO-5 was collected and analyzed July of 1994. A "Less Than" result for tritium was reported. Gamma analysis performed on this sample yielded "Less Than" activities. The October 1994 sample reported 560 pCi/L tritium. A special collection was performed two weeks later to confirm the positive tritium and a result of 310 pCi/L was obtained. Gamma analysis continued to show no reportable activity.

Quarterly and special collections from GEO-5 yielded some positive and some "Less Than" tritium activities. The highest activity of tritium (760 pCi/L) was observed October 1995. Since that time, no concentrations above 200 pCi/L were observed. Table 2-18 is a list of all tritium results that have been performed since the start of GEO-5 monitoring.

Upon review of these results, it appears that the activity in the GEO-5 area can be attributed to pockets of tritiated water trapped in fractures leading to the overburden groundwater. In order to assess the possibility of other contaminates in this area, GPU Nuclear contracted Haley & Aldrich, Inc. (formally GEO Engineering) to add supplemental monitoring wells in this location (Reference 2-17). These new wells showed infrequent tritium activity slightly above the MDA. The new monitoring wells, like the former wells, yielded "Less Than" activities for gamma analysis. Table 2-17a lists the tritium results from all the monitoring wells sampled in the year 2001. The results indicate that no other contaminants are present in the groundwater.

Based on the ground water monitoring program results, no contamination of ground water, with the exception of tritium well below the USEPA's Primary Drinking Water Standard of 20,000 pCi/L, has been observed over the monitoring period. The transit times for contaminant movement would indicate that no such contamination will occur as it would have been observed with or shortly following the positive tritium results.

Recent groundwater testing results (last 12 months) indicate tritium is not present above levels of measurable detection. In May 2001, additional monitor wells (OW-7 and OW-7R) were installed closer to the Site to increase confidence that tritium was not present in the groundwater. In addition, monitor wells were installed in the backfill of the discharge tunnel (OP-3 and OP-4). Tables 2-17a and 2-17b provide sample results for the new monitoring wells. Figure 2-17 is updated to show all prior and current monitoring well locations.

In 2001, the NRC requested SNEC analyze groundwater samples for hard to detect nuclides and transuranics (HTDN/TRU). Nine wells were sampled and analyzed by an off-site laboratory for HTDN/TRU. Except for naturally occurring uranium, all results were less than the minimum detectable activity (<MDA). The results are reported in Table 2-17b.

Special monitoring of ground water was requested by the NRC in early 2002 in order to validate reported data and the conclusions related to potential ground water contamination. In April 2002, ten (10) groundwater monitoring wells were sampled under NRC observation. The samples were split with the NRC who had the analyzed by Oak Ridge Institute for Science and Education (ORISE). ORISE analyzed the samples for I-129, Co-60, Cs-137, Am-241, Pu-238, Pu-239, Pu-241, U-234, U-235, U238, total uranium, Sr-90, C-14 and tritium. The ORISE results are reported in Reference 2-34. SNEC analyzed the split samples for Cs-137, Cs-134, Co-60, and tritium, SNEC results are reported in Table 2-32. Review of both sets of analysis confirms the conclusion that no radionuclides related to plant operations are present in the monitored groundwater.

Reference 2-32, submitted to the NRC on January 24, 2002 contains information on the SNEC site hydrogeology, monitoring well placement and sampling results.

2.2.4.6 Surface Water

The Juniata River surface water is monitored for radionuclides of potential SNEC Facility origin. Two grab samples, one control and one indicator, are collected on a quarterly basis and analyzed for gamma emitting radionuclides and tritium. The indicator sample was collected at the discharge bulkhead leading into the river, while the control sample was collected upstream of the discharge. No tritium or other radionuclides attributed to SNEC operations were detected above the minimum detectable concentration (MDC).

2.2.4.7 River Sediment Characterization

The Raystown Branch of the Juniata River meanders from its headwaters near Deeters Gap in Somerset County through rural Bedford County. From Deeters Gap, the river runs an easterly course through the Town of Bedford, Pennsylvania. After Bedford, the river takes a northeasterly course to Saxton, Pennsylvania where the river begins to form Raystown Lake. The river upstream of Raystown Lake is characterized by slow pools and interrupted by fast shallow riffles.

The Saxton Steam Generating Station (SSGS) Dam, located adjacent to the SSGS, was constructed to impound water for the SSGS. Although this dam was breached after shutdown of the SSGS in 1974, it was in place during the operational period of the Saxton Nuclear Experimental Corporation (SNEC) Facility. The SSGS Dam was a 780 feet long concrete gravity dam on the Raystown Branch, about 700 feet downstream from the mouth of Shoup Run. Backwater from the SSGS Dam extended 1.5 miles upstream according to one historical report. However, based on a crest elevation of approximately of 794.00, it is possible that the backwater created by this dam extended to a point approximately 3.5 miles upstream. The pool created by the SSGS Dam received potentially contaminated runoff from the spray pond area and is therefore a depositional feature that was considered for sampling activities.

2.2.4.7.1 Sample Collection Methods

Sample collection methods were selected for each sample collection site based on site reconnaissance activities conducted prior to sampling. At each site one of the following methods was used to collect samples:

1. Core sampling
2. Ponar sampling
3. Suction sampling
4. Scoop sampling

2.2.4.7.1.1 Core Sampling

Core sampling was used at sites where sediment depth was expected to be significant. To conduct core sampling, the survey team utilized a slide hammer mounted to a 14-foot long modified sediment sampling vessel. The slide hammer was used to drive 3-inch diameter stainless steel sampling tubes with plastic liners (if appropriate) into river substratum and bottom sediments. Sampling tubes were driven to refusal in all cases (penetration < 6 inches per 50 hammer blows). The core sample was then recovered using a winch system.

2.2.4.7.1.2 Ponar Sampling

Ponar sampling was conducted at sites where core sampling was not expected to result in significant sediment recovery but sediment depth was sufficient to allow effective use of a Petit Ponar sampler. Ponar sampling was accomplished by slowly lowering a 6" Petit Ponar sampler on a rope to the substrate and closing the sampler with a sharp pull on the rope. The sampler was then raised and the sampler contents were emptied into one or more 10-gallon plastic tub(s). Multiple ponar grabs were obtained for each sample in an effort to collect a sufficient sample volume for analytical testing. The contents of the 10-gallon plastic tub(s) were allowed to settle and excess water was removed by decanting.

2.2.4.7.1.3 Suction Sampling

Suction sampling was conducted at submerged sites where neither core sampling nor ponar sampling was expected to be effective due to minimal sediment deposition. Suction sampling was conducted using a trash pump with a small nozzle that prevented the collection of large particles. To conduct suction sampling, a 30-inch diameter corrugated polyethylene pipe section that measured 22 inches long was placed on the streambed to isolate the sample location. The substrate was agitated by the sampling team to suspend fine-grained sediments and sediment-laden river water was pumped to two 50-gallon plastic tubs. The contents of the 50-gallon plastic tub(s) were allowed to settle, and excess water was removed by decanting. The contents remaining in the two 50-gallon plastic tubs were then combined into one 10-gallon plastic tub.

2.2.4.7.1.4 Scoop Sampling

River levels during the sampling period were sufficiently low to allow collection of sediments from areas of the streambed that was not submerged. Sediment sampling in these exposed areas that are normally submerged areas was accomplished by scooping sediment into plastic bags. In some areas, cobbles and boulders were moved to expose sediment deposits and facilitate collection of finer-grained sediments.

2.2.4.7.1.5 Sample Collection Summary

The selection of the sediment sampling sites was based on areas of interest and field reconnaissance activities performed to identify likely depositional zones. Field reconnaissance typically consisted of visual observations of substrate and river flow conditions and physical probing of the substrate using steel rods or other implements. In addition, reconnaissance included use of a recording fathometer where appropriate to obtain information regarding the water depths. Table 2-23 lists the sample locations and type.

The sampling locations included background river sites, near field river sites, river sites in the immediate vicinity of the SNEC Weir discharge, river sites in the immediate vicinity of the SNEC Discharge Tunnel, and standing water sites near the former Spray Pond. At each site, two samples were collected. Pertinent sample information was recorded on Sediment Sampling Data Forms, and field notes were recorded in an Environmental Field Book. Table 2A-1 presents an overview of the sampling program and the following sections summarize sample collection activities.

Table 2A-1

Overview of Sampling Program

Area of Interest	Number of Sample Collection Sites	Number of Samples
Background	3	6
Near Field River Sites	10	20
SNEC Discharge Tunnel	5	10
SNEC Weir Line	6	12
Spray Pond	2	4
Total	**26**	**52**

2.2.4.7.2 Background Sites

Background sites were located in the river upstream of possible contamination from the SNEC Facility. These sites were identified as BKG-1, BKG-2, and BKG-3

BKG-1 is located near the right bank of the river in the large pooled area upstream of the bridge at Riddlesburg, PA. Site BKG-1 was selected after conducting site reconnaissance of the Riddlesburg Pool. Reconnaissance started at the Riddlesburg Bridge and proceeded upstream until a suitable sediment deposition area was discovered. By randomly probing with a steel rod from a boat, it was determined that the Riddlesburg Pool substrate consisted primarily of cobbles and boulders. Soft sediment deposits were found in 4 feet of water at Site BKG-1. Core samples SXSD1537 and SXSD1538 were obtained at this location.

BKG-2 is located in Warriors Path State Park near the left bank just downstream from the end of Warriors Park Road. Site BKG-2 was selected after conducting reconnaissance by boat in one pooled area (known locally as "Big Salmon Hole") and by wading in riffle and run areas which predominate in this area. Reconnaissance proceeded from "Big Salmon Hole" downstream to Site BKG-2. Substrate in the pool and riffle/run areas consisted primarily of cobbles and boulders. Soft sediment deposits were found in 2.5 feet of water at Site BKG-2. Ponar samples SXSD1539 and SXSD1540 were obtained at this location.

BKG-3 is located in Warriors Path State Park near the right bank just downstream of the Canoe/Raft Access Ramp. Site BKG–3 was selected after wading riffle and run areas near the access ramp. Substrate in the river near the access ramp area consisted primarily of cobbles and boulders. Soft sediment deposits were found at 0.5 feet of water at Site BKG-3. Ponar samples SXSD1543 and SXSD1544 were obtained at this location.

2.2.4.7.3 Near Field River Sites

Ten near field river sites referred to as Sites 1 through 4 and Sites 6 through 11 are located in depositional zones that are in close proximity to the SNEC Facility. Each of these sites is located in an area that could have been impacted by SNEC Facility discharges. Sites 1 through 3 are in the former pool area upstream of the SSGS Dam, and may have been impacted by spray pond discharges. Site 4 is located just downstream of the SSGS Dam and may have also been impacted by the spray pond discharges. In addition, Site 4 is downstream of the former Shoup Run shunt line discharge which carried acid mine drainage (AMD) to the Raystown Branch during the SNEC Facility's operational period. Site 4 samples could provide an indication of whether radiological contaminants adsorbed to AMD precipitates and deposited in close proximity to the SNEC Facility. Site 5 was intended to be in close proximity to the SNEC Facility in the vicinity of the Discharge Tunnel and Weir Line. However, Site 5 was abandoned because this same area was well represented by other sampling sites in close proximity to the Discharge Tunnel and Weir Line. Site 11 was added downstream to compensate for the removal of Site 5 from the sampling program. Sites 6 through 11 are downstream of all SNEC Facility point source discharges.

2.2.4.7.4 Weir Line Sites

Six weir sites were located in the outfall vicinity of the former Weir Line. These sites are identified as Weir 1 through Weir 6. Weir 6 location was added later as a confirmatory point to Weir 1, which indicated Cs-137 activity above background.

2.2.4.7.5 Discharge Tunnel Sites

Five Discharge Tunnel Sites were located in the immediate vicinity of the Discharge tunnel. These sites are identified as Discharge Tunnel 1 through Discharge Tunnel 5.

2.2.4.7.6 Spray Pond Sites

Two Spray Pond Sites were located in the immediate vicinity of the former Spray Pond. These sites are identified as Spray Pond Lagoon, and Spray Pond Bog

2.2.4.7.7 Spray Pond Lagoon

The Spray Pond Lagoon is a pool of standing water (approximately 10 feet deep) that has formed at the mouth of Shoup Run. The Lagoon, which is fed by Shoup Run, remains separate from the river except during high flow. The Spray Pond Lagoon site was included in the sampling program because it is adjacent to the former Spray Pond, and it was probably part of the former pool created by the SSGS Dam. Core samples SXSD1498 and SXSD1499 were obtained at this location.

2.2.4.7.8 Spray Pond Bog

The Spray Pond Bog is an area of shallow standing water (approximately 2 feet deep) that has formed along the north side of the Shoup Run dike. The Shoup Run Dike runs along the south side of Shoup to its mouth. The Spray Pond Bog site was included in the sampling program because it is adjacent to the former Spray Pond and historic aerial photographs suggest that runoff from the Spray Pond accumulated in this area. Ponar samples SXSD1500 and SXSD1501 were obtained at this location.

2.2.4.7.9 Sample Results

Tables 2-24 and 2-25 provide the radiological results. With the exception of Weir 1 & 6 locations all other sampling locations had results that were at or below environmental background detection levels and are thus classified as non-impacted. U-234, U-235 and U-238 activity was also found in samples. Results of these uranium nuclides are listed in Table 2-25. These results are indicative of natural background uranium.

Weir 1 & 6 samples averaged 1.7 pCi/g for Cs-137. These samples were obtained from a 25 m^2 (approximate) area surrounding the location where the mouth of the weir pipe used to be (i.e. 4 feet from weir head wall into the river). The contamination in this area is approximately equal to 25% of the site DCGL and will be classified as an impacted Class 2 area. This information is reflected in the area classifications in Chapter 5 (Figure 5-1 and Table 5-2) of the SNEC LTP. Reference 2-31, submitted to the NRC on January 11, 2002 contains information on the river sediment sampling program.

2.3 BACKGROUND DATA

The License Termination Plan and the Final Status Survey activities require that applicable background radiation levels be established surrounding the SNEC site. In support of this need, sampling and surveys were conducted as part of the characterization effort to establish soil background levels and background exposure rates at each sample location. Background sampling locations were established by considering topography, meteorology, population distribution and areas of public interest.

The Background Soil Study program was designed on the basis of applicable NRC guidance and direction provided by the NRC Radiological Assessment Branch Technical Position for an acceptable environmental monitoring program (Reference 2-26).

Background stations are generally located at distances greater than 10 miles from the SNEC Facility. The samples collected at these locations are expected to be unaffected by SNEC operations. These data from background locations provide a basis for evaluating indicator data relative to natural background radioactivity and the effects of fallout from atmospheric nuclear weapons tests.

2.3.1 Summary of Soil Results

Locations approximately 10 miles from the site were selected in each of the 16 directional sectors. During the week of July 13, 1999, sampling and survey work was conducted. Exposure rate measurements were taken using a Bicron MicroRem meter. Twenty soil grab samples were taken and split between SNEC and the former GPUN Environmental Radioactivity Laboratory (ERL). Table 2-21 lists the ERL analysis results of the typical isotopes seen in the environment. Table 2-22 provides a list of the exposure rate measurements.

Per Table 2-21, the average specific activity (pCi/g) in the soil background for each of the typical nuclides is listed as follows with the associated two-sigma uncertainty value:

K-40	Cs-137	Ra-226	Th-232
14 +/- 15.5	0.28 +/- 0.39	1.8 +/- 1.1	0.9 +/- 0.5

As shown in Table 2-22, the average of the exposure rate measurements is **7 +/- 3 (2σ) uRem/hr.**

2.3.2 Concrete Background Data

As with the background soil surveys, it is necessary to collect information on the background radioactivity characteristics of concrete similar to that used in the SNEC Facility and SSGS.

To gather this data core bore samples were taken from surrounding Penelec property and from locations in and around the town of Saxton. These two groups of samples are believed to be from the same construction time period as that of the SNEC Facility, and are considered to be representative of concrete background for relevant nuclides. Tables 2-9 and 2-10 present sample locations and results for these two groups. This data will be used in conjunction with Final Status Survey results to determine the radionuclide inventory in concrete remaining at the site.

In support of Final Status Survey work, additional concrete samples will be obtained to use in surveying the SSGS structures. As with the SNEC Facility concrete, representative background samples from similar construction will be used to compare with the SSGS survey results.

2.3.3 Additional Surveys

Future work will expand on the samples and surveys taken to date to further establish background radioactivity levels for site specific materials such as structural steel.

2.4 SURVEY INSTRUMENTATION

A variety of survey instrumentation has been used in support of site characterization surveys. The following are the principal instruments employed:

1. Low-level dose rate measurements: Bicron MicroRem meter, scintillation based dose rate instrument.

2. Exposure rate measurements higher than the range of the Bicron MicroRem meter: Eberline RO-2 or equivalent, ion chamber instrument.

3. Beta/gamma scans and fixed points for fixed and loose contamination: Eberline E-140N, Geiger-Mueller thin window detector.

4. Alpha smear counting: Eberline SAC-4, scintillation based scaler.

5. Field alpha contamination surveys: Eberline ASP-1, scintillation based detector.

6. Beta/gamma smear counting: Ludlum-2000, Geiger-Mueller thin window scaler.

7. Photon Spectral Analysis: Canberra and EG&G Ortec HpGe systems.

8. Tritium: Beckman low energy beta liquid scintillation counter.

9. Alpha spectroscopy: surface barrier and PIPS laboratory instruments for TRU analysis.

2.5 QA/PROCEDURES

The SNEC Facility has been in a decommissioning mode for some time. These efforts, including the majority of the characterization process, predate the MARSSIM process. Previous characterization efforts used NUREG/CR-2082 (Reference 2-9) and NUREG/CR-5849 (Reference 2-23) to direct the characterization effort. These references do not employ the "Data Quality Objective" process when planning characterization activities. Under these guidance documents, characterization surveys and sampling is performed on an "as needed" basis, considering site conditions and operational history. The overall purpose of such a program is to establish the nature and extent of radioactive contamination. However, a retrospective review of the SNEC Facility site characterization process shows that the intent of the Data Quality Objective (DQO) process has been met.

The characterization program has been conducted using the SNEC procedure No. 6575-PLN-5420.06, "SNEC Site Characterization Plan" (Reference 2-4). This comprehensive plan provided an organized approach to specifying survey and sample locations and lower tier implementing procedures specified sampling and survey technique as well as laboratory analyses.

In concert with the DQO process, criteria or goals for characterization were established and survey and sampling plans developed to achieve these goals. Those goals closely follow those established by MARSSIM to provide the quality data needed to support the Final Status Survey. Some of those goals are:

1. To collect information from locations where little is known about radiological conditions.

2. Sample those areas indicated in the HSA as suspect.

3. Provide information on the relative concentrations of radionuclides of concern and provide input to initial DCGL development.

4. Provide sufficient repeat and duplicate analysis to ensure confidence in sample results.

5. To provide information to support timely and adequate remediation.

6. To provide accurate and timely information about site conditions to stakeholders during the decommissioning process (the public, regulators, licensee management, etc.)

The principal study questions for all SNEC Facility site characterization work have been:

1. Are contaminants present at the site as a result of licensed activities? if present;

2. Are contaminant concentrations above background levels and to what degree do they approach postulated DCGL values?

The SNEC Facility Decommissioning Quality Assurance Plan (Reference 2-25) ensures that all survey activities are performed in a manner that assures the results are accurate and that uncertainties have been adequately considered. All sampling, analysis and surveys have been performed under written procedures, which are reviewed and approved in a rigorous fashion. Trained and qualified individuals carry out these activities. Radiological survey instrumentation and laboratory equipment is operated in accordance with SNEC procedure 6575-QAP-4220.01, "Quality Assurance Program for Radiological Instruments", (Reference 2-24). Characterization data, as well as calibration and source check records are maintained in accordance with approved procedures that comply with NRC and industry requirements. All characterization activities have been and continue to be conducted under the auspices of a comprehensive quality assurance program, specifically 1000-PLN-3000.05, "SNEC Facility Decommissioning Quality Assurance Plan" (Reference 2-25).

2.6 CONCLUSIONS

The SNEC Facility site has been comprehensively characterized. The results support decisions related to remediation required and the classification of land areas, systems and structures as to non impacted or impacted status. The data also supports the classification of areas if impacted, and the establishment of initial DCGLs.

In general, the characterization results support the continued remediation of the Containment Vessel (CV) and the pipe tunnel surrounding the CV. The CV interior concrete is contaminated on surfaces and in areas where cracks and defects have allowed contaminants to reach subsurface areas. Areas of CV concrete in the reactor storage well that are above the operating water level, are activated from neutron flux. Due to the nature and extent of CV concrete contamination, all of the interior CV concrete will be removed. The CV steel liner (shell) is activated and, following interior concrete removal, will require the remediation of loose surface contamination. The CV pipe tunnel is scheduled to be completely removed prior to the Final Status Survey. Following removal, the soil beneath the CV pipe tunnel will need to be more fully characterized as it is currently inaccessible.

Soil, particularly that surrounding the CV will require remediation. Some subsurface samples and surveys indicate that remediation of soil north of the CV may be required to a depth of ten (10) feet. In an effort to justify the classification of the backfill surrounding the CV below the 797.6' elevation and under the CV as non-impacted, an extensive characterization and sampling project was conducted in this area. Approximately 857 samples were obtained and analyzed from 112 locations around the CV. Depths of these samples ranged from the surface to 150' deep. Sample media included soil, soil like materials, bedrock, groundwater and concrete from the exterior CV saddle. Of the 857 samples analyzed, 35 of those detected positive activity. Of those 35 positive results, five (5) indicated Cs-137 above background. These ranged from 0.6 pCi/gm to a high of 0.9 pCi/gm, all well below the applicable DCGL. No positive results were detected >10' below the surface. A complete listing of the analysis results is given in Table 2-30. Due to the volume of data with no positive activity, a separate table, 2-31 provides a listing of all positive results. These characterization results justify the classification of these areas as listed in Chapter 5.0.

Some soil sample results offsite but on surrounding Penelec property indicate the area has been impacted by SNEC Facility operations. These areas will be classified as "impacted" and included in the Final Status Survey. Initial characterization data indicates that remediation of these areas may not be required.

The Saxton Steam Generating Station (SSGS) discharge tunnel is contaminated as a result of routine radioactive liquid effluent discharges from the SNEC Facility. Characterization of this structure indicates that extensive remediation will not be needed to meet final release criteria. However, several piping sections required removal as they were significantly above the applicable DCGL.

The SSGS intake tunnel has been characterized and is minimally impacted by SNEC Facility operations. Remediation is not required to meet the proposed DCGLs however the SSGS intake tunnel will be included in the Final Status Survey.

The SSGS footprint including the turbine room, firing aisle and boiler pads has been characterized and these areas are impacted by SNEC Facility operations. These areas will be included in the Final Status Survey.

The Decommissioning Support Facility (DSF) is in use at this time to support decommissioning and contains radioactive material that precludes characterization sufficient to determine if remediation will be required to meet final release criteria. In addition, the final disposition of this building has not been determined; i.e. will the building be removed prior to the Final Status Survey. If the structure remains it will be included in the Final Status Survey.

Other buildings, structures and systems offsite but on the surrounding Penelec property (excepting the SSGS discharge tunnel described above) will likely not require remediation to meet final release criteria. However, they have been impacted by the operation of the SNEC Facility and will be included in the Final Status Survey process. This includes the Penelec garage (Figure 2-19), the Penelec warehouse (Figure 2-20) and the Penelec "line shack" (Figure 2-21). The Penelec garage and warehouse are scheduled to be demolished prior to performance of the Final Status Survey, if they remain they will be included in the survey.

The REMP data and characterization of offsite environmental areas indicate that remediation of offsite areas including effluent release pathways will not be required. The liquid effluent discharge points to the Raystown Branch of the Juniata River have been impacted by SNEC Facility operations and these areas will be classified as "impacted" and included in the Final Status Survey.

The river sediment of the Raystown Branch of the Juniata River has been characterized and is not impacted by SNEC Facility operations. The river including surface waters and sediment are classified as non-impacted.

Due to the use of mixed oxide (MOX) fuel at the SNEC Facility and the history of failed fuel, special emphasis has been placed on the detection of so called hard to detect nuclides and transuranic isotopes (HTDN/TRU) during characterization. Over 200 samples were analyzed for

HTDN and or TRU. These results are used to determine the appropriate nuclide ratios/mix for the appropriate surrogate DCGL and to plan remediation activities. The extensive analysis performed for HTDN/TRU has enabled SNEC to focus on those nuclides present as a result of licensed operations as discussed in section 6.2.2.3. Table 2-29 provides the results of HTDN/TRU analysis performed to date and is provided as requested by the NRC.

Supplemental characterization information has been submitted to the NRC under separate cover in References 2-30, 2-31 and 2-32.

2.7 REFERENCES

2-1 Code of Federal Regulations, Title 10 Part 50.82, "Application for Termination of License"

2-2 USNRC Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for nuclear Power Reactors," January 1999

2-3 GPU Nuclear, "1994 Saxton Soil Remediation Project Report"

2-4 SNEC procedure No. 6575-PLN-5420.06, "SNEC Site Characterization Plan"

2-5 Station Work Instructions:

2-5.1 SWI-94-001, "Remove Core Bore Samples from Saxton Containment Vessel Bldg. Structures", Rev 2

2-5.2 SWI-94-002, "Bulk Sample Collection from SNEC Site Facilities in Preparation for Offsite Analysis"

2-5.3 SWI-94-003, "System Sampling at SNEC Facilities"

2-5.4 SWI-99-065, "Collecting Samples of Scabbled Concrete in the SNEC CV

2-5.5 SWI-99-068, "Characterization of the Remaining On-Site Structures",

2-5.6 SWI-99-069, "Saxton Coal Fired Steam Plant Discharge Tunnel Area"

2-5.7 SWI-99-070, "SNEC Site Sub-surface Soil Gamma Logging and Sampling"

2-5.8 SWI-99-071, "Saxton Out-falls and Other Remote Areas"

2-6 "SNEC Facility Site Characterization Report", May 1996

2-7 NUREG-1575, "Multi-Agency Radiation Survey and Site investigation Manual (MARSSIM)," Revision 1 August 2001

2-8 SNEC Report, "Decommissioned Status of the SNEC Reactor Facility", February 20, 1975

2-9 NUREG/CR-2082, "Monitoring for Compliance with Decommissioning Termination Survey Criteria"

2-10 "Saxton Nuclear Power Plant Final Release Survey of Reactor Support Buildings", GPU Nuclear Corporation report, Revision 3, March 1992

2-11 "Confirmatory Radiological Survey for Portions of the Saxton Nuclear Experimental Facility, Saxton, Pa.", June 1991, Oak Ridge Associated Universities

2-12 USNRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear reactors," June 1974

2-13 "SNEC Facility Offsite Dose Calculation Manual", "E900-PLN-4542.08"

2-14 GPU Nuclear Report, "SNEC Facility Historical Site Assessment", Draft January 2000

2-15 GEO Engineering "Phase I Report of Findings – Groundwater Investigation." November 18, 1992

2-16 GEO Engineering "Summary of Field Work." June 7, 1994

2-17 Haley and Aldrich "Summary of Field Work." July 24, 1998

2-18 United States Environmental Protection Agency, Primary Drinking Water Standard, 40CFR141.

2-19 CoPhysics Corp. report, "Review of the Final Release Survey of the Reactor Support Buildings at the Saxton Nuclear Experimental Facility", 12/14/99

2-20 Minutes of the February 2, 1987 SNEC briefing to NRC Region 1

2-21 TLG Services, Inc. report, "The Saxton Facility Reactor Vessel, internals, Ex-Vessel Lead, Structural Steel and Reactor Compartment Concrete Shield Wall Radionuclide Inventory", December, 1995 (TLG Document No. G01-1192-003)

2-22 RESRAD, Version 5.82, United States Department of Energy and Argonne National Laboratory, April 1998

2-23 NUREG/CR-5849, "Manual for Conducting Radiological Surveys in support of License Termination", draft of June 1992

2-24 SNEC procedure E900-QAP-4220.01, "Quality Assurance Program for Radiological Instruments"

2-25 GPU Nuclear Plan, 1000-PLN-3000.05, "SNEC Facility Decommissioning Quality Assurance Plan"

2-26 United States Nuclear Regulatory Commission Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program", Revision 1, November 1979

2-27 June 1988 "*In-situ* Survey General Public Utilities Facility and Surrounding Area", conducted by EG&G Energy Measurements for the DOE/NRC, report number DOE/ONS-8806 dated September 1990

2-28 July 1989 "Aerial Radiological Survey of the Saxton Nuclear Experimental Corporation Facility" conducted by EG&E Energy Measurements for the DOE/NRC, report number EGG-10617-1132 dated October 1991

2-29 "Saxton Nuclear Experimental Corporation Facility Decommissioning Environmental Report," Revision 2, GPU Nuclear, September 2002

2-30 GPU letter to the Nuclear Regulatory Commission E910-01-016 dated September 4, 2001: Phase 2 Characterization of the Saxton Steam Generating Station (SSGS), SSGS Discharge Tunnel and Surrounding Environs

2-31 GPU letter to the Nuclear Regulatory Commission E910-02-002, dated January 11, 2002: Phase 2 & 3 Characterization Data

2-32 GPU letter to the Nuclear Regulatory Commission E910-02-003, dated January 24, 2002: Supplemental Response to RAI #3 Questions

2-33 "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 11 to Amended Facility License No. DPR-4 Saxton Nuclear Experimental Corporation Docket No. 50-146" May 28, 1992

2-34 ORISE letter dated June 27, 2002 to Mr. Jon Peckenpaugh, U.S. Nuclear Regulatory Commission reporting the analytical results for water samples collected April 1 and 2, 2002 from Saxton Nuclear Experimental Corporation. ADAMS ascension number ML022460476

Sample Table notes:

Sample type codes are as follows:

AP – Air Particulate
AS – Asbestos
AT – Asphalt
CC – Concrete Ceiling
CD – Concrete Debris
CF – Concrete Floor
CW – Concrete Wall
DW – Discharge Water
GW – Ground Water
IW – Intake Water
LQ – Liquid
OT – Other
PC – Paint Chips
RS – Resin
SD – Sediment
SL – Soil
SM – Smears
SP – Steel Platform
ST – Steel
SW – Surface Water
VG – Vegetation
WA – Water (unspecified)
WW – Well Water

Unless otherwise noted, activity units are as follows:

pCi/g for solids
pCi/l for liquids
pCi for smears

NOTE: Less than values (<) indicate the analysis was less than the reported minimum detectable activity (<MDA), minimum detectable concentration (MDC) or lower limit of detection (LLD).

Table 2-1
Radionuclide Inventory for the SNEC Facility (2002)

Radionuclide	Total Activity Estimate (Ci)	Remaining Fraction	Total CV Activity Estimate (mCi)	% of Total
Am-241	1.12E-02	0.26	0.0029	**1.29%**
C-14	5.89E-03	0.26	0.0015	0.68%
Cm-243/Cm-244	1.73E-04	0.26	0.0000	0.02%
Co-60	7.68E-02	0.26	0.0199	**8.85%**
Cs-134	1.99E-04	0.26	0.0001	0.02%
Cs-137	4.24E-01	0.26	0.1100	**48.86%**
Eu-152	1.49E-03	0.26	0.0004	0.17%
Eu-154	5.98E-04	0.26	0.0002	0.07%
Eu-155	1.62E-04	0.26	0.0000	0.02%
Fe-55	1.01E-03	0.26	0.0003	0.12%
H-3	1.09E-01	0.26	0.0283	**12.56%**
Nb-94	2.50E-04	0.26	0.0001	0.03%
Ni-59	5.08E-03	0.26	0.0013	0.59%
Ni-63	1.60E-01	0.26	0.0415	**18.44%**
Pu-238	1.54E-03	0.26	0.0004	0.18%
Pu-239/Pu-240	3.67E-03	0.26	0.0010	0.42%
Pu-241	5.36E-02	0.26	0.0139	**6.18%**
Pu-242	7.71E-06	0.26	0.0000	0.00%
Sb-125	5.54E-04	0.26	0.0001	0.06%
Sr-90	1.17E-02	0.26	0.0030	**1.35%**
Tc-99	7.83E-04	0.26	0.0002	0.09%
U-234	6.79E-06	0.26	0.0000	0.00%
U-235	6.79E-06	0.26	0.0000	0.00%
U-238	6.79E-06	0.26	0.0000	0.00%
	0.87		0.23	100.00%

Note: % values in **Bold** are those nuclides greater than one percent (1%) of the mix.

Table 2-2
Radionuclide Concentrations - CV Pipe Tunnel Water and Sediment

Sample Number	Cs-137	Co-60
SX856950167-SD (Liquid)	3.44E-7 uCi/ml	1.16E-7 uCi/ml
SX856950167-SD (Solids)	2.94E-4 uCi/g	6.39E-6 uCi/g

Table 2-3
Radionuclide Concentrations - SSGS Discharge Tunnel - Water and Sediment

Sample Number	H-3	Cs-137	Co-60	Ni-63	TRU
SX10SD99002 2	2.1E-4 uCi/g	2.1E-5 uCi/g	< 3E-6 uCi/g	< 3E-5 uCi/g	< 7.2E-5 uCi/g
SX10SD99003 1	NR	1.2E-4 uCi/g	8.4E-7 uCi/g	NR	NR
SX10SD99003 3	NR	4.8E-3 uCi/g	3.0E-5 uCi/g	5.5E-5 uCi/g	9.6E-6 uCi/g
SX10SD99003 4	NR	6.2E-5 uCi/g	< 9E-uCi/g	NR	< 2.4E-7 uCi/g
SX5DW99017 7 (Liquid)	2.0E-7 uCi/ml	2.0E-8 uCi/ml	NR	NR	NR

NR = Not Reported

Table 2-3a
Sample Results From SR-0006, SSGS West ~790' to 811' Elevation

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX10CF01813	Hole 1	Core Bore 3"D x 6"L	< 0.16	< 0.15
SX10CF01814	Hole 2	Core Bore 3"D x 6"L	< 0.14	< 0.11
SX10CF01815	Hole 3	Core Bore 3"D x 6"L	0.32	< 0.16
SX10CF01816	Hole 4	Core Bore 3"D x 6"L	0.3	< 0 15
SX10CF01817	Hole 5	Core Bore 3"D x 6"L	< 0 15	< 0.13
SX10CF01818	Hole 6	Core Bore 3"D x 6"L	0.14	< 0.19
SX10CF01819	Hole 7	Core Bore 3"D x 6"L	0.35	< 0 19
SX10CF01897	Southeast Sump Hole 1	Core Bore 3"D x 6"L	< 0 16	< 0 15
SX10CF01898	Southeast Sump Hole 2	Core Bore 3"D x 6"L	< 0 14	< 0.15
SX10CF01899	North Central Hole 1	Core Bore 3"D x 6"L	< 0 4	< 0.28
SX10CF01900	North Central Hole 2	Core Bore 3"D x 6"L	< 0 3	< 0.2
SX10CF01834	Central Area – Drain Trough South	1 liter of Concrete Rubble	19.6	< 0 09
SX10SD01917	North Manway	Scrape Sample	0.1	< 0 1
SX10SD01918	South Manway	Scrape Sample	0.58	< 0.1
SX10SD01927	18" Line in Northwest Corner	Scrape Sample	0.9	< 0.09
SX10SD01756	North Sump 4" Tie Line	Sediment	6.1	0.41
SX10SD01757	North Sump 2' Line	Sediment	13.2	< 0 29

Table 2-3a
Sample Results From SR-0006, SSGS West ~790' to 811' Elevation, Cont'd

SX10SD01762	Seal Chamber #1 – 8" Penetration	Sediment	**31**	< 0 1
SX10SD01761	Seal Chamber #3 – Upper 8" Penetration	Sediment	**0.2**	< 0.09
SX10SD01763	Seal Chamber #3 – Lower 8" Penetration	Sediment	**3.2**	< 0 1
SX10SD01774	South Sump 4" Tie Line	Sediment	**3.6**	< 0.13
SX10SD01775	South Wall ~806' El, 8" Upper Drain Pipe	Sediment	**7.8**	< 0.07
SX10SD01776	South Wall ~803' El, 8" Middle Drain Pipe	Sediment	**0.06**	< 0 1
SX10SD01777	South Wall ~803' El, 8" Lower Drain Pipe	Sediment	**3.4**	< 0.15
SX10SD01839	790' El South Sump	Sediment	**1.3**	< 0.09
SX10SD01964	Mezzanine† – East Wall Penetration	Sediment	**0.59**	< 0 4
SX10SD01965	Mezzanine† – Manway Northeast Corner	Sediment	**0.15**	< 0.12
SX10SD01966	Mezzanine† – Northeast Central Manway	Sediment	**6.7**	< 0.14
SX10SD01967	Mezzanine† – Northeast Central Small Pipe	Sediment	**1.4**	< 0 2
SX10SD01968	Mezzanine† – West Wall Penetration	Sediment	< 0.17	< 0.17

Direct frisk of the West section of the SSGS area floor and other selected locations indicated < 100 ncpm using a standard frisker probe with the exception of the a lower section of the Northwest wall between 0" and 6" above the floor, which ranged from about 200 to 400 ncpm. General area micro REM measurements ranged from about 3 to 5 micro REM per hour throughout (taken at ~1 meter above the floor) All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma) Bold type face reports a > MDA value †Area above Seal Chambers

Table 2-3b
Sample Results From SR-0004, SSGS East ~790' to 811' Elevation

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/L)	H-3 (pCi/L)
SX10WA01724	Northeast Sump	Water	35	< 255
SX10WA01726	Southeast Sump	Water	**12.8**	< 255
SX10WA011191	Southwest Sump	Water	< 16	< 318
SX10SD01725	Northeast Sump	Sediment	**25.5**	**0.15**
SX10SD01727	Southeast Sump	Sediment	**88.1**	**0.53**
SX10SD01743	West Wall 8" Pipe Penetration	Sediment	**4.43**	< 0.08
SX10SD01744	Mezzanine† – 2" Pipe	Sediment	**84**	**3.8**
SX10SD01745	790' El Condenser Pump Pad Southwest	Sediment	**0.9**	< 0.06
SX10SD011192	Northwest Sump	Sediment	**10.9**	**0.15**
SX10CF01825	Hole # 1	Core Bore 3"D x 6"L	**3.1**	< 0.19
SX10CF01826	Hole # 2	Core Bore 3"D x 6"L	**3.7**	< 0.17
SX10CF01827	Hole # 3	Core Bore 3"D x 6"L	**109**	< 0 2
SX10CF01828	Hole # 4	Core Bore 3"D x 6"L	**464**	**1.4**
SX10CF01892	Hole # 5	Core Bore 3"D x 6"L	**0.91**	< 0.18
SX10CF01893	Hole # 6	Core Bore 3"D x 6"L	**4.68**	< 0 15
SX10CF01894	Hole # 7	Core Bore 3"D x 6"L	**0.9**	< 0.18
SX10CF01895	Hole # 8	Core Bore 3"D x 6"L	**1.0**	< 0.22
SX10CF01896	Hole # 9	Core Bore 3"D x 6"L	**57.3**	< 0.24
SX10CF01888	Northwest Sump Hole # 1	Core Bore 3"D x 6"L	< 0.17	< 0.14
SX10CF01889	Northwest Sump Hole # 2	Core Bore 3"D x 6"L	**0.31**	< 0.13
SX10CF01890	Southwest Sump Hole # 1	Core Bore 3"D x 6"L	**20.3**	< 0 24
SX10CF01891	Southwest Sump Hole # 2	Core Bore 3"D x 6"L	**10.6**	< 0.22
SX10CF011207	QA Sample	Core Bore 3"D x 6"L	**13.8**	< 0.13
SX10SD01915	Northwest Manway	Scrape	**0.56**	< 0.24
SX10SD01916	Southwest Manway	Scrape	**0.76**	< 0 16

Direct frisk of the East section of the SSGS area floor and other selected locations indicated a range of values from < 100 ncpm to as much as 1200 ncpm, using a standard frisker probe. The majority of elevated count rates were detected on the floor area Walls were for the most part < 100 ncpm. General area micro REM measurements ranged from about 2 to 5 micro REM per hour throughout (taken at ~1 meter above the floor). All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma). Bold type face reports a > MDA value.

†Area above Seal Chambers

Table 2-3c
Sample Results From SR-0011, SSGS Center Section ~790' to 811' Elevation

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX10SD011215	Floor Trough & Drain - Center Section	Sediment	**4.6**	< 0.08
SX10OT011248	South Wall Penetration @ ~810' El	Scrapings	**1.2**	< 0.16
SX10OT011249	South Wall Penetration @ ~808' El	Scrapings	**0.96**	< 0.16
SX10SD011250	South Wall Penetration @ ~807' El	Sediment	**0.12**	< 0 12
SX10OT011265	Floor Trough & Drain - Center Section	Sediment	**14.9**	< 0.1
SX10CF011208	QA Core Bore	Core Bore 3"D x 6"L	**0.12**	< 0.12
SX10CF011209	Core Bore # 1	Core Bore 3"D x 6"L	**0.13**	< 0 18
SX10CF011210	Core Bore # 2	Core Bore 3"D x 6"L	**0.3**	**0.16**
SX10CF011211	Core Bore # 3	Core Bore 3"D x 6"L	**0.42**	< 0 14
SX10CF011212	Core Bore # 4	Core Bore 3"D x 6"L	**6.0**	< 0 08
SX10CF011213	Core Bore # 5	Core Bore 3"D x 6"L	**0.19**	< 0.16

Direct frisk of the Center section of the SSGS area floor and other selected locations indicated a range of from ≤ 100 ncpm to 300 ncpm (in one small area), using a standard frisker probe The elevated count rate was detected on the base of the south wall However, walls were for the most part < 100 ncpm General area micro REM measurements ranged from about 4 to 5 micro REM per hour throughout (taken at ~1 meter above the floor) All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma) Bold type face reports a > MDA value.

Table 2-3d
Sample Results From SR-0012, SSGS Firing Isle, 806' Elevation

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX10CF010990	Hole # 1	Core Bore 3"D x 6"L	< 0.18	< 0.17
SX10CF010991	Hole # 2	Core Bore 3"D x 6"L	**0.33**	< 0.1
SX10CF010992	Hole # 3	Core Bore 3"D x 6"L	< 0 12	< 0.11
SX10CF010993	Hole # 4	Core Bore 3"D x 6"L	< 0 12	< 0 1
SX10CF010994	Hole # 5	Core Bore 3"D x 6"L	**0.13**	< 0 11
SX10CF010995	QC Hole # 1	Core Bore 3"D x 6"L	< 0 16	< 0 15
SX10SD010768	Drain # 1	Sediment	**2.8**	< 0.1
SX10SD010769	Drain # 2	Sediment	**1.6**	< 0 1
SX10SD010770	Drain # 3	Sediment	**2.4**	< 0 08
SX10SD010771	Drain # 4	Sediment	**9.3**	**0.3**
SX10SD010772	Drain # 5	Sediment	**0.62**	< 0 08
SX10SD010779	Drain # 6	Sediment	**7.2**	< 0.09
SX10SD010781	Drain # 7	Sediment	**5.77**	**0.22**
SX10SD010778	6" Drains	Sediment	**1.3**	< 0 13
SX10SD011000	Sump Pit	Sediment	**0.9**	< 0 05

Direct frisk of the Firing Aisle of the SSGS area indicated < 100 ncpm using a standard frisker probe General area micro REM measurements ranged from about 3 to 5 micro REM per hour throughout (~1 meter above the floor) All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma) Bold type face reports a > MDA value

Table 2-3e
Sample Results From SWI-99-069, SSGS Discharge Tunnel

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/L)	H-3 (pCi/L)
SX5DW99176	Seal Chamber # 1	Water	< 8	220
SX5DW99175	Seal Chamber # 2	Water	< 5	150
SX5DW99177	Seal Chamber # 3	Water	20	200
SX5DW99178	~10' Position	Water	< 5	< 140
SX5DW99179	~170' Position	Water	< 5	< 140
SX5DW99180	~290' Position	Water	< 4	< 140
SX13CF01739	Floor @ ~10' Position	Core Bore 3"D x 6"L	0.5	< 0 2
SX13CW01740	Wall @ ~13' Position	Core Bore 3"D x 6"L	1.3	< 0 2
SXCF998	Floor @ ~38' Position	Core Bore 3"D x 6"L	< 0 26	< 0.2
SX13CF01737	Floor @ ~60' Position	Core Bore 3"D x 6"L	< 0.23	< 0.17
SX13CF01738	Floor @ ~60' Position	Core Bore 3"D x 6"L	0.25	< 0.43
SX13CF01734	Floor @ ~110' Position	Core Bore 3"D x 6"L	< 0.18	< 0.19
SX13CW01736	Wall @ ~111' Position	Core Bore 3"D x 6"L	18.4	< 0.19
SX13CW01735	Wall @ ~115' Position	Core Bore 3"D x 6"L	31.5	< 0.14
SX13CW01733	Wall @ ~147' Position	Core Bore 3"D x 6"L	< 0.17	< 0.18
SX13CF01732	Floor @ ~150' Position	Core Bore 3"D x 6"L	< 0.2	< 0.18
SX13CW01731	Wall @ ~189' Position	Core Bore 3"D x 6"L	< 0 17	< 0.14
SX13CF01730	Floor @ ~200' Position	Core Bore 3"D x 6"L	0.17	< 0.24
SX13CF01729	Floor @ ~270' Position	Core Bore 3"D x 6"L	< 0.43	< 0 39
SX13CF01728	Floor @ ~340' Position	Core Bore 3"D x 6"L	< 0 2	< 0 22
SX13CW01702	Wall (Not Designated)	Concrete Rubble	0.41	< 0.06
SX13CW000649	Wall @ ~65' Position	Concrete Rubble	0.26	< 0 09
SX5CC000675	Ceiling @ ~105' Position	Concrete Rubble	1.4	< 0.08
SX5CW00661	Wall @ ~195' Position	Concrete Rubble	< 0 1	< 0 05
SX5CF000673	Floor @ ~195' Position	Concrete Rubble	0.55	< 0 13
SX13CF01709	Sump Hole @ ~350' Position	Concrete Rubble	< 0.1	< 0 08
SX10SD990033*	Seal Chamber # 1, 6" Discharge Pipe	Sediment	4800	30
SX5SD99257*	Seal Chamber # 2 Floor	Sediment	1.9	< 0.6
SX5SD99254	Seal Chamber # 2, 6" Pipe Internals	Sediment	< 0 6	< 0.4
SX5SD99258*	Seal Chamber # 3 Floor	Sediment	43	< 0.3
SX5SD99256*	~170' Position, 8" Pipe Internals	Sediment	2.2	< 0.15
SX5SD99255*	~170' Position, 15" Pipe Internals	Sediment	2.2	< 0.3
SX5SD99252*	~140' Position, 18" Pipe Internals	Sediment	3.8	< 0.5
SX13SD00365	~140' Position, 50' Down 18" Pipe	Sediment	3.1	< 0.12
SX10SD990031	Wall Scraping	Sediment	120	0.84
SX10SD990022	Floor @ ~0' Position Below Entrance	Sediment	21.2	< 3
SX5SD99263	Floor @ ~20' Position	Sediment	2.1	< 0 3
SX5SD99259*	Floor @ ~30' Position	Sediment	27	< 0 9
SX5SD99261*	Floor @ ~100' Position	Sediment	4.3	< 0 4
SX5SD99260	Floor @ ~160' Position	Sediment	1.1	< 0.3
SX5SD99253	Floor @ ~220' Position	Sediment	1.4	< 0.3
SX5SD99262*	Floor @ ~330' Position	Sediment	7.0	< 0 3
SX5SD99265	Floor @ ~390' Position	Sediment	2.0	< 0.14

Table 2-3e Contd.
Sample Results From SWI-99-069, SSGS Discharge Tunnel

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX5SD99267	Floor @ ~550' Position	Sediment	2	< 0.16
SX5SD99268	Floor @ ~490' Position	Sediment	2.2	< 0.2
SX5SD99264	Floor @ ~670' Position	Sediment	1.6	< 0.2

Direct frisk of the Discharge Tunnel area (floors, Walls & Ceiling) indicated a range of from < 100 ncpm up to a maximum of 500 ncpm using a standard frisker probe. The vast majority of elevated readings were near seal chamber # 3 on wall surfaces or were on piping that has now been removed The majority of other Discharge Tunnel concrete surfaces were < 100 ncpm General area micro REM measurements ranged from about 2 to 6 micro REM per hour throughout (~1 meter above the floor) All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma) Bold type face reports a > MDA value Sample numbers with an "*" also contained positively identified TRU radionuclides

Table 2-3f
Sample Results From SR-0008, Northeast End of SSGS Discharge Tunnel

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/L)	H-3 (pCi/L)
SX10DW01784	~460' Position	Water	25	< 253
SX10DW01783	~530' Position	Water	540	< 253
SX10DW01785	~580' Position	Water	16	< 253
SXDW1009	QA ~620' Position	Water	< 17	< 325
SX10DW01786	~690' Position	Water	< 14	< 253
SX10CF01807	Floor @ ~350' Position	Core Bore 3"D x 6"L	0.14	< 0.13
SXCF999	QA Floor @ ~370' Position	Core Bore 3"D x 6"L	< 0 2	< 0.12
SX10CF01808	Floor @ ~420' Position	Core Bore 3"D x 6"L	0.3	< 0.17
SX10CF01809	Floor @ ~490' Position	Core Bore 3"D x 6"L	< 0 23	< 0.2
SX10CF01810	Floor @ ~560' Position	Core Bore 3"D x 6"L	0.27	< 0.2
SX10CF01811	Floor @ ~630' Position	Core Bore 3"D x 6"L	< 0 49	< 0.4
SX10CF01812	Floor @ ~690' Position	Core Bore 3"D x 6"L	< 0 18	< 0.2
SX10SD01923	Floor @ ~700' Position	Rubble	0.14	< 0 04
SX10SD01924	Floor @ ~700' Position	Rubble	0.06	< 0 06
SX10SD01787	Floor @ ~350' Position	Sediment	2.4	< 0 08
SX10SD01788	Floor @ ~380' Position	Sediment	2.8	< 0 1
SX10SD01789	Floor @ ~410' Position	Sediment	2.2	< 0 1
SX10SD01792	Floor @ ~440' Position	Sediment	2.8	< 0 09
SX10SD01793	Floor @ ~470' Position	Sediment	2.6	< 0 11
SX10SD01794	Floor @ ~500' Position	Sediment	2.2	< 0.1
SX10SD01795	Floor @ ~530' Position	Sediment	1.8	< 0.1
SX10SD01796	Floor @ ~560' Position	Sediment	1.9	< 0.1
SX10SD01797	Floor @ ~590' Position	Sediment	1.8	< 0.1
SX10SD01798	Floor @ ~620' Position	Sediment	1.6	< 0.1
SXSD1008	QA Floor @ ~620' Position	Sediment	1.8	< 0.06
SX10SD01799	Floor @ ~650' Position	Sediment	1.8	< 0.1
SX10SD01800	Floor @ ~680' Position	Sediment	1.9	< 0.09

Direct frisk of the Discharge Tunnel area indicated < 100 ncpm using a standard frisker probe General area micro REM measurements ranged from about 3 to 5 micro REM per hour throughout (~1 meter above the floor). All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma) Bold type face reports a > MDA value

Table 2-3g
Sample Results From SR-0014, SSGS Spray Pump Pit

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/L)	H-3 (pCi/L)
SX10DW01902	SPP General Area	Water	< 16 8	**253**
Sample No.	**General Location Information**	**Sample Type**	**Cs-137 (pCi/g)**	**Co-60 (pCi/g)**
SX10CF01820	Hole # 1	Core Bore 3"D x 6"L	**0.09**	< 0.16
SX10CF01821	Hole # 2	Core Bore 3"D x 6"L	**0.15**	< 0.12
SX10CF01832	Hole # 3	Core Bore 3"D x 6"L	**0.16**	< 0.13
SX10CF01988	West QC Hole # 1	Core Bore 3"D x 6"L	**0.18**	< 0.11
SX10SD01904	SPP General Area	Sediment	**0.37**	< 0.05
SX10SD01905	SPP General Area	Sediment	**0.58**	< 0 08
SX10SD011301	Inside Spray Pond Pipe	Sediment	< 0 06	< 0 06
SX10SD011351	Inside Spray Pond Pipe QC	Sediment	**0.03**	< 0.05

Direct frisk of the Firing Aisle of the SSGS area indicated < 100 ncpm using a standard frisker probe General area micro REM measurements ranged from about 3 to 4 micro REM per hour throughout (~1 meter above the floor) All smears taken in this area indicated < 1000 dpm per 100 centimeter square area (beta/gamma). Bold type face reports a > MDA value

Table 2-3h
Sample Results From SR-0015, SSGS Discharge Tunnel 18" Line

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX10SD01938	18" Line ~37' from NW corner of SSGS area toward Screen Room of Intake Tunnel	Sediment	**3.2**	< 0 15
SX10SD01939	18" Line ~42' from NW corner of SSGS area toward Screen Room of Intake Tunnel	Sediment	**4.2**	< 0.1
SXSD953	18" Line ~60' from NW corner of SSGS area toward Screen Room of Intake Tunnel	Sediment	**1.8**	< 0 11

Table 2-3i
Sample Results From SR-0007, Open Land Area near SSGS Tunnels

Sample No.	General Location Information	Sample Type	Cs-137 (pCi/g)	Co-60 (pCi/g)
SX11SL01836	OW7 Test Pit in BG-133 (Surface Sample)	Soil	0.7	< 0.1
SX11SL01835	OW7 Test Pit in BG-133 (0' – 3' Below Grade)	Soil	< 0 13	<.14
SX11SL01837	OW7 Test Pit in BG-133 (3' – 6' Below Grade)	Soil	0.2	< 0.11
SX11SL01838	OW7 Test Pit in BG-133 (6' – 9' Below Grade)	Soil	< 0 09	< 0.11
SX11SL01849	OP3 Test Pit in BK-135 (Surface Sample)	Soil	0.13	< 0.12
SX11SL01850	OP3 Test Pit in BK-135 (3' Below Grade)	Soil	< 0 1	< 0.1
SX11SL01851	OP3 Test Pit in BK-135 (6' Below Grade)	Soil	< 0 07	< 0.07
SX11SL01852	OP3 Test Pit in BK-135 (9' Below Grade)	Soil	< 0 08	< 0.09
SX11SL01853	OP3 Test Pit in BK-135 (12' Below Grade)	Soil	< 0.06	< 0.14
SX11SL01854	OP3 Test Pit in BK-135 (15' Below Grade)	Soil	< 0.06	< 0 07
SX11SL01855	OW7R in BG-133 (Surface Sample)	Soil	0.19	< 0.08
SX11SL01856	OW7R in BG-133 (0' – 3' Below Grade)	Soil	0.09	< 0.07
SX11SL01857	OW7R in BG-133 (3' – 6' Below Grade)	Soil	0.11	< 0.06
SX11SL01858	OW7R in BG-133 (6' – 9' Below Grade)	Soil	< 0.1	< 0.12
SX11SL01859	OW7R in BG-133 (9' – 13' Below Grade)	Soil	< 0.05	< 0.06
SX11SL01860	OW7 in BG-133 (Surface Sample)	Soil	0.14	< 0.07
SX11SL01861	OW7 in BG-133 (0' – 3' Below Grade)	Soil	0.17	< 0.05
SX11SL01862	OW7 in BG-133 (3' – 6' Below Grade)	Soil	< 0.07	< 0.08
SX11SL01863	OW7 in BG-133 (6' – 8' Below Grade)	Soil	< 0.06	< 0.06
SX11SL01864	OW7R in BG-133 (15' – 18' Below Grade)	Soil	< 0 08	< 0.08
SX11SL01865	OW7R in BG-133 (18' – 21' Below Grade)	Soil	< 0.07	< 0.08
SX11SL01866	OW7R in BG-133 (21' – 24' Below Grade)	Soil	< 0 07	< 0.08
SX11SL01867	OW7R in BG-133 (24' – 27' Below Grade)	Soil	< 0 07	< 0.08
SX11SL01868	OW7R in BG-133 (27' – 30' Below Grade)	Soil	< 0.07	< 0.08
SX11SL01869	OW7R in BG-133 (30' – 33' Below Grade)	Soil	< 0 07	< 0.08
SX11SL01870	OW7R in BG-133 (33' – 36' Below Grade)	Soil	< 0.06	< 0.08
SX11SL01871	OW7R in BG-133 (36' – 39' Below Grade)	Soil	< 0 05	< 0.06
SX11SL01872	OW7R in BG-133 (39' – 42' Below Grade)	Soil	< 0.06	< 0 06
SX11SL01873	OW7R in BG-133 (42' – 45' Below Grade)	Soil	< 0 07	< 0 08
SX11SL01874	OW7R in BG-133 (45' – 48' Below Grade)	Soil	< 0 07	< 0 08
SX11SL01875	OW7R in BG-133 (48' – 50' Below Grade)	Soil	< 0.07	< 0 08
SX11SL01876	OP4 in BI-135 (Surface Sample)	Soil	< 0.06	< 0.07
SX11SL01877	OP4 in BI-135 (0' – 3' Below Grade)	Soil	0.73	< 0 06
SX11SL01878	OP4 in BI-135 (3' – 6' Below Grade)	Soil	< 0.05	< 0 06
SX11SL01879	OP4 in BI-135 (6' – 9' Below Grade)	Soil	< 0 04	< 0 04
SX11SL01880	OP4 in BI-135 (9' – 12' Below Grade)	Soil	0.037	< 0 06
SX11SL01881	OP4 in BI-135 (12' – 15' Below Grade)	Soil	< 0 07	< 0 07
SX11SL01883	OP4 in BI-135 (15' – 19' Below Grade)	Soil	< 0 04	< 0 04
SX11SL01884	OP4 in BI-135 (15' – 21' Below Grade)	Soil	< 0 07	< 0.08

Table 2-4
Radionuclide Concentrations - CV Paint on Inside Dome Surface

Sample Number	Cs-137	Co-60	TRU (total)
SX4PC990093	3.2E-5 uCi/g	< 2E-6 uCi/g	3.5E-8 uCi/g
SX4PC990098	5.7E-4 uCi/g	3.8E-5 uCi/g	NR
SX4PC990104	3.0E-3 uCi/g	4.0E-4 uCi/g	1E-5 uCi/g

NR = Not Reported

Table 2-5
Radionuclide Concentrations – Yard Drains

Sample Number	Cs-137	Co-60
SX10SD99002 4	1.6E-7 uCi/g	< 6E-8 uCi/g
SX8SD990027	4.7E-7 uCi/g	< 1.4E-7 uCi/g
SX10SD99003 2	3.5E-6 uCi/g	< 2E-7 uCi/g

Table 2-5a
Phase 1 SNEC Site Yard Drain Characterization Sampling Results Summary (pCi/g)

Sampling Point (see figure 2A-1)	Sample No.	Description	Cs-137	Co-60	Combined TRU
1	SX11SD990131	Man-Hole Access With Ladder 1	< 0.19	< 0.04	No Analysis
2	SX11SD990132	Man-Hole Access With Ladder 2	**0.23**	< 0.08	No Analysis
3	SX11SD990130	First Man Hole Sample Outside Fence 1	< 0.17	< 0.18	No Analysis
4	SX11SD990129	First Man Hole Sample Outside Fence 2	**0.48**	< 0.04	No Analysis
5	SX11SD990133	Shunt Line Man-Hole Access	< 0.04	< 0.04	No Analysis
6	SX11SD990135	Garage - South of Fence - 12" Line	**0.072**	< 0.05	No Analysis
7	SX10SD99223	Garage Bay #4 - Floor Drain Rim	**6.4**	< 0.3	< MDA
8	SX10SD990137	Warehouse Storm Drain 12" Feed Pipe	**0.52**	< 0.04	No Analysis
9	SX10SD990024	Warehouse Storm Drain Line	0.16	< 0.06	No Analysis
10	SX10SD990136	Warehouse Storm Main	**0.26**	< 0.06	No Analysis
11	SX11SD990134	South - Old Parking Lot Storm Drain	**0.21**	< 0.03	No Analysis
12	SX12SD99287	Shoup Run Shunt Line Outfall 1	< 0.12	< 0.11	No Analysis
13	SX12SD99279	Shoup Run Shunt Line Outfall 2	< 0.06	< 0.07	No Analysis

NOTE: Positive results are in bold typeface.

Table 2-5b
Phase 2 Summary SNEC Site Yard Drain Characterization

	Measurement Results (range)		Sample Results (range)
Location	dpm/100 cm^2	pCi/g	pCi/g
Small Garage Sumps	< 664 to < 2134	< 2.1 to < 3 8	0.2 to 1 4
Central Grated Cover Yard Drain & Line to Shunt	< 330 to 910	< 1 0 to < 2	< 0 07 to 1.1
Grated Cover Yard Drain Near Warehouse	< 309 to < 1633	< 1.1 to < 1.8	0 7 (one sample)
12" Line South of Small Garage Outside Fence	< 336 to < 656	< 1 2 to < 2.3	< 0.1 (one sample)
Unknown 12" Drainage Line West of Small Garage	< 360 to < 565	< 1 3 to < 2	< 0 1 (one sample)
Drain Line from Warehouse South to Shunt Line	< 309 to < 522	< 1.1 to < 1.8	0 11 (one sample)
Shunt Line Access Points	< 409 to < 694	< 1.4 to < 2.4	0.04 to 0.34

Table 2-6

Summary Results of Characterization for Near Site Structures

		Exposure rate survey data	Direct Frisk Data	Beta Gamma Smear Data	Alpha Smear Data
Structure	**Location**	**GA urem/hr**	**Net cpm Direct Frisk**	**dpm/100 cm^2**	**dpm/100 cm^2**
Penelec Garage (Fig. 2-19)	Interior	6.3	70	< 227	< 8.6
Penelec Garage (Fig. 2-19)	Roof	5.1	60	< 227	< 8.6
Penelec Line Shack (Fig. 2-21)	Interior	4.8	20	< 231	< 10.9
Penelec Line Shack (Fig. 2-21)	Roof	5.3	20	< 231	< 10.9
Penelec Switch Yard Bldg. (Fig. 2-22)	Interior	4	10	< 231	< 10.9
Penelec Switch Yard Bldg. (Fig. 2-22)	Roof	Not Done	0	< 231	< 10.9
Penelec Warehouse (Fig. 2-20)	Interior	8	40	< 231	< 9.9
Penelec Warehouse (Fig. 2-20)	Roof	5.3	50	< 231	< 9.9
MHB (DSF)	Interior	18	20	< 236	< 11.6
DSB (DSF)	Interior	28	60	< 236	< 11.6
PAF (DSF)	Interior	6	10	< 227	< 9.9
SSGS Discharge Tunnel (Fig. 2-18)	Interior	4	30	< 229	< 12.3

Note: These are the average results of the characterization surveys performed.

Table 2-6a
DSF Facility General Area Measurement Results

(Note: ± Values Represent 1 Standard Deviation Estimates)

Type of Material and/or Location	Average
DECOMMISSIONING SUPPORT BUILDING GENERAL AREA RESULTS	
Type of Material and/or Location	**Average**
Decommissioning Support Building (DSB) – urem/h	26.5 ± 51.4 urem/h
DSB Floor Frisk Results – ncpm	40.7 ± 30.3 ncpm
DSB Wall Frisk Results – ncpm	17 ± 17.5 ncpm
DSB Overhead – ncpm	24 ± 15.8 ncpm
DSB Floor Smear Results – dpm (beta/gamma)	< 236 dpm
DSB Wall Smear Results – dpm (beta/gamma)	< 236 dpm
DSB Overhead Smear Results – dpm (beta/gamma)	< 236 dpm
PERSONNEL ACCESS FACILITY GENERAL AREA RESULTS	
Type of Material and/or Location	**Average**
Personnel Access Facility (PAF) – urem/h	6.9 ± 2.6 urem/h
PAF Floor Frisk Results – ncpm	3.3 ± 11.5 ncpm
PAF Wall Frisk Results – ncpm	10 ± 15.1 ncpm
PAF Overhead – ncpm	7.5 ± 10.4 ncpm
PAF Floor Smear Results – dpm (beta/gamma)	< 237 dpm
PAF Wall Smear Results – dpm (beta/gamma)	< 237 dpm
PAF Overhead Smear Results – dpm (beta/gamma)	< 237 dpm
MATERIALS HANDLING BAY GENERAL AREA RESULTS	
Type of Material and/or Location	**Average**
Materials Handling Bay (MHB) – urem/h	18 ± 5.9 urem/h
MHB Floor Frisk Results – ncpm	100 ± 82 ncpm
MHB Wall Frisk Results – ncpm	16 ± 18.4 ncpm
MHB Overhead – ncpm	23.3 ± 19.7 ncpm
MHB Floor Smear Results – dpm (beta/gamma)	< 237 dpm
MHB Wall Smear Results – dpm (beta/gamma)	< 237 dpm
MHB Overhead Smear Results – dpm (beta/gamma)	< 237 dpm
MHB Floor Sample Above CV Pipe Tunnel – SX8SD99273	1.3 ± 0.2 pCi/g
DECOMMISSIONING SUPPORT FACILITY ROOF GENERAL AREA RESULTS	
Type of Material and/or Location	**Average**
DSF Roof, A/C Air Filter Material – SX9SD01908 CS-137	109 ± 11 pCi/g
DSF Roof, A/C Air Filter Material – SX9SD01908 Co-60	2.8 ± 0.43 pCi/g
DSF Roof, Debris From Inside Air Conditioner Housing – SXOT951	23 ± 4.7 pCi/g
Decommissioning Support Facility (DSF) Roof – urem/h	4.8 ± 0.6 urem/h
DSF Roof Smear Results – dpm	< 100 dpm

Note 1. All smear results are per 100-centimeter square area.
Note 2. ncpm = net counts per minute using standard frisker probe (probe area ~15 cm^2 - probe held stationary at ~1/2 inch from surface for each determination)
Note 3 < values indicate Minimum Detectable Activities

Table 2-7
SNEC Facility Surface Contamination Analysis Results
Composited Smears of January 1995

NUCLIDES	AREA 1 (uCi's)	% OF TOTAL	AREA 2 (uCi's)	% OF TOTAL	AREA 3 & 4[1] (uCi's)	% OF TOTAL
C-14	3.0E-5*	0.0081	2.0E-5*	0.0242	2.0E-5*	0.2319
Ni-59	3.0E-4*	0.0814	3.0E-4*	0.3628	3.0E-4*	3.4781
Sr-90	**6.8E-4**	**0.1845**	**1.0E-3**	**1.2094**	**3.0E-5**	**0.3478**
Fe-55	5.0E-4*	0.1356	4.0E-4*	0.4838	3.0E-4*	3.4781
Tc-99	4.0E-5*	0.0109	3.0E-5*	0.0363	4.0E-5*	0.4637
I-129	5.0E-5*	0.0136	4.0E-5*	0.0484	7.0E-5*	0.8116
Co-60	**2.87E-3**	**0.7786**	**8.31E-4**	**1.0050**	**2.59E-4**	**3.0028**
Zn-65	3.0E-4*	0.0814	8.0E-5*	0.0968	1.0E-5*	0.1159
Ru-106	3.0E-3*	0.8139	1.0E-3*	1.2094	9.0E-5*	1.0434
Cs-134	2.0E-4*	0.0543	4 0E-5*	0.0484	6.0E-6*	0.0696
Cs-137	**3.56E-1**	**96.5780**	**7.66E-2**	**92.6432**	**6.26E-3**	**72.5768**
Ce-144	2.0E-3*	0.5426	5.0E-4*	0.6047	4.0E-5*	0 4637
H-3	5.0E-4*	0.1356	5.0E-4*	0.6047	8.0E-4*	9.2750
Ni-63	**1.2E-3**	**0.3255**	**5.4E-4**	**0.6531**	**8.9E-5**	**1.0318**
Pu-238	**4.6E-5**	**0.0125**	**3.1E-5**	**0.0375**	**4.0E-6**	**0.0464**
U-234	1.1E-6*	0.0003	1.0E-6*	0.0012	1 1E-6*	0.0128
U-235	1.1E-6*	0.0003	1.0E-6*	0.0012	1.1E-6*	0.0128
U-238	1.1E-6*	0.0003	1.0E-6*	0.0012	1.1E-6*	0.0128
Am-241	**1.8E-4**	**0.0488**	**1.3E-4**	**0.1572**	**1.2E-5**	**0.1391**
Cm-242	1.3E-6*	0.0004	**2.6E-6**	**0.0031**	1.3E-6*	0.0151
Cm-244	2.2E-6*	0.0006	1.0E-6*	0.0012	9.5E-7*	0.0110
Pu-239	**1.0E-4**	**0.0271**	**8.3E-5**	**0.1004**	**8.6E-6**	**0.0997**
Pu-241	**6.1E-4**	**0.1655**	**5.5E-4**	**0.6652**	2.8E-4*	3 2462
Pu-242	9.9E-7*	0.0003	1.2E-6*	0.0015	1.2E-6*	0.0139
TOTALS	**3.69E-1**	**100%**	**8.27E-2**	**100%**	**8.63E-3**	**100%**

*** Reported as "Less Than" values (values in bold were positively identified)**

Note: Because of similar nuclide compositions, smear results from AREA 3 and 4 (Table 2-8) were combined prior to analysis.

Nuclides with half-lives of < 100 days or naturally occurring isotopes e.g. K-40, Ra-226 and Th-228, were not included in the percent of total columns. These nuclides are not present in sufficient quantity to be significant. "Less than" values are assumed valid for calculations related to curie evaluations.

Table 2-8

SNEC Facility Surface Contamination Analysis Results

Composited Smears of June 1995

NUCLIDES	AREA 2 (uCi's)	% OF TOTAL	AREA 6 (uCi's)	% OF TOTAL
C-14	**1.1E-5**	**0.0017**	**1.1E-5**	**0.0001**
Ni-59	1.0E-3*	0.1585	**1.7E-3**	0.0096
Sr-90	1.2E-2	**1.9021**	**2.3E-2**	**0.1304**
Fe-55	5.0E-4*	0.0793	2.5E-2	**0.1418**
Tc-99	**3.2E-5**	**0.0051**	6.2E-4	**0.0035**
I-129	2.0E-5*	0.0032	2.0E-5*	0.0001
Mn-54	3.0E-4*	0.0476	4.0E-2*	0.2268
Co-60	**1.49E-2**	**2.3618**	**7.18E+0**	**40.7143**
Zn-65	7.0E-4*	0.1110	1.0E-1*	0.5671
Nb-94	3.0E-4*	0.0476	5.0E-2*	0.2835
Ru-106	5.0E-3*	0.7925	4.0E-1*	2.2682
Ag-110m	4.0E-4*	0.0634	7.0E-2*	0.3969
Sb-125	3.0E-3*	0.4755	1.0E-1*	0.5671
Cs-134	3.0E-4*	0.0476	5.0E-2*	0.2835
Cs-137	**5.63E-1**	**89.2394**	**9.03E+0**	**51.2048**
Ce-144	3.0E-3*	0.4755	3.0E-1*	1.7012
Np-237	1.0E-3*	0.1585	8.0E-2*	0.4536
H-3	6.0E-4*	0.0951	**2.0E-3**	**0.0113**
Ni-63	**1.9E-2**	**3.0116**	**1.3E-1**	**0.7372**
Pu-238	**3.5E-4**	**0.0555**	**3.1E-3**	**0.0176**
U-234	1.0E-6*	0.0002	9.0E-7*	0.0000
U-235	1.0E-6*	0.0002	9.0E-7*	0.0000
U-238	1.0E-6*	0.0002	9.0E-7*	0.0000
Am-241	**8.5E-4**	**0.1347**	**1.3E-2**	**0.0737**
Cm-242	**7.4E-6**	**0.0012**	**1.0E-4**	**0.0006**
Cm-244	**1.9E-5**	**0.0030**	**3.0E-4**	**0.0017**
Pu-239	**8.9E-4**	**0.1411**	**8.2E-3**	**0.0465**
Pu-241	**3.7E-3**	**0.5865**	**2.8E-2**	**0.1588**
Pu-242	**4.8E-6**	**0.0008**	**2.4E-5**	**0.0001**
TOTALS	**6.31E-1**	**100%**	**1.76E+1**	**100%**

*** Reported as "Less Than" values (values in bold were positively identified)**

Nuclides with half-lives of < 100 days or naturally occurring isotopes e.g. K-40, Ra-226 and Th-228, were not included in the percent of total columns. These nuclides are not present in sufficient quantity to be significant. "Less than" values are assumed to be valid for calculations related to curie evaluations.

Table 2-9

Off-Site Core Bore Locations and Counting Results

Core Bore Sample No.	Location	Core Length	pCi/g Co-60	pCi/g Cs-137	pCi/g Eu-152
SX895010090 Slice 1	Saxton IGA Supermarket Sidewalk West Side	8.7 cm	<0.31	<0.31	<0.32
Slice 2	(same as above)	--	<0.26	<0.27	<0 28
SX895010091 Slice 1	Saxton IGA Supermarket Sidewalk East Side	8 7	<0.30	<0 28	<0 26
Slice 2	(same as above)	--	<0.34	<0.21	<0.29
SX895010092 Slice 1	Tussey Mountain High School, Front Sidewalk, West Side	9.8	<0 26	<0.25	<0.29
Slice 2	(same as above)	--	<0.23	<0.26	<0.27
SX895010093 Slice 1	Tussey Mountain High School, Front Sidewalk, East Side	8.4	<0.30	<0.29	<0.33
Slice 2	(same as above)	--	<0.28	<0.26	<0.25
SX895010095 Slice 1	South East Corner of Penelec Property, Concrete Slab #1	14.6	<0.25	<0.27	<0 28
Slice 2	(same as above)	--	<0.27	<0.23	<0.28
SX895010096 Slice 1	South East Corner of Penelec Property, Concrete Slab #2	10.8	<0.25	<0.27	<0.27
Slice 2	(same as above)	--	<0.33	<0.25	<0.28
SX895010097 Slice 1	Old Westinghouse Air Sample Station Pad, Penelec Property-NE	30.5	<0 26	<0.40	<0 26
Slice 2	(same as above)	--	<0.37	<0 27	<0.29
SX895010098 Slice 1	Penelec Line Shack, Front Sidewalk North Side	7.9	<0.28	<0.29	<0.26
Slice 2	(same as above)	--	<0.26	<0.24	<0.28
SX895010099 Slice 1	Penelec Line Shack, Front Sidewalk South Side	7 6	<0.28	<0.27	<0.29
Slice 2	(same as above)	--	<0.27	<0.21	<0 28

Concrete sample counting results from on-site, but outside of the containment vessel are reported in the following table.

Table 2-10

Counting Results, On-Site Core Bore Locations Outside Of CV.

Core Bore Sample No.	Location	Core Length	pCi/g Co-60	pCi/g Cs-137	pCi/g Eu-152
SX871950001 Slice 1	Concrete Slab Below Personnel Airlock At CV	11.9 cm	<0.32	1.09 ±0.30	<MDA**
Slice 2	(same as above)	--	<0.29	<0.24	<MDA
SX872950002* Subsurface Slice	Concrete Shield Wall External To CV (Used As Bkgd Blank)	~10 cm	<0.28 (Avg)	<0.30 (Avg.)	<0 27 (Avg.)
SX871950003 Slice 1	Concrete Ledge Adjacent To Northeast Side Of CV	11.6 cm	<0.23	2.00±0.40	<MDA
Slice 2	(same as above)	--	<0.29	<0.26	<MDA
SX871950004 Slice 1	Concrete Pad WNW Of CV - Former HEPA/Vent System	15 cm	<0.91	156.1±19.9	<MDA
Slice 2	(same as above)	--	<0.30	<0.38	<MDA
SX881950101 Slice 1	Concrete Core From Weir Floor	15.3 cm	<0.34	<0.34	<MDA
Slice 2	(same as above)	--	<0.36	<0.28	<MDA
SX882950102 Slice 1	Weir, Through Concrete Divider Wall (West End)	19.4 cm	<0.32	<0.33	<MDA
Slice 2	(same as above)	--	<0 27	<0.24	<MDA
Slice 8	Through Concrete Divider Weir Wall (East End)	--	<0.30	<0.25	<MDA
Surface Slice Slice 9	(same as above)	--	<0.34	0.73 ±0.24	<MDA
SX852950103 Slice 1	Through Concrete Support Wall In Tunnel (West End)	23.8 cm	<0.34	8.51 ±1.22	<MDA
Slice 2	(same as above)	--	<0.26	0.37 ±0.16	<MDA
Slice 3	(same as above)	--	<0.31	<0.27	<MDA
Slice 7	Through Concrete Support Wall In Tunnel (East End)	--	<0.36	<0 26	<MDA
Slice 8	(same as above)	--	<0.30	<0.27	<MDA
Surface Slice Slice 9	(same as above)	--	<0.34	2.72 ±0.51	<MDA

Table 2-10

Counting Results, On-Site Core Bore Locations Outside Of CV (Continued)

Core Bore Sample No.	Location	Core Length	pCi/g Co-60	pCi/g Cs-137	pCi/g Eu-152
SX853950104 Slice 1	Through Concrete Ceiling Of Tunnel (Top End-Outside)	37.3 cm	<0.33	12.56 ±1.76	<MDA
Slice 2	(same as above)	--	<0.33	<0 37	<MDA
Slice 3	(same as above)	--	<0.31	<0.28	<MDA
Slice 7	Through Concrete Ceiling Of Tunnel (Bottom End-Inside)	--	<0 29	<0.22	<MDA
Slice 8	(same as above)	--	<0.23	<0 22	<MDA
Surface Slice Slice 9	(same as above)	--	<0.29	0.58 ±0.20	<MDA
SX852950105 Slice 1	Tunnel Wall At South Entrance Hatch	15.9 cm	<0.31	1 35 ±0.31	<MDA
Slice 2	(same as above)	--	<0 26	<0 27	<MDA
Slice 3	(same as above)	--	<0 27	<0 24	<MDA
SX801950106 Slice 1	Westinghouse Area Concrete Pad Below SNEC Office Trailer	6.8 cm	<0.35	<0.37	<MDA
Slice 2	(same as above)	--	<0 34	<0.31	<MDA
SX801950107 Slice 1	Westinghouse Area Concrete Pad Below SNEC Office Trailer	9 7 cm	<0 29	<0.29	<MDA
Slice 2	(same as above)	--	<0 28	<0 25	<MDA
SX871950108 Slice 1	Shield Wall Adjacent To CV, NW Side (High n-Flux Region)	18.8 cm	<0.30	<0.33	<MDA
Slice 2	(same as above)	--	<0.30	<0.30	<MDA
Slice 9 Taken At A Depth Of ~17.5 to 18.8 cm Below Exposed Surface	(same as above)	--	<0 23	<0.17	<MDA

* This core was used as a background blank sample and counted frequently throughout the core bore analysis program.

** All <MDA values are approximately the same as that obtained for the blank or background core slice for this isotope.

Table 2-11

SNEC CV Concrete Core Bore Sample Locations.

SNEC Sample Number	Location
SX841950008	CV Floor, 818' El., West Side
SX841950009	CV Floor, 818' El., East Of 008
SX841950012	CV Floor Plug, 818' El.
SX842950013	Wall, Between 812' & 818' El., East Side
SX842950014	Wall Between 812' & 818' El., By Steps
SX842950015	Wall Between 812' & 818' El., North Side
SX841950016	CV Floor, 812' El., West Side Under Platform
SX841950017	CV Floor, 812' El., NE Of Reactor Cavity
SX841950018	CV Floor, 812' El., West Side By Platform
SX832950019	SW Wall, ~799' El., Above Water Line
SX832950020	CV Outer Wall, ~802" El.
SX832950021	CV SW Wall, ~791'6" El., At Water Line
SX832950022	North Wall, ~788' El.
SX832950023	North Wall, ~786' El.
SX812950024	CV Outer Wall, Rod Room, ~768' El.
SX811950025	CV Floor, Below RV, ~765'-8" El.
SX811950026	CV Floor, SE Corner Of Sump, ~765'-8" El.
SX811950027	CV Floor, Between Drain Pumps, ~765'-8" El.
SX811950028	CV Ledge, West Of Drain Tank, ~768' El.
SX812950029	CV Outer Wall, West Of Drain Tank, ~770' El.
SX812950030	Ledge/Wall, South Of Filter Cubicle, ~766' El.
SX822950031	SW Wall, ~10' East Of Hot Leg Penetration, ~789' El.
SX821950032	CV Floor Under S/G, ~779' El.
SX821950033	CV Floor Under S/G, ~779' El.
SX822950034	Wall East Of Non-Regen Heat Exchanger, ~782' El.
SX822950035	CV Outer Wall NW Of S/G, ~798' El.
SX822950036	SW Wall Next To Hot Leg, ~790'-8" El., At Water Line
SX822950037	SW Wall 8'-3" East Of Hot leg, ~799' El.
SX861950056	Storage Well Floor, ~765'-8" El.
SX861950057	Storage Well Floor, `765'-8" El.
SX862950058	Storage Well, Outer Wall, ~771' El.
SX862950059	Storage Well, Outer Wall, ~771' El.
SX862950060	Storage Well, Inner Wall, East Of Rx, ~768' El.
SX862950061	Storage Well, Inner Wall, East Of Rx, ~768' El.
SX862950062	Reactor Cavity Area, South Wall, 797' El.
SX862950063	Reactor Cavity Area, South Wall, 797' El.
SX862950064	Reactor Cavity, Shield Wall North West Of RV, 784' El.
SX862950065	Reactor Cavity, Shield Wall North East Of RV, 784' El.
SX861950066	Reactor Cavity Floor, ~779'-8" El.
SX862950119	CV Outer Wall, NE Of RV, In Hi-Flux Region, ~795' El.
SX841950120 To SX841950125	Reactor Cavity Shield Blocks, 1 To 6, ~812' to 807' El.

These locations are identified on Figures 2-6 through 2-10.

Table 2-12

Composite Results - Concrete Core Bore Sample SX862950119.

Isotope	As % Of Total Activity
Ag-108m	0.0266
Am-241	0.0464
Ce-144	0.0924
Co-60	**2.4443**
Cs-134	0.0213
Cs-137	**7.5581**
C-14	2.3263
Eu-152	**3.5327**
Eu-154	**0.1996**
Eu-155	0.0489
H-3	**63.5044**
I-129	0.4071
Nb-94	0.0204
Ni-59	**0.7042**
Ni-63	**18.6422**
Ru-106	0.1540
Sb-125	0.0506
Tc-99	0.2206

Note: Isotopes listed above in bold text were positively identified.

Table 2-13

Comparison of SNEC and B&W Concrete Analysis Results (pCi/g)

No.	Core Bore Sample No.	SNEC Number	Co-60 SNEC	Cs-137 SNEC	Eu-152 SNEC	Eu-154 SNEC	Co-60 B&W	Cs-137 B&W	Eu-152 B&W	Eu-154 B&W
1	0091	0127	<0.29	<0.24	<0.27	N/R	<0.01	0.12	<0.11	<0.04
2	0026, 0027	0128	<0.96	1717	<1.87	N/R	0.5	1480	<0.35	<0.09
3	0032, 0033	0129	8.14	5836	<2.56	N/R	6.37	4690	0.73	<0.13
4	0021	0130	<0.84	12.16	<0.65	N/R	0.26	58.6	<0.14	<0.15
5	0021	0131	2.07	6.87	<0.38	N/R	1.32	14.2	<0.44	<0.10
6	0021	0132	<0.31	0.36	<0.29	N/R	0.03	1.24	<0.18	<0.06
7	0016, 0017, 0018	0133	<0.61	15.01	<0.65	N/R	0.1	13.5	<0.14	<0.05
8	0103	0134	<0.31	3.05	<0.3	N/R	0.03	3.06	<0.13	<0.05
9	0056, 0057	0135	24.69	10668	<4.29	N/R	31.9	13800	<4.49	<0.51
10	0056, 0057	0136	<1.17	665.2	<2.34	N/R	2.15	945	<0.64	<0.14
11	0025	0137	3.25	6074	<6.7	N/R	1.9	7180	2.16	<0.23
12	0025	0138	<0.51	1419	<3.04	N/R	0.29	1870	2.61	<0.10
13	0025	0139	<0.38	18.34	<0.47	N/R	0.21	31.4	1.18	<0.15
14	0025	0140	<0.36	2.82	<0.33	N/R	0.05	11.5	<0.48	<0.15
15	0031	0141	<0.65	108.8	<1.28	N/R	0.16	127	<0.17	<0.05
16	0031	0142	14.8	195.8	<1.08	N/R	14.5	246	<0.89	<0.15
17	0031	0143	<0.4	6.55	<0.37	N/R	0.12	13.8	<0.18	<0.07
18	0031	0144	<0.33	4.77	<0.32	N/R	<0.03	8.98	<0.18	<0.06
19	0037	0145	<0.65	106.4	<0.79	N/R	0.09	132	<0.15	<0.05
20	0037	0146	3.41	29.22	7.09	N/R	2.67	27.8	9.31	0.59
21	0037	0147	<0.36	17.28	<0.53	N/R	0.1	32.1	0.33	<0.08
22	0037	0148	<0.99	7.63	5.1	N/R	0.88	14.9	7.57	0.37
23	0125	0149	1.4	3.43	5.91	N/R	1.47	6.47	10.7	0.64
24	0125	0150	<0.68	0.39	6.01	N/R	0.92	1.62	9.05	0.61
25	0125	0151	<0.33	0.19	2.22	N/R	0.32	1.08	3.3	<0.14
26	0125	0152	<0.23	0.23	<0.26	N/R	0.08	1.89	0.48	<0.04
27	0066	0153	14.97	498.6	<2.49	N/R	11.8	513	<0.78	<0.13
28	0066	0154	<0.32	1.06	<0.28	N/R	0.13	3.66	<0.26	<0.09
29	0062	0155	11.22	127.3	5.67	N/R	8.81	119	8.4	0.59
30	0062	0156	0.97	35.86	6.45	N/R	1.25	46.7	10.2	0.37
31	0063	0157	25.72	211.2	4.92	N/R	15.7	261	7.81	0.56
32	0063	0158	1.12	0.41	6.8	N/R	1.7	3.94	10.6	0.53
33	0065	0159	<1.23	36.82	<0.79	N/R	1.09	37.4	<0.16	<0.05
34	0065	0160	<0.38	0.6	<0.27	N/R	0.12	1.39	<0.23	<0.07
35	0119	0161	11.53	279.9	22.99	<3.27	9.02	233	31.5	1.94
36	0119	0162	53.39	0.83	25.89	<2.12	92.896	5.67	46.99	3.34
37	0119	0163	4.02	0.69	37.37	<2.25	4.42	2.19	60.8	2.67
38	0119	0164	2.12	0.56	22.56	<1.96	2.59	1.66	32	1.32

Note: SNEC number 0162 above, is the composite results from the rebar and concrete sample materials. Presence of rebar affected the SNEC counting results for this sample (slice 6, SX862950119). A rebar locator was used to avoid rebar in all other sampling locations.
N/R - Not Reported.

Table 2-14

Surface Soil Samples

Sample Location #	SNEC Sample Number	Grid Location (LL PIN)	Cs-137 (pCi/gm)
37	SX-9-SL-99-0037	AV-127	0.12
38	SX-9-SL-99-0038	BA-127	0.2
39	SX-9-SL-99-0039	BA-125	0.24
41	SX-10-SL-99-0041	BC-124	2.2
42	SX-12-SL-99-0042	BD-101	0.09
43	SX-12-SL-99-0043	BB-108	0.09
44	SX-10-SL-99-0044	BD-129	1.3
45	SX-10-99-0045	BK-137	1.3
46	SX-10-SL-99-0046	BC-129	0.9
47	SX-10-SL-99-0047	BD-130	0.92
48	SX-10-SL-99-0048	AV-125	0.6
49	SX-10-SL-99-0049	BA-127	<MDA (0.05)
50	SX-10-SL-99-0050	AV-129	<MDA (0.05)
51	SX-10-SL-99-0051	BC-125	1.7
52	SX-9-SL-99-0052	AU-125	0.66
53	SX-11-SL-99-0053	AJ-107	<MDA (0.07)
54	SX-11-SL-99-0054	BK-112	<MDA (0.07)
55	SX-11-SL-99-0055	AE-103	1
56	SX-11-SL-99-0056	AK-92	0.16
57	SX-11-SL-99-0057	AE-102	0.92
58	SX-10-SL-99-0058	BD-122	0.14
59	SX-10-SL-99-0059	AH-119	<MDA (0.07)
60	SX-11-SL-99-0060	BL-91	0.5
61	SX-11-SL-99-0061	AN-94	1.2
62	SX-11-SL-99-0062	AK-112	<MDA (0.08)
63	SX-11-SL-99-0063	BP-143	0.4
64	SX-9-SL-99-0064	BA-126	0.73
65	SX-10-SL-0065	BO-137	0.13
66	SX-10-SL-0066	BD-126	1
67	SX-11-SL-0067	AE-136	<MDA (0.09)
68	SX-10-SL-0068	BD-124	0.6
69	SX-10-SL-0069	BC-140	1.1
70	SX-11-SL-0070	BJ-117	0.9
71	SX-11-SL-0071	BP-95	0.3
72	SX-10-SL-0072	AY-119	0.18
73	SX-11-SL-0073	BK-130	0.11
74	SX-12-SL-0074	AU-99	1.1
75	SX-11-SL-0075	BO-110	<MDA (0.08)
76	SX-11-SL-0076	AJ-146	1.3
77	SX-12-SL-0077	AB-146	<MDA (0.09)
78	SX-11-SL-0078	BA-115	0.6

Note. Cs-137 was the only positively identified radionuclide resulting from licensed operations

See Figures 2-13 and 2-14 for surface soil sampling locations.

Table 2-14

Surface Soil Samples (Continued)

Sample Location #	SNEC Sample Number	Grid Location (LL PIN)	Cs-137 (pCi/gm)
79	SX-11-SL-0079	BF-123	1.1
80	SX-10-SL-0080	AM-127	0.7
81	SX-11-0081	AP-120	<MDA (0.09)
82	SX-11-0082	BO-137	0.25
83	SX-11-0083	BC-107	0.04
84	SX-11-0084	BD-122	1.2
85	SX-11-0085	AP-144	1.2
86	SX-11-0086	AN-126	2.1
87	SX-10-0087	BF-143	1.7
88	SX-11-0088	BE-141	0.7
89	SX-11-0089	BE-140	1
90	SX-10-0090	AN-140	0.8
91	SX-10-0091	BC-138	1.3
92	SX-11-0092	BI-106	<MDA (0.1)

Note: Cs-137 was the only positively identified radionuclide resulting from licensed operations.
See Figures 2-13 and 2-14 for surface soil sampling locations.

Table 2-15
SNEC Subsurface Soil Sample Results

Sample Location	SNEC Sample Number	Sample Depth (Feet)	Cs-137 (pCi/g)
Sample #AK112	SX-11-SL-99-221	0 to 3	<MDA (0.21)
Sample #AK112	SX-11-SL-99-140	3 to 6	<MDA (0.25)
Sample #M-1	SX-9-SL-99-206	0 to 3	<MDA (0.18)
Sample #M-1	SX-9-SL-99-194	4 to 8	0.66
Sample #M-1	SX-9-SL-99-207	9 to 16	0.17
Sample #M-2	SX-9-SL-99-195	0 to 3	1.8
Sample #M-2	SX-9-SL-99-196	4 to 6	0.54
Sample #M-2	SX-9-SL-99-197	7 to 12	0.49
Sample #1	SX-11-SL-99-229	0 to 3	0.47
Sample #1	SX-9-SL-99-208	4 to 6	0.45
Sample #2	SX-11-SL-99-233	0 to 3	0.33
Sample #2	SX-9-SL-99-204	4 to 6	<MDA (0.06)
Sample #3	SX-11-SL-99-226	0 to 3	<MDA (0.2)
Sample #3	SX-9-SL-99-205	4 to 6	<MDA (0.11)
Sample #4	SX-11-SL-99-230	0 to 4	0.21
Sample #5	SX-11-SL-99-251	0 to 1	<MDA (0.2)
Sample #6	SX-10-SL-99-167	0 to 3	0.5
Sample #7	SX-12-SL-99-241	0 to 4	0.22
Sample #7	SX-11-SL-99-235	4 to 5	<MDA (0.14)
Sample #9	SX-10-SL-99-170	4 to 6	<MDA (0.14)
Sample #9	SX-10-SL-99-169	7 to 12	<MDA (0.08)
Sample #10	SX-9-SL-99-201	0 to 7	0.51
Sample #10	SX-9-SL-99-210	8 to 12	1.4
Sample #11	SX-9-SL-99-209	0 to 3	0.79
Sample #11	SX-9-SL-99-202	4 to 6	9.3
Sample #11	SX-9-SL-99-203	7 to 12	0.34
Sample #12	SX-9-SL-99-218	0 to 3	<MDA (0.11)
Sample #12	SX-10-SL-99-222	4 to 9	<MDA (0.18)
Sample #13	SX-9-SL-99-185	0 to 3	1.5
Sample #13	SX-9-SL-99-186	10 to 14.5	3.3
Sample #14	SX-9-SL-99-228	0 to 3	<MDA (0.12)
Sample #14	SX-9-SL-99-224	4 to 5	<MDA (0.08)
Sample #15	SX-9-SL-99-242	0 to 4	<MDA (0.10)
Sample #15	SX-9-SL-99-236	4 to 5	<MDA (0.06)
Sample #16	SX-10-SL-99-171	0 to 3	0.1
Sample #16	SX-10-SL-99-181	3 to 6	<MDA (0.12)
Sample #17	SX-10-SL-99-182	0 to 3	<MDA (0.19)
Sample #17	SX-10-SL-99-165	3 to 6	<MDA (0.14)
Sample #18	SX-9-SL-99-211	0 to 2	0.48
Sample #19	SX-9-SL-99-213	0 to 3	<MDA (0.2)
Sample #19	SX-9-SL-99-215	3 to 4	0.32
Sample #20	SX-9-SL-99-216	0 to 3	0.27
Sample #20	SX-9-SL-99-220	4 to 8	<MDA (0.2)
Sample #20	SX-9-SL-99-214	9 to 12	<MDA (0.2)

Note: Cs-137 was the only positively identified radionuclide resulting from licensed operations.
See Figures 2-15 and 2-16 for sub-surface soil sampling locations.

Table 2-15
SNEC Subsurface Soil Sample Results (Continued)

Sample Location	SNEC Sample Number	Sample Depth (Feet)	Cs-137 (pCi/g)
Sample #21	SX-9-SL-99-200	0 to 3	<MDA (0.2)
Sample #21	SX-9-SL-99-212	4 to 6	0.12
Sample #22	SX-10-SL-99-173	0 to 3	<MDA (0.15)
Sample #22	SX-11-SL-99-190	0 to 3	0.33
Sample #22	SX-11-SL-99-193	4 to 6	<MDA (0.07)
Sample #23	SX-11-SL-99-192	0 to 3	<MDA (0.120
Sample #23	SX-11-SL-99-174	4 to 6	0.1
Sample #24	SX-10-SL-99-191	0 to 4	0.57
Sample #24	SX-10-SL-99-198	0 to 4	0.38
Sample #24	SX-10-SL-99-187	5 to 6	0.078
Sample #25	SX-11-SL-99-232	3 to 6	<MDA (0.18)
Sample #25	SX-11-SL-99-238	0 to 3	0.2
Sample #26	SX-11-SL-99-237	0 to 4	<MDA (0.13)
Sample #26	SX-11-SL-99-240	4 to 6	<MDA (0.16)
Sample #27	SX-11-SL-99-239	0 to 3.5	0.97
Sample #28	SX-10-SL-99-199	0 to 3	1.4
Sample #28	SX-9-SL-99-217	7 to 12	0.69
Sample #28	SX-9-SL-99-227	4 to 6	0.42
Sample #29	SX-9-SL-99-219	0 to 5	0.59
Sample #30	SX-11-SL-99-141	0 to 3	<MDA (0.2)
Sample #30	SX-11-SL-99-142	3 to 6	<MDA (0.18)
Sample #30	SX-11-SL-99-168	3 to 5	<MDA (0.13)
Sample #31	SX-11-SL-99-138	0 to 3	<MDA (0.17)
Sample #31	SX-11-SL-99-139	3 to 6	<MDA (0.24)
Sample #33	SX-10-SL-99-172	0 to 3	<MDA (0.19)
Sample #33	SX-10-SL-99-188	4 to 6	<MDA (0.11)
Sample #34	SX-10-SL-99-166	0 to 3	0.16
Sample #34	SX-10-SL-99-189	4 to 6	<MDA (0.080
Sample #35	SX-11-SL-99-231	0 to 4	<MDA (0.11)
Sample #35	SX-11-SL-99-234	0 to 3	<MDA (0.13)
Sample #36	SX-9-SL-99-245	4 to 8	0.69
Sample #36	SX-9-SL-99-248	0 to 4	1.1
Sample #36	SX-9-SL-99-249	8 to 12	0.36
Sample #36	SX-9-SL-99-250	0 to 6	0.44
Sample #37	SX-10-SL-99-244	0 to 4	<MDA (0.1)
Sample #37	SX-10-SL-99-246	4 to 6	<MDA (0.12)
Sample #38	SX-10-SL-99-243	1 to 2	<MDA (0.17)
Sample #39	SX-10-SL-99-247	0 to 2	<MDA (0.07)

Note: Cs-137 was the only positively identified radionuclide resulting from licensed operations.

See Figures 2-15 and 2-16 for sub-surface soil sampling locations.

Table 2-16
SNEC Subsurface Gamma Logging Results

Hole	Depth* (ft)	Cs137 (pCi/g)				Co60 (pCi/g)		
		Conc.	"±2σ"	MDA		Conc.	"±2σ"	MDA
1	1	0.8	0.3	0.2		<MDA	0.1	0.3
1	2	0.2	0.2	0.2		<MDA	0.1	0.3
1	3	<MDA	0.2	0.2		<MDA	0.1	0.3
1	4	<MDA	0.2	0.2		<MDA	0.1	0.3
1	5	<MDA	0.2	0.3		<MDA	0.2	0.4
1	6	<MDA	0.2	0.3		<MDA	0.1	0.4
1	1d	0.7	0.4	0.3		<MDA	0.1	0.4
2	1	0.6	0.3	0.2		<MDA	0.1	0.3
2	2	<MDA	0.1	0.2		<MDA	0.1	0.3
2	3	<MDA	0.2	0.3		<MDA	0.2	0.4
3	1	0.2	0.2	0.2		<MDA	0.1	0.3
3	2	<MDA	0.2	0.2		<MDA	0.1	0.4
3	3	<MDA	0.2	0.3		<MDA	0.2	0.4
3	4	<MDA	0.2	0.3		<MDA	0.1	0.5
3	5	<MDA	0.2	0.3		<MDA	0.1	0.5
3	6	<MDA	0.2	0.3		<MDA	0.1	0.4
3	7	<MDA	0.2	0.3		<MDA	0.1	0.4
3	2d	<MDA	0.2	0.3		<MDA	0.2	0.4
4	1	<MDA	0.3	0.5		<MDA	0.2	0.7
4	2	<MDA	0.3	0.3		<MDA	0.2	0.5
4	3	<MDA	0.2	0.3		<MDA	0.1	0.4
4	4	<MDA	0.2	0.3		<MDA	0.1	0.4
4	5	<MDA	0.2	0.3		<MDA	0.1	0.4
5	1	<MDA	0.2	0.2		<MDA	0.1	0.3
5	2	<MDA	0.2	0.3		<MDA	0.2	0.4
6	1	0.9	0.3	0.2		<MDA	0.1	0.3
6	2	0.6	0.3	0.2		<MDA	0.1	0.3
6	3	<MDA	0.2	0.2		<MDA	0.1	0.3
7	1	0.3	0.2	0.2		<MDA	0.1	0.3
7	2	0.4	0.2	0.2		<MDA	0.1	0.4
7	3	<MDA	0.2	0.2		<MDA	0.1	0.3
7	4	<MDA	0.2	0.3		<MDA	0.2	0.4
9	1	0.8	0.3	0.1		<MDA	0.1	0.2
9	2	0.8	0.4	0.3		<MDA	0.2	0.5
9	3	<MDA	0.3	0.3		<MDA	0.2	0.5
9	4	<MDA	0.3	0.3		<MDA	0.2	0.5
9	5	<MDA	0.3	0.4		<MDA	0.2	0.5
9	6	<MDA	0.2	0.3		<MDA	0.1	0.4
9	7	<MDA	0.2	0.3		<MDA	0.1	0.4
9	8	0.2	0.1	0.1		<MDA	0.1	0.2
9	9	<MDA	0.2	0.3		<MDA	0.2	0.4
9	10	<MDA	0.3	0.4		<MDA	0.2	0.5

Table 2-16, SNEC Subsurface Gamma Logging Results (Continued)

Hole	Depth* (ft)	Cs137 (pCi/g) Conc.	"±2σ"	MDA		Co60 (pCi/g) Conc.	"±2σ"	MDA
9	11	<MDA	0.3	0.3		<MDA	0.2	0.5
9	12	<MDA	0.2	0.3		<MDA	0.2	0.5
9	13	<MDA	0.2	0.3		<MDA	0.2	0.5
10	1	<MDA	0.2	0.2		<MDA	0.1	0.3
10	2	1.5	0.5	0.3		<MDA	0.1	0.4
10	3	1.4	0.5	0.3		<MDA	0.2	0.4
10	4	3.7	1.0	0.3		<MDA	0.2	0.5
10	5	0.9	0.4	0.3		<MDA	0.2	0.5
10	6	7.9	2.0	0.4		<MDA	0.2	0.5
10	7	28.6	7.2	0.7		<MDA	0.4	0.9
10	8	17.0	4.2	0.4		<MDA	0.2	0.6
10	9	2.8	0.8	0.2		<MDA	0.2	0.3
10	10	0.9	0.4	0.3		<MDA	0.2	0.5
10	11	<MDA	0.3	0.3		<MDA	0.2	0.5
10	12	<MDA	0.3	0.3		<MDA	0.2	0.5
10	4d	3.2	1.0	0.4		<MDA	0.2	0.5
11	1	0.2	0.2	0.2		<MDA	0.1	0.3
11	2	2.0	0.6	0.2		<MDA	0.1	0.3
11	3	0.5	0.3	0.3		<MDA	0.1	0.4
11	4	1.1	0.4	0.2		<MDA	0.1	0.3
11	5	5.5	1.5	0.3		<MDA	0.1	0.4
11	6	109.9	23.2	0.3		<MDA	0.2	0.4
11	7	17.4	4.1	0.4		<MDA	0.2	0.5
11	8	1.6	0.5	0.3		<MDA	0.1	0.4
11	9	0.2	0.2	0.2		<MDA	0.1	0.3
11	10	0.3	0.2	0.3		<MDA	0.1	0.4
11	11	<MDA	0.2	0.3		<MDA	0.1	0.4
11	12	0.2	0.2	0.2		<MDA	0.1	0.3
11	13	0.5	0.3	0.3		<MDA	0.2	0.4
12	1	<MDA	0.2	0.2		<MDA	0.1	0.3
12	2	<MDA	0.2	0.4		<MDA	0.2	0.5
12	3	<MDA	0.2	0.3		<MDA	0.2	0.5
12	4	<MDA	0.2	0.3		<MDA	0.2	0.4
12	5	<MDA	0.2	0.4		<MDA	0.1	0.5
12	6	<MDA	0.3	0.4		<MDA	0.2	0.5
12	7	<MDA	0.2	0.4		<MDA	0.2	0.5
12	8	<MDA	0.2	0.3		<MDA	0.2	0.4
12	9	<MDA	0.3	0.3		<MDA	0.1	0.5
12	2d	<MDA	0.3	0.4		<MDA	0.2	0.5
13	0	0.6	0.2	0.1		<MDA	0.1	0.2
13	1	0.1	0.1	0.1		<MDA	0.1	0.2
13	2	0.5	0.2	0.2		<MDA	0.1	0.3

Table 2-16, SNEC Subsurface Gamma Logging Results (Continued)

Hole	Depth* (ft)	Cs137 (pCi/g)				Co60 (pCi/g)		
		Conc.	"±2σ"	MDA		Conc.	"±2σ"	MDA
13	3	3.6	1.0	0.3		<MDA	0.1	0.4
13	4	5.3	1.4	0.4		<MDA	0.2	0.5
13	5	2.7	0.7	0.2		<MDA	0.1	0.3
13	6	2.1	0.6	0.2		<MDA	0.1	0.3
13	7	2.2	0.7	0.2		<MDA	0.1	0.3
13	8	12.7	3.2	0.3		<MDA	0.1	0.5
13	9	66.2	14.0	0.2		<MDA	0.2	0.3
13	10	8.9	2.1	0.2		<MDA	0.1	0.3
13	11	0.2	0.2	0.2		<MDA	0.1	0.4
13	12	0.2	0.2	0.2		<MDA	0.1	0.3
13	13	0.4	0.3	0.2		<MDA	0.1	0.3
13	14	0.3	0.2	0.3		<MDA	0.2	0.4
13	1S	<MDA	0.2	0.2		<MDA	0.1	0.3
13	9d	63.8	14.5	0.5		<MDA	0.3	0.8
14	1	<MDA	0.2	0.2		<MDA	0.2	0.3
14	2	<MDA	0.2	0.3		<MDA	0.2	0.4
14	3	<MDA	0.1	0.2		<MDA	0.1	0.3
15	1	0.2	0.1	0.2		<MDA	0.1	0.3
15	2	<MDA	0.2	0.4		<MDA	0.1	0.5
15	3	<MDA	0.2	0.3		<MDA	0.1	0.4
16	1	0.4	0.2	0.2		<MDA	0.1	0.3
16	2	<MDA	0.2	0.3		<MDA	0.1	0.4
16	3	<MDA	0.2	0.3		<MDA	0.1	0.4
16	4	<MDA	0.2	0.2		<MDA	0.1	0.3
17	1	0.3	0.2	0.2		<MDA	0.1	0.3
17	2	0.5	0.3	0.3		<MDA	0.1	0.4
17	3	<MDA	0.2	0.3		<MDA	0.1	0.4
18	1	4.7	1.3	0.3		<MDA	0.2	0.4
18	2	0.2	0.2	0.2		<MDA	0.1	0.3
18	1d	5.1	1.4	0.3		<MDA	0.2	0.4
19	1	0.3	0.2	0.3		<MDA	0.2	0.4
19	2	<MDA	0.2	0.3		<MDA	0.2	0.4
19	3	<MDA	0.2	0.3		<MDA	0.2	0.5
20	1	0.7	0.3	0.2		<MDA	0.1	0.3
20	2	<MDA	0.2	0.3		<MDA	0.2	0.4
20	3	0.4	0.3	0.3		<MDA	0.2	0.4
20	4	0.4	0.3	0.3		<MDA	0.1	0.5
20	5	0.4	0.3	0.3		<MDA	0.2	0.5
20	6	0.3	0.2	0.3		<MDA	0.2	0.4
20	7	<MDA	0.2	0.3		<MDA	0.1	0.4
20	8	<MDA	0.2	0.3		<MDA	0.2	0.4
21	1	<MDA	0.2	0.2		<MDA	0.1	0.3

Table 2-16, SNEC Subsurface Gamma Logging Results (Continued)

Hole	Depth* (ft)	Cs137 (pCi/g)			Co60 (pCi/g)		
		Conc.	"±2σ"	MDA	Conc.	"±2σ"	MDA
21	2	0.2	0.2	0.2	<MDA	0.1	0.4
21	3	<MDA	0.2	0.2	<MDA	0.1	0.3
21	4	<MDA	0.2	0.2	<MDA	0.1	0.4
21	5	<MDA	0.2	0.3	<MDA	0.1	0.4
21	2d	<MDA	0.2	0.3	<MDA	0.2	0.4
22	1	<MDA	0.1	0.2	<MDA	0.1	0.3
22	2	<MDA	0.1	0.2	<MDA	0.1	0.3
22	3	<MDA	0.2	0.2	<MDA	0.1	0.3
22	4	<MDA	0.1	0.2	<MDA	0.1	0.3
23	1	<MDA	0.1	0.2	<MDA	0.1	0.3
23	2	<MDA	0.1	0.1	<MDA	0.1	0.2
23	3	<MDA	0.1	0.2	<MDA	0.1	0.3
24	1	0.5	0.2	0.1	<MDA	0.1	0.2
24	2	0.7	0.3	0.2	<MDA	0.1	0.2
24	3	0.6	0.3	0.2	<MDA	0.1	0.3
24	4	0.3	0.2	0.2	<MDA	0.1	0.2
24	5	0.2	0.1	0.1	<MDA	0.1	0.2
24	1d	0.6	0.3	0.2	0.3	0.1	0.3
25	1	<MDA	0.2	0.3	<MDA	0.1	0.4
25	2	<MDA	0.3	0.5	<MDA	0.3	0.7
25	3	<MDA	0.3	0.4	<MDA	0.2	0.6
26	1	<MDA	0.2	0.2	<MDA	0.1	0.4
26	2	<MDA	0.2	0.3	<MDA	0.1	0.4
26	3	<MDA	0.2	0.3	<MDA	0.1	0.4
26	4	<MDA	0.2	0.3	<MDA	0.2	0.4
26	5	<MDA	0.2	0.3	<MDA	0.2	0.5
26	6	<MDA	0.2	0.3	<MDA	0.2	0.5
27	1	0.8	0.3	0.2	<MDA	0.1	0.3
27	2	<MDA	0.2	0.3	<MDA	0.1	0.4
27	1d	0.9	0.3	0.2	<MDA	0.1	0.4
28	1	0.2	0.2	0.2	<MDA	0.1	0.3
28	2	3.7	1.0	0.3	<MDA	0.2	0.4
28	3	2.0	0.6	0.2	<MDA	0.2	0.4
28	4	0.5	0.3	0.2	<MDA	0.1	0.3
28	5	<MDA	0.2	0.2	<MDA	0.1	0.3
28	6	0.4	0.2	0.2	<MDA	0.1	0.3
28	7	0.7	0.3	0.3	<MDA	0.1	0.4
28	8	1.1	0.4	0.2	<MDA	0.1	0.3
28	9	2.0	0.6	0.3	<MDA	0.1	0.4
28	10	1.6	0.5	0.2	<MDA	0.2	0.4
28	11	1.0	0.4	0.2	<MDA	0.1	0.4
28	12	0.1	0.1	0.1	<MDA	0.1	0.2

Table 2-16, SNEC Subsurface Gamma Logging Results (Continued)

Hole	Depth* (ft)	Cs137 (pCi/g)				Co60 (pCi/g)		
		Conc.	"±2σ"	MDA		Conc.	"±2σ"	MDA
29	1	1.0	0.3	0.2		<MDA	0.1	0.2
29	2	1.7	0.5	0.2		<MDA	0.1	0.3
29	3	5.7	1.4	0.3		<MDA	0.2	0.4
29	4	0.8	0.3	0.3		<MDA	0.1	0.4
29	5	<MDA	0.1	0.2		<MDA	0.1	0.2
30	1	<MDA	0.1	0.2		<MDA	0.1	0.2
30	2	<MDA	0.1	0.2		<MDA	0.1	0.3
30	3	<MDA	0.1	0.2		<MDA	0.1	0.3
30	4	<MDA	0.1	0.2		<MDA	0.1	0.2
31	1	0.2	0.2	0.2		<MDA	0.1	0.3
31	2	<MDA	0.2	0.4		<MDA	0.1	0.6
31	3	<MDA	0.3	0.5		<MDA	0.2	0.7
31	4	<MDA	0.3	0.4		<MDA	0.2	0.7
31	5	<MDA	0.3	0.4		<MDA	0.2	0.6
31	6	<MDA	0.3	0.4		<MDA	0.2	0.7
31	4d	<MDA	0.3	0.4		<MDA	0.2	0.6
33	1	<MDA	0.2	0.3		<MDA	0.1	0.4
33	2	<MDA	0.2	0.3		<MDA	0.1	0.4
33	3	<MDA	0.1	0.2		<MDA	0.1	0.3
34	1	<MDA	0.2	0.2		<MDA	0.1	0.3
34	2	<MDA	0.2	0.2		<MDA	0.1	0.3
34	3	<MDA	0.2	0.3		<MDA	0.1	0.4
34	1d	0.3	0.3	0.2		<MDA	0.1	0.4
35	1	0.2	0.2	0.2		<MDA	0.1	0.3
35	2	0.3	0.2	0.2		<MDA	0.1	0.4
35	3	<MDA	0.1	0.1		<MDA	0.1	0.2
36	1	0.9	0.4	0.3		<MDA	0.2	0.5
36	2	<MDA	0.2	0.3		<MDA	0.2	0.5
36	3	<MDA	0.2	0.3		<MDA	0.1	0 5
36	4	<MDA	0.2	0.3		<MDA	0.2	0.5
36	5	<MDA	0.2	0.3		<MDA	0.2	0.4
36	6	<MDA	0.2	0.3		<MDA	0.2	0.5
36	7	0.3	0.3	0.2		<MDA	0.1	0.4
36	8	<MDA	0.2	0.3		<MDA	0.2	0.5
36	9	<MDA	0.2	0.3		<MDA	0.1	0.4
36	10	<MDA	0.2	0.3		<MDA	0.2	0.4
36	11	<MDA	0 2	0.3		<MDA	0.1	0.4
37	1	<MDA	0.1	0.2		<MDA	0.1	0.3
37	2	<MDA	0.2	0.3		<MDA	0.2	0.5
37	3	<MDA	0.2	0.3		<MDA	0.2	0.5
37	4	<MDA	0.2	0.3		<MDA	0.2	0.5
37	5	<MDA	0.2	0.3		<MDA	0.2	0.5

Table 2-16, SNEC Subsurface Gamma Logging Results (Continued)

Hole	Depth* (ft)	Cs137 (pCi/g) Conc.	"±2σ"	MDA	Co60 (pCi/g) Conc.	"±2σ"	MDA
38	1	<MDA	0.2	0.3	<MDA	0.1	0.5
39	1	<MDA	0.2	0.3	<MDA	0.1	0.4
AK112	1	<MDA	0.1	0.2	<MDA	0.1	0.3
AK112	3	<MDA	0.2	0.3	<MDA	0.1	0.4
M1	1	<MDA	0.2	0.2	<MDA	0.1	0.3
M1	2	0.4	0.3	0.3	<MDA	0.2	0.5
M1	3	0.3	0.2	0.3	<MDA	0.1	0.4
M1	4	0.4	0.3	0.4	<MDA	0.2	0.6
M1	5	0.3	0.2	0.2	<MDA	0.1	0.3
M1	6	0.4	0.3	0.3	<MDA	0.2	0.4
M1	7	0.6	0.3	0.2	<MDA	0.1	0.4
M1	8	<MDA	0.1	0.3	<MDA	0.1	0.4
M1	9	0.4	0.3	0.3	<MDA	0.1	0.4
M2	1	<MDA	0.2	0.2	<MDA	0.1	0.3
M2	2	2.5	0.7	0.3	<MDA	0.1	0.4
M2	3	<MDA	0.2	0.3	<MDA	0.1	0.5
M2	4	<MDA	0.2	0.3	<MDA	0.1	0.4
M2	5	<MDA	0.1	0.1	<MDA	0.1	0.2
M2	6	<MDA	0.1	0.2	<MDA	0.1	0.3
M2	7	0.5	0.3	0.3	<MDA	0.1	0.4
M2	8	2.3	0.7	0.3	<MDA	0.1	0.4
M2	9	1.7	0.5	0.3	<MDA	0.1	0.4
M2	10	0.8	0.3	0.2	<MDA	0.1	0.3
M2	11	<MDA	0.3	0.3	<MDA	0.1	0.4
M2	12	0.2	0.2	0.2	<MDA	0.2	0.3
M2	13	<MDA	0.2	0.3	<MDA	0.1	0.4
M2	14	<MDA	0.2	0.3	<MDA	0.1	0.4
M2	15	<MDA	0.2	0.3	<MDA	0.1	0.4
M2	2d	2.2	0.7	0.3	<MDA	0.2	0.5

* Depth to Bottom of interval, e.g., 1 is 0' to 1', 2 is 1' to 2', etc.
"d" In the "Depth" column represents a duplicate or repeat measurement at that depth.
Note: Cs-137 and Co-60 were the only positively identified radionuclides resulting from licensed operations.

See Figures 2-15 and 2-16 for sub-surface gamma logging locations.

Table 2-17a
SNEC Monitoring Well Quarterly Results (pCi/L)

LOCATION CODE	FIRST QUARTER (Sampled 1-24-01)				SECOND QUARTER (Sampled 4-4-01)			
	TRITIUM	Cs-137	Cs-134	Co-60	TRITIUM	Cs-137	Cs-134	Co-60
MDA	<2000	18	15	15	<2000	18	15	15
GEO-1	<603	<10.1	<9 9	<11.5	<547	<6.89	<6 31	<7 65
GEO-3	<603	<9.2	<7.1	<10.6	<547	**<40.3**	**<40.3**	**<42.4**
GEO-4	<603	<9.4	<9.1	<11 4	<547	<4 81	<4 44	<5 61
GEO-5	<105	<5.4	<4.9	<6 6	<92	<10 10	<9 15	<12.1
GEO-8	<603	<5.3	<5.5	<5 6	<547	<10.8	<10.5	<12 2
GEO-10	<603	<14.0	<14.9	**<18.4**	<547	**<33.2**	**<30.3**	**<38.8**
MW-2	<603	<4.7	<4 4	<5 8	<547	<8.26	<7 34	<8 37
MW-2Q(teledyne)	<100	<4.1	<4.2	<3 9	<200	<6.7	<7.5	<6.4
MW-3	<603	<5.7	<5.1	<6 7	<547	<5.94	<5.79	<7 17
MW-4	<603	<10.3	<9.6	<12.5	<547	<10 5	<10 8	<12 6
OW-3	THESE WELLS WERE INSTALLED IN 1ST QTR. & WILL BE SAMPLED IN 2 ND QTR				<600	<6 34	<5.85	<8 37
OW-3R					<600	<9 99	<8 48	<12
OW-4					NO SAMPLE OBTAINED (DRY)			
OW-4R					<600	<8.49	<7 41	<9.65
OW-5					<600	<9.06	<9.81	<11 7
OW-5R					<600	<6 91	<6.91	<7 19
OW-6					<600	<7 22	<6.55	<9.34
LOCATION CODE	THIRD QUARTER (Sampled 7/3/01)				FOURTH QUARTER (Sampled 10/2/01)			
	TRITIUM	Cs-137	Cs-134	Co-60	TRITIUM	Cs-137	Cs-134	Co-60
MDA	<2000	18	15	15	<2000	18	15	15
GEO-1	<332	<16 2	<14.7	<14.3	<266	<12.7	<11.8	<13 1
GEO-3	<332	<10.9	<10.9	<10 6	<266	<11 7	<12.6	<14 0
GEO-4	<332	<11.2	<11.9	<11 8	<266	<10 2	<10.8	<11.5
GEO-5	<332	<10 6	<11.2	<12.5	<266	<11.4	<11.4	<11.1
GEO-8	<332	<9.7	<10.3	<8 5	<266	<10.1	<10.5	<9 11
GEO-10	<332	<10 6	<11.1	<12	NO SAMPLE - WELL DRY			
MW-2	<332	<14.4	<11.7	<12.4	<266	<10.6	<9 66	<10.8
MW-2Q(B&W)	<189	<13.5	<11.8	<14.4	n/a	n/a	n/a	n/a
MW-3	<332	<14.9	<11.9	<14.8	<266	<15.9	<13.5	<14.9
MW-4	<332	<9.6	<10 9	<10.6	<266	<15.7	<12.4	<14.5
OW-3	<332	<9.3	<10.4	<9 9	<266	<11.7	<12.3	<11.3
OW-3R	<332	<10.3	<9.7	<10.1	<266	<10.5	<11 2	<9 57
OW-4	NO SAMPLE - WELL DRY				NO SAMPLE - WELL DRY			
OW-4R	<282	<15 9	<12.2	<14.6	<266	<12.8	<11 6	<11 6
OW-5	<332	<11.7	<11.3	<12.5	NO SAMPLE - WELL DRY			
OW-5R	<332	<10.4	<12.2	<12	<266	<15.0	<13.7	<12.5
OW-6	<332	<7.9	<9 01	<8 8	<289	<9 45	<10 0	<10.2
OW-7	NO SAMPLE - WELL DRY				NO SAMPLE - WELL DRY			
OW-7R	<332	<9.5	<10.7	<10.9	<266	<13.9	<12 9	<15 3
OP-3	<332	<9.8	<9.1	<11.1	NO SAMPLE - WELL DRY			
OP-4	<332	<13.7	<14.5	<12.5	<289	<10 3	<10.5	<10.6

REQUIRED MDA NOT MET DUE TO LOW VOLUME OF SAMPLE

Table 2-17b

NEW MONITORING WELL TRU/HTDN ANALYSIS RESULTS

All Results are <MDA in pCi/g except for uranium

Well ID	OW-3	OW-3R	OW-4R	OW-5	OW-5R	OW-6	OP-3	OP-4	OW-7R
Sample Date	4/12/01 @1446	4/12/01 @1455	4/12/01 @1505	4/12/01 @1545	4/12/01 @1535	4/12/01 @1620	7/5/01 @1630	7/3/01 @1545	7/2/01 @1330
Carbon-14	<43.69	<45.32	<44.34	<44.01	<43.79	<46.14	<53.31	<52.08	<53.23
Nickel-63	<12.13	<12.77	<13.7	<11.56	<11.11	<9.9	<154.9	<73.55	<68.53
Sr-90	<0.8	<1.06	<0.65	<1.23	<1.3	<0.82	<1.46	<0.75	<0.77
Tc-99	<11.79	<12.1	<12.94	<11.89	<12.51	<12.26	<24.3	<11.57	<14.48
I-129	<109	<216	<189	<190	<229	<373	<518.05	<183.57	<149.14
Pu-242	<0.22	<0.23	<0.38	<0.25	<0.25	<0.24	<0.39	<0.18	<0.96
Pu-239/240	<0.22	<0.23	<0.36	<0.25	<0.37	<0.2	<0.39	<0.18	<1.07
Pu-238	<0.24	<0.58	<0.63	<0.25	<0.34	<0.49	<0.39	<0.59	<1.79
Pu-241	<55.43	<63.24	<56.48	<67.78	<40.03	<54.53	<120.67	<60.88	<317.69
Am-241	<0.23	<0.52	<0.2	<0.19	<0.32	<0.29	<0.71	<0.82	<0.59
U-234	**0.49**	**0.94**	**1.19**	<0.55	**2.38**	**0.52**	<0.82	**0.41**	**0.81**
U-235	<0.24	<0.23	<0.28	<0.37	<0.23	<0.23	<0.55	<0.21	<0.21
U-238	<0.24	**4.4**	**0.84**	<0.32	**2.1**	<0.26	<0.49	**0.33**	**0.85**

Note: Shaded cells indicate naturally occurring uranium above MDA.

Table 2-18
Historical Groundwater Monitoring Results for well GEO-5

TRITIUM RESULTS
Activity ± 2σ

Date	Result (pCi/L)
7/13/94	MDA (<170)
10/06/94	560 ± 130
10/27/94	310 ± 120
1/12/95	MDA (<190)
4/05/95	MDA (<180)
5/30/95	270 ± 120
6/13/95	370 ± 130
7/13/95	370 ± 110
8/17/95	390 ± 130
9/15/95	410 ± 130
10/18/95	760 ± 140
11/17/95	MDA (<200)
1/25/96	MDA (<190)
4/03/96	MDA (<150)
7/10/96	MDA (<140)
10/03/96	MDA (<140)
1/08/97	MDA (<140)
4/16/97	MDA (<150)
7/09/97	MDA (<150)
10/01/97	180 ± 100
1/08/98	MDA (<150)
4/15/98	140 ± 80
7/09/98	MDA (<120)
10/08/98	MDA (<130)
1/19/99	200 ± 90
4/15/99	MDA (<160)
7/22/99	200 ± 90
10/14/99	MDA (<130)
1/06/00	MDA (<130)
4/06/00	MDA (<120)
7/13/00	190 ± 80
10/11/00	MDA (<644)
1/24/01	MDA (<105)
4/04/01	MDA (<92)
7/03/01	MDA (<332)
10/02/01	MDA (<266)
1/7/02	MDA (<298)
4/1/02	MDA (<308)
7/11/02	MDA (<336)

Table 2-19

Year 2001 Quarterly Results of Aquatic Sediment Analysis

Activity ± 2σ
pCi/g dried

	First Qtr **01/24/01**	**Second Qtr** **04/04/01**	**Third Qtr** **07/05/01**	**Fourth Qtr** **10/02/01**
Cs-137				
A1-1(I)	0.083± 0.011	<0.02	1.1 ± 0.17	2.21 ± 0.29
C1-6(I)	0.94 ± 0.11	<0.04	0.7 ± 0.1	1.09 ± 0.16
A1-4(I)	0.216± 0.027	<0.02	0.5 ± 0.1	0.17 ± 0.05
Q1-2(C)	0.031± 0.009	<0.03	0.03 ± 0.033	0.059 ± 0.26
Cs-134				
A1-1(I)	<0.026	<0.02	<0.01	<0.11
C1-6(I)	<0.027	<0.04	<0.08	<0.07
A1-4(I)	<0.019	<0.02	<0.06	<0.072
Q1-2(C)	<0.009	<0.03	<0.08	<0 048
Co-60				
A1-1(I)	<0.020	<0.02	<0.1	<0.093
C1-6(I)	<0.06	<0.03	<0.06	<0.05
A1-4(I)	<0.013	<0.02	<0.06	<0.065
Q1-2(C)	<0.011	<0.03	<0.08	<0.042

(I) = Indicator Station (C) = Control Station

See Figure 2-24 for REMP sample locations.

Table 2-20

REMP TLD Results

2001 SNEC TLD Summary
Field Cycle: January 16, 2001 to January 22, 2002

mR/std month	MEAN	MINIMUM	MAXIMUM
Average Offsite Indicator Stations	5.95	4.3	9.0
Average Control Stations	5.5	4.8	7.0

Table 2-21

Soil Background Results

SNEC Soil Background Study 1999

		K-40			Cs-137			Ra-226			Th-232		
Sample	Location	(pCi/gm)			(pCi/gm)			(pCi/gm)			(pCi/gm)		
SX12-SL-0001E	17	22	+/-	2	<MDA			2.3	+/-	0.1	1.1	+/-	0.1
SX12-SL-0002E	16	9.5	+/-	0.9	0.042	+/-	0.022	1.4	+/-	0.4	0.72	+/-	0.09
SX12-SL-0003E	14	11	+/-	1	0.58	+/-	0.06	1.6	+/-	0.5	0.86	+/-	0.13
SX12-SL-0004E	15	4.8	+/-	0.6	0.72	+/-	0.07	1.6	+/-	0.6	0.54	+/-	0.13
SX12-SL-0005E	13	9.2	+/-	0.9	0.3	+/-	0.03	1.8	+/-	0.4	0.8	+/-	0.12
SX12-SL-0006E	12	17	+/-	2	0.33	+/-	0.03	1.7	+/-	0.5	1.2	+/-	0.1
SX12-SL-0007E	11	16	+/-	2	0.25	+/-	0.04	1.8	+/-	0.6	1.2	+/-	0.1
SX12-SL-0008E	10	15	+/-	1	0.055	+/-	0.018	1.4	+/-	0.5	0.9	+/-	0.1
SX12-SL-0009E	19	26	+/-	3	0.19	+/-	0.04	3	+/-	0.7	1.1	+/-	0.2
SX12-SL-0010E	18	11	+/-	1	0.12	+/-	0.02	2.4	+/-	0.5	1.5	+/-	0.2
SX12-SL-0011E	20	11	+/-	1	0.25	+/-	0.06	3	+/-	0.9	0.9	+/-	0.23
SX12-SL-0012E	1	37	+/-	4	0.56	+/-	0.06	1.7	+/-	0.7	0.77	+/-	0.15
SX12-SL-0013E	2	18	+/-	2	0.3	+/-	0.04	1.2	+/-	0.5	0.88	+/-	0.13
SX12-SL-0014E	3	17	+/-	2	0.046	+/-	0.022	1.3	+/-	0.6	1.0	+/-	0.13
SX12-SL-0015E	4	8.2	+/-	0.8	0.31	+/-	0.03	1.4	+/-	0.5	0.63	+/-	0.1
SX12-SL-0016E	5	6.7	+/-	0.7	0.31	+/-	0.03	1.7	+/-	0.4	0.7	+/-	0.09
SX12-SL-0017E	6	14	+/-	1	0.12	+/-	0.02	1.8	+/-	0.5	0.96	+/-	0.1
SX12-SL-0018E	7	4.5	+/-	0.4	0.28	+/-	0.03	0.83	+/-	0.48	0.41	+/-	0.08
SX12-SL-0019E	8	12	+/-	1	0.059	+/-	0.034	1.2	+/-	0.6	0.94	+/-	0.17
SX12-SL-0020E	9	9.3	+/-	0.9	0.5	+/-	0.06	1.9	+/-	0.9	0.99	+/-	0.2
AVERAGE		14	+/-	15.5	0.28	+/-	0.39	1.8	+/-	1.1	0.9	+/-	0.5

See Figure 2-23 for soil background sample locations.

Table 2-22

Background Exposure Rate Measurements

SNEC Exposure Rate Background Study 1999

Survey location	Sector	Exposure Rate (uR/hr) 1m > Sample Site
1	A	9
2	B	7
3	C	8
4	D	6
5	E	5
6	F	6
7	G	6
8	H	6
9	H	6
10	J	11
11	J	7
12	K	7
13	K	8
14	L	7
15	L	6
16	M	6
17	N	9
18	P	7
19	Q	8
20	R	5
	Average +/- 2σ	7+/-3

See Figure 2-23 for background survey locations.

Table 2-23
River Sediment Sampling Locations

Site Identification	Sample Identification	Latitude	Longitude	Sample Date	Sample Time	Sample Type
Weir 1	SXSD1472	40° 13' 42.539"	78° 14' 33 429"	10/10/01	855	Scoop
Weir 1	SXSD1473	40° 13' 42.539"	78° 14' 33 429"	10/10/01	900	Scoop
Weir 2	SXSD1474	40° 13' 43.417"	78° 14' 30.996"	10/10/01	1205	Scoop
Weir 2	SXSD1475	40° 13' 43 417"	78° 14' 30.996"	10/10/01	1215	Scoop
Weir 3	SXSD1476	40° 13' 43.491"	78° 14' 31.384"	10/10/01	1226	Scoop
Weir 3	SXSD1477	40° 13' 43.491"	78° 14' 31.384"	10/10/01	1232	Scoop
Weir 4	SXSD1478	40° 13' 43.676"	78° 14' 32.104"	10/10/01	1240	Scoop
Weir 4	SXSD1479	40° 13' 43.676"	78° 14' 32.104"	10/10/01	1245	Scoop
Weir 5	SXSD1480	40° 13' 42.832"	78° 14' 32.382"	10/10/01	1415	Suction
Weir 5	SXSD1481	40° 13' 42 832"	78° 14' 32.382"	10/10/01	1420	Suction
Weir 6	SXSD1545	40° 13' 42.597"	78° 14' 33.435"	10/18/01	817	Suction
Weir 6	SXSD1546	40° 13' 42.597"	78° 14' 33.435"	10/18/01	823	Suction
Discharge Tunnel 1	SXSD1482	40° 13' 43.548"	78° 14' 34.806"	10/10/01	1502	Scoop
Discharge Tunnel 1	SXSD1483	40° 13' 43.548"	78° 14' 34.806"	10/10/01	1508	Scoop
Discharge Tunnel 2	SXSD1484	40° 13' 43.561"	78° 14' 35.097"	10/10/01	1525	Scoop
Discharge Tunnel 2	SXSD1485	40° 13' 43.561"	78° 14' 35.097"	10/10/01	1535	Scoop
Discharge Tunnel 3	SXSD1486	40° 13' 42.284"	78° 14' 34.657"	10/10/01	1515	Ponar
Discharge Tunnel 3	SXSD1487	40° 13' 42.284"	78° 14' 34.657"	10/10/01	1530	Ponar
Discharge Tunnel 4	SXSD1488	40° 13' 42.440"	78° 14' 36 302"	10/10/01	1555	Ponar
Discharge Tunnel 4	SXSD1489	40° 13' 42.440"	78° 14' 36 302"	10/10/01	1605	Ponar
Discharge Tunnel 5	SXSD1490	40° 13' 42.116"	78° 14' 36 419"	10/10/01	1612	Scoop
Discharge Tunnel 5	SXSD1491	40° 13' 42.116"	78° 14' 36 419"	10/10/01	1615	Scoop
Spray Pond Lagoon	SXSD1498	40° 13' 27.614"	78° 14' 40.116"	10/11/01	1130	Core
Spray Pond Lagoon	SXSD1499	40° 13' 27.614"	78° 14' 40.116"	10/11/01	1155	Core
Spray Pond Bog	SXSD1500	40° 13' 28.015"	78° 14' 39.220"	10/11/01	1240	Ponar
Spray Pond Bog	SXSD1501	40° 13' 28.015"	78° 14' 39.220"	10/11/01	1242	Ponar
Site 1	SXSD1502	40° 13' 20 197"	78° 14' 35.441"	10/11/01	1310	Scoop
Site 1	SXSD1503	40° 13' 20.197"	78° 14' 35.441"	10/11/01	1313	Scoop
Site 2	SXSD1496	40° 13' 30 559"	78° 14' 43.783"	10/11/01	1018	Scoop
Site 2	SXSD1497	40° 13' 30 559"	78° 14' 43.783"	10/11/01	1022	Scoop
Site 3	SXSD1494	40° 13' 32.130"	78° 14' 45 129"	10/11/01	1007	Ponar
Site 3	SXSX1495	40° 13' 32.130"	78° 14' 45.129"	10/11/01	1010	Ponar
Site 4	SXSD1492	40° 13' 36.644"	78° 14' 46.519"	10/11/01	947	Scoop
Site 4	SXSD1493	40° 13' 36 644"	78° 14' 46.519"	10/11/01	954	Scoop
Site 5	Deleted due to redundancy with discharge tunnel sampling.					
Site 6	SXSD1506	40° 13' 56.499"	78° 13' 53.996"	10/15/01	1415	Core
Site 6	SXSD1507	40° 13' 56 499"	78° 13' 53.996"	10/15/01	1430	Core
Site 7	SXSD1508	40° 13' 59.081"	78° 13' 48.768"	10/15/01	1510	Core
Site 7	SXSD1509	40° 13' 59.081"	78° 13' 48 768"	10/15/01	1532	Core
Site 8	SXSD1535	40° 14' 01.520"	78° 13' 39.818"	10/16/01	946	Core
Site 8	SXSD1536	40° 14' 01.520"	78° 13' 39.818"	10/16/01	1014	Core
Site 9	SXSD1504	40° 13' 57.580"	78° 13' 24.309"	10/16/01	1200	Core
Site 9	SXSD1505	40° 13' 57.580"	78° 13' 24.309"	10/16/01	1216	Core
Site 10	SXSD1470	40° 14' 16.367"	78° 13' 15.900"	10/9/01	1530	Core
Site 10	SXSD1471	40° 14' 16.367"	78° 13' 15.900"	10/9/01	1600	Core
Site 11	SXSD1547	40° 14' 54.757"	78° 13' 49.096"	10/18/01	1116	Core
Site 11	SXSD1548	40° 14' 54.757"	78° 13' 49.096"	10/18/01	1200	Core
BKG - 1	SXSD1537	40° 09' 25.063"	78° 15' 22.185"	10/17/01	940	Core
BKG - 1	SXSD1538	40° 09' 25.063"	78° 15' 22.185"	10/17/01	955	Core
BKG - 2	SXSD1539	40° 12' 12.494"	78° 15' 46.467"	10/17/01	1300	Ponar
BKG - 2	SXSD1540	40° 12' 12.494"	78° 15' 46.467"	10/17/01	1315	Ponar
BKG - 3	SXSD1543	40° 11' 47.708"	78° 15' 04.959"	10/17/01	1355	Ponar
BKG - 3	SXSD1544	40° 11' 47.708"	78° 15' 04.959"	10/17/01	1405	Ponar

Table 2-24
River Sediment Gamma Spectroscopy Results

SAMPLE ID	HpGe ID #	SAMPLE DATE	TIME	DESCRIPTION/LOCATION	Cs-137 (pCi/g)	Co-60 (pCi/g)
*1472	3-9330	10/10/01	855	WEIR SITE #1	2.55	< 0.08
1473	2-9329	10/10/01	900	WEIR SITE #1	1.07	< 0.06
1474	3-9327	10/10/01	1205	WEIR SITE #2	< 0.07	< 0.07
1475	2-9326	10/10/01	1215	WEIR SITE #2	0.05	< 0.055
1476	1-9325	10/10/01	1226	WEIR SITE #3	< 0.039	< 0.05
1477	1-9338	10/10/01	1232	WEIR SITE #3	< 0.06	< 0.05
1478	2-9339	10/10/01	1337	WEIR SITE #4	< 0.06	< 0.05
1479	1-9328	10/10/01	1245	WEIR SITE #4	< 0.05	< 0.04
1480	1-9344	10/10/01	1415	WEIR SITE #5	0.15	< 0.04
1481	1-9345	10/10/01	1420	WEIR SITE #5	0.08	< 0.04
1545	1-9412	10/18/01	817	WEIR SITE #6	1.8	< 0.05
1546	2-9413	10/18/01	823	WEIR SITE #6	1.2	< 0.07
1482	2-9346	10/10/01	1502	DISCHARGE TUNNEL #1	0.07	< 0.06
1483	2-9354	10/10/01	1508	DISCHARGE TUNNEL #1	< 0.07	< 0.07
1484	3-9352	10/10/01	1525	DISCHARGE TUNNEL #2	< 0.09	< 0.07
1485	2-9366	10/10/01	1535	DISCHARGE TUNNEL #2	< 0.04	< 0.07
1486	3-9356	10/10/01	1515	DISCHARGE TUNNEL #3	< 0.05	< 0.06
1487	2-9348	10/10/01	1530	DISCHARGE TUNNEL #3	< 0.045	< 0.06
1488	1-9371	10/10/01	1555	DISCHARGE TUNNEL #4	< 0.05	< 0.04
1489	2-9372	10/10/01	1605	DISCHARGE TUNNEL #4	< 0.06	< 0.06
1490	3-9349	10/10/01	1612	DISCHARGE TUNNEL #5	< 0.06	< 0.06
1491	2-9351	10/10/01	1615	DISCHARGE TUNNEL #5	< 0.06	< 0.06
1498	1-9369	10/11/01	1130	SPRAY POND LAGOON	< 0.06	< 0.05
1499	2-9364	10/11/01	1155	SPRAY POND LAGOON	< 0.06	< 0.07
1500	1-9367	10/11/01	1240	SPRAY POND BOG	< 0.06	< 0.06
1501	1-9363	10/11/01	1242	SPRAY POND BOG	< 0.14	< 0.12
1502	1-9365	10/11/01	1310	RIVER SITE #1	< 0.04	< 0.05
1503	1-9361	10/11/01	1313	RIVER SITE #1	< 0.05	< 0.05
1496	3-9358	10/11/01	1018	RIVER SITE #2	< 0.05	< 0.08
1497	3-9362	10/11/01	1022	RIVER SITE #2	< 0.1	< 0.1
1494	3-9360	10/11/01	1007	RIVER SITE #3	< 0.1	< 0.09
1495	2-9357	10/11/01	1010	RIVER SITE #3	< 0.1	< 0.09
1492	2-9370	10/11/01	947	RIVER SITE #4	< 0.08	< 0.07
1493	1-9347	10/11/01	954	RIVER SITE #4	< 0.047	< 0.057
1506	1-9397	10/15/01	1415	RIVER SITE #6	0.07	< 0.04
1507	2-9399	10/15/01	1430	RIVER SITE #6	< 0.053	< 0.055
1508	1-9390	10/15/01	1510	RIVER SITE #7	< 0.05	< 0.04
1508-B	2-9403	10/15/01	1510	RIVER SITE #7	< 0.06	< 0.05
1509	2-9391	10/15/01	1532	RIVER SITE #7	< 0.06	< 0.06
1509-B	1-9402	10/15/01	1532	RIVER SITE #7	< 0.04	< 0.03
1535	2-9386	10/16/01	946	RIVER SITE #8	0.09	< 0.06
1536	1-9387	10/16/01	1014	RIVER SITE #8	0.11	< 0.05
*1504	1-9392	10/15/01	1200	RIVER SITE #9	0.16	< 0.04
1505	2-9393	10/15/01	1216	RIVER SITE #9	< 0.06	< 0.06
1470	1-9333	10/9/01	1530	RIVER SITE #10	0.13	< 0.037
1471	2-9334	10/9/01	1600	RIVER SITE #10	< 0.044	< 0.04
1547	1-9420	10/18/01	1116	RIVER SITE #11	< 0.03	< 0.04
1548	2-9416	10/18/01	1200	RIVER SITE #11	< 0.049	< 0.063
*1537	2-9419	10/17/01	940	BKG #1 RIDDLESBURG	0.08	< 0.07
1538	2-9421	10/17/01	955	BKG #1 RIDDLESBURG	< 0.07	< 0.07
1539	2-9423	10/17/01	1300	BKG #2 WARRIORS PATH	0.07	< 0.06
1540	1-9418	10/17/01	1315	BKG #2 WARRIORS PATH	0.09	< 0.05
1543	1-9422	10/17/01	1355	BKG #3 WARRIORS PATH	0.01	< 0.04
1544	1-9414	10/17/01	1405	BKG #3 WARRIORS PATH	< 0.04	< 0.05

Areas with a < symbol are less than MDA.

* TRU analyses performed on these samples (Ref. BWXT Report #0110089).

Table 2-25
River Sediment TRU/HTD Results

	Results (pCi/g)					
Isotope		Weir #1		River Site #9		Bkg #1 (Riddlesburg)
H-3	<	1.02E+01	<	1.01E+01	<	9.62E+00
C-14	<	4.58E+00	<	4.82E+00	<	4.94E+00
Fe-55	<	1.19E+00	<	3.21E-01	<	1.61E-01
Ni-59	<	5.20E+00	<	1.34E+01	<	5.74E+00
Ni-63	<	7.46E+00	<	6.94E+00	<	7.98E+00
Sr-90	<	1.40E-02	<	1.00E-02	<	1.00E-02
Tc-99	<	5.56E-01	<	2.05E+00	<	1.25E+00
I-129	<	1.35E+00	<	1.46E+00	<	1.27E+00
Np-237	<	3.41E-03	<	5.45E-03	<	1.03E-02
Pu-242	<	3.41E-03	<	4.35E-03	<	3.56E-03
Pu-239/240	<	3.41E-03	<	3.12E-03	<	3.56E-03
Pu-238	<	3.41E-03	<	3.48E-03	<	3.56E-03
Pu-241	<	9.60E-01	<	1.06E+00	<	1.15E+00
Am-243	<	5.13E-03	<	2.83E-03	<	3.50E-03
Am-241	<	4.89E-03	<	2.83E-03	<	3.50E-03
Cm-244	<	3.70E-03	<	3.16E-03	<	3.50E-03
Cm-242	<	5.72E-03	<	3.02E-03	<	3.72E-03
U-234		4.30E-01		5.29E-01		7.70E-01
U-235		2.30E-02		1.24E-02		1.81E-02
U-238		3.11E-01		4.12E-01		4.95E-01
Co-60		2.00E-02	<	2.74E-02	<	1.37E-02
Nb-94	<	1.08E-02	<	2.36E-02	<	1.13E-02
Sb-125	<	3.83E-02	<	5.90E-02	<	3.11E-02
Cs-134	<	1.57E-02	<	3.86E-02	<	2.04E-02
Cs-137		2.87E+00		1.54E-01		6.62E-02
Ce-144	<	8.78E-02	<	1.32E-01	<	8.73E-02
Eu-152	<	6.24E-02	<	1.39E-01	<	6.86E-02
Eu-154	<	4.20E-02	<	9.41E-02	<	4.66E-02
Eu-155	<	4.69E-02	<	6.98E-02	<	3.26E-02

Shaded areas denote positive results.
Areas with a < symbol are less than MDA.
Reference BWXT Report # 0110089, November 13, 2001

Table 2-26
SSGS Intake Tunnel Characterization Results

No.	Sample Number			General Location Information	Sample Type	Isotopic Results		Other Results
						Cs-137	Co-60	
1	SX	SD	1622	SSGS South Intake Tunnel, SUCTION @ 60' / QC SAMPLE	Sediment	1 6 pCi/g	<.1 pCi/g	
2	SX	SD	1869	SSGS Intake CLEANOUT ACCESS	Sediment	0 22 pCi/g	<0.14 pCi/g	
3	SX	IW	1871	SSGS Intake @ CLEANOUT	Water	<1.5 E-8 uCi/ml	<1.5 E-8 uCi/ml	<289 pCi/L H-3
4	SX	SD	1914	SSGS North Intake Tunnel @ East WALL@ 0'	Sediment	0.56 pCi/g	<0.15 pCi/g	
5	SX	SD	1915	SSGS North Intake Tunnel @ 10'	Sediment	0 43 pCi/g	<0 09 pCi/g	
6	SX	SD	1916	SSGS North Intake Tunnel @ 20'	Sediment	0 51 pCi/g	<0 13 pCi/g	
7	SX	SD	1917	SSGS North Intake Tunnel @ 30'	Sediment	0 56 pCi/g	<0.1 pCi/g	
8	SX	SD	1918	SSGS North Intake Tunnel @ 40'	Sediment	0 38 pCi/g	<0 14 pCi/g	
9	SX	SD	1919	SSGS North Intake Tunnel @ 50'	Sediment	0 42 pCi/g	<0.1 pCi/g	
10	SX	SD	1920	SSGS North Intake Tunnel @ 60'	Sediment	0 85 pCi/g	<0.1 pCi/g	
11	SX	SD	1921	SSGS North Intake Tunnel @ 70'	Sediment	0 48 pCi/g	<0 09 pCi/g	
12	SX	SD	1922	SSGS North Intake Tunnel @ 80'	Sediment	0 6 pCi/g	<0.1 pCi/g	
13	SX	SD	1923	SSGS North Intake Tunnel @ 90'	Sediment	0 34 pCi/g	<0 07 pCi/g	
14	SX	SD	1924	SSGS North Intake Tunnel @ 100'	Sediment	0.74 pCi/g	<0 1 pCi/g	
15	SX	SD	1925	SSGS North Intake Tunnel @ 110'	Sediment	0.72 pCi/g	<0 09 pCi/g	
16	SX	SD	1926	SSGS North Intake Tunnel @ 120'	Sediment	0.74 pCi/g	<0.13 pCi/g	
17	SX	SD	1927	SSGS North Intake Tunnel @ 130'	Sediment	0 83 pCi/g	<0.08 pCi/g	
18	SX	SD	1928	SSGS North Intake Tunnel @ 140'	Sediment	0 82 pCi/g	<0.1 pCi/g	
19	SX	SD	1929	SSGS North Intake Tunnel @ 150'	Sediment	0 7 pCi/g	<0 1 pCi/g	
20	SX	SD	1930	SSGS North Intake Tunnel @ 160'	Sediment	0.88 pCi/g	<0 1 pCi/g	
21	SX	IW	1953	SSGS North Intake Tunnel/East END @ 30'	Water	<1 4 E-7 uCi/ml	<1 2 E-7 uCi/ml	<286 pCi/L H-3
22	SX	SD	1957	SSGS North Intake Tunnel @ 170'	Sediment	0 7 pCi/g	<0 14 pCi/g	
23	SX	SD	1997	SSGS North Intake Tunnel North Wall/ East END @ 25'	Sediment	0 8 pCi/g	<0 13 pCi/g	
24	SX	SD	1998	SSGS North Intake Tunnel North Wall / MID-SECTION @ 85'	Sediment	1 8 pCi/g	<0 09 pCi/g	
25	SX	SD	1999	SSGS North Intake Tunnel North Wall/ West END @ 160'	Sediment	0.7 pCi/g	<0 08 pCi/g	
26	SX	SD	2000	SSGS North Intake Tunnel South Wall / East END @ 25'	Sediment	1.4 pCi/g	<0 08 pCi/g	
27	SX	SD	2001	SSGS North Intake Tunnel South Wall/ MID-SECTION @ 95'	Sediment	0 85 pCi/g	<0 09 pCi/g	
28	SX	SD	2002	SSGS North Intake Tunnel South Wall/ West END @ 145'	Sediment	0 7 pCi/g	<0 1 pCi/g	
29	SX	SM	2033	SSGS North Intake Tunnel WALLS	Smear Composite	<9 6 E-6 uCi	<8.0 E-6 uCi	
30	SX	CF	2060	SSGS North Intake Tunnel FLOOR @ 25'	Core Bore	<0.14 pCi/g	<0 16 pCi/g	
31	SX	CF	2061	SSGS North Intake Tunnel FLOOR @ 65'	Core Bore	<0.12 pCi/g	<0.1 pCi/g	
32	SX	CF	2062	SSGS North Intake Tunnel FLOOR @ 100'	Core Bore	<0.14 pCi/g	<0 14 pCi/g	
33	SX	CF	2063	SSGS North Intake Tunnel FLOOR @ 135'	Core Bore	<0.14 pCi/g	<0 15 pCi/g	
34	SX	CF	2064	SSGS North Intake Tunnel FLOOR @ 165'	Core Bore	<0.18 pCi/g	<0.16 pCi/g	
35	SX	CF	2065	SSGS North Intake Tunnel FLOOR @ 110' QC SAMPLE	Core Bore	<0 2 pCi/g	<0.17 pCi/g	
36	SX	SD	2066	SSGS North Intake Tunnel PUMP SUCTION PIPE @ ~ 20'	Sediment	0 8 pCi/g	<0.1 pCi/g	
37	SX	SD	2067	SSGS North Intake Tunnel PUMP SUCTION PIPE @ ~ 55'	Sediment	0 22 pCi/g	<0 1 pCi/g	
38	SX	SD	2068	SSGS North Intake Tunnel PUMP SUCTION PIPE @ ~ 70'	Sediment	0 4 pCi/g	<0 1 pCi/g	
39	SX	SD	2069	SSGS North Intake Tunnel PUMP SUCTION PIPE @ ~ 100'	Sediment	0 55 pCi/g	<0 11 pCi/g	

Table 2-26 (Contd.)
SSGS Intake Tunnel Characterization Results Cont'd.

No.	Sample Number			General Location Information	Sample Type	Isotopic Results		Other Results
						Cs-137	Co-60	
40	SX	SD	2070	SSGS North Intake Tunnel PUMP SUCTION PIPE @ ~ 110'	Sediment	1.1 pCi/g	<0 1 pCi/g	
41	SX	SM	2071	SSGS North Intake Tunnel PUMP SUCTION PIPES INNER WALL COMPOSITE	Smear Composite	<1.8 E-5 uCi	<1.7 E-5 uCi	
42	SX	SD	2072	SSGS North Intake Tunnel @ North DOOR DEBRIS	Sediment	0 6 pCi/g	<0 09 pCi/g	
43	SX	SD	2073	SSGS North Intake Tunnel @ SOUTH DOOR DEBRIS	Sediment	0 72 pCi/g	<0 06 pCi/g	
44	SX	SM	2082	F.P. Intake Tunnel CEILING	Smear Composite	<1.4 E-5 uCi	<1 7 E-5 uCi	
45	SX	SM	2083	SSGS North Intake Tunnel CEILING & WALLS (QC SAMPLE)	Smear Composite	<1 7 E-5 uCi	<2 0 E-5 uCi	
46	SX	SD	2118	SSGS North Intake Tunnel QC SAMPLE @ ~ 30'	Sediment	0.5 pCi/g	<0 07 pCi/g	
47	SX	SD	2119	SSGS North Intake Tunnel QC SAMPLE @ ~ 70'	Sediment	0.5 pCi/g	<0 08 pCi/g	
48	SX	SD	2120	SSGS North Intake Tunnel QC SAMPLE /PUMP SUCTION PIPE INTERNALS @~20'	Sediment	0 52 pCi/g	<0 14 pCi/g	
49	SX	SD	2167	Intake Tunnel 20' West OF 2ND CLEANOUT	Sediment	0 7 pCi/g	<0 1 pCi/g	
50	SX	SD	2168	Intake Tunnel 20' E OF 2ND CLEANOUT	Sediment	0 55 pCi/g	<0 1 pCi/g	
51	SX	SM	2169	SSGS Intake Tunnel @ East/West 00' TO East 460'	Smear Composite	<8.9 E-6 uCi	<1.2 E-5 uCi	
52	SX	GW	2170	SSGS Intake Tunnel @ East 100'	Ground Water	<1.7 E-8 uCi/ml	<1.25 E-8 uCi/ml	<286 pCi/l H-3
53	SX	GW	2171	SSGS Intake Tunnel @ East 320'	Ground Water	<1.02 E-8 uCi/ml	<9.5 E-9 uCi/ml	<286 pCi/l H-3
54	SX	SD	2172	SSGS Intake Tunnel WALL/CEILING COMPOSITE East/West 00' TO East 220'	Sediment	0.09 pCi/g	<0.09 pCi/g	
55	SX	SD	2173	SSGS Intake Tunnel WALL/CEILING COMPOSITE East 230' TO East 460'	Sediment	0 6 pCi/g	<0.15 pCi/g	
56	SX	SM	2174	SMEARS Intake Tunnel 10' West 210' West (QC SAMPLE @ 235 E, 165 W, 425 E)	Smear Composite	<1.0 E-5 uCi	<1.3 E-5 uCi	
57	SX	SD	2175	COMPOSITE OF WALL & CEILING SCRAPINGS 10' West TO 210' West	Sediment	<0 16 pCi/g	<0 13 pCi/g	
58	SX	SD	2176	SSGS Intake Tunnel @ West 30'	Sediment	0 08 pCi/g	<0 1 pCi/g	
59	SX	SD	2177	SSGS Intake Tunnel @ West 40'	Sediment	0 17 pCi/g	<0 13 pCi/g	
60	SX	SD	2178	SSGS Intake Tunnel @ West 50'	Sediment	0 11 pCi/g	<0 15 pCi/g	
61	SX	SD	2179	SSGS Intake Tunnel @ West 60'	Sediment	0 17 pCi/g	<0 15 pCi/g	
62	SX	SD	2180	SSGS Intake Tunnel @ West 70'	Sediment	0 15 pCi/g	<0.11 pCi/g	
63	SX	SD	2181	SSGS Intake Tunnel @ West 80'	Sediment	0 11 pCi/g	<0.17 pCi/g	
64	SX	SD	2182	SSGS Intake Tunnel @ West 90'	Sediment	0.14 pCi/g	<0 16 pCi/g	
65	SX	SD	2183	SSGS Intake Tunnel @ West 100'	Sediment	0 15 pCi/g	<0 13 pCi/g	
66	SX	SD	2184	SSGS Intake Tunnel @ West 110'	Sediment	0 3 pCi/g	<0 08 pCi/g	
67	SX	SD	2185	SSGS Intake Tunnel @ West 120'	Sediment	0.23 pCi/g	<0 06 pCi/g	
68	SX	SD	2186	SSGS Intake Tunnel @ West 130'	Sediment	0.35 pCi/g	<0 08 pCi/g	
69	SX	SD	2187	SSGS Intake Tunnel @ West 140'	Sediment	0.16 pCi/g	<0.16 pCi/g	
70	SX	SD	2188	SSGS Intake Tunnel @ West 150'	Sediment	0.18 pCi/g	<0.1 pCi/g	
71	SX	SD	2189	SSGS Intake Tunnel @ West 160'	Sediment	0 26 pCi/g	<0.12 pCi/g	
72	SX	SD	2190	SSGS Intake Tunnel @ West 170'	Sediment	0 15 pCi/g	<0.17 pCi/g	
73	SX	SD	2191	SSGS Intake Tunnel @ West 180'	Sediment	0.15 pCi/g	<0.1 pCi/g	
74	SX	SD	2192	SSGS Intake Tunnel @ West 190'	Sediment	<0.19 pCi/g	<0 16 pCi/g	
75	SX	SD	2193	SSGS Intake Tunnel @ West 200'	Sediment	0 14 pCi/g	<0.12 pCi/g	
76	SX	SD	2194	SSGS Intake Tunnel @ West 210'	Sediment	0 16 pCi/g	<0.07 pCi/g	
77	SX	SD	2209	SSGS Intake Tunnel @ West 10'	Sediment	0.1 pCi/g	<0.12 pCi/g	
78	SX	SD	2210	SSGS Intake Tunnel @ East/West 00'	Sediment	0 2 pCi/g	<0.16 pCi/g	

Table 2-26 (Contd.)
SSGS Intake Tunnel Characterization Results Cont'd.

No.	Sample Number			General Location Information	Sample Type	Isotopic Results		Other Results
						Cs-137	Co-60	
79	SX	SD	2211	SSGS Intake Tunnel @ East 10'	Sediment	0.2 pCi/g	<0.15 pCi/g	
80	SX	SD	2212	SSGS Intake Tunnel @ East 20'	Sediment	0.19 pCi/g	<0.2 pCi/g	
81	SX	SD	2213	SSGS Intake Tunnel @ East 30'	Sediment	0.12 pCi/g	<0.18 pCi/g	
82	SX	SD	2214	SSGS Intake Tunnel @ East 40'	Sediment	0.09 pCi/g	< 0.15 pCi/g	
83	SX	SD	2215	SSGS Intake Tunnel @ East 50'	Sediment	0.16 pCi/g	<0.17 pCi/g	
84	SX	SD	2216	SSGS Intake Tunnel @ East 60'	Sediment	0.09 pCi/g	<0.17 pCi/g	
85	SX	SD	2217	SSGS Intake Tunnel @ East 70'	Sediment	0.2 pCi/g	<0.16 pCi/g	
86	SX	SD	2218	SSGS Intake Tunnel @ East 80'	Sediment	0.16 pCi/g	<0.12 pCi/g	
87	SX	SD	2219	SSGS Intake Tunnel @ East 90'	Sediment	<0.18 pCi/g	<0.18 pCi/g	
88	SX	SD	2220	SSGS Intake Tunnel @ East 100'	Sediment	0.18 pCi/g	<0.17 pCi/g	
89	SX	SD	2221	SSGS Intake Tunnel @ East 110'	Sediment	0.3 pCi/g	<0.17 pCi/g	
90	SX	SD	2222	SSGS Intake Tunnel @ East 120'	Sediment	0.23 pCi/g	<0.16 pCi/g	
91	SX	SD	2223	SSGS Intake Tunnel @ East 130'	Sediment	0.2 pCi/g	<0.16 pCi/g	
92	SX	SD	2224	SSGS Intake Tunnel @ East 140'	Sediment	0.18 pCi/g	<0.17 pCi/g	
93	SX	SD	2225	SSGS Intake Tunnel @ East 150'	Sediment	0.13 pCi/g	<0.14 pCi/g	
94	SX	SD	2226	SSGS Intake Tunnel @ East 160'	Sediment	0.25 pCi/g	<0.08 pCi/g	
95	SX	SD	2227	SSGS Intake Tunnel @ East 170'	Sediment	0.4 pCi/g	<0.05 pCi/g	
96	SX	SD	2228	SSGS Intake Tunnel @ East 180'	Sediment	0.3 pCi/g	<0.06 pCi/g	
97	SX	SD	2229	SSGS Intake Tunnel @ East 190'	Sediment	0.4 pCi/g	<0.06 pCi/g	
98	SX	SD	2230	SSGS Intake Tunnel @ East 200'	Sediment	0.6 pCi/g	<0.09 pCi/g	
99	SX	SD	2231	SSGS Intake Tunnel @ East 210'	Sediment	0.2 pCi/g	<0.06 pCi/g	
100	SX	SD	2232	SSGS Intake Tunnel @ East 220'	Sediment	0.24 pCi/g	<0.06 pCi/g	0.14 pCi/g U-235
101	SX	SD	2233	SSGS Intake Tunnel @ East 230'	Sediment	0.23 pCi/g	<0.06 pCi/g	
102	SX	SD	2234	SSGS Intake Tunnel @ West 20'	Sediment	0.2 pCi/g	<0.15 pCi/g	
103	SX	SD	2235	SSGS Intake Tunnel @ East 240'	Sediment	0.3 pCi/g	<0.09 pCi/g	
104	SX	SD	2236	SSGS Intake Tunnel @ East 250'	Sediment	0.6 pCi/g	<0.1 pCi/g	
105	SX	SD	2237	SSGS Intake Tunnel @ East 260'	Sediment	0.6 pCi/g	<0.08 pCi/g	
106	SX	SD	2238	SSGS Intake Tunnel @ East 270'	Sediment	0.73 pCi/g	<0.08 pCi/g	
107	SX	SD	2239	SSGS Intake Tunnel @ East 280'	Sediment	0.74 pCi/g	<0.08 pCi/g	
108	SX	SD	2240	SSGS Intake Tunnel @ East 290'	Sediment	0.76 pCi/g	<0.09 pCi/g	
109	SX	SD	2241	SSGS Intake Tunnel @ East 300'	Sediment	0.7 pCi/g	<0.12 pCi/g	
110	SX	SD	2242	SSGS Intake Tunnel @ East 310'	Sediment	0.76 pCi/g	<0.12 pCi/g	
111	SX	SD	2243	SSGS Intake Tunnel @ East 320'	Sediment	0.76 pCi/g	<0.13 pCi/g	
112	SX	SD	2244	SSGS Intake Tunnel @ East 330'	Sediment	0.76 pCi/g	<0.13 pCi/g	
113	SX	CF	2245	SSGS Intake Tunnel @ West 98'	Core Bore	<0.27 pCi/g	<0.4 pCi/g	
114	SX	CF	2246	SSGS Intake Tunnel @ East 120'	Core Bore	<0.18 pCi/g	<0.2 pCi/g	
115	SX	CF	2247	SSGS Intake Tunnel @ East 120'; QC SAMPLE.	Core Bore	<0.16 pCi/g	<0.17 pCi/g	
116	SX	CF	2248	SSGS Intake Tunnel @ East 355'	Core Bore	<0.2 pCi/g	<0.2 pCi/g	
117	SX	SD	2264	SSGS Intake Tunnel @East 340'	Sediment	0.56 pCi/g	<0.07 pCi/g	
118	SX	SD	2265	SSGS Intake Tunnel @ East 350'	Sediment	0.6 pCi/g	<0.11 pCi/g	
119	SX	SD	2266	SSGS Intake Tunnel @ East 360'	Sediment	0.7 pCi/g	<0.12 pCi/g	
120	SX	SD	2267	SSGS Intake Tunnel @ East 370'	Sediment	0.5 pCi/g	<0.17 pCi/g	
121	SX	SD	2268	SSGS Intake Tunnel @ East 380'	Sediment	0.52 pCi/g	<0.08 pCi/g	
122	SX	SD	2269	SSGS Intake Tunnel @ East 390'	Sediment	0.4 pCi/g	<0.07 pCi/g	
123	SX	SD	2270	SSGS Intake Tunnel @ East 400'	Sediment	0.44 pCi/g	<0.12 pCi/g	
124	SX	SD	2271	SSGS Intake Tunnel @ East 410'	Sediment	0.4 pCi/g	<0.13 pCi/g	
125	SX	SD	2272	SSGS Intake Tunnel @ East 420'	Sediment	0.5 pCi/g	<0.15 pCi/g	
126	SX	SD	2273	SSGS Intake Tunnel @ East 430'	Sediment	0.45 pCi/g	<0.12 pCi/g	
127	SX	SD	2274	SSGS Intake Tunnel @ East 440'	Sediment	0.4 pCi/g	<0.07 pCi/g	
128	SX	SD	2275	SSGS Intake Tunnel @ East 450'	Sediment	0.3 pCi/g	<0.08 pCi/g	
129	SX	SD	2276	SSGS Intake Tunnel @ East 460'	Sediment	0.17 pCi/g	<0.07 pCi/g	

Table 2-26 (Contd.)
SSGS Intake Tunnel Characterization Results Cont'd.

No.	Sample Number			General Location Information	Sample Type	Isotopic Results		Other Results
						Cs-137	Co-60	
130	SX	SD	2277	SSGS Intake Tunnel @ East 160' QC SAMPLE	Sediment	0.3 pCi/g	<0.10 pCi/g	
131	SX	SD	2278	SSGS Intake Tunnel @ East 90' QC SAMPLE	Sediment	0 11 pCi/g	<0.15 pCi/g	
132	SX	SD	2279	SSGS Intake Tunnel @ West 50'	Sediment	0 2 pCi/g	< 0 14 pCi/g	
133	SX	SD	2280	SSGS Intake Tunnel @ W 150' QC SAMPLE	Sediment	.0 18 pCi/g	<0 09 pCi/g	
134	SX	SD	2281	SSGS Intake Tunnel @ East 290' QC SAMPLE	Sediment	0 8 pCi/g	<0 12 pCi/g	
135	SX	SD	2282	SSGS Intake Tunnel @ East 370' QC SAMPLE	Sediment	0 74 pCi/g	<0 08 pCi/g	
136	SX	SM	2310	SSGS Intake Tunnel @ West 20', West 90', East 50', East 250', East 350'	Smear Composite	<1.7 E-5 uCi	<1.7 E-5 uCi	
137	SX	SD	2330	SSGS South Intake Tunnel @ 0'	Sediment	0 6 pCi/g	<0 07pCi/g	
138	SX	SD	2331	SSGS South. Intake Tunnel @ 10'	Sediment	0 5 pCi/g	<0.06 pCi/g	
139	SX	SD	2332	SSGS South Intake Tunnel @ 20'	Sediment	0 5 pCi/g	<0 06 pCi/g	
140	SX	SD	2333	SSGS South Intake Tunnel @ 30'	Sediment	0.44 pCi/g	<0.10 pCi/g	
141	SX	SD	2334	SSGS South Intake Tunnel @ 40'	Sediment	0 5 pCi/g	<0.08 pCi/g	
142	SX	SD	2335	SSGS South Intake Tunnel @ 50'	Sediment	0 46 pCi/g	<0 07pCi/g	
143	SX	SD	2336	SSGS South Intake Tunnel @ 60'	Sediment	0.3 pCi/g	<0.08 pCi/g	
144	SX	SD	2337	SSGS South Intake Tunnel @ 70'	Sediment	0 4 pCi/g	< 0 07 pCi/g	
145	SX	SD	2338	SSGS South Intake Tunnel @ 80'	Sediment	0.2 pCi/g	<0 05 pCi/g	
146	SX	SD	2339	SSGS South Intake Tunnel @ 90'	Sediment	0 24 pCi/g	< 0 04 pCi/g	
147	SX	SD	2340	SSGS South Intake Tunnel @ 100'	Sediment	0.5 pCi/g	<0 08 pCi/g	
148	SX	SD	2341	SSGS South Intake Tunnel @ 110'	Sediment	0.4 pCi/g	<0 10 pCi/g	
149	SX	SD	2342	SSGS South Intake Tunnel @ 120'	Sediment	0 25 pCi/g	< 0 05 pCi/g	
150	SX	SD	2343	SSGS South Intake Tunnel @ 130'	Sediment	0 23 pCi/g	<0 05 pCi/g	
151	SX	SD	2344	SSGS South Intake Tunnel @ 140'	Sediment	0.3 pCi/g	< 0 06 pCi/g	
152	SX	SD	2345	SSGS South Intake Tunnel @ 150'	Sediment	0 4 pCi/g	<0 05 pCi/g	
153	SX	SD	2346	SSGS South Intake Tunnel @ 160'	Sediment	0 8 pCi/g	<0 11 pCi/g	
154	SX	SD	2347	SSGS South Intake Tunnel @ 170'	Sediment	0 2 pCi/g	< 0 11 pCi/g	
155	SX	SD	2348	SSGS South Intake Tunnel @ 180'	Sediment	0 33 pCi/g	<0 05 pCi/g	
156	SX	SD	2349	SSGS South Intake Tunnel @ 190'	Sediment	0 67 pCi/g	<0 08 pCi/g	
157	SX	SD	2350	SSGS South Intake Tunnel @ 45' 5% QC SAMPLE	Sediment	0 45 pCi/g	<0 08 pCi/g	
158	SX	SD	2351	SSGS South Intake Tunnel/WALL SEDIMENT COMPOSITE 0-100'	Sediment	1.8 pCi/g	<0 1 pCi/g	
159	SX	SD	2352	SSGS South Intake Tunnel/WALL SEDIMENT COMPOSITE 100-190'	Sediment	1.3 pCi/g	<0.14 pCi/g	
160	SX	GW	2353	SSGS South Intake Tunnel @ 30'	Ground Water	<1.3 E-8 uCi/ml	<1.4 E-8 uCi/ml	<306 pCi/l H-3
161	SX	GW	2354	SSGS South Intake Tunnel @ 160'	Ground Water	<1.2 E-8 uCi/ml	<2 8 E-8 uCi/ml	<306 pCi/l H-3
162	SX	CF	2355	SSGS South Intake Tunnel @ 180'	Core Bore	<0 15 pCi/g	<0 19 pCi/g	
163	SX	CF	2356	SSGS South Intake Tunnel @ 65'	Core Bore	<0.1 pCi/g	<0 12 pCi/g	
164	SX	CF	2357	SSGS South Intake Tunnel @ 65' QC SAMPLE	Core Bore	0 13 pCi/g	<0 1 pCi/g	
165	SX	CF	2358	SSGS South Intake Tunnel @ 20'	Core Bore	<0 17 pCi/g	<0 2 pCi/g	
166	SX	SD	2359	SSGS South Intake Tunnel @ 125' QC SAMPLE	Sediment	0 32 pCi/g	<0 09 pCi/g	
167	SX	SD	2360	SSGS South Intake Tunnel SUCTION @ ~30'	Sediment	0 67 pCi/g	<0 16 pCi/g	
168	SX	SD	2361	SSGS South Intake Tunnel SUCTION @ ~60'	Sediment	0 17 pCi/g	<0 05 pCi/g	
169	SX	SD	2362	SSGS South Intake Tunnel SUCTION @ ~80'	Sediment	0 85 pCi/g	<0 09 pCi/g	

Table 2-26 (Contd.)
SSGS Intake Tunnel Characterization Results Cont'd.

No.	Sample Number			General Location Information	Sample Type	Isotopic Results		Other Results
						Cs-137	Co-60	
170	SX	SD	2363	SSGS South Intake Tunnel SUCTION @ ~100'	Sediment	0 4 pCi/g	<0 15 pCi/g	
171	SX	SD	2364	SSGS South Intake Tunnel SUCTION @ ~120'	Sediment	0 3 pCi/g	<0 06 pCi/g	
172	SX	GW	2365	SSGS South Intake Tunnel @ 30' / QC SAMPLE	Ground Water	<1.5 E-8 uCi/ml	<1 4 E-8 uCi/ml	<305 pCi/l H-3
173	SX	SM	2366	South Intake Tunnel INCLUDING QC	Smear Composite	2.8 E-5 uCi	<1.7 E-5 uCi	
174	SX	SM	2367	West Intake Tunnel INCLUDING QC	Smear Composite	<1.8 E-5 uCi	<1 7 E-5 uCi	

Table 2-27

SNEC Containment Vessel (CV) & CV Pipe Tunnel Area Sub-Surface Soil Sample Results (pCi/g)

Table Includes Data from Work Packages SMPRQ - SOIL001, SR-0010 & SR-0016

Sample Number	Estimated Depth (Grade @ ~811' El.)	Cs-137	Co-60
SX-5-SL-01-933	802' El	2.16	< MDA
SX-5-SL-01-934	802' El	9 58	< MDA
SX-5-SL-01-935	802' El	61	< MDA
SX-SL-959	800' El	9.1	< MDA
SX-SL-960	797' El	2 8	< MDA
SX-SL-961	795' El	3	< MDA
SX-SL-982	798' El	3 21	< MDA
SX-SL-983	800' El	1.8	< MDA
SX-SL-984	802' El	7.12	< MDA
SX-SL-985	802' El	0 54	< MDA
SX-5-SL-01-790	802' El	0 12	< MDA
SX-5-SL-01-801	802' El	1 04	< MDA
SX-5-SL-01-829	802' El	32 97	< MDA
SX-5-SL-01-830	802' El	105 2	< MDA
SX-5-SL-01-831	802' El	34 3	< MDA
SX-5-SL-01-833	802' El	80 5	< MDA
SX-5-SL-01-841	802' El	5 3	< MDA
SX-5-SL-01-842	802' El	13	< MDA
SX-5-SL-01-802	802' El	4 94	< MDA
SX-SL-942	802' El	0.06	< MDA
SX-SL-943	802' El	1.8	< MDA
SX-SL-944	802' El	0.046	< MDA
SX-SL-945	802' El	27	< MDA
SX-SL-946	802' El	29 3	< MDA
SX-SL-947	802' El	46 5	< MDA
SX-SL-948	802' El	38.06	< MDA
SX-SL-949	802' El.	53 2	< MDA
SX-SL-972	802' El	0.71	< MDA
SX-SL-973	802' El	0 64	< MDA
SX-SL-974	802' El	0.55	< MDA
SX-SL-975	802' El	0.18	< MDA
SX-SL-976	802' El	23.5	< MDA
SX-9-SL-00-364*	CV Yard 807' El	2 24	< MDA
SX-9-SL-00-343*	CV Yard 809' El	225.6	0 2
SX-9-SL-00-339*	CV Yard 809' El	40.8	< MDA
SX-9-SL-00-340*	CV Yard 809' El	3	< MDA
SX-9-SL-00-341*	CV Yard 809' El	1.2	< MDA
SX-9-SL-00-342*	CV Yard 809' El	4 75	< MDA
SX-9-SL-00-347*	CV Yard 807' El	241	< MDA
SX-9-SL-00-363*	CV Yard 807' El	596 5	< MDA
SX-SL-977*	Under Septic Tank Pad	0 17	< MDA
SX-SL-978*	Under Septic Tank Pad	0 045	< MDA
SX-SL-979*	Under Septic Tank Pad	0 032	< MDA
SX-SL-980*	Under Septic Tank Pad	0 26	< MDA
Average		**39.0**	**0.2**
Standard Deviation		**99.1**	**----**

*** These Samples were not from under CV Tunnel Floor Slab but were taken from CV yard.**

Table 2-28, Site Access Roads

2" by 2" Sodium Iodide (NaI) Scanning Results

Type of Material and/or Location	Average NaI cpm
Macadam Parking Lot Area Between Penelec Warehouse & Garage	8400 ± 2700
Access Areas Between Penelec Warehouse & 1 1 Acre Site	9700 ± 2500
10 Acre Penelec Site Perimeter Dirt Road	10300 ± 2900
Dirt Access Roads to Dump Area & Rifle Range	13400 ± 1800
Main Access Road to Site & Penelec Line Shack	12400 ± 2500
Old Coal Fired Plant Macadam Access Road	12700 ± 2700

Typical Sample results in pCi/g (Cs-137)

Type of Material and/or Location - Sample No.	pCi/g
Access Areas Between Penelec Warehouse & 1.1 Acre Site – SX10SL01758 & 759	0.6 ± 0.25
10 Acre Penelec Site Perimeter Dirt Road – SX11SL01755 & 760	0.31 ± 0.29
Dirt Access Roads to Dump Area & Rifle Range – SX11SL01748, 750 & 754	0.1 ± 0.03
Main Access Road to Site & Penelec Line Shack – SX11SL01749, 751 & 752	0.2 ± 0.28
Old Coal Fired Plant Macadam Access Road – SX11AT01765	< 0.13

2" by 2" Sodium Iodide (NaI) Scanning Results – Near Site Background Samples

Type of Material and/or Location	Average NaI cpm
Near-Site Background Macadam	7200 ± 1000
Near-Site Background Gravel	12900 ± 1000
Near-Site Background Soil	13400 ± 2100

Typical Sample results in pCi/g (Cs-137)

Type of Material and/or Location - Sample No.	pCi/g
Near-Site Background Macadam – SX12AT00371	< 0.27
Near-Site Background Gravel – SX12GR00372	< 0.09
Near-Site Background Soil – SX12SL00370	< 0.15

Table 2-29
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
None Assigned	10/13/94	Soil	OL-1			0 228	11.9					< 3		
SXSGL84S	11/5/94	1994 Soil Remediation Report Results	OL-1		< 0 4	< 0 03	0.45		< 0.04	< 0.08	< 8	< 3	< 1	
SXSGF81S(5)	11/9/94	1994 Soil Remediation Report Results (Recount 1999)	OL-1			1.1	38 6					< 0 4		
SXSGG72S	11/9/94	1994 Soil Remediation Report Results	OL-1		< 0.5	< 0 04	3 58		< 0 03	< 0 03	< 7	< 3	< 1	
SXSGF81S	11/9/94	1994 Soil Remediation Report Results	OL-1		< 0 5	0 968	33.1		< 0 01	< 0.01	< 6	< 2	< 1	
SXSGG761	11/19/94	1994 Soil Remediation Report Results	OL-1		< 0 4	2 35	319		< 0 02	< 0 04	< 4	< 4	< 1	
SXGWG16	1/19/98	Ground Water	OL-1 (3)	< 140										
SXGWG16	4/7/98	CV Pipe Tunnel Water Sample (April 7, 1998)	CV-4/CV-5	160		< 4	5 8							
SXGWG16	6/29/98	CV Pipe Tunnel Water Sample (June 29, 1998)	CV-4/CV-5	< 120		< 1 5	7.4							
SX861990236CO	4/15/99	Scabble Dust of CV Cavity 779' El - Floor	CV-3			22	31400					< 7		
SX822990235CO	4/15/99	Scabble Dust of CV Cavity 779' El - Wall	CV-3			22 9	66500					96		
None Assigned	6/2/99	Scabble Dust from SNEC SW	CV-3			< 5	29900					< 5		
None Assigned	6/2/99	Scabble Dust from SNEC Sump	CV-3			< 0 4	2170					< 2		
SXSOBKG2	7/14/99	Composite Soil Background	(4)			< 0 02	0.134	0 6	< 0 3	0 67	< 50	< 8	< 20	< 0 06
DA-SXSOBKG1	7/14/99	Composite BKGND Soil	(4)			< 0 02	0 51	< 0 6	< 0 05	< 0 05				
SXSOBKG1	7/14/99	Composite BKGND Soil	(4)			< 0 02	0 55	< 2	< 0 05	< 0 05				
SXSOBKG1	7/14/99	Composite Soil Background	(4)			< 0 03	0 467	0 43	0 91	0 73	< 70	< 20	< 20	< 0.09
SXSOBKG2	7/14/99	Composite BKGND Soil	(4)			< 0 02	0 15	< 0 6	< 0 05	< 0 04				
SXSO3KG1A	7/14/99	Background Soil Composite (10 miles off-site)	(4)					< 0.02	< 0 04	< 0 03	< 4			
SXSO3KG2A	7/14/99	Background Soil Composite (10 miles off-site)	(4)					< 0.03	< 0.01	< 0.01	< 2			
SX10SD990136	7/15/99	South Garage Storm Main	OL-4			< 0 06	0 26							
SX11SD990134	7/15/99	South - Old Parking Lot Storm Drain	OL-4			< 0 03	0 21							

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No.	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SXSL0032	7/19/99	Weir Discharge to River 30' Excavation Beyond Fence	OL-1					< 0 006	< 0 0008	< 0 002				
SX10SD990022	7/21/99	Discharge Tunnel Sediment - End of Tunnel	SS-3	210	< 8	< 3	21 2	< 0.4	< 0 3	< 0.3	< 70	< 2	< 30	< 6
SXSD0027	7/21/99	South Garage Toilet Effluent to Septic Tank	OL-4					< 0.03	< 0.016	< 0.007				
SX5SD99223	7/22/99	SW Garage #4 Drain	GA-1					< 0 014	< 0.0007	< 0.002				
SX10WA990036	7/22/99	Steam Tunnel Water ~12'	OL-1	< 130										
SX10WA990035	7/22/99	Seal Chamber #1 Water	SS-8	< 130										
SXGWMWGEO	7/22/99	Composite of All GEO Well Water Samples TI#-14181	OL-1 (3)									< 20	< 200	
SX10SD990033	7/22/99	Discharge Tunnel 6" Drain Line Scraping	SS1/SS2/SS3	< 100	< 8	30	4800	5.4	1.6	2.5	< 60	< 6	55	< 20
SX10SD990034	7/22/99	1st Seal Chamber Pile Below 3" Vertical Drain Line	SS-8			< 0 09	62	< 0 05	< 0.04	< 0.04				
SX10SD990031	7/29/99	Discharge Tunnel Wall Scraping	SS-6/SS-7			0.84	120	< 0 2	< 0.04	< 0.04				
SX4PC990104	10/14/99	CV Dome Paint Chips (see 110593) (PS-12)	(2)			400	27000	2.5	1 9	5 8				
SXGWMW1	10/14/99	Bedrock Monitoring Well 1 Water	OL-1 (3)	130	< 0 8	< 6	< 5							
SXGWGEO8	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 6	< 5							
SXGWGEO3	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 6	< 5							
SXPCTRU1	10/14/99	CV Dome Paint-SX4PC990093 (110582) (PS-1)	(2)			< 2	32	0 012	< 0.005	0.0091				
SXPCTRU2	10/14/99	CV Paint-SX4PC990094, 95, 96, 97 & 98 (PS-2,3,4,5 &6)	(2)					0.096	0.041	0.065				
SXPCTRU3	10/14/99	CV Paint-SX4PC990099, 100, 101 & 102 (PS-7,8,9 &10)	(2)					0.11	< 0 0004	< 0 0012				
SXPCTRU4	10/14/99	CV Paint-SX4PC990103, 104, 105 & 106 (PS-11,12,13,&14)	(2)					0.61	0 49	0 91				
SX4PC990098	10/14/99	CV Dome Paint Chips (see 110607) (PS-6)	(2)			37	530	2	0.38	1.1				
SXGWGEO10	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 2	< 3							

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No.	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SXGWMW2	10/14/99	Bedrock Monitoring Well 2 Water	OL-1 (3)	< 130	< 0 8	< 3	< 2							
SXGWGEO7	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 3	< 2							
SXGWGEO1	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	140		< 3	< 2							
SXGWMW3	10/14/99	Bedrock Monitoring Well 3 Water	OL-1 (3)	< 130		< 3	< 3							
SXGWGEO6	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 3	< 3							
SXGWGEO5	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 3	< 3							
SXGWGEO2	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 3	< 3							
DA-SXGWGEO1	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 4	< 3							
SXGWMW4	10/14/99	Bedrock Monitoring Well 4 Water	OL-1 (3)	130		< 4	< 4							
SXGWGEO4	10/14/99	Groundwater Well - Overburden Groundwater	OL-1 (3)	< 130		< 7	< 7							
SXGWE1-1	10/14/99	Line Shack Faucet Well Water	OL-1 (3)	< 130		< 4	< 3							
SX11SL990128	10/14/99	Spray Pond - Sample #5	SP-1			< 0 02	0.29							
SXGWG16	10/20/99	CV Pipe Tunnel Water Sample (October 1999)	CV-4/CV-5	150										
SXPCTRU6	10/25/99	CV Paint-SX4PC990114, 115 & 116 (PSO-5, 6 & 7)	(2)					< 0.017	< 0 0012	< 0 003				
SXPCTRU5	10/25/99	CV Paint-SX4PC990110, 111 & 112 (PSO-1, 2, & 3)	(2)					0 017	0.0058	0 0084				
SXPCTRU7	10/26/99	CV Paint-SX4PC990113, 117 & 118 (PSO-4, 8 & 9)	(2)					< 0 008	< 0 003	< 0 002				
SXSL25262	10/28/99	Composite of Spray Pond Soil 125, 126 & 127	SP-1					0 0035	< 0 0009	0 0043				
SX5DW99180	11/17/99	290' Tunnel Floor Water Sample	SS-2	< 140		< 4	< 4							
SX5DW99179	11/17/99	170' Tunnel Floor Water Sample	SS-2	< 140		< 5	< 5							
SX5DW99178	11/17/99	10' Tunnel Floor Water Sample	SS-1	< 140		< 5	< 5							

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SX5DW99175	11/17/99	2nd Seal Chamber Water	SS-8	150		< 6	< 5							
SX5DW99176	11/17/99	1st Seal Chamber Water	SS-8	220	< 1 3	< 5	< 8	< 0 03	< 0 03	< 0 03				
SX5SD261& 262	11/17/99	SSGSDT Floor Sediment Composite @ 100 & 326'	SS-1/SS-2				4 3/7 0	0 035	< 0.0005	0 0042				
SX5SD99263	11/17/99	SSPDT Floor Sediment ~24'	SS-1			< 0.3	2.1							
SXDW178-179-180	11/17/99	Composite Discharge Tunnel Water	SS1/SS2/SS3					< 0 02	< 0.006	< 0.02				
SX5SD99258	11/17/99	SSGSDT Seal Chamber #3 Sediment	SS-8					< 0.02	< 0.0015	0.0071				
SX5DW175-177	11/17/99	Composite Discharge Tunnel Water	SS1/SS2/SS3					< 0 018	< 0 017	< 0.006				
SX5SD255 & 256	11/17/99	SSGSDT 8" & 15" Pipe Internal Composite (160 &163')	SS-2				2 2	< 0.018	< 0 002	0.0081				
SX5SD99202	11/17/99	Subsurface #11 (4-6')	OL-1					0 012	< 0 0007	< 0 003				
SX5SD99259	11/17/99	SSGSDT Floor Sediment @ 32'	SS-1				27	0 021	0 0037	0 012				
SX5SD99252	11/17/99	SSGSDT 16" Pipe Internal @ 138'	SS-1					< 0 04	< 0.0016	0.02				
SX5DW99177	11/17/99	3rd Seal Chamber Water	SS-8	200		< 6	20							
SX5SD99257	11/17/99	SSGSDT Seal Chamber @40' Sediment	SS-8					< 0 3	< 0.005	0.009				
SX10SL00320	3/27/00	Sediment - Westinghouse Lab Pad Drain Line Composite	OL-1			0 067	6.8	0.092	< 0 07	< 0 08				
SX10SL00329	4/25/00	SSGS Footprint AV-134, 0'-3', Well #2	SS-14		< 0 03	< 0.05	1.5	< 0 1	< 0.0014	< 0 006	< 0.3			
SX10GW00321	4/25/00	Water Phase - SSGS East Sump @ 25', AV183, Well #1	SS-9	< 120		< 6	53							
SX10GW00321	4/25/00	Sediment Phase - SSGS East Sump @ 25', AV183, Well #1	SS-9			< 3	85	0.088	< 0 03	< 0.04				
SX10SL00331	4/26/00	SSGS Footprint AT-139, 9'-12', Well #4	SS-14		< 0 018	< 0 05	0.33	< 0 02	< 0 0015	< 0 005	< 0.4			
SX10SL00334	4/26/00	SSGS Footprint AT-139 @ 6'	SS-16		< 0 02	< 0.05	0 27	< 0 02	< 0 007	< 0.005	< 0 6			

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No.	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SX10SL00337	4/27/00	SSGS Footprint AW-132 @ 21', Well #3	SS-14		< 0.03	< 0 04	0 47	< 0 009	< 0 002	< 0 006	< 0 6			
SX9SL00339	5/2/00	Grid F-8 @ 809' El. (SMPRQ Soil001)	OL-1		< 0 015	< 0 07	43	< 0 016	< 0.007	< 0.006	< 0 4			
SX9SL00342	5/4/00	CV Yard G-8 Loc. # 12/Truck #7 (SMPRQ Soil001)	OL-1		< 0 014	< 0 06	5	< 0.03	< 0 007	< 0 006	< 0 4			
SX9SL00340	5/4/00	CV Yard G-8 Loc. # 12 (SMPRQ Soil001)	OL-1		< 0 018	< 0.13	3.2	< 0 03	< 0 0013	< 0 006	< 0 3			
SX9SL00343	5/8/00	CV Yard F-7, Loc # 2, Truck R-2 (SMPRQ Soil001)	OL-1	< 40	< 0 07	0 175	210	< 0.1	< 0.2	< 0.1	< 80	< 2	< 20	< 0.144
SXSD344	5/10/00	SSGS Tunnel 18" Pipe, Sample From Robotic Entry	SS1/SS2/SS3			< 0 015	1 4	< 0 6	< 0 01	< 0 04				
SX13DW00345	5/10/00	SSGS Tunnel 21" Pipe Water	SS-1/SS-2/SS-3	< 120										
SX9SL00347	5/16/00	CV Yard Grid# F-8 AY-129, (SMPRQ Soil001)	OL-1	< 50	< 0 07	0 104	612	< 0.08	< 0 08	< 0 08	< 60	< 0.5	< 10	< 0.0898
SX9SL00364	5/18/00	CV Yard Truck 18-2 (SMPRQ Soil001)	OL-1		< 0 016	< 0.05	< 0 07	< 0.1	< 0 002	< 0.006	< 0 5			
SX13SD00365	5/24/00	SSGS DT 18" Line	SS1/SS2/SS3		< 0 019	< 0 07	3	< 0.07	< 0.01	< 0.007	< 0.7			
SX13SD00365D	5/24/00	SSGS DT 18" Line	SS1/SS2/SS3		< 0 02	< 0 07	3.1	< 0.03	< 0.007	< 0 007	< 0 6			
SX10SD00367	6/5/00	SSGS Footprint West Turbine Sump Area AV-134 (Pumped)	SS-14		< 0 02	< 0 2	6.7	< 0 13	< 0 007	< 0 012	< 1.5			
SX10SD00366	6/5/00	SSGS Footprint East Turbine Sump Area AV-133 (Pumped)	SS-9	< 90	< 0 06	0 37	97.8	< 0.2	< 0 2	< 0.2	< 100	< 2	< 20	< 0.18
SX10SD00368	6/6/00	SSGS Footprint Collection Tank Area AW-132 (Pumped)	SS-14		< 0 02	< 0 2	5 5	< 0 04	< 0 015	< 0 016	< 1 8			
SX10SD00369	6/8/00	SSGS Footprint in Intake Tunnel AT-139 (Pumped)	SS1/SS14	< 30	< 0 05	< 0.151	0 22	< 0 2	< 0.1	< 0.1	< 100	<2 0	< 20	< 0.187
SX9SL00363	7/22/00	CV Yard R-2-4 (G-8) AZ-129 (SMPRQ Soil001)	OL-1	37	< 0 06	0 0842	555	< 0 06	< 0 07	< 0.1	< 50	< 0.4	< 8	< 0.0656
SX9SL00341	7/22/00	CV Yard F-7, Loc # 11-9 (SMPRQ Soil001)	OL-1	< 40	< 0.03	< 0 0248	1.55	< 0 06	< 0 2	< 0 09	< 60	< 0.6	< 9	< 0 0556
SX-SM-HAP37	7/24/00	HAP-37 Smears, 18" Wall in Primary (AREA 2) 779' El.	CV-1			14	1300	0 82	0 15	0 35				
SX-SM-HAP8	7/25/00	HAP-8 Smears, 18" Wall in Storage Well (AREA 6)	CV-1			55	14000	15	1.8	4.7				
SNEC -ST-100	7/26/00	Discharge Tunnel Water - 100' Down Tunnel	SS-1	< 120	< 1.2									

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SNEC-ST-2	7/26/00	Discharge Tunnel Water - Seal Chamber #2	SS-8	< 120	< 1									
SNEC-ST-1	7/26/00	Discharge Tunnel Water - Seal Chamber #1	SS-8	< 120	< 1									
SNEC -ST-160	7/26/00	Discharge Tunnel Water - 160' Down Tunnel	SS-2	< 120	< 1.3									
SNEC-ST-3	7/26/00	Discharge Tunnel Water - Seal Chamber #3	SS-8	< 120	< 1.6									
SNEC-ST-40	7/27/00	Discharge Tunnel Water - 40' Down Tunnel	SS-1	< 120	< 1.3									
SX-WA-LADDER	8/21/00	Discharge Water, SSGS DT @ Ladder ~5' in	SS1/SS2/SS3	< 1700		< 14	< 15							
SX-WA-CHAM2	8/21/00	Discharge Water, SSGS DT Chamber #2	SS-8	< 1700		< 15	< 14							
SX-WA-CHAM1	8/21/00	Discharge Water, SSGS DT Chamber #1	SS-8	< 1700		< 15	< 12							
SX-WA-TUN130	8/21/00	Discharge Water, SSGS DT @ 130'	SS-1	< 1700		< 14	< 11							
SX-WA-TUN320	8/21/00	Discharge Water, SSGS DT @ 320'	SS-2	< 1700		< 14	< 11							
SX-WA-CHAM3	8/21/00	Discharge Water, SSGS DT Chamber #3	SS-8	< 1700		< 60	18							
SX-SD-00-410	8/24/00	SSGS Footprint, Well # 7 Pumped Sediment	SS-14			1.5	77	< 0.07	< 0.3	< 0.17				
SX-WA-CV-WEST	9/13/00	CV Tunnel Water	CV-4/CV-5			< 13	< 16							
SX-WA-CV-EAST	9/13/00	CV Tunnel Water	CV-4/CV-5			< 11	< 13							
	9/26/00	HAP # 46, CV Concrete Material, Primary North 5' Wall	CV-3	371.58	< 5 04	3.95	275	0 018	< 0.011	< 0.008	4.17	74 5		< 2.33
	9/26/00	HAP # 11, CV Concrete Material, Rx Cavity, 18" Wall-South	CV-3	165 74	< 5 3	17.1	597	0 859	0 031	0.039	< 0.757	51 07		< 2.33
	9/26/00	HAP # 5, CV Concrete Material, Rx Cavity, 18" Wall-NW	CV-3	259 32	< 4.93	52 2	2510	1 18	0.051	0.119	1 97	85 53		< 2 99
#6386	11/22/00	SSGS Soil Bag #05	SS14	< 10 9	< 0 54	0 4	11 4	< 0.008	< 0 029	< 0 02	< 3 26	< 5.85	< 8 7	< 0 03
SX01CW00636	12/14/00	SNEC CV Concrete, AO-18	CV-3	66.6		< 0 09	5 08	< 1.27	< 1 06	< 0 39	46 78	22 4		< 0 18
SX01CW00637	12/14/00	SNEC CV, Composite Concrete Samples AN-1, 2 & 3	CV-3	190 63		< 0.07	58 5	0 55	< 0 91	< 0.58	31 04	114 68		< 0.39

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SX01CW00640	12/14/00	Composite Core Bore Wafers -	CV-3	518.57		< 0.08	27.7	< 1.45	< 1.2	< 0 57	10 07	98 39		< 0 26
SX01CW00638	12/14/00	SNEC CV Composite Concrete Samples PO-1 & PO-8	CV-3	225.26		< 0 07	11.1	< 0 46	< 0 52	< 0 61	23.52	67 48		< 0 21
SX01CW00626	12/14/00	SNEC CV Basement Sump Concrete	CV-3	270 87		< 0 08	0.55	1.08	< 0 49	< 0.77	39 69	90 29		< 0.13
SX01CW00574	12/14/00	SNEC CV Rod Room Concrete	CV-3	40 86		0.04	1.37	< 1.19	< 1 2	< 0.78	274 98	33.62		0.1
SX02CW00639	12/14/00	SNEC CV Concrete PE-1	CV-3	376 21		< 0 07	0.21	< 0.37	< 0.4	< 0 4	28.76	80 42		< 0.12
#6550	1/10/01	4th Quarter Liquid Composite - Water	OL-1 (3)	< 571	< 0 9									
CV Tunnel	2/14/01	CV Tunnel Sediment	CV-4/CV-5	< 9 4	9.67	1.26	1250	< 0 18	< 0 55	<0 22	< 44 69	< 9 34	< 4.02	< 0.13
#6889	3/26/01	North CV Yard Area Soil Bag #34L	OL-1	< 12 29	0 27	1.31	5 04	0 07	0.02	0.04	< 1.23	< 4 21	< 1.29	< 0 23
SX-9-SL-01-746	5/7/01	CV Yard Soil Bag	OL-1		0.27			0.07	0 02	0 04	<1.23	<4.21	<1.29	
SX-SD-937	7/16/01	937 Weir Line 135' Above River	(4)(1)	<45.13	<0.14	<0 27	61.59	<0 04	<0 04	<0 04	<11.75	<8 02	<6.25	<0.77
SX-GW-OW-7R	8/9/01	Well Water	(3)		<.77			<.59	<1.79	<1.07	<317.7	<53.23	<68 53	<73 55
SX-GW-OP-3	8/9/01	Well Water	(3)		<1 46			<.71	<.39	<.39	<120.7	<53 31	<154 9	
SX-GW-OP-4	8/9/01	Well Water	(3)		<.75			< 82	<.59	<.18	<60 88	<52 08		
SX-SL-1281	9/27/01	AX-128 CV E. Tunnel	OL-1	<11.52	< 03	<0 01	4.38	<0 031	<.016	<.007	<1 908	<4	<7 78	<0 04
SX-SL-1270	9/27/01	AX-129 Composite of hot spot under CV tunnel wall	OL-1	<11 31	<.02	<0 01	23 1	<0 037	< 007	< 007	<2.104	<3.93	<8 68	<0 07
SX-SD-1377	10/15/01	SSGS PUMP PED. DRAIN TO SUMP	SS-14	<11	< 04	3 98	3130	<.11	0 07	0 08	<4.74	<4.15	<8 61	<0.24
SX-SD-1537	11/13/01	RIDDLESBURG BACKGROUND	(4)	<9 62	<0 01	<0.0137	0.0662	<0.0035	<0.00356	<0.00356	<1.15	<4 94	<7 98	<0.0686
SX-SD-1504	11/13/01	RIVER SITE #1	(4)	<10 1	<0 01	<0.0274	0.154	<0.00283	<0.00348	<0.00312	<1.06	<4 82	<6 94	<0.139
SX-SD-1472	11/13/01	Weir Site #1	MA-3	<10 2	<0.014	0 0201	2.87	<0.00489	<0.00341	<0 00341	<0.96	<4 58	<7 46	<0 0624
SX-CW-735	1/28/02	SSGS Tunnel N Wall, 111' @ 5' 8"	SS1	<10 3	<0 03	<0 07	22 6	<0.044	<0 047	<0 044	<6 57	<3.96	<7 88	<0 33
SX-SD-1098	1/28/02	SSGS Seal Chamber #1 Floor	SS8	<11.9	<0 07	<0 04	<0 03	<0 056	<0 049	<0 038	<6 9	<3.71	<24.8	<0 17
SX-SD-1192	1/28/02	SSGS Footprint E NW Sump	SS14	<12 5	<0 09	0.14	11 6	<0.136	<0 003	<0 003	<0.559	<3 83	<9 08	<0 06
SX-SD-1210	1/28/02	ND #16 Surface BG-137	OL1	<11 8	<0 06	<0 04	0 27	<0 048	<0 049	<0 049	<6.79	<3.72	<7 33	<0 21
SX-SD-721	1/28/02	SSGS N Sump	SS14	<12 7	<0 01	0 07	2.66	<0 004	<0 004	<0.003	<0.0478	<4.13	<7.26	<0 07
SX-SD-923	1/28/02	SSGS Footprint Center	SS14	<11 2	<0 05	<0 01	0.15	<0.006	<0.003	<0.003	<0.549	<3 43	<7 02	<0.05
SX-SD-723	1/28/02	SSGS SE Sump	SS14	<12.1	<0.02	0.54	159	<0 014	<0 003	<0 004	<0 562	<4 07	<7.2	<0 04
SX-SD-756	1/28/02	SSGS West N Sump	SS14	<12 2	<0.05	0 28	4.39	<0 053	<0 01	<0 004	<0 491	<3 52	<7.68	<0 07

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No.	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SX-SD-828	1/28/02	SSGS Footprint e Hole #4	SS14	<11 7	<0 05	2 01	660	0.29	<0.046	<0 145	<6 819	<3 68	<7 73	<0 31
SX-CF-971	1/28/02	SSGS Seal Chamber #2 SW Floor	SS8	<11.8	0 2	<0 01	1 05	<0 032	<0.015	<0.015	<2.22	<3 81	<7.59	<0 04
SX-SD-744	1/28/02	SSGS Mezzanine Pipe	SS13	<123	<0.18	2 26	39 6	<0 709	<0 33	<0.33	<50 8	<37.9	<82 6	<1 46
SX-SD-1998	2/21/02	SSGS N Intake Tunnel N Wall @85'	SS19		<0 01	<0 02	2.08	<0.004	<0 008	<0 007	<0.86			<0.04
SX-SD-2232	2/21/02	SSGS Intake Tunnel East 220'	SS19		<0.1	<0.03	0.24	<0.003	<0 005	<0 006	<0 87			<0 05
SX-SD-2351	2/21/02	SSGS Intake 0-100' Wall/Floor Composite	SS19/SS20		<0.02	<0.04	2.18	<0.004	<0.009	<0 011	<1.422			<0.1
SX-SD-1622	2/21/02	SSGS South Intake @60'	SS19		<0 03	<0.06	2 18	<0.147	<0.038	<0.041	<4 59			<0 16
SX-12-SL-99-0004E	4/19/02	OFFSITE BACKGROUND	(4)		<0 03	<0 03	0.72							
SX-12-SL-99-0012E	4/19/02	OFFSITE BACKGROUND	(4)		0 13									
SX-12-SL-99-0015E	4/19/02	OFFSITE BACKGROUND	(4)		0 045									
SX-12-SL-99-0003E	4/19/02	OFFSITE BACKGROUND	(4)		0 094	<0.03	0.58							
SX-12-SL-99-0006E	4/19/02	OFFSITE BACKGROUND	(4)		<0.05	<0.02	0.33							
SX-SD-2858	5/10/02	Williamsburg Intake Tunnel 6-12"	(4)		<0 05									
SX-SL-2869	5/10/02	SSGS Middle, 1/2 up Dirt Pile	OL1		<0 03									
SX-SD-2859	5/10/02	Williamsburg Intake Tunnel 12-18"	(4)		<0 03	<0 0222	0.326							
SX-SD-2860	5/10/02	Williamsburg Intake Tunnel 18-24"	(4)		<0 04									
SX-SD-2862	5/10/02	Williamsburg Intake Tunnel 24-30"	(4)		<0 05									
SX-SD-2861	5/10/02	Williamsburg Intake Tunnel	(4)		<0 05									
SX-GW-2863	5/10/02	Williamsburg Intake Tunnel 30"	(4)		0.58									
SX-SL-2870	5/10/02	SSGS Middle, Top of Dirt Pile	OL1		<0 03	<0 0223	0 181							
SX-SD-2857	5/10/02	Williamsburg Intake Tunnel 6"	(4)		<0.03									
SX-SL-1531, 1532, 1533	5/10/02	CV Shell, Exterior	CV4		<0.04	<0.0331	0.177	<0.0246	<0.0517	<0.0231	<3.99			
SX-SM-2958	5/10/02	CV Shell, Exterior	CV4		<2 0	<2 04	<2 09	<0.123	<0 287	<0 0865	<17			
SX-SL-2871	5/10/02	East SNEC Yard, 1/2 up Dirt Pile	OL1		<0 04									
SX-SL-1531, 1532	5/10/02	CV Shell, Exterior	CV4		<0 04	<0 0305	0 297	<0 0113	<0.0372	<0 0131	<2 36			
SX-SL-2872	5/10/02	East SNEC Yard, 1/2 up Dirt Pile	OL1		<0.03									
SX-SL-2376	6/11/02	SE CV Yard ABH 40, 50-60'	OL1 (1)	<2 04	<0 0323			<0 0382	<0 0336	<0 0137	<2.48	<0.187	<1.67	
SX-SL-2456	6/11/02	N CV Yard ABH 32, 20-30'	OL1 (1)	<2 02	<0 0277			<0 0207	<0 0367	<0 013	<2 03	<0 188	<1 17	
SX-SL-2610	6/11/02	N CV Yard ABH 21, 20-30'	OL1 (1)	<1 83	<0 0336			<0 0259	<0 0182	<0 0129	<2.21	<0 189	<1 51	

Table 2-29 (Contd.)
Listing of all "Hard to Detect Nuclide"/Transuranic Analysis

Sample No.	Analysis Date	Location/Description	Sample location See Table 5-2	H-3	Sr-90	Co-60	Cs-137	Am-241	Pu-238	Pu-239	Pu-241	C-14	Ni-63	Eu-152
SX-SL-2655	6/11/02	Annulus Well A-4, 5-10'	OL1 (1)	<1 89	<0 0497			0.0135	<0 03	<0 0123	<2 28	<0.187	<1.94	
SX-SL-2374	6/11/02	SE CV Yard ABH 40, 30-40'	OL1 (1)	<1.87	<0.0268			<0 0585	<0 019	<0 00134	<2.37	<0.186	<1.64	
SX-SL-2484	6/11/02	N CV Yard ABH 22, 50-60'	OL1 (1)	<2	<0 038			<0 0273	<0 0269	<0 0155	<2.45	<0.178	<1.84	
SX-SL-2662	6/11/02	W CV Yard ABH 10, 20-30'	OL1 (1)	<1.98	<0 0338			<0 041	<0 0307	-0 0293	<1.96	<0.189	<1.34	
SX-SL-2960	6/11/02	NRC CV Angle Well, Initial Sample	(3)		<0.299			<0 327	<0 276	<0.16	<24.9			
SX-SL-2634	6/11/02	W CV Yard ABH 9, 10-15'	OL1 (1)	<2 06	<0 0287			0 0324	<0 0295	<0 0104	<1 68	<0 191	<2.3	
SX-SL-2649	6/11/02	Annulus Well A-2, 5-10'	OL1 (1)	<2 0	<0 0314			<0.00978	<0 0133	<0 00938	<1 87	<0 183	<1.75	
SX-SL-2664	6/11/02	W CV Yard ABH 10, 40-50'	OL1 (1)	1.99	<0 0303			<0 0216	<0 0105	<0 0256	<2.28	<0.182	<1.84	
SX-SL-2660	6/11/02	Annulus Well A-3, 15-20'	OL1 (1)	<1.9	<0 0268			<0 0372	<0 00949	<0 0134	<1.65	<0 189	<2.0	
SX-SL-2425	6/11/02	E CV Yard ABH 33, 60-90'	OL1 (1)	<1.99	<0.0339			<0 0261	<0 0264	<0 0118	<1.71	<0 188	<1.57	
SX-ST-3077	8/30/02	CV Shell Steel, Internal	CV1			<1.17	<1.17						<8.54	
SX-ST-3087	8/30/02	CV Shell Steel, Internal	CV1			<2.12	<1 45						<36 21	
SX-ST-3069	8/30/02	CV Shell Steel, Internal	CV1			<1.49	2.28						<10 83	
SX-ST-3086	8/30/02	CV Shell Steel, Internal	CV1			<1 22	<1.13						<5.9	
SX-ST-3085	8/30/02	CV Shell Steel, Internal	CV1			<1 48	<1 38						<9 46	
SX-ST-3084	8/30/02	CV Shell Steel, Internal	CV1			<2 29	2.55						<5.11	
SX-ST-3083	8/30/02	CV Shell Steel, Internal	CV1			<1 56	<1.69						<4.33	
SX-ST-3082	8/30/02	CV Shell Steel, Internal	CV1			<1 66	3						<4 02	
SX-ST-3081	8/30/02	CV Shell Steel, Internal	CV1			<1 91	3 44						<4.99	
SX-ST-3067	8/30/02	CV Shell Steel, Internal	CV1			<3 39	16.9						<3.89	
SX-ST-3070	8/30/02	CV Shell Steel, Internal	CV1			2 64	180						<10.96	
SX-ST-3078	8/30/02	CV Shell Steel, Internal	CV1			<1.11	2.3						<4.84	
SX-ST-3076	8/30/02	CV Shell Steel, Internal	CV1			2.78	24 8						<4 46	
SX-ST-3079	8/30/02	CV Shell Steel, Internal	CV1			<2.13	5 08						<20 46	
SX-ST-3080	8/30/02	CV Shell Steel, Internal	CV1			<1 02	1.9						<4.29	
SX-ST-3074	8/30/02	CV Shell Steel, Internal	CV1			<1.96	3 36						<3 8	
SX-ST-3075	8/30/02	CV Shell Steel, Internal	CV1			2 06	1.37						<5 25	
SX-ST-3073	8/30/02	CV Shell Steel, Internal	CV1			<1.79	3 03						<12 8	
SX-ST-3072	8/30/02	CV Shell Steel, Internal	CV1			<0 96	1.12						<27.11	
SX-ST-3071	8/30/02	CV Shell Steel, Internal	CV1			3 43	9 26						20 23	
SX-ST-3068	8/30/02	CV Shell Steel, Internal	CV1			<2 85	59						<30 35	
DA-SX4PC990114	10/25/01	CV Dome Paint Chips (see 110611) (PSO-5)	(2)			< 1 5	< 1.7							

Table 2-30
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTIONTION
1	SL	1627	<0.1	<0.12	---	10/30/2001	0-10' N. CV YARD GC HOLE 800' #1 (ELEVATION 800')
2	SL	1628	<0.07	<0.08	---	10/30/2001	10-20' CV YARD GC HOLE #1
3	SL	1631	<0 08	<0.11	---	10/30/2001	30'-40' N. CV YARD G C. HOLE #1
4	SL	1632	<0 07	<0 09	---	10/30/2001	20'-30' N. CV YARD G C. HOLE #1
5	SL	1633	<0.1	<0.11	---	10/30/2001	40-50' N. CV YARD G.C. HOLE #1
6	SL	1634	<0.1	<0.12	---	10/30/2001	50-60' N. CV YARD G.C. HOLE #1
7	SL	1635	<0.1	<0.12	---	10/30/2001	60-70' N. CV YARD G.C. HOLE #1
8	SL	1636	<0 09	<0 09	---	10/30/2001	70-75' N. CV YARD G C. HOLE #1
9	SL	1637	<0.11	<0.13	---	10/30/2001	0-10' N. CV YARD G.C. HOLE #3 800'
10	SL	1638	<0.08	<0 09	---	10/30/2001	10-20' N. CV YARD G.C. HOLE #3
11	SL	1639	<0.09	<0 08	---	10/30/2001	20-30' N. CV YARD G.C. HOLE #3
12	SL	1640	<0.06	<0 07	---	10/30/2001	30-40' N. CV YARD G.C. HOLE #3
13	SL	1641	<0.13	<0.147	---	10/30/2001	40-50' N. CV YARD G.C. HOLE #3
14	SL	1642	<0 09	<0.12	---	10/30/2001	50-60' N. CV YARD G C. HOLE #3
15	SL	1643	<0.11	<0.13	---	10/30/2001	60-70' N. CV YARD G.C. HOLE #3
16	SL	1648	<0.05	<0 07	---	10/30/2001	70-75' N. CV YARD G.C. HOLE #3
17	SL	1649	<0 07	<0 07	---	10/30/2001	0-10' N. CV YARD G C. HOLE #5 (ELEVATION 800')
18	SL	1650	<0 07	<0.07	---	10/30/2001	10-20' N. CV YARD G C. HOLE #5
19	SL	1651	<0.12	<0.13	---	10/30/2001	20-30' N. CV YARD G.C. HOLE #5
20	SL	1652	<0.1	<0.11	---	10/30/2001	30-40' N. CV YARD G.C. HOLE #5
21	SL	1653	<0.12	<0.13	---	10/30/2001	40-50' N. CV YARD G.C. HOLE #5
22	SL	1654	<0.1	<0.11	---	10/30/2001	50-60' N. CV YARD G.C. HOLE #5
23	SL	1655	<0.09	<0.11	---	10/30/2001	60-75' N. CV YARD G C. HOLE #5
24	SL	1656	<0 09	<0 09	---	10/30/2001	0-10' N. CV YARD G C. HOLE #7 (ELEVATION 800')
25	SL	1657	<0.12	<0.15	---	10/30/2001	10-20' N. CV YARD G.C. HOLE #7
26	SL	1658	<0.11	<0.13	---	10/30/2001	20-30' N. CV YARD G.C. HOLE #7
27	SL	1659	<0 08	<0.08	---	10/30/2001	30-40' N. CV YARD G.C. HOLE #7
28	SL	1660	<0.13	<0.13	---	10/30/2001	40-50' N. CV YARD G C. HOLE #7
29	SL	1661	<0.11	<0.12	---	10/30/2001	50-60' N. CV YARD G.C HOLE #7
30	SL	1662	<0.09	<0.1	---	10/30/2001	60-75' N. CV YARD G.C. HOLE #7
31	SL	1680	<0 12	<0 14	---	10/30/2001	0-10' N. CV YARD G.C HOLE #9 (ELEVATION 800')
32	SL	1681	<0 11	<0.11	---	10/30/2001	10-20' N. CV YARD G.C. HOLE #9
33	SL	1682	<0.1	<0 11	---	10/30/2001	20-30' N. CV YARD G.C. HOLE #9
34	SL	1683	<0.07	<0 08	---	10/30/2001	30-40' N. CV YARD G.C. HOLE #9
35	SL	1684	<0.11	<0.12	---	10/30/2001	40-50' N. CV YARD G.C. HOLE #9
36	SL	1685	<0 07	<0.05	---	10/30/2001	50-60' N. CV YARD G C. HOLE #9
37	SL	1686	<0.11	<0.12	---	10/30/2001	60-75' N. CV YARD G.C. HOLE #9
38	SL	1687	<0.11	<0.12	---	10/30/2001	0-10' N. CV YARD G C. HOLE #11 (ELEVATION 800')
39	SL	1688	<0.12	<0.147	---	10/30/2001	10-20' N. CV YARD G C. HOLE #11
40	SL	1689	<0.13	<0.13	---	10/30/2001	20-30' N. CV YARD G C. HOLE #11
41	SL	1690	<0.12	<0.13	---	10/30/2001	30-40' N. CV YARD G.C. HOLE #11
42	SL	1691	<0.11	<0.13	---	10/30/2001	40-50' N. CV YARD G.C HOLE # 11
43	SL	1692	<0.1	<0.11	---	10/30/2001	50-60' N CV YARD G C HOLE #11
44	SL	1693	<0 08	<0 09	---	10/30/2001	60-75' N: CV YARD G C. HOLE #11
45	SL	1695	<0 07	<0 08	---	10/31/2001	0-10' N. CV YARD G C. HOLE #13 (ELEVATION 800')

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTIONTION
46	SL	1696	<0.12	<0.13	---	10/31/2001	10-20' N. CV YARD G.C. HOLE #13
47	SL	1697	<0.13	<0.13	---	10/31/2001	20-30' N. CV YARD G.C HOLE #13
48	SL	1698	<0 09	<0 09	---	10/31/2001	30-40' N. CV YARD G.C. HOLE # 13
49	SL	1699	<0.08	<0.08	---	10/31/2001	40-50' N. CV YARD G C. HOLE #13
50	SL	1700	<0 08	<0 09	---	10/31/2001	50-60' N. CV YARD G C. HOLE #13
51	SL	1701	<0.08	<0.08	---	10/31/2001	60-75' N CV YARD G.C. HOLE #13
52	SL	1702	<0.01	<0.14	---	10/31/2001	0-10' N. CV YARD G.C. HOLE #33 (ELEVATION 795')
53	SL	1703	<0 06	<0.08	---	10/31/2001	10-20' N. CV YARD G.C. HOLE #33
54	SL	1704	<0 08	<0 08	---	10/31/2001	20-30' N. CV YARD G.C HOLE #33
55	SL	1705	<0.1	<0.1	---	10/31/2001	30-40' N. CV YARD G.C. HOLE #33
56	SL	1706	<0.1	<0.11	---	10/31/2001	40-50' N. CV YARD GC HOLE #33
57	SL	1707	<0.12	<0.13	---	10/31/2001	50-60' N. CV YARD G.C. HOLE #33
58	SL	1708	<0.12	<0.14	---	10/31/2001	60-75' N. CV YARD G.C. HOLE #33
59	SL	1709	<0.9	<0.08	---	10/31/2001	0-10', N. CV YARD G.C. HOLE #31 (ELEVATION 795')
60	SL	1710	<0 09	<0.13	---	10/31/2001	10-20' N. CV YARD G.C. HOLE #31
61	SL	1711	<0.08	<0.09	---	10/31/2001	20-30' N. CV YARD G C. HOLE #31
62	SL	1712	<0 06	<0.08	---	10/31/2001	30-40' N. CV YARD G C. HOLE #31
63	SL	1713	<0.06	<0.07	---	10/31/2001	40-50' N. CV YARD G.C. HOLE #31
64	SL	1714	<0.11	<0.11	---	10/31/2001	50-60' N CV YARD G.C. HOLE #31
65	SL	1715	<0.11	<0.14	---	10/31/2001	60-75' N. CV YARD G.C. HOLE #31
66	SL	1716	<0.08	<0.09	---	10/31/2001	0-10' N CV YARD G C. HOLE #29 (ELEVATION 795')
67	SL	1717	<0.09	<0 10	---	10/31/2001	10-20' N. CV YARD G C HOLE 29
68	SL	1718	<0.07	<0 08	---	10/31/2001	20-30' N CV YARD G C. HOLE #29
69	SL	1719	<0.1	<0.12	---	10/31/2001	30-40'.N. CV YARD G C. HOLE #29
70	SL	1720	<0.11	<0 11	---	10/31/2001	40-50'.N. CV YARD G.C. HOLE #29
71	SL	1721	<0.1	<0.11	---	10/31/2001	50-60' N. CV YARD G.C. HOLE #29
72	SL	1722	<0 08	<0 08	---	10/31/2001	60-75' N. CV YARD G.C. HOLE #29
73	SL	1723	<0.11	<0.1	---	10/31/2001	0-10' N. CV YARD G.C. HOLE #27 (ELEVATION 795')
74	SL	1724	<0.13	<0.14	---	10/31/2001	10-20' N. CV YARD G C. HOLE #27
75	SL	1757	<0 09	<0 11	---	10/31/2001	20-30' N. CV YARD G.C. HOLE #27
76	SL	1758	<0 08	<0.09	---	10/31/2001	30-40' N. CV YARD G C. HOLE #27
77	SL	1759	<0.1	<0.11	---	10/31/2001	40-50' N. CV YARD G C. HOLE #27
78	SL	1760	<0 07	<0.09	---	10/31/2001	50-60' N. CV YARD G.C. HOLE #27
79	SL	1761	<0 07	<0.09	---	10/31/2001	60-75' N. CV YARD G C. HOLE #27
80	SL	1762	<0 08	<0.08	---	10/31/2001	0-10' N. CV YARD G C. HOLE #25 (ELEVATION 795')
81	SL	1763	<0 05	<0.06	---	10/31/2001	10-20' N. CV YARD G.C. HOLE #25
82	SL	1764	<0 09	<0.09	---	10/31/2001	20-30' N. CV YARD G.C. HOLE #25
83	SL	1765	<0.1	<0.09	---	10/31/2001	30-40' N. CV YARD G.C. HOLE #25
84	SL	1766	<0.08	<0.08	---	10/31/2001	40-50' N. CV YARD G.C. HOLE #25
85	SL	1767	<0 08	<0.09	---	10/31/2001	50-60' N. CV YARD G C. HOLE #25
86	SL	1768	<0.1	<0 12	---	10/31/2001	60-75' N. CV YARD G C. HOLE #25
87	SL	1769	<0.08	<0 09	---	10/31/2001	0-10' N. CV YARD G.C. HOLE #23 (798' ELEVATION)
88	SL	1770	<0 11	<0.11	---	10/31/2001	10-20' N. CV YARD G.C. HOLE #23
89	SL	1771	<0 11	<0.13	---	10/31/2001	20-30' N CV YARD G.C. HOLE #23
90	SL	1772	<0 09	<0 1	---	10/31/2001	30-40' N. CV YARD G C. HOLE #23

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTIONTION
91	SL	1773	<0 07	<0.08	---	10/31/2001	40-50' N. CV YARD G C. HOLE #23
92	SL	1774	<0.07	<0.08	---	10/31/2001	50-60' N. CV YARD G.C. HOLE #23
93	SL	1775	<0.09	<0.1	---	10/31/2001	60-75' N. CV YARD G.C. HOLE #23
94	SL	1776	<0.1	<0.12	---	11/1/2001	0-10' N. CV YARD G.C. HOLE #35 (795' ELEVATION)
95	SL	1777	<0.09	<0.1	---	11/1/2001	10-20' N. CV YARD G C. HOLE #35
96	SL	1778	<0.11	<0.11	---	11/1/2001	20-30' N. CV YARD G.C. HOLE #35
97	SL	1779	<0.1	<0.12	---	11/1/2001	30-40' N. CV YARD G C. HOLE #35
98	SL	1780	<0.13	<0.14	---	11/1/2001	40-50' N. CV YARD G.C. HOLE #35
99	SL	1781	<0.12	<0.12	---	11/1/2001	50-60' N. CV YARD G.C. HOLE #35
100	SL	1782	<0.15	<0.145	---	11/1/2001	60-75' N. CV YARD G.C. HOLE #35
101	SL	1783	<0.11	<0.11	---	11/1/2001	0-10' N. CV YARD G C. HOLE #21 (802' ELEVATION)
102	SL	1784	<0.11	<0.13	---	11/1/2001	10-20' N. CV YARD G.C. HOLE #21
103	SL	1785	<0 06	<0.05	---	11/1/2001	20-30' N. CV YARD G.C. HOLE #21
104	SL	1786	<0.1	<0.12	---	11/1/2001	30-40' N. CV YARD G C. HOLE #21
105	SL	1787	<0 09	<0.1	---	11/1/2001	40-50' N. CV YARD G.C. HOLE #21
106	SL	1788	<0 08	<0.11	---	11/1/2001	50-60' N. CV YARD G C. HOLE #21
107	SL	1789	<0.11	<0.12	---	11/1/2001	60-75' N. CV YARD G C. HOLE #21
108	SL	1790	<0.13	<0.147	---	11/1/2001	0-10 N. CV YARD G.C. HOLE #19 (809' ELEVATION)
109	SL	1791	<0.1	<0.13	---	11/1/2001	10-20' N CV YARD G.C. HOLE #19
110	SL	1792	<0.1	<0.1	---	11/1/2001	20-30' N. CV YARD G C. HOLE #19
111	SL	1793	<0.11	<0.14	---	11/1/2001	30-40' N. CV YARD G.C. HOLE #19
112	SL	1794	<0.1	<0.12	---	11/1/2001	40-50' N. CV YARD G.C. HOLE #19
113	SL	1795	<0.07	<0.08	---	11/1/2001	50-60' N. CV YARD G.C. HOLE #19
114	SL	1796	<0.12	<0.11	---	11/1/2001	60-75' N. CV YARD G C. HOLE #19
115	SL	1797	<0 08	<0.11	---	11/1/2001	0-10' N. CV YARD G C. HOLE #17 (800' ELEVATION)
116	SL	1798	<0.08	<0.11	---	11/1/2001	10-20' N. CV YARD G C. HOLE #17
117	SL	1799	<0 07	<0.1	---	11/1/2001	20-30' N. CV YARD G C. HOLE #17
118	SL	1800	<0.09	<0.08	---	11/1/2001	30-40' N. CV YARD HOLE #17
119	SL	1801	<0.12	<0.13	---	11/1/2001	40-50' N. CV YARD HOLE #17
120	SL	1802	<0 06	<0.06	---	11/1/2001	50-60' N. CV YARD G.C. HOLE #17
121	SL	1803	<0 08	<0 08	---	11/1/2001	60-75' N. CV YARD G.C. HOLE #17
122	SL	1804	<0.09	<0.1	---	11/1/2001	0-5' N CV YARD G C. HOLE #37 (795' ELEVATION)
123	SL	1805	<0 08	<0.08	---	11/1/2001	5-10' N. CV YARD G C. HOLE #37
124	SL	1806	<0.09	<0 11	---	11/1/2001	0-10' N. CV YARD G C. HOLE #15 (802' ELEVATION)
125	SL	1807	<0.07	<0 08	---	11/1/2001	10-20' N. CV YARD G.C. HOLE #15
126	SL	1808	<0.09	<0.09	---	11/1/2001	20-30' N. CV YARD G C. HOLE #15
127	SL	1809	<0 08	<0.08	---	11/1/2001	30-40' N. CV YARD G.C. HOLE #15
128	SL	1810	<0.11	<0.13	---	11/1/2001	40-50' N. CV YARD G.C HOLE #15
129	SL	1811	<0.08	<0.09	---	11/1/2001	50-60' N. CV YARD G.C. HOLE #15
130	SL	1812	<0.1	<0.1	---	11/1/2001	60-75' N. CV YARD G C. HOLE #15
131	SL	1838	<0.08	<0.08	---	11/2/2001	0-10' N. CV YARD G C. HOLE #39 (ELEVATION 812')
132	SL	1839	0.06	0.06	---	11/2/2001	10-20' N. CV YARD G.C. HOLE #39

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTIONTION
133	SL	1840	<0.09	<0.1	---	11/2/2001	0-10' N. CV YARD G.C. HOLE #41 (ELEVATION 812')
134	SL	1841	<0.05	<0.05	---	11/2/2001	10-20' N. CV YARD G.C. HOLE #41
135	SL	1842	<0.07	<0.08	---	11/2/2001	0-10' N. CV YARD G.C. HOLE #43 (ELEVATION 812')
136	SL	1843	<0 11	<0.13	---	11/2/2001	10-20' N. CV YARD G C. HOLE #43
137	SL	1844	<0.07	<0 08	---	11/2/2001	0-10' N. CV YARD G C. HOLE #45 (ELEVATION 812')
138	SL	1845	<0 08	<0.10	---	11/2/2001	10-20' N CV YARD G.C. HOLE #45
139	SL	1870	<0 09	<0.1	---	11/5/2001	0-10' N. CV YARD G.C. HOLE #47 (812' ELEVATION)
140	SL	1872	<0.13	<0 15	---	11/5/2001	10-20' N. CV YARD G.C. HOLE #47
141	SL	1873	<0 09	<0 09	---	11/5/2001	20-30' N. CV YARD G C. HOLE #39
142	SL	1874	0.06	<0 07	---	11/5/2001	30-40' N. CV YARD G.C. HOLE #39
143	SL	1875	<0.07	<0 07	---	11/5/2001	40-50' N. CV YARD G.C. HOLE #39
144	SL	1876	<0 09	<0 08	---	11/5/2001	50-60' N CV YARD G.C. HOLE #39
145	SL	1877	<0 11	<0.12	---	11/5/2001	60-70' N. CV YARD G.C. HOLE #39
146	SL	1878	<0.12	<0.11	---	11/5/2001	70-80' N. CV YARD G.C. HOLE #39
147	SL	1879	<0.1	<0.11	---	11/5/2001	80-100' N CV YARD G C. HOLE #39
148	SL	1880	<0.11	<0 12	---	11/5/2001	20-30' N. CV YARD G.C. HOLE #41
149	SL	1881	<0 07	<0 07	---	11/5/2001	30-40' N. CV YARD G.C. HOLE #41
150	SL	1882	<0 07	<0 08	---	11/5/2001	40-50' N. CV YARD G.C HOLE #41
151	SL	1883	<0 07	<0.1	---	11/5/2001	50-60' N. CV YARD G.C. HOLE #41
152	SL	1884	<0 08	<0.08	---	11/5/2001	60-70' N. CV YARD G.C. HOLE #41
153	SL	1885	<0.1	<0.09	---	11/5/2001	70-80' N. CV YARD G.C. HOLE #41
154	SL	1892	<0.09	<0.11	---	11/5/2001	80-100' N. CV YARD G.C. HOLE #41
155	SL	1893	<0 07	<0.07	---	11/5/2001	20-30' N. CV YARD G.C. HOLE #43
156	SL	1894	<0 03	<0.02	---	11/5/2001	30-40' N. CV YARD G C. HOLE #43
157	SL	1895	<0 08	<0.09	---	11/5/2001	40-50' N. CV YARD G C. HOLE #43
158	SL	1896	<0 07	<0.07	---	11/5/2001	50-60' N. CV YARD G.C. HOLE #43
159	SL	1897	<0 07	<0.08	---	11/5/2001	60-70' N. CV YARD G.C. HOLE #43
160	SL	1898	<0 04	<0.009	---	11/5/2001	70-80' N. CV YARD G.C. HOLE #43
161	SL	1899	<0 02	<0.009	---	11/5/2001	80-100' N. CV YARD G C. HOLE #43
162	SL	1900	<0 04	<0 1	---	11/5/2001	20-30' N. CV YARD G.C. HOLE #45
163	SL	1901	<0 11	<0 13	---	11/5/2001	30-40' N CV YARD G.C. HOLE #45
164	SL	1902	<0 07	<0.07	---	11/5/2001	40-50' N. CV YARD G.C. HOLE #45
165	SL	1903	<0 09	<0 09	---	11/5/2001	50-60' N. CV YARD G.C. HOLE #45
166	SL	1904	<0 13	<0.15	---	11/5/2001	60-70' N. CV YARD G.C. HOLE #45
167	SL	1905	<0 08	<0 10	---	11/5/2001	70-80' N. CV YARD G.C. HOLE #45
168	SL	1906	<0 07	<0.09	---	11/5/2001	80-100' N. CV YARD G.C. HOLE #45
169	SL	1907	<0 07	<0.09	---	11/5/2001	20-30' N. CV YARD G.C. HOLE #47
170	SL	1908	<0 06	<0.07	---	11/5/2001	30-40' N CV YARD G.C. HOLE #47
171	SL	1909	<0.11	<0.12	---	11/5/2001	40-50' N CV YARD G.C. HOLE #47
172	SL	1910	<0 08	<0.10	---	11/5/2001	50-60' N. CV YARD G.C. HOLE #47
173	SL	1911	<0 11	<0.09	---	11/5/2001	60-70' N. CV YARD G.C. HOLE #47
174	SL	1912	<0.11	<0.13	---	11/5/2001	70-80' N. CV YARD G.C. HOLE #47
175	SL	1913	<0 09	<0.09	---	11/5/2001	80-100' N CV YARD G.C. HOLE #47
176	OT	1954	<1.35 E-8	<1.5 E-8	<316 pCi/L	11/6/2001	WATER FROM OFF-SIGHT FOR GROUT CURTAIN

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTIONTION
177	OT	1955	<0.07	<0.11	---	11/6/2001	PORTLAND CEMENT FOR GROUT CURTAIN
178	OT	1956	<0.16	<0.11	---	11/6/2001	GRANULAR BENTON FOR GROUT CURTAIN
179	SL	1958	0.17	<0.06	---	11/6/2001	0-10' N. CV YARD GC HOLE #49 (812' ELEVATION)
180	SL	1959	<0 11	<0 13	---	11/6/2001	10-20' N CV YARD GC HOLE #49
181	SL	1960	<0.12	<0.13	---	11/6/2001	0-10' N CV YARD GC HOLE #51 (812' ELEVATION)
182	SL	1961	<0.13	<0.14	---	11/6/2001	10-20' N CV YARD GC HOLE #51
183	SL	1962	<0 09	<0.10	---	11/6/2001	0-10' N CV YARD GC HOLE #53 (812' ELEVATION)
184	SL	1963	<0.08	<0.08	---	11/6/2001	10-20' N CV YARD GC HOLE #53
185	SL	1964	<0.11	<0.10	---	11/6/2001	0-10' N CV YARD GC HOLE #55 (812' ELEVATION)
186	SL	1965	<0.14	<0.14	---	11/6/2001	10-20' N CV YARD GC HOLE #55
187	SL	1966	0.7	<0.12	---	11/6/2001	0-10' N CV YARD GC HOLE #56 (812' ELEVATION)
188	SL	1967	<0.11	<0.13	---	11/6/2001	10-20' N CV YARD GC HOLE #56
189	SL	1968	<0 09	<0.09	---	11/6/2001	0-10' N CV YARD GC HOLE #56 ELEVATED READING
190	SL	1969	<0.13	<0.15	---	11/6/2001	20-30' N CV YARD GC HOLE #49
191	SL	1970	<0.12	<0.13	---	11/6/2001	30-40' N CV YARD GC HOLE #49
192	SL	1971	<0.08	<0.10	---	11/6/2001	40-50' N CV YARD GC HOLE #49
193	SL	1972	<0.1	<0.14	---	11/6/2001	50-60' N CV YARD GC HOLE #49
194	SL	1973	<0.13	<0.12	---	11/6/2001	60-70' N CV YARD GC HOLE #49
195	SL	1974	<0.11	<0.12	---	11/6/2001	70-80' N CV YARD GC HOLE #49
196	SL	1975	<0.08	<0 08	---	11/6/2001	80-100' N CV YARD GC HOLE #49
197	SL	1976	<0.1	<0.13	---	11/6/2001	20-30' N CV YARD GC HOLE #51
198	SL	1977	<0.08	<0 09	---	11/6/2001	30-40' N CV YARD GC HOLE #51
199	SL	1978	<0 06	<0.07	---	11/6/2001	40-50' N CV YARD GC HOLE #51
200	SL	1979	<0 08	<0.08	---	11/6/2001	50-60' N CV YARD GC HOLE #51
201	SL	1980	<0.11	<0.11	---	11/6/2001	60-70' N CV YARD GC HOLE #51
202	SL	1981	<0.08	<0.09	---	11/6/2001	70-80' N CV YARD GC HOLE #51
203	SL	1982	<0.11	<0.12	---	11/6/2001	80-100' N CV YARD GC HOLE #51
204	SL	1983	<0 08	<0.09	---	11/7/2001	20-30' N CV YARD GC HOLE #53
205	SL	1984	<0.1	<0.09	---	11/7/2001	30-40' N CV YARD GC HOLE #53
206	SL	1985	<0.12	<0.13	---	11/7/2001	40-50' N CV YARD GC HOLE #53
207	SL	1986	<0.1	<0.12	---	11/7/2001	50-60' N CV YARD GC HOLE #53
208	SL	1987	<0.08	<0.08	---	11/7/2001	60-70' N CV YARD GC HOLE #53
209	SL	1988	<0.08	<0 09	---	11/7/2001	70-80' N CV YARD GC HOLE #53
210	SL	1989	<0.08	<0.07	---	11/7/2001	80-100' N CV YARD GC HOLE #53
211	SL	1990	<0 07	<0.09	---	11/7/2001	20-30' N CV YARD GC HOLE #55
212	SL	1991	<0.12	<0.12	---	11/7/2001	30-40' N CV YARD GC HOLE #55
213	SL	1992	<0.1	<0.12	---	11/7/2001	40-50' N CV YARD GC HOLE #55
214	SL	1993	<0 06	<0 06	---	11/7/2001	50-60' N CV YARD GC HOLE #55
215	SL	1994	<0 06	<0.07	---	11/7/2001	60-70' N CV YARD GC HOLE #55
216	SL	1995	<0.11	<0.12	---	11/7/2001	70-80' N CV YARD GC HOLE #55
217	SL	1996	<0.1	<0.11	---	11/7/2001	80-100' N CV YARD GC HOLE #55
218	SL	2161	<0.07	<0.12	---	11/19/2001	SECONDARY ROCK WELL-3 0-10' (812' ELEVATION)
219	SL	2162	<0.09	<0.09	---	11/19/2001	SECONDARY ROCK WELL-3 10-20'
220	SL	2163	0 2	<0.08	---	11/19/2001	SR-2 WELL 0-10' (812' ELEVATION)
221	SL	2164	<0.07	<0.09	---	11/19/2001	SR-2 WELL 10-20'
222	SL	2165	<0.05	<0.06	---	11/19/2001	SR-4 WELL 0-10' (812' ELEVATION)
223	SL	2166	<0.12	<0.1	---	11/19/2001	SR-4 WELL 10-20'
224	SL	2195	<0.06	<0.06	---	11/30/2001	WELL SR-3, 30'
225	SL	2196	<0 07	<0.09	---	11/30/2001	SR-3 WELL 40'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
226	SL	2197	<0.08	<0.08	---	11/30/2001	SR-3 WELL 50'
226	SL	2197	<0.08	<0.08	---	11/30/2001	SR-3 WELL 50'
227	SL	2198	<0.09	<0.1	---	11/30/2001	SR-3 WELL 60'
228	SL	2199	<0.12	<0.13	---	11/30/2001	SR-3 WELL 70'
229	SL	2200	<0.08	<0.08	---	11/30/2001	SR-3 WELL 80'
230	SL	2201	<0.11	<0.12	---	11/30/2001	SR-3 WELL 90'
231	SL	2202	<0.12	<0.11	---	11/30/2001	SR-3 WELL 100'
232	SL	2203	<0.11	<0.12	---	11/30/2001	SR-3 WELL 110'
233	SL	2204	<0.08	<0.09	---	11/30/2001	SR-3 WELL 120'
234	SL	2205	<0.06	<0.07	---	11/30/2001	SR-3 WELL 130'
235	SL	2206	<0.08	<0.08	---	11/30/2001	SR-3 WELL 140'
236	SL	2207	<0.1	<0.1	---	11/30/2001	SR-3 WELL 150'
237	SL	2208	<0.08	<0.1	---	11/30/2001	SR-3 WELL 150' (QC SAMPLE)
238	SL	2249	<0.1	<0.1	---	12/4/2001	PRIMARY WELL #3 N CV YARD 0-10' (810' ELEVATION)
239	SL	2250	<0.09	<0.1	---	12/4/2001	PRIMARY WELL #3 N CV YARD 10-20'
240	SL	2251	<0.11	<0.11	---	12/4/2001	SECONDARY WELL #1 N CV YARD 0-10' (803' ELEVATION)
241	SL	2252	<0.12	<0.14	---	12/4/2001	SECONDARY WELL #1 N CV YARD 10-20'
242	SL	2253	<0.05	<0.06	---	12/4/2001	SECONDARY WELL #2 N CV YARD 20-30'
243	SL	2254	<0.08	<0.1	---	12/4/2001	SECONDARY WELL #2 N CV YARD 30-40'
244	SL	2255	<0.07	<0.08	---	12/4/2001	SECONDARY WELL #2 N CV YARD 40-50'
245	SL	2256	<0.07	<0.1	---	12/4/2001	SECONDARY WELL #2 N CV YARD 50-60'
246	SL	2257	<0.09	<0.1	---	12/4/2001	SECONDARY WELL #2 N CV YARD 60-70'
247	SL	2258	<0.08	<0.09	---	12/4/2001	SECONDARY WELL #2 N CV YARD 70-80'
248	SL	2259	<0.06	<0.07	---	12/4/2001	SECONDARY WELL #2 N CV YARD 80-90'
249	SL	2260	<0.13	<0.12	---	12/4/2001	SECONDARY WELL #2 N CV YARD 90-100'
250	SL	2261	<0.09	<0.1	---	12/4/2001	SECONDARY WELL #2 N CV YARD 100-110'
251	SL	2262	<0.1	<0.1	---	12/4/2001	SECONDARY WELL #2 N CV YARD 110-120'
252	SL	2263	<0.07	<0.09	---	12/4/2001	SECONDARY WELL #2 N CV YARD 110-120' QC SAMPLE
253	SL	2283	<0.08	<0.07	---	12/5/2001	PRIMARY ROCK WELL #4 N CV YARD 0-10' (812' ELEVATION)
254	SL	2284	<0.08	<0.08	---	12/5/2001	PRW #4 N CV YARD 10-20'
255	SL	2285	<0.1	<0.1	---	12/5/2001	SECONDARY ROCK WELL #4 S CV YARD 20-30'
256	SL	2286	<0.09	<0.1	---	12/5/2001	SRW #4 S CV YARD 30-40'
257	SL	2287	<0.1	<0.1	---	12/5/2001	SRW #4 S CV YARD 40-50'
258	SL	2288	<0.10	<0.12	---	12/5/2001	SRW #4 S CV YARD 50-60'
259	SL	2289	<0.13	<0.13	---	12/5/2001	SRW #4 S CV YARD 60-70'
260	SL	2290	<0.1	<0.09	---	12/5/2001	SRW #4 S CV YARD 70-80'
261	SL	2291	<0.12	<0.14	---	12/5/2001	SRW #4 S CV YARD 80-90'
262	SL	2292	<0.1	<0.1	---	12/5/2001	SRW #4 S CV YARD 90-100'
263	SL	2293	<0.07	<0.09	---	12/5/2001	SRW #4 S CV YARD 100-110'
264	SL	2294	<0.10	<0.11	---	12/5/2001	SRW #4 S CV YARD 110-120'
265	SL	2295	<0.12	<0.13	---	12/5/2001	SRW #4 S CV YARD 60-70' QC SAMPLE
266	SL	2296	<0.05	<0.07	---	12/5/2001	SRW #1 N CV YARD 20-30'
267	SL	2297	<0.10	<0.14	---	12/5/2001	SRW #1 N CV YARD 30-40'
268	SL	2298	<0.07	<0.08	---	12/5/2001	SRW #1 N CV YARD 40-50'
269	SL	2299	<0.07	<0.08	---	12/5/2001	SRW #1 N CV YARD 50-60'
270	SL	2300	<0.1	<0.1	---	12/5/2001	SRW #1 N CV YARD 60-70'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
271	SL	2301	<0.1	<0.1	---	12/5/2001	SRW #1 N CV YARD 70-80'
272	SL	2302	<0 05	<0.05	---	12/5/2001	SRW #1 N CV YARD 80-90'
273	SL	2303	<0.06	<0.07	---	12/5/2001	SRW #1 N CV YARD 90-100'
274	SL	2304	<0.1	<0.13	---	12/5/2001	SRW #1 N CV YARD 100-110'
275	SL	2305	<0 06	<0.07	---	12/5/2001	SRW #1 N CV YARD 110-120'
276	SL	2306	<0 08	<0.09	---	12/5/2001	SRW #1 N CV YARD 120-130'
277	SL	2307	<0 08	<0.08	---	12/5/2001	SRW #1 N CV YARD 130-140'
278	SL	2308	<0.06	<0.06	---	12/5/2001	SRW #1 N CV YARD 140-150'
279	SL	2309	<0 05	<0.06	---	12/5/2001	SRW #1 N CV YARD 80-90' QC SAMPLE
280	SL	2311	<0.1	<0.12	---	12/6/2001	PR #3 N CV YARD 20-30'
281	SL	2312	<0.1	<0.12	---	12/6/2001	PR #3 N CV YARD 20-30' QC SAMPLE
282	SL	2313	<0.07	<0.08	---	12/6/2001	PR #3 N CV YARD 30-40'
283	SL	2314	<0.1	<0.12	---	12/6/2001	PR #3 N CV YARD 40-50'
284	SL	2315	<0 08	<0.08	---	12/6/2001	PR #3 N CV YARD 50-60'
285	SL	2316	<0 07	<0.08	---	12/6/2001	PR #3 N CV YARD 60-70'
286	SL	2317	<0.09	<0.12	---	12/6/2001	PR #3 N CV YARD 70-80'
287	SL	2318	<0.07	<0 09	---	12/6/2001	PR #3 N CV YARD 80-90'
288	SL	2319	<0 07	<0 08	---	12/6/2001	PR #3 N CV YARD 90-100'
289	SL	2320	<0.1	<0.1	---	12/6/2001	PRW #4 SW CV YARD 20-30'
290	SL	2321	<0.08	<0 09	---	12/6/2001	PRW #4 SW CV YARD 20-30' QC SAMPLE
291	SL	2322	<0.1	<0.1	---	12/6/2001	PRW #4 SW CV YARD 30-40'
292	SL	2323	<0.1	<0.13	---	12/6/2001	PRW #4 SW CV YARD 40-50'
293	SL	2324	<0 04	<0.04	---	12/6/2001	PRW #4 SW CV YARD 50-60'
294	SL	2325	<0 08	<0.08	---	12/6/2001	PRW #4 SW CV YARD 60-70'
295	SL	2326	<0.08	<0.09	---	12/6/2001	PRW #4 SW CV YARD 70-80'
296	SL	2327	<0.06	<0.07	---	12/6/2001	PRW #4 SW CV YARD 80-90'
297	SL	2328	<0.09	<0.09	---	12/6/2001	PRW #4 SW CV YARD 90-100'
298	SL	2329	<0.08	<0.08	---	12/6/2001	PRW #4 SW CV YARD 100-105'
299	SL	2369	<0.12	<0.13	---	12/28/2001	SE C.V. YARD IN ANNULUS A.B.H. NO. 40 0' TO 5' (795' ELEVATION)
300	SL	2370	<0.08	<0.08	---	12/28/2001	SE C.V. YARD IN ANNULUS A.B. H. NO. 40 5' TO10'
301	SL	2371	<0 09	<0 08	---	12/28/2001	SE C V. YARD IN ANNULUS A B H. NO 40 10' TO 15'
302	SL	2372	<0.1	<0 1	---	12/28/2001	SE C.V. YARD IN ANNULUS A B H. NO. 40 15' TO 20'
303	SL	2373	<0 07	<0.08	---	1/3/2002	SE C.V. YARD IN ANNULUS. A B.H. #40. 20' TO 30'.
304	SL	2374	<0.1	<0.1	---	1/3/2002	SE C.V. YARD IN ANNULUS A.B H. #40. 30' TO 40'.
305	SL	2375	<0.1	<0.1	---	1/3/2002	SE C.V. YARD IN ANNULUS. A.B.H. #40. 40' TO 50'.
306	SL	2376	<0.07	<0 08	---	1/3/2002	SE C.V. YARD IN ANNULUS. A.B.H. #40. 50' TO 60'.
307	SL	2377	<0 05	<0 06	---	1/3/2002	SE C.V. YARD IN ANULUS. A B H. #40. 60' TO 70'.
308	SL	2378	<0 05	<0 07	---	1/3/2002	SE C.V. YARD IN ANNULUS. A.B.H. #40. 70' TO 80'.
309	SL	2379	<0.1	<0.1	---	1/3/2002	SE C.V. YARD IN ANNULUS. A B.H. #39. 0 TO 5'
310	SL	2380	<0 08	<0 09	---	1/3/2002	SE C.V. YARD IN ANNULUS. A B H. #39. 15' TO 20'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
311	SL	2381	<0.08	<0.07	---	1/4/2002	SE C.V. YARD IN ANNULUS. A B H #38. 0 TO 5'.
312	SL	2382	<0 1	<0.1	---	1/4/2002	SE C.V. YARD IN ANNULUS A B.H #38 10' TO 15'.
313	SL	2383	<0.16	<0.12	---	1/4/2002	SE C.V. YARD IN ANNULUS. A B H. #38 15' TO 20'.
314	SL	2384	<0.11	<0.12	---	1/8/2002	E. CV YARD IN ANNULUS ABH #37 0-5'
315	SL	2385	<0.12	<0.14	---	1/8/2002	E. CV YARD IN ANNULUS ABH #37 5-10'
316	SL	2386	<0.11	<0.11	---	1/8/2002	E. CV YARD IN ANNULUS ABH #37 10-15'
317	SL	2387	<0.08	<0.08	---	1/8/2002	W. CV ANNULUS ABH #6 0-5' (795' ELEVATION)
318	SL	2388	<0.09	<0.09	---	1/8/2002	W. CV ANNULUS ABH #6 5-10'
319	SL	2389	<0.1	<0.1	---	1/8/2002	W. CV ANNULUS ABH #6 10-15'
320	SL	2390	<0.09	<0.09	---	1/8/2002	W. CV ANNULUS ABH #36 15-20'
321	SL	2391	<0.07	<0 06	---	1/9/2002	E. CV YARD IN ANNULUS ABH #33 0-5' (795' ELEVATION)
322	SL	2393	<0 08	<0.1	---	1/9/2002	W. CV ANNULUS ABH #6 20-30'
323	SL	2394	<0 09	<0 09	---	1/11/2001	SW CV YARD ANNULUS A.B H #6 30' TO 40'
324	SL	2395	<0 04	<0 04	---	1/10/2002	N.E. CV YARD IN ANNULUS ABH #30 0-5' (795' ELEVATION)
325	SL	2396	<0 07	<0 07	---	1/10/2002	N.E. CV YARD IN ANNULUS ABH #30 10-15'
326	SL	2397	<0 05	<0 05	---	1/10/2002	N.E. CV YARD IN ANNULUS ABH #30 15-20'
327	SL	2398	<0 06	<0 05	---	1/14/2002	W. CV ANNULUS ABH #6 40-50'
328	SL	2399	<0 07	<0 07	---	1/16/2002	N CV ANNULUS ABH #24 0-5' (795' ELEVATION)
329	SL	2400	<0 1	<0.1	---	1/16/2002	N. CV ANNULUS ABH #24 15-20' (795' ELEVATION)
330	WA	2401	<1.4 E-8	<1.4 E-8	<312 pCi/L	1/17/2002	N CV ANNULUS ABH #25 PRIOR TO DRILLING (795' ELEVATION)
331	WA	2402	<1 1 E-8	<1.4 E-8	<312 pCi/L	1/17/2002	N. CV ANNULUS ABH #26 PRIOR TO DRILLING (795' ELEVATION)
332	WA	2403	<9.6 E-9	<9.8 E-9	<312 pCi/L	1/17/2002	N CV ANNULUS ABH #27 PRIOR TO DRILLING (795' ELEVATION)
333	WA	2404	<1 39 E-8	<1.26 E-8	<301 pCi/L	1/17/2002	N CV ANNULUS ABH #28 PRIOR TO DRILLING (795' ELEVATION)
334	SL	2405	<0 06	<0 06	---	1/17/2002	E. CV ANNULUS ABH #39 20-30'
335	SL	2406	<0.12	<0.14	---	1/17/2002	E. CV ANNULUS ABH #39 30-40'
336	SL	2407	<0 08	<0.1	---	1/17/2002	E. CV ANNULUS ABH #39 40-50'
337	SL	2408	<0 05	<0.04	---	1/17/2002	E. CV ANNULUS ABH #39 50-60'
338	SL	2409	<0 09	<0 09	---	1/17/2002	E. CV ANNULUS ABH #39 60-70'
339	SL	2410	<0.10	<0.13	---	1/17/2002	E. CV ANNULUS ABH #39 70-73'
340	SL	2411	<0 06	<0.06	---	1/17/2002	E. CV ANNULUS ABH #38 20-30'
341	SL	2412	<0 07	<0 07	---	1/17/2002	E. CV ANNULUS ABH #38 30-40'
342	SL	2413	<0 07	<0 09	---	1/17/2002	E. CV ANNULUS ABH #38 40-50'
343	SL	2414	<0 06	<0.06	---	1/17/2002	E. CV ANNULUS ABH # 38 50-60'
344	SL	2415	<0 07	<0.07	---	1/17/2002	E CV ANNULUS ABH #38 60-70'
345	SL	2416	<0 06	<0.07	---	1/17/2002	E. CV ANNULUS ABH #38 70-73'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
346	WA	2417	1.1 E-8	1.3 E-8	<312 pCi/L	1/17/2002	ABH #25 AFTER DRILLING
347	WA	2418	<1.1 E-8	<8.1 E-9	<312 pCi/L	1/17/2002	ABH #26 AFTER DRILLING
348	WA	2419	<8.4 E-9	<9 3 E-9	<312 pCi/L	1/17/2002	ABH #27 AFTER DRILLING
349	WA	2420	<1.4 E-8	<1.4 E-8	<312 pCi/L	1/17/2002	ABH #28 AFTER DRILLING
350	SL	2421	<0.05	<0.05	---	1/21/2002	E. CV ANNULUS ABH #33 20-30'
351	SL	2422	<0.04	<0.04	---	1/21/2002	E. CV ANNULUS ABH #33 30-40'
352	SL	2423	<0 06	<0.05	---	1/21/2002	E. CV ANNULUS ABH #33 40-50'
353	SL	2424	<0.08	<0 07	---	1/21/2002	E. CV ANNULUS ABH #33 50-60'
354	SL	2425	<0.1	<0.09	---	1/21/2002	E. CV ANNULUS ABH #33 60-70'
355	SL	2426	<0 06	<0.07	---	1/21/2002	N. CV ANNULUS ABH #31 20-30'
356	SL	2427	<0 03	<0 03	---	1/21/2002	N. CV ANNULUS ABH #31 30-40'
357	SL	2428	<0 06	<0 07	---	1/21/2002	N. CV ANNULUS ABH #31 40-50'
358	SL	2429	<0.1	<0.1	---	1/21/2002	N. CV ANNULUS ABH #31 50-60'
359	SL	2430	<0.06	<0.06	---	1/21/2002	N. CV ANNULUS ABH #31 60-70'
360	SL	2431	<0.05	<0.04	---	1/21/2002	N. CV ANNULUS ABH #29 20-30'
361	SL	2432	<0.105	<0.126	---	1/21/2002	N. CV ANNULUS ABH #29 30-40'
362	SL	2433	<0 09	<0.1	---	1/21/2002	N. CV ANNULUS ABH #34 40-50'
363	SL	2434	<0.09	<0 09	---	1/21/2002	N. CV ANNULUS ABH #34 50-60'
364	SL	2435	<0.1	<0 09	---	1/21/2002	N. CV ANNULUS ABH #34 60-70'
365	SL	2436	<0.071	<0.081	---	1/21/2002	N. CV ANNULUS ABH #34 20-30'
366	SL	2437	<0.08	<0 09	---	1/21/2002	N. CV ANNULUS ABH #34 30-40'
367	GW	2438	<1.3 E-8	<1.5 E-8	<307 pCi/L	1/21/2002	N. CV YARD ABH #25
368	GW	2439	<1.2 E-8	<1.0 E-8	<301 pCi/L	1/21/2002	N. CV YARD ABH #26
369	GW	2440	<1.42 E-8	<1.27 E-8	<279 pCi/L	1/21/2002	N. CV YARD ABH #27
370	GW	2441	<1.43 E-8 pCi/L	<1.35 E-8 pCi/L	<301 pCi/L	1/21/2002	N. CV YARD ABH #28
371	GW	2442	<1.34 E-8	<1.2 E-8	<307 pCi/L	1/21/2002	N. CV YARD ABH #25
372	GW	2443	<1.26 E-8	<1.39 E-8	<301 pCi/L	1/21/2002	N. CV YARD ABH #26
373	GW	2444	<1 4 E-8	<1.4 E-8	<279 pCi/L	1/21/2002	N. CV YARD ABH #27
374	GW	2445	<1 48 E-8	<1.18 E-8	<301 pCi/L	1/21/2002	N. CV YARD ABH #28
375	SL	2446	<0.09	<0 09	---	1/21/2002	N. CV YARD IN ANNULUS ABH #36 20-30'
376	SL	2447	<0.1	<0.1	---	1/21/2002	N. CV YARD IN ANNULUS ABH #36 30-40'
377	SL	2448	<0 08	<0 08	---	1/21/2002	N. CV YARD IN ANNULUS ABH #36 40-50'
378	SL	2449	<0 09	<0.1	---	1/21/2002	N. CV YARD IN ANNULUS ABH #36 50-60'
379	SL	2450	<0 07	<0 08	---	1/21/2002	N. CV YARD IN ANNULUS ABH #36 60-70'
380	SL	2451	<0.07	<0 08	---	1/21/2002	N. CV YARD IN ANNULUS ABH #35 20-30'
381	SL	2452	<0.06	<0 07	---	1/21/2002	N. CV YARD IN ANNULUS ABH #35 30-40'
382	SL	2453	<0.1	<0.1	---	1/21/2002	N. CV YARD IN ANNULUS ABH #35 40-50'
383	SL	2454	<0.1	<0.1	---	1/21/2002	N. CV YARD IN ANNULUS #35 50-60'
384	SL	2455	<0 05	<0.06	---	1/21/2002	N. CV YARD IN ANNULUS ABH #35 60-70'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
385	SL	2456	<0.05	<0 07	---	1/21/2002	N. CV YARD IN ANNULUS ABH #32 20-30'
386	SL	2457	<0 04	<0.05	---	1/21/2002	N CV YARD IN ANNULUS ABH #32 30-40'
387	SL	2458	<0.1	<0 1	---	1/21/2002	N. CV YARD IN ANNULUS ABH #32 40-50'
388	SL	2459	<0 04	<0 04	---	1/21/2002	N CV YARD IN ANNULUS ABH #32 50-60'
389	SL	2460	<0.082	<0.094	---	1/21/2002	N. CV YARD IN ANNULUS ABH #32 60-70'
390	SL	2461	<0.07	<0.05	---	1/21/2002	N. CV YARD IN ANNULUS ABH #30 20-30'
391	SL	2462	<0.09	<0.07	---	1/21/2002	N. CV YARD IN ANNULUS ABH #30 30-40'
392	SL	2463	<0.05	<0 06	---	1/21/2002	N. CV YARD IN ANNULUS ABH #30 40-50'
393	SL	2464	<0 04	<0 05	---	1/21/2002	N. CV YARD IN ANNULUS ABH #30 50-60'
394	SL	2465	<0 11	<0.11	---	1/21/2002	N. CV YARD IN ANNULUS ABH #30 60-70'
395	WA	2466	<1.0 E-8	<8.0 E-9	<301 pCi/L	1/22/2002	ABH #25 PRIOR TO DRILLING (795' ELEVATION)
396	WA	2467	<1.23 E-8	<1.34 E-8	<258 pCi/L	1/22/2002	ABH #26 PRIOR TO DRILLING (795' ELEVATION)
397	WA	2468	<9.4 E-9	<9.8 E-9	<301 pCi/L	1/22/2002	ABH #27 PRIOR TO DRILLING (795' ELEVATION)
398	WA	2469	<9.7 E-9	<9.5 E-9	<301 pCi/L	1/22/2002	ABH #28 PRIOR TO DRILLING (795' ELEVATION)
399	SL	2470	<0.04	<0 04	---	1/22/2002	ABH #23 N. CV ANNULUS 20-30'
400	SL	2471	<0 06	<0 06	---	1/22/2002	ABH #23 N. CV ANNULUS 30-40'
401	SL	2472	<0.05	<0 06	---	1/22/2002	ABH #23 N CV ANNULUS 40-50'
402	SL	2473	<0.05	<0 07	---	1/22/2002	ABH #23 N. CV ANNULUS 50-60'
403	SL	2474	<0.12	<0.14	---	1/22/2002	ABH #23 N. CV ANNULUS 60-70'
404	SL	2475	<0.04	<0 04	---	1/22/2002	ABH #25 N. CV ANNULUS 30-40'
405	SL	2476	0.09	<0.12	---	1/22/2002	ABH #25 N. CV ANNULUS 40-50'
406	SL	2477	<0.1	<0 1	---	1/22/2002	ABH #25 N. CV ANNULUS 50-60'
407	SL	2478	<0.08	<0 1	---	1/22/2002	ABH #25 N. CV ANNULUS 60-70'
408	SL	2479	0.17	<0.1	---	1/22/2002	ABH #25 N. CV ANNULUS 70-80'
409	SL	2480	<0 04	<0.04	---	1/22/2002	N. CV YARD IN ANNULUS ABH #22 20-30'
410	SL	2481	<0.1	<0 06	---	1/22/2002	N. CV YARD IN ANNULUS ABH #22 30-40'
411	SL	2482	<0 07	<0 07	---	1/22/2002	N/ CV YARD IN ANNULUS ABH #22 30-40' (QC SAMPLE)
412	SL	2483	<0 1	<0 1	---	1/22/2002	N CV YARD IN ANNULUS ABH #22 40-50'
413	SL	2484	<0.1	<0 1	---	1/22/2002	N. CV YARD IN ANNULUS ABH #22 50-60'
414	SL	2485	<0.12	<0.12	---	1/22/2002	N. CV YARD IN ANNULUS ABH #22 60-70'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
415	SL	2486	<0.04	<0 06	---	1/22/2002	N. CV YARD IN ANNULUS ABH #24 20-30'
416	SL	2487	0 09	<0.1	---	1/22/2002	N. CV YARD IN ANNULUS ABH #24 30-40'
417	SL	2488	<0 0175	<0.02	---	1/22/2002	N CV YARD IN ANNULUS ABH #24 40-50'
418	SL	2489	<0.07	<0 07	---	1/22/2002	N. CV YARD IN ANNULUS ABH #24 40-50'
419	SL	2490	0 13	<0 09	---	1/22/2002	N. CV YARD IN ANNULUS ABH #24 50-60'
420	SL	2491	<0.08	<0 09	---	1/22/2002	N. CV YARD IN ANNULUS ABH #24 60-70'
421	SL	2492	<0.11	<0.12	---	1/22/2002	N. CV YARD IN ANNULUS ABH #26 40-50'
422	SL	2493	<0.1	<0.1	---	1/22/2002	N. CV YARD IN ANNULUS ABH #26 50-60'
423	SL	2494	<0.1	<0.1	---	1/22/2002	N. CV YARD IN ANNULUS ABH #26 60-70'
424	SL	2495	<0.1	<0.1	---	1/22/2002	N. CV YARD IN ANNULUS ABH #26 70-80'
425	SL	2496	<0.11	<0.11	---	1/22/2002	N. CV YARD IN ANNULUS ABH #26 60-70' QC SAMPLE
426	GW	2497	<1 37 E-8	<1.4 E-8	<279 pCi/L	1/22/2002	ABH #25 AFTER DRILLING
427	GW	2498	<1.4 E-8	<1.24 E-8	<301 pCi/L	1/22/2002	ABH #26 AFTER DRILLING
428	GW	2499	<1.3 E-8	<1.2 E-8	<258 pCi/L	1/22/2002	ABH #27 AFTER DRILLING
429	GW	2500	<1.1 E-8	<1.1 E-8	<301 pCi/L	1/22/2002	ABH #28 AFTER DRILLING
430	GW	2501	<1.33 E-8	<1.3 E-8	<279 pCi/L	1/23/2002	N. CV YARD ABH #25
431	GW	2502	<1.32 E-8	<1.24 E-8	<281 pCi/L RC	1/23/2002	N. CV YARD ABH #26
432	GW	2503	<1.0 E-8	<9.9 E-9	<301 pCi/L	1/23/2002	N. CV YARD ABH #27
433	GW	2504	<1.3 E-8	<1.4 E-8	<301 pCi/L	1/23/2002	N. CV YARD ABH #28
434	GW	2505	<1.3 E-8	<1.3 E-8	<281 pCi/L RC	1/23/2002	N. CV YARD ABH #25
435	GW	2506	<1.53 E-8	<1.5 E-8	<301 pCi/L	1/23/2002	N. CV YARD ABH #26
436	GW	2507	<1.5 E-8	<1.4 E-8	<301 pCi/L	1/23/2002	N. CV YARD ABH #27
437	GW	2508	<1.5 E-8	<1.5 E-8	<307 pCi/L	1/23/2002	N. CV YARD ABH #28
438	GW	2509	<1.41 E-8	<1.3 E-8	<307 pCi/L	1/24/2002	N. CV YARD ABH #25
439	GW	2510	<1.36 E-8	<1.43 E-8	<301 pCi/L	1/24/2002	N. CV YARD ABH #26
440	GW	2511	<1.18 E-8	<1.31 E-8	<312 pCi/L	1/24/2002	N. CV YARD ABH #27
441	GW	2512	<1.07 E-8	<1.1 E-8	<312 pCi/L	1/24/2002	N. CV YARD ABH #28
442	SL	2513	<0.05	<0 06	---	1/24/2002	ABH #37 N. CV ANNULUS 20-30'
443	SL	2514	<0.05	<0.06	---	1/24/2002	ABH #37 N. CV ANNULUS 30-40'
444	SL	2515	<0.1	<0.11	---	1/24/2002	ABH #37 N. CV ANNULUS 40-50'
445	SL	2516	<0.05	<0.06	---	1/24/2002	ABH #37 N. CV ANNULUS 50-60'
446	SL	2517	<0 09	<0.1	---	1/24/2002	ABH #37 N. CV ANNULUS 50-60' QC SAMPLE
447	SL	2518	<0 05	<0 06	---	1/24/2002	ABH #37 N. CV ANNULUS 60-70'
448	GW	2519	<1.47 E-8	<1.44 E-8	<312 pCi/L	1/28/2002	N. CV YARD ABH #25
449	GW	2520	<1.5 E-8	<1.4 E-8	<300 pCi/L	1/28/2002	N. CV YARD ABH #26
450	GW	2521	<1.41 E-8	<1.52 E-8	<312 pCi/L	1/28/2002	N. CV YARD ABH #27.

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
451	GW	2522	<1.4 E-8	<1.23 E-8	<308 pCi/L	1/28/2002	N CV YARD ABH #28
452	GW	2523	<1.32 E-8	<1.2 E-8	<300 pCi/L	1/28/2002	N CV YARD ABH #25
453	GW	2524	<1.34 E-8	<1.4 E-8	<325 pCi/L	1/28/2002	N CV YARD ABH #26
454	GW	2525	<1.4 E-8	<1.41 E-8	<308 pCi/L	1/28/2002	N. CV YARD ABH #27
455	GW	2526	<1.4 E-8	<1.4 E-8	<300 pCi/L	1/28/2002	N. CV YARD ABH #28
456	WA	2527	<1.0 E-8	<1.1 E-8	<312 pCi/L	1/29/2002	ABH #25 BEFORE DRILLING
457	WA	2528	<1.2 E-8	<1.33 E-8	<258 pCi/L	1/29/2002	ABH #26 BEFORE DRILLING
458	WA	2529	<1.1 E-8	<1.2 E-8	<312 pCi/L	1/29/2002	ABH #27 BEFORE DRILLING
459	WA	2530	<1.4 E-8	<1.5 E-8	<307 pCi/L	1/29/2002	ABH #28 BEFORE DRILLING
460	GW	2531	<1.23 E-8	<1.22 E-8	<307 pCi/L	1/29/2002	N. CV YARD ABH #25
461	GW	2532	<1.3 E-8	<1.3 E-8	<281 pCi/L	1/29/2002	N. CV YARD ABH #26
462	GW	2533	<1.43 E-8	<1.4 E-8	<258 pCi/L	1/29/2002	N. CV YARD ABH #27
463	GW	2534	<1.02 E-8	<1.22 E-8	<290 pCi/L, RC	1/29/2002	N. CV YARD ABH #28
464	WA	2535	<1.39 E-8	<1.28 E-8	<258 pCi/L	1/30/2002	ABH #25 BEFORE DRILLING
465	WA	2536	<1.1 E-8	<1.2 E-8	<258 pCi/L	1/30/2002	ABH #26 BEFORE DRILLING
466	WA	2537	<1.3 E-8	<1.4 E-8	<311 pCi/L	1/30/2002	ABH #27 BEFORE DRILLING
467	WA	2538	<1.4 E-8	<1.2 E-8	<322 pCi/L	1/30/2002	ABH #28 BEFORE DRILLING
468	SL	2539	<0 1	<0.12	---	1/30/2002	ABH #29 N. CV YARD 40-50'
469	SL	2540	<0.1	<0 1	---	1/30/2002	ABH #29 N. CV YARD 50-60'
470	SL	2541	<0.042	<0.06	---	1/30/2002	ABH #29 N. CV YARD 50-60' QC SAMPLE
471	SL	2542	<0.071	<0 09	---	1/30/2002	ABH #29 N. CV YARD 60-70'
472	WA	2543	<1.4 E-8	<1.3 E-8	<258 pCi/L	1/30/2002	ABH #25 AFTER DRILLING
473	WA	2544	<1.4 E-8	<1.2 E-8	<258 pCi/L	1/30/2002	ABH #26 AFTER DRILLING
474	WA	2545	<1.5 E-8	<1.4 E-8	<281 pCi/L	1/30/2002	ABH #27 AFTER DRILLING
475	WA	2546	<1.4 E-8	<1.5 E-8	<281 pCi/L	1/30/2002	ABH #28 AFTER DRILLING
476	GW	2547	<1.42 E-8	<1.4 E-8	<306 pCi/L	2/6/2002	N. CV YARD A.B.H. #25
477	GW	2548	<1.4 E-8	<1.4 E-8	<306 pCi/L	2/6/2002	N C.V. YARD. A.B.H. #26
478	GW	2549	<9.52 E-9	<1.01 E-8	<278 pCi/L	2/6/2002	N C.V. YARD A.B.H. #27
479	GW	2550	<1.52 E-8	<1.35 E-8	<280 pCi/L	2/6/2002	N C.V. YARD. A.B H. #28
480	SL	2551	<0.063	<0.062	---	2/6/2002	E. C.V. YARD. OBSERVATION WELL 3A. 0 TO 20'. (795' ELEVATION)
481	SL	2552	<0.12	<0.13	---	2/6/2002	E. C.V. YARD OBSERVATION WELL 3B 0 TO 5' (796' ELEVATION)
482	SL	2553	<0.1	<0.11	---	2/6/2002	E C.V. YARD. OW3B 5' TO 10'.
483	SL	2554	0.18	<0.1	---	2/6/2002	E. C.V. YARD. OW3B. 10' TO 15'.
484	SL	2555	0.12	<0 1	---	2/6/2002	E. C.V. YARD. OW3B. 15' TO 20'.
485	SL	2556	<0.1	<0 11	---	2/6/2002	E. C.V. YARD. OW3B. 20' TO 30'.
486	SL	2557	<0.09	<0.1	---	2/6/2002	E. C.V. YARD OW3B. 30' TO 40'.
487	SL	2558	<0 11	<0.11	---	2/6/2002	E C.V. YARD. OW3B 40' TO 50'.
488	GW	2559	1.03 E-8	<1.24 E-8	<306 pCi/L	2/6/2002	N. C.V. YARD. A.B H. #25
489	GW	2560	<1.44 E-8	<1.27 E-8	<306 pCi/L	2/6/2002	N. C.V. YARD. A B.H. #26
490	GW	2561	<1.4 E-8	<1.4 E-8	<306 pCi/L	2/6/2002	N. C.V. YARD. A B.H #27
491	GW	2562	<1.44 E-8	<1.31 E-8	<293 pCi/L	2/6/2002	N. C.V. YARD. A B.H. #28
492	GW	2563	<1.41 E-8	<1.35 E-8	<278 pCi/L	2/7/2002	ABH #25 BEFORE DRILLING
493	GW	2564	<1.33 E-8	<1.34 E-8	<311 pCi/L	2/7/2002	ABH #26 BEFORE DRILLING
494	GW	2565	<1.27 E-8	<1.24 E-8	<278 pCi/L	2/7/2002	ABH #27 BEFORE DRILLING
495	GW	2566	<1.46 E-8	<1.29 E-8	<311 pCi/L	2/7/2002	ABH #28 BEFORE DRILLING
496	GW	2567	<1.39 E-8	<1.28 E-8	<293 pCi/L	2/8/2002	N. C.V. YARD. A.B.H. #25

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
497	GW	2568	<1.33 E-8	<1.4 E-8	<278 pCi/L	2/8/2002	N. C.V. YARD. A.B H. #26
498	GW	2569	<1.36 E-8	<1.33 E-8	<280 pCi/L	2/8/2002	N. C.V. YARD. A.B.H. #27
499	GW	2570	<1.51 E-8	<1.43 E-8	<312 pCi/L	2/8/2002	N. C.V. YARD. A.B.H. #28
500	GW	2571	<1.4 E-8	<1.5 E-8	<280 pCi/L	2/7/2002	ABH#25 AFTER DRILLING
501	GW	2572	<1.37 E-8	<1.17 E-8	<280 pCi/L	2/7/2002	ABH#26 AFTER DRILLING
502	GW	2573	<1.40 E-8	<1.36 E-8	<287 pCi/L	2/7/2002	ABH#27 AFTER DRILLING
503	GW	2574	<1.38 E-8	<1.31 E-8	<293 pCi/L	2/7/2002	ABH#28 AFTER DRILLING
504	SL	2575	<0 09	<0.08	---	2/8/2002	W. CV. ANNULUS ABH #7 0-5 FT (795' ELEVATION)
505	SL	2576	<0.11	<0.1	---	2/8/2002	W.CV. ANNULUS ABH#7 5-10 FT
506	SL	2577	<0.08	<0.09	---	2/8/2002	W.CV. ANNULUS ABH#7 10-15 FT
507	SL	2578	<0 06	<0.072	---	2/8/2002	W.CV. ANNULUS ABH#7 15-20 FT
508	SL	2579	<0.071	<0 084	---	2/8/2002	W CV. ANNULUS ABH#7 20-30 FT
509	SL	2580	<0.067	<0.068	---	2/8/2002	W.CV. ANNULUS ABH#7 30-40FT
510	SL	2581	<0.11	<0.1	---	2/8/2002	W CV. ANNULUS ABH#7 40-50 FT
511	SL	2582	<0.044	<0 06	---	2/8/2002	W.CV.ANNULUS ABH#7 50-60 FT
512	SL	2583	<0.09	<0.1	---	2/8/2002	W.CV.ANNULUS ABH#7 60-70 FT
513	GW	2584	<1.2 E-8	<1.51 E-8	<312 pCi/L	2/11/2002	N. CV YARD ABH #25
514	GW	2585	<1.34 E-8	<1.31 E-8	<312 pCi/L	2/11/2002	N CV YARD ABH #26
515	GW	2586	<1.4 E-8	<1.3 E-8	<280 pCi/L	2/11/2002	N. CV YARD ABH #27
516	GW	2587	<1.4 E-8	<1.3 E-8	<278 pCi/L	2/11/2002	N. CV YARD ABH #28
517	SL	2588	<0.06	<0 06	---	2/11/2002	N CV ANNULUS ABH #18 20-30'
518	SL	2589	<0.1	<0.12	---	2/11/2002	N. CV ANNULUS ABH #18 30-40'
519	SL	2590	<0.07	<0.08	---	2/11/2002	N CV ANNULUS ABH #18 40-50'
520	SL	2591	<0.1	<0.1	---	2/11/2002	N. CV ANNULUS ABH #18 50-60'
521	SL	2592	<0.12	<0.1	---	2/11/2002	N. CV ANNULUS ABH #18 60-70'
522	SL	2593	<0.1	<0.11	---	2/11/2002	W. CV ANNULUS ABH #6 60-70'
523	SL	2594	<0.11	<0.11	---	2/11/2002	W. CV ANNULUS ABH #6 50-60'
524	GW	2595	<1.41 E-8	<1.29 E-8	<313 pCi/L	2/11/2002	N. C.V. YARD A B H. #25
525	GW	2596	<1.4 E-8	<1.4 E-8	<278 pCi/L	2/11/2002	N. C.V. YARD. A B.H. #26
526	GW	2597	<1.21 E-8	<1.08 E-8	<312 pCi/L	2/11/2002	N. C.V YARD. A.B.H. #27
527	GW	2598	<1.44 E-8	<1.5 E-8	<278 pCi/L	2/11/2002	N. C.V. YARD. A.B.H. #28
528	SL	2599	<0 08	<0 09	---	2/11/2002	N. CV YARD IN ANNULUS ABH #19 20-30'
529	SL	2600	<0.104	<0.12	---	2/11/2002	N. CV YARD IN ANNULUS ABH #19 30-40'
530	SL	2601	<0 053	<0.067	---	2/11/2002	N. CV YARD IN ANNULUS ABH #19 50-60'
531	SL	2602	<0.13	<0.15	---	2/11/2002	N CV YARD IN ANNULUS ABH #19 50-60' QC SAMPLE
532	SL	2603	<0.1	<0.11	---	2/11/2002	N. CV YARD IN ANNULUS ABH #19 60-70'
533	SL	2604	<0 07	<0.07	---	2/11/2002	N. CV YARD IN ANNULUS ABH #20 20-30'
534	SL	2605	<0.073	<0.08	---	2/11/2002	N. CV YARD IN ANNULUS ABH #20 30-40'
535	SL	2606	<0.05	<0 06	---	2/11/2002	N CV YARD IN ANNULUS ABH #20 30-40' QC SAMPLE
536	SL	2607	<0.03	<0 04	---	2/11/2002	N. CV YARD IN ANNULUS ABH #20 40-50'
537	SL	2608	<0.1	<0.1	---	2/11/2002	N. CV YARD IN ANNULUS ABH #20 50-60'
538	SL	2609	<0.05	<0 06	---	2/11/2002	N. CV YARD IN ANNULUS ABH #20 60-70'
539	SL	2610	<0 05	<0 06	---	2/11/2002	N. CV YARD IN ANNULUS ABH #21 20-30'
540	SL	2611	<0.05	<0.06	---	2/11/2002	N. CV YARD IN ANNULUS ABH #21 30-40'
541	SL	2612	<0 084	<0 09	---	2/11/2002	N. CV YARD IN ANNULUS ABH #21 40-50'
542	SL	2613	<0 084	<0.103	---	2/11/2002	N. CV YARD IN ANNULUS ABH #21 50-60'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
543	SL	2614	<0 09	<0 081	---	2/11/2002	N. CV YARD IN ANNULUS ABH #21 60-70'
544	SL	2615	<0.08	<0 084	---	2/11/2002	N. CV YARD PRIMARY ROCK WELL #2 0-5' (804' ELEVATION)
545	GW	2616	<1.4 E-8	<1.2 E-8	<281 pCi/L	2/12/2002	N. CV YARD ABH #20
546	GW	2617	<1.5 E-8	<1.5 E-8	<278 pCi/L	2/12/2002	N. CV YARD ABH #29
547	SL	2618	<0.1	<0.1	---	2/11/2002	N. CV YARD PRW #2 5-10'
548	SL	2619	<0 08	<0.09	---	2/11/2002	N. CV YARD PRW #2 15-20'
549	SL	2620	<0 1	<0.12	---	2/11/2002	N. CV YARD PRW #2 20-30'
550	SL	2621	<0 04	<0.05	---	2/11/2002	N. CV YARD PRW #2 30-40'
551	SL	2622	<0.1	<0.104	---	2/11/2002	N CV YARD PRW #2 30-40' QC SAMPLE
552	SL	2623	<0 06	<0.06	---	2/11/2002	N. CV YARD PRW #2 40-50'
553	SL	2624	<0.1	<0.11	---	2/11/2002	N. CV YARD PRW #2 50-60'
554	SL	2625	<0.07	<0.08	---	2/11/2002	N CV YARD PRW #2 60-70'
555	SL	2626	<0 133	<0.113	---	2/11/2002	N. CV YARD PRW #2 70-80'
556	SL	2627	<0.1	<0 1	---	2/11/2002	N CV YARD PRW #2 80-90'
557	SL	2628	<0.1	<0.11	---	2/11/2002	N. CV YARD PRW #2 90-100'
558	SL	2629	<0.1	<0.11	---	2/11/2002	N. CV YARD PRW #2 10-15'
559	SL	2630	<0.1	<0.1	---	2/12/2002	W. CV YARD ABH #8 40-50'
560	SL	2631	0.17	<0.1	---	2/12/2002	W. CV YARD ABH #8 50-60'
561	SL	2632	<0.1	<0.1	---	2/12/2002	W. CV YARD ABH #8 60-70'
562	SL	2633	<0.1	<0.09	---	2/12/2002	W. CV YARD ABH #9 5-10'
563	SL	2634	0.1	<0.1	---	2/12/2002	W. CV YARD ABH #9 10-15'
564	SL	2635	<0.07	<0.08	---	2/12/2002	W. CV YARD ABH #9 15-20'
565	SL	2636	<0.07	<0.08	---	2/12/2002	W. CV YARD ABH #9 20-30'
566	SL	2637	<0 1	<0 11	---	2/11/2002	W. CV ANNULUS ABH #7 0-5' (812' ELEVATION)
567	SL	2638	<0.08	<0 08	---	2/11/2002	W. CV ANNULUS ABH #7 5-10'
568	SL	2639	<0 08	<0 09	---	2/11/2002	W. CV ANNULUS ABH #7 10-15'
569	SL	2640	<0.07	<0.08	---	2/11/2002	W. CV ANNULUS ABH #7 15-20'
570	SL	2641	<0 1	<0 09	---	2/11/2002	W. CV ANNULUS ABH #7 20-30'
571	SL	2642	<0.11	<0 13	---	2/11/2002	W. CV ANNULUS ABH #7 30-40'
572	GW	2643	<1.6 E-8	<1 6 E-8	<280 pCi/L	2/13/2002	N. CV YARD ABH #29 (EXCEPTION FOR Co60 LLD >1.5 E-8)
573	GW	2644	<1.27 E-8	<1.26 E-8	<312 pCi/L	2/13/2002	N. CV YARD ABH #20
574	SL	2645	<0 07	<0.08	---	2/13/2002	ANNULUS WELL A-1 0-5' (795' ELEVATION)
575	SL	2646	<0.1	<0.1	---	2/13/2002	ANNULUS WELL A-1 5-10'
576	SL	2647	<0.06	<0.06	---	2/13/2002	ANNULUS WELL A-1 10-15'
577	SL	2648	<0.06	<0.06	---	2/13/2002	ANNULUS WELL A-2 0-5' (795' ELEVATION)
578	SL	2649	0 6	<0.1	---	2/13/2002	ANNULUS WELL A-2 5-10'
579	GW	2650	<1.42 E-8	<1.36 E-8	<292 pCi/L	2/14/2002	N. CV YARD ABH #20
580	GW	2651	<1.39 E-8	<1.31 E-8	<292 pCi/L	2/14/2002	N. CV YARD ABH #29
581	GW	2652	<1.04 E-8	<9.99 E-9	<312 pCi/L	2/14/2002	N. CV YARD ABH #29
582	GW	2653	<9.4 E-9	<1.12 E-8	<313 pCi/L	2/14/2002	N. CV YARD ABH #20
583	SL	2654	<0.065	<0.078	---	2/14/2002	ANNULUS WELL A-4 0-5' (795' ELEVATION)
584	SL	2655	<0.09	<0.09	---	2/14/2002	ANNULUS WELL A-4 5-10'
585	SL	2656	<0 08	<0 08	---	2/14/2002	ANNULUS WELL A-4 10-15'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
586	SL	2657	<0 07 pCi/l	<0 08 pCi/l	---	2/14/2002	ANNULUS W ELL A-3 0' TO 5' (795' ELEVATION)
587	SL	2658	<0 07	<0 08	---	2/14/2002	ANNULUS WELL A-3 5' TO 10'
588	SL	2659	<0.067	<0 077	---	2/14/2002	ANNULUS WELL A-3 10' TO 15'
589	SL	2660	<0.09	<0.09	---	2/14/2002	ANNULUS WELL A-3 15' TO 20'
590	SL	2661	<0.071	<0 063	---	2/15/2002	W.C.V. YARD ABH NO.10 0' TO20' (795' ELEVATION)
591	SL	2662	<0.07	<0.07	---	2/15/2002	W C.V. YARD ABH NO.10 20' TO 30'
592	SL	2663	<0.1	<0.1	---	2/15/2002	W C.V. YARD ABH NO.10 30' TO 40'
593	SL	2664	0.13	<0 08	---	2/15/2002	W C.V. YARD ABH NO.10 40'TO 50'
594	GW	2665	<1.50 E-8	<1.30 E-8	<313 pCi/L	2/18/2002	N. CV YARD ABH #29
595	GW	2666	<1.38 E-8	<1.18 E-8	<313 pCi/L	2/18/2002	N. CV YARD ABH #20
596	SL	2667	<0.1	<0.12	---	2/18/2002	W. CV YARD ABH #10 50-60'
597	SL	2668	<0.1	<0.14	---	2/18/2002	W. CV YARD ABH #10 60-70'
598	SL	2669	<0.09	<0 09	---	2/18/2002	W. CV YARD ABH #11 0-5' (795' ELEVATION)
599	SL	2670	<0.07	<0 07	---	2/18/2002	W. CV YARD ABH #11 5-10'
600	SL	2671	<0.07	<0.07	---	2/18/2002	W. CV YARD ABH #11 10-15'
601	SL	2672	<0 05	<0.05	---	2/18/2002	W. CV YARD ABH #11 15-20'
602	SL	2673	<0.05	<0.06	---	2/18/2002	W. CV YARD ABH #11 20-30'
603	SL	2674	<0.05	<0.05	---	2/18/2002	W. CV YARD ABH #11 30-40'
604	GW	2675	<1.26 E-8	<1.24 E-8	<312 pCi/L	2/18/2002	N.C.V. YARD ABH NO. 29
605	GW	2677	<1.28 E-8	<1.33 E-8	<312 pCi/L	2/18/2002	N.C.V. YARD ABH NO. 20
606	GW	2678	<1.14 E-8	<1.14 E-8	<313 pCi/L	2/19/2002	N.C.V YARD ABH NO. 29
607	GW	2679	<1.43 E-8	<1.38 E-8	<313 pCi/L	2/19/2002	N.C V. YARD ABH NO. 20
608	SL	2680	<0.13	<0.14	---	2/18/2002	W.C.V. YARD ABH NO. 12 O' TO 5' (795' ELEVATION)
609	SL	2681	<0.052	<0 064	---	1/18/2002	W.C.V. YARD ABH NO.12 5' TO 10'
610	SL	2682	<0 07	<0.07	---	2/18/2002	W,C,V, YARD ABH NO.12 10' TO 15'
611	SL	2683	<0.1	<0.103	---	2/18/2002	W,C,V, YARD ABH NO.12 15' TO 20'
612	SL	2684	<0.1	<0.1	---	2/18/2002	W.C.V. YARD ABH NO.12 20' TO 30'
613	SL	2685	<0.106	<0.114	---	2/18/2002	W.C.V. YARD ABH NO.12 30' TO 40'
614	SL	2686	<0 05	<0.06	---	2/18/2002	ABH #11 W. CV ANNULUS 40-50'
615	SL	2687	<0.1	<0.15	---	2/18/2002	ABH #11 W. CV ANNULUS 50-60'
616	SL	2688	<0.1	<0.1	---	2/18/2002	ABH #11 W. CV ANNULUS 60-70'
617	SL	2689	<0.06	<0.08	---	2/18/2002	ABH #11 W. CV ANNULUS 60-70' QC SAMPLE
618	SL	2690	<0.05	<0.05	---	2/19/2002	W. CV YARD ABH #12 40-50'
619	SL	2691	<0 04	<0.05	---	2/19/2002	W. CV YARD ABH #12 50-60'
620	SL	2692	<0 09	<0.1	---	2/19/2002	W. CV YARD ABH #12 60-70'
621	SL	2693	<0 08	<0.085	---	2/19/2002	W. CV YARD ABH #13 0-5' (795' ELEVATION)
622	SL	2694	<0 07	<0.07	---	2/19/2002	W. CV YARD ABH #13 5-10'
623	SL	2695	<0 08	<0.08	---	2/19/2002	W. CV YARD ABH #13 10-15'
624	SL	2696	<0.1	<0.1	---	2/19/2002	W. CV YARD ABH #13 15-20'
625	SL	2697	<0.06	<0.07	---	2/19/2002	W. CV YARD ABH #13 20-30'
626	SL	2698	<0 09	<0.1	---	2/19/2002	W. CV YARD ABH #13 30-40'
627	SL	2699	<0.08	<0 08	---	2/19/2002	W. CV YARD ABH #13 40-50'
628	SL	2700	<0 09	<0.1	---	2/19/2002	W. CV YARD ABH #13 50-60'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
629	SL	2701	<0.08	<0.09	---	2/19/2002	W. CV YARD ABH #14 0-5' (795' ELEVATION)
630	SL	2702	<0.06	<0.05	---	2/19/2002	W. CV YARD ABH #14 5-10'
631	SL	2703	<0.08	<0.1	---	2/19/2002	W. CV YARD ABH #14 10-15'
632	SL	2704	<0.08	<0.07	---	2/19/2002	W. CV YARD ABH #14 15-20'
633	SL	2705	<0 09	<0.1	---	2/19/2002	W. CV YARD ABH #14 20-30'
634	GW	2706	<1.38 E-8	<1.34 E-8	<313 pCi/L	2/20/2002	ABH #25 BEFORE DRILLING
635	GW	2707	<1.4 E-8	<1.2 E-8	<313 pCi/L	2/20/2002	ABH #26 BEFORE DRILLING
636	GW	2708	<1.32 E-8	<1.25 E-8	<313 pCi/L	2/20/2002	ABH #27 BEFORE DRILLING
637	GW	2709	<9.0 E-9	<1.01 E-8	<289 pCi/L	2/20/2002	ABH #28 BEFORE DRILLING
638	SL	2710	<0.07	<0.09	---	2/20/2002	ABH #14 W. CV ANNULUS 30-40'
639	SL	2711	<0 05	<0.07	---	2/20/2002	ABH #14 W. CV ANNULUS 40-50'
640	SL	2712	<0 06	<0.06	---	2/20/2002	ABH #14 W. CV ANNULUS 40-50' QC SAMPLE
641	SL	2713	<0.09	<0.1	---	2/20/2002	ABH #14 W. CV ANNULUS 50-60'
642	SL	2714	<0.08	<0 09	---	2/20/2002	ABH #14 W. CV ANNULUS 60-70'
643	SL	2715	<0 08	<0 1	---	2/20/2002	ABH #15 W. CV ANNULUS 0-5' (795' ELEVATION)
644	SL	2716	<0.09	<0 09	---	2/20/2002	ABH #15 W. CV ANNULUS 5-10'
645	SL	2717	<0.07	<0.07	---	2/20/2002	ABH #15 W. CV ANNULUS 10-15'
646	SL	2718	<0.1	<0.1	---	2/20/2002	ABH #15 W. CV ANNULUS 15-20'
647	SL	2719	<0.08	<0 09	---	2/20/2002	ABH #15 W. CV ANNULUS 20-30'
648	SL	2720	<0.09	<0.1	---	2/20/2002	ABH #15 W. CV ANNULUS 30-40'
649	SL	2721	<0.1	<0.1	---	2/20/2002	ABH #15 W. CV ANNULUS 40-50'
650	SL	2722	<0 1	<0.1	---	2/20/2002	ABH #15 W. CV ANNULUS 40-50' QC SAMPLE
651	SL	2723	<0.06	<0.06	---	2/20/2002	ABH #15 W. CV ANNULUS 50-60'
652	SL	2724	<0.05	<0.053	---	2/20/2002	ABH #16 0' TO 5' (795' ELEVATION)
653	SL	2725	<0.063	<0 08	---	2/20/2002	ABH #16 5' TO 15'
654	SL	2726	<0.11	<0.1	---	2/20/2002	ABH #16 15' TO 20'
655	SL	2727	<0.06	<0 06	---	2/20/2002	ABH #16 20' TO 30'
656	SL	2728	<0.07	<0 07	---	2/20/2002	ABH #16 30' TO 40'
657	SL	2729	<0 08	<0.08	---	2/20/2002	ABH #16 40' TO 50'
658	GW	2730	<1.25 E-8	<1.21 E-8	<289 pCi/L	2/20/2002	ABH #20 N CV YARD
659	GW	2731	<1.08 E-8	<9.95 E-8	<313 pCi/L	2/20/2002	ABH #29 N CV YARD
660	SL	2732	<0 09	<0.08	---	2/20/2002	ABH #15 W. CV ANNULUS 60-70'
661	GW	2733	<1.22 E-8	<1.24 E-8	<313 pCi/L	2/21/2002	ABH #25 BEFORE DRILLING
662	GW	2734	<1.15 E-8	<9.85 E-9	<289 pCi/L	2/21/2002	ABH #26 BEFORE DRILLING
663	GW	2735	<1.06 E-8	<1.24 E-8	<289 pCi/L	2/21/2002	ABH #27 BEFORE DRILLING
664	GW	2736	<1.41 E-8	<1.51 E-8	<306 pCi/L	2/21/2002	ABH #28 BEFORE DRILLING
665	SL	2737	<0.08	<0.1	---	2/21/2002	ABH #16 W. CV ANNULUS 50-60'
666	SL	2738	<0.1	<0.1	---	2/21/2002	ABH #16 W. CV ANNULUS 60-70'
667	GW	2739	<1.1 E-8	<1.2 E-8	<313 pCi/L	2/19/2002	N. CV YARD ABH #20
668	GW	2740	<1.15 E-8	<1.25 E-8	<313 pCi/L	2/19/2002	N. CV YARD ABH #29
669	SL	2741	<0 07	<0.08	---	2/21/2002	ABH #17 W. CV ANNULUS 0-5' (795' ELEVATION)
670	SL	2742	<0.06	<0.07	---	2/21/2002	ABH #17 W. CV ANNULUS 5-10'
671	SL	2743	<0 06	<0 07	---	2/21/2002	ABH #17 W. CV ANNULUS 10-15'
672	SL	2744	<0.1	<0 08	---	2/21/2002	ABH #17 W. CV ANNULUS 15-20'
673	SL	2745	<0 09	<0.09	---	2/21/2002	ABH #17 W. CV ANNULUS 20-30'
674	SL	2746	<0 07	<0 07	---	2/21/2002	ABH #17 W. CV ANNULUS 30-40'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
675	SL	2747	<0.05	<0 05	---	2/21/2002	ABH #17 W. CV ANNULUS 40-50'
676	SL	2748	<0.06	<0 07	---	2/21/2002	ABH #17 W. CV ANNULUS 50-60'
677	SL	2749	<0.08	<0.1	---	2/21/2002	ABH #17 W. CV ANNULUS 60-70'
678	GW	2750	<1.17 E-8	<1.15 E-8	<313 pCi/L	2/21/2002	ABH #25 AFTER DRILLING
679	GW	2751	<1.32 E-8	<1.37 E-8	<313 pCi/L	2/21/2002	ABH #26 AFTER DRILLING
680	GW	2752	<1.47 E-8	<1.17 E-8	<289 pCi/L	2/21/2002	ABH #27 AFTER DRILLING
681	GW	2753	<8.72 E-9	<1.11 E-8	<313 pCi/L	2/21/2002	ABH #28 AFTER DRILLING
682	GW	2772	<1.49 E-8	<1.28 E-8	<289 pCi/L	2/25/2002	ABH #20 BEFORE DRILLING
683	GW	2773	<1.18 E-8	<1.21 E-8	<312 pCi/L	2/25/2002	ABH #29 BEFORE DRILLING
684	SL	2774	0.1	<0.11	---	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 0-5' (795' ELEVATION)
685	SL	2775	<0.08	<0.13	---	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 5-10'
686	SL	2776	0.12	<0.11	---	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 10-15'
687	SL	2777	<0.09	<0.076	---	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 15-20'
688	GW	2778	<9.78 E-9	<1.10 E-8	<289 pCi/L	2/25/2002	ABH #20 AFTER DRILLING
689	GW	2779	<1.33 E-8	<1.30 E-8	<289 pCi/L	2/25/2002	ABH #29 AFTER DRILLING
690	GW	2780	<1.52 E-8	<1.23 E-8	<289 pCi/L	2/26/2002	ABH #20 BEFORE DRILLING
691	GW	2781	<1.44 E-8	<1.41 E-8	<289 pCi/L	2/26/2002	ABH #29 BEFORE DRILLING
692	SL	2782	0 08	<0.08	---	2/26/2002	ABH #1 W. CV ANNULUS 0-5' (795' ELEVATION)
693	SL	2783	0.07	<0.09	---	2/26/2002	ABH #1 W. CV ANNULUS 5-10'
694	SL	2784	0.25	<0.14	---	2/26/2002	ABH #1 W. CV ANNULUS 10-15'
695	SL	2785	0.3	<0.1	---	2/26/2002	ABH #1 W. CV ANNULUS 15-20'
696	SL	2786	0.1	<0.08	---	2/26/2002	ABH #1 W. CV ANNULUS 20-30'
697	SL	2787	<0.08	<0.08	---	2/26/2002	ABH #1 W. CV ANNULUS 30-40'
698	SL	2788	<0.1	<0 08	---	2/26/2002	ABH #1 W. CV ANNULUS 40-50'
699	SL	2789	<0.08	<0.09	---	2/26/2002	ABH #1 W. CV ANNULUS 50-60'
700	SL	2790	<0.08	<0.1	---	2/26/2002	ABH #1 W CV ANNULUS 50-60' QC SAMPLE
701	SL	2791	<0.06	<0.07	---	2/26/2002	ABH #1 W. CV ANNULUS 60-70'
702	SL	2792	<0.1	<0 1	---	2/26/2002	ABH #2 W. CV ANNULUS 0-5'
703	SL	2793	0.05	<0.12	---	2/26/2002	ABH #2 W. CV ANNULUS 5-10'
704	SL	2794	<0.1	<0.09	---	2/26/2002	ABH #2 W. CV ANNULUS 10-15'
705	SL	2795	0.05	<0.07	---	2/26/2002	ABH #2 W. CV ANNULUS 15-20'
706	SL	2796	<0 08	<0.06	---	2/26/2002	ABH #2 W. CV ANNULUS 20-30'
707	SL	2797	<0.065	<0.07	---	2/26/2002	ABH #2 W. CV ANNULUS 30-40'
708	SL	2798	<0 06	<0.07	---	2/26/2002	ABH #2 W. CV ANNULUS 40-50'
709	SL	2799	<0.1	<0.14	---	2/26/2002	ABH #2 W. CV ANNULUS 40-50' QC SAMPLE
710	SL	2800	<0 07	<0.07	---	2/26/2002	ABH #2 W. CV ANNULUS 50-60'
711	SL	2801	<0.1	<0.13	---	2/26/2002	ABH #2 W. CV ANNULUS 60-70'
712	GW	2802	<1.09 E-8	<1.02 E-8	<306 pCi/L	2/26/2002	ABH #20 AFTER DRILLING
713	GW	2803	<1.35 E-8	<1.41 E-8	<303 pCi/L	2/26/2002	ABH #29 AFTER DRILLING
714	GW	2804	<1.06 E-8	<1.15 E-8	<303 pCi/L	2/27/2002	ABH #20 PRE-DRILL
715	GW	2805	<1.13 E-8	<1.19 E-8	<303 pCi/L	2/27/2002	ABH #29 PRE-DRILL
716	SL	2806	<0.1	<0.1	---	2/27/2002	ABH #3 0-20' (795' ELEVATION)
717	SL	2807	<0.1	<0.1	---	2/27/2002	ABH #3 20-30'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
718	SL	2808	<0.1	<0 1	---	2/27/2002	ABH #3 30-40'
719	SL	2809	<0.12	<0.14	---	2/27/2002	ABH #3 40-50'
720	SL	2810	<0.11	<0 1	---	2/27/2002	ABH #3 50-60'
721	SL	2811	<0.09	<0.1	---	2/27/2002	ABH #3 60-70'
722	GW	2812	<1.41 E-8	<1.33 E-8	<303 pCi/L	2/27/2002	ABH #20 POST-DRILL
723	GW	2813	<1.41 E-8	<1.46 E-8	<303 pCi/L	2/27/2002	ABH #29 POST-DRILL
724	WW	2814	<1.14 E-8	<9 4 E-9	<305 pCi/L	3/6/2002	ABH #29
725	WW	2815	<1.1 E-8	<1.1 E-8	<305 pCi/L	3/6/2002	ABH #25
726	SL	2816	0 05	<0.09	---	3/6/2002	ABH #4 0-25' (795' ELEVATION)
727	SL	2817	0 13	<0.08	---	3/6/2002	ABH #4 25-30'
728	SL	2818	<0.05	<0.05	---	3/6/2002	ABH #4 30-40'
729	SL	2819	<0.09	<0.09	---	3/6/2002	ABH #4 40-50'
730	SL	2820	<0.05	<0.06	---	3/6/2002	ABH #4 50-60'
731	SL	2821	<0 08	<0.09	---	3/6/2002	ABH #4 60-70'
732	SL	2822	<0 07	<0.08	---	3/6/2002	ABH #5 0-25' (795' ELEVATION)
733	SL	2823	0 1	<0.1	---	3/6/2002	ABH #5 25-30'
734	SL	2824	<0 15	<0.09	---	3/6/2002	ABH #5 30-40'
735	SL	2825	<0 06	<0 06	---	3/6/2002	ABH #5 40-50'
736	SL	2826	<0.1	<0.1	---	3/6/2002	ABH #5 50-60'
737	SL	2827	<0.05	<0 06	---	3/6/2002	ABH #5 60-70'
738	SL	2828	<0.1	<0.1	---	3/6/2002	ABH #5 0-25' QC SAMPLE (795' ELEVATION)
739	GW	2829	<1.1 E-8	<1.3 E-8	<305 pCi/L	3/6/2002	SRW #2 / SAMPLE #1 / 1ST 50 GAL
740	GW	2830	<1.43 E-8	<1.34 E-8	<286 pCi/L	3/6/2002	SRW #2 / SAMPLE #2 / 2ND 50 GAL.
741	GW	2831	<1.12 E-8	<1.05 E-8	<304 pCi/L	3/6/2002	SRW #2 / SAMPLE #3 / 3RD 50 GAL.
742	GW	2832	<1.5 E-8	<1.2 E-8	<305 pCi/L	3/6/2002	SRW #2 / SAMPLE #3 / 3RD 50 GAL. QC SAMPLE
743	GW	2833	<1.4 E-8	<1.3 E-8	<306 pCi/L	3/6/2002	SRW #2 / SAMPLE #4 / 4TH 50 GAL
744	GW	2834	<1.04 E-8	<1.3 E-8	<286 pCi/L	3/6/2002	SRW #2 / SAMPLE #5 / 5TH 50 GAL.
745	GW	2835	<1.4 E-8	<1.3 E-8	<305 pCi/L	3/6/2002	SRW #2 / SAMPLE #6 / 6TH 50 GAL.
746	GW	2836	<1.2 E-8	<1.1 E-8	<305 pCi/L	3/6/2002	SRW #2 / SAMPLE #7 / 7TH 50 GAL.
747	GW	2837	<1.2 E-8	<1.3 E-8	<286 pCi/L	3/6/2002	SRW #2 / SAMPLE #8 / 8TH 50 GAL.
748	GW	2838	<1.1 E-8	<1.2 E-8	<300 pCi/L	3/6/2002	PRW #3 / SAMPLE #1/ 1ST 50 GAL.
749	GW	2839	<1.4 E-8	<1.4 E-8	<339 pCi/L	3/6/2002	PRW #3 / SAMPLE #2 / 2ND 50 GAL.
750	GW	2840	<1.5 E-8	<1.4 E-8	<300 pCi/L	3/6/2002	PRW #3 / SAMPLE #3 / 3RD 50 GAL.
751	GW	2841	<1.0 E-8	<1.1 E-8	<329 pCi/L	3/6/2002	PRW #3 / SAMPLE #4 / 4TH 50 GAL
752	GW	2842	<1.3 E-8	<1.24 E-8	<300 pCi/L	3/6/2002	PRW #3 / SAMPLE #5 / 5TH 50 GAL.
753	GW	2843	<1.03 E-8	<1.05 E-8	<320 pCi/L	3/6/2002	PRW #3 / SAMPLE #6 / 6TH 50 GAL.
754	WW	2844	<6 5 E-9	<1.4 E-8	<305 pCi/L	3/6/2002	ABH #29
755	WW	2845	<6 0 E-9	<1.4 E-8	<305 pCi/L	3/6/2002	ABH #25
756	GW	2846	<1.31 E-8	<1.33 E-8	<320 pCi/L	3/6/2002	PRW #3 / SAMPLE #7 / 7TH 50 GAL.
757	GW	2847	<1.23 E-8	<1.18 E-8	<320 pCi/L	3/6/2002	PRW #3 / SAMPLE #8 / 8TH 50 GAL.
758	GW	2848	<1.3 E-8	<1.4 E-8	<286 pCi/L	3/6/2002	SRW #3 / SAMPLE #1 / 1ST 50 GAL.
759	GW	2849	<1.42 E-8	<1.45 E-8	<320 pCi/L	3/6/2002	SRW #3 / SAMPLE #2 / 2ND 50 GAL
760	GW	2850	<1.48 E-8	<1.33 E-8	<320 pCi/L	3/6/2002	SRW #3 / SAMPLE #3 / 3RD 50 GAL.
761	GW	2851	<1.28 E-8	<1.25 E-8	<320 pCi/L	3/6/2002	SRW #3 / SAMPLE #4 / 4TH 50 GAL
762	GW	2852	<1.43 E-8	<1.45 E-8	<304 pCi/L	3/6/2002	SRW #3 / SAMPLE #5 / 5TH 50 GAL
763	GW	2853	<1.6 E-8	<1.34 E-8	<300 pCi/L	3/6/2002	SRW #3 / SAMPLE #5 / 5TH 50 GAL. QC
764	GW	2854	<1.36 E-8	<1.38 E-8	<300 pCi/L	3/6/2002	SRW #3 / SAMPLE #6 / 6TH 50 GAL.

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
765	GW	2855	<1.12 E-8	<1.15 E-8	<304 pCi/L	3/6/2002	SRW #3 / SAMPLE #7 / 7TH 50 GAL.
766	GW	2856	<1.4 E-8	<1.3 E-8	<304 pCi/L	3/6/2002	SRW #3 / SAMPLE #8 / 8TH 50 GAL.
767	SL	2864	0.7	<0 1	---	3/6/2002	OBSERVATION WELL 0-4 B WELL SURFACE (795' ELEVATION)
768	SL	2865	0.9	<0.05	---	3/6/2002	OBSERVATION WELL 0-4 B 5'
769	SL	2866	0 68	<0.149	---	3/6/2002	OBSERVATION WELL 0-4 B 10'
770	SL	2867	<0.14	<0.13	---	3/6/2002	OBSERVATION WELL 0-4 B 15'
771	SL	2868	<0.13	<0.14	---	3/6/2002	OBSERVATION WELL 0-4 B 20'
772	SL	2873	<0.09	<0.11	---	3/7/2002	OBSERVATION WELL 04-B WELL 20-30'
773	SL	2874	<0.11	<0.13	---	3/7/2002	OBSERVATION WELL 04-B WELL 30-40'
774	SL	2875	<0.09	<0.1	---	3/7/2002	OBSERVATION WELL 04-B WELL 40-50'
775	SL	2876	<0.05	<0 06	---	3/7/2002	OBSERVATION WELL 04-B WELL 50-60'
776	SL	2877	<0 09	<0.09	---	3/7/2002	OBSERVATION WELL 04-B WELL 60-71'
777	GW	2878	<1.2 E-8	<1.3 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 1ST 50 GAL.
778	GW	2879	<1.02 E-8	<1.16 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 2ND 50 GAL.
779	GW	2880	<1.36 E-8	<1.01 E-8	<304 pCi/L	3/7/2002	N. CV YARD SRW #4 / 3RD 50 GAL.
780	GW	2881	<9.1 E-9	<9.8 E-9	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 4TH 50 GAL.
781	GW	2882	<8.56 E-9	<1.03 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 5TH 50 GAL.
782	GW	2883	<9.76 E-9	<1.05 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 6TH 50 GAL.
783	GW	2884	<1.1 E-8	<1.14 E-8	<329 pCi/L	3/7/2002	N CV YARD SRW #4 / 7TH 50 GAL.
784	GW	2885	<8.29 E-9	<1.0 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 8TH 50 GAL.
785	GW	2886	<1.33 E-8	<1 42 E-8	<320 pCi/L	3/7/2002	N. CV YARD SRW #4 / 8TH 50 GAL. QC SAMPLE
786	GW	2887	<1.14 E-8	<1.3 E-8	<286 pCi/L	3/7/2002	N. CV YARD PRW #2 / 1ST 50 GAL. H2O PUMPED
787	GW	2888	<1.3 E-8	<1.3 E-8	<286 pCi/L	3/7/2002	N. CV YARD PRW #2 / 2ND 50 GAL. H2O PUMPED
788	GW	2889	<1.47 E-8	<1.28 E-8	<329 pCi/L	3/7/2002	N. CV YARD PRW #2 / 3RD 20 GAL. H2O PUMPED
789	GW	2890	<1 38 E-8	<1.38 E-8	<286 pCi/L	3/7/2002	N. CV YARD PRW #2 / 4TH 50 GAL. H2O PUMPED
790	GW	2891	<1.14 E-8	<1.1 E-8	<329 pCi/L	3/7/2002	N. CV YARD PRW #2 / 5TH 50 GAL. H2O PUMPED
791	GW	2892	<1 32 E-8	<1.25 E-8	<329 pCi/L	3/7/2002	N. CV YARD PRW #2 / 6TH APPROX. 20 GAL. H2O PUMPED
792	GW	2893	<1 4 E-8	<1.5 E-8	<286 pCi/L	3/7/2002	N. CV YARD PRW #2 / 7TH 50 GAL. H2O PUMPED
793	GW	2894	<1.1 E-8	<1.3 E-8	<286 pCi/L	3/7/2002	N. CV YARD PRW #2 / 8TH 50 GAL. H2O PUMPED
794	GW	2895	<1.2 E-8	<1.11 E-8	<330 pCi/L	3/7/2002	N. CV YARD PRW #4 / 1ST 50 GAL. SAMPLE
795	GW	2896	<1 4 E-8	<1.3 E-8	<304 pCi/L	3/7/2002	N. CV YARD PRW #4 / 2ND 50 GAL. SAMPLE
796	WW	2897	<1.36 E-8	<1.14 E-8	<300 pCi/L	3/8/2002	ABH #29
797	WW	2898	<1.3 E-8	<1.4 E-8	<320 pCi/L	3/8/2002	ABH #25
798	SL	2899	<0 05	<0 06	---	3/8/2002	OBSERVATION WELL 01-A 0' TO 5' (795' ELEVATION)
799	SL	2900	<0.07	<0.08	---	3/8/2002	OBSERVATION WELL 01-A 5' TO 18'
800	SL	2901	<0 06	<0 07	---	3/8/2002	OBSERVATION WELL 01-A 18' TO 22'
801	SL	2902	<0 04	<0.05	---	3/8/2002	OBSERVATION WELL 01-B 0' TO 5' (795' ELEVATION)

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
802	SL	2903	<0.05	<0.05	---	3/8/2002	OBSERVATION WELL 01-B 5'TO 10'
803	SL	2904	<0.1	<0.1	---	3/8/2002	OBSERVATION WELL 01-B 10' TO 15'
804	SL	2905	<0.07	<0 09	---	3/8/2002	OBSERVATION WELL 01-B 15' TO 20'
805	SL	2906	<0.1	<0.1	---	3/8/2002	OBSERVATION WELL 01-B 20' TO 30'
806	SL	2907	<0 05	<0.07	---	3/8/2002	OBSERVATION WELL 01-B 30' TO 40'
807	SL	2908	<0 062	<0.06	---	3/8/2002	OBSERVATION WELL 01-B 40' TO 56'
808	WW	2909	<9.2 E-9	<9 6 E-9	<300 pCi/L	3/8/2002	ABH#29
809	WW	2910	<1.14 E-8	<1.19 E-8	<300 pCi/L	3/8/2002	ABH#25
810	GW	2911	<8.2 E-9	<1.1 E-8	<303 pCi/L	3/11/2002	N. CV YARD SRW #1 1ST 50 GAL.
811	GW	2912	<1.03 E-8	<1.2 E-8	<300 pCi/L	3/11/2002	N. CV YARD SRW #1 2ND 50 GAL.
812	GW	2913	<9 32 E-9	<1.0 E-8	<320 pCi/L	3/11/2002	N. CV YARD SRW #1 3RD 50 GAL.
813	GW	2914	<1.14 E-8	<1.15 E-8	<329 pCi/L	3/11/2002	N CV YARD SRW #1 4TH 50 GAL.
814	GW	2915	<9 7 E-9	<8 98 E-9	<304 pCi/L	3/11/2002	N. CV YARD SRW #1 5TH 50 GAL.
815	GW	2916	<1.4 E-8	<1.3 E-8	<300 pCi/L	3/11/2002	N CV YARD SRW #1 6TH 50 GAL.
816	GW	2917	<1.37 E-8	<1.14 E-8	<329 pCi/L	3/11/2002	N. CV YARD SRW #1 7TH 50 GAL
817	GW	2918	<1.36 E-8	<1.31 E-8	<320 pCi/L	3/11/2002	N CV YARD SRW #1 8TH 50 GAL.
818	SL	2919	<0.08	<0 078	---	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2A 0-5' (795' ELEVATION)
819	SL	2920	<0.086	<0.094	---	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2A 5-10'
820	SL	2921	<0 073	<0.076	---	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2A 10-15'
821	SL	2922	<0 067	<0.077	---	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2A 15-24'
822	SL	2923	0.092	<0 11	---	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2B 0-5' (796' ELEVATION)
823	GW	2924	<1.3 E-8	<1.24 E-8	<330 pCi/L	3/11/2002	N. CV YARD PRW #4 3RD 50 GAL. SAMPLE
824	GW	2925	<1.3 E-8	<1.4 E-8	<330 pCi/L	3/11/2002	N. CV YARD PRW #4 4TH 50 GAL. SAMPLE
825	GW	2926	<1.2 E-8	<1 1 E-8	<300 pCi/L	3/11/2002	N CV YARD PRW #4 5TH 50 GAL. SAMPLE
826	GW	2927	<1.4 E-8	<1.3 E-8	<330 pCi/L	3/11/2002	N. CV YARD PRW #4 6TH 50 GAL. SAMPLE
827	GW	2928	<1.3 E-8	<1.4 E-8	<312 pCi/L	3/11/2002	N CV YARD PRW #4 7TH 50 GAL. SAMPLE
828	GW	2929	<1.02 E-8	<9.16 E-9	<299 pCi/L	3/11/2002	N CV YARD PRW #4 8TH 50 GAL. SAMPLE
829	GW	2930	<9.0 E-9	<1.1 E-8	<330 pCi/L	3/11/2002	N CV YARD PRW #4 8TH 50 GAL. SAMPLE QC
830	SL	2931	<0 09	<0 104	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 5-10'
831	SL	2932	<0 08	<0 094	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 10-15'
832	SL	2933	<0 072	<0 084	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 15-20'
833	SL	2934	<0 091	<0.095	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 20-30'
834	SL	2935	<0.04	<0.041	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 30-40'

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-30 (Cont'd)
CV Backfill & Subsurface Sample Results (see Figs. 2-31 & 2-32)

	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
835	SL	2936	<0.072	<0.082	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 40-50'
836	SL	2937	0.11	<0.091	---	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 50-57'
837	SL	2938	0.12	<0.12	---	3/14/2002	N. CV YARD PRW #1 0-5' (795' ELEVATION)
838	SL	2939	<0.1	<0.1	---	3/14/2002	N. CV YARD PRW #1 5-10'
839	SL	2940	<0.125	<0.11	---	3/14/2002	N. CV YARD PRW #1 10-15'
840	SL	2941	<0 03	<0.03	---	3/14/2002	N. CV YARD PRW #1 15-20'
841	SL	2942	<0 08	<0 08	---	3/14/2002	N. CV YARD PRW #1 30-40'
842	SL	2943	<0.07	<0 07	---	3/14/2002	N. CV YARD PRW #1 40-50'
843	SL	2944	<0.1	<0.1	---	3/14/2002	N. CV YARD PRW #1 50-60'
844	SL	2945	<0.07	<0.07	---	3/14/2002	N. CV YARD PRW #1 60-70'
845	SL	2946	<0.04	<0 05	---	3/14/2002	N. CV YARD PRW #1 70-80'
846	SL	2947	<0.1	<0.1	---	3/14/2002	N. CV YARD PRW #1 80-90'
847	SL	2948	<0.1	<0.1	---	3/14/2002	N. CV YARD PRW #1 90-102'
848	SL	2949	<0.1	<0.1	---	3/14/2002	N. CV YARD NRC ANGLE WELL 0-5' (795' ELEVATION)
849	SL	2950	<0.063	<0.077	---	3/14/2002	N. CV YARD NRC ANGLE WELL 5-10'
850	SL	2951	<0.056	<0.065	---	3/14/2002	N. CV YARD NRC ANGLE WELL 10-15'
851	SL	2952	<0.07	<0.07	---	3/14/2002	N. CV YARD NRC ANGLE WELL 15-20'
852	SL	2953	<0.1	<0.11	---	3/14/2002	N. CV YARD NRC ANGLE WELL 20-30'
853	SL	2954	<0.08	<0.11	---	3/14/2002	N. CV YARD NRC ANGLE WELL 30-40'
854	SL	2955	<0 083	<0.1	---	3/14/2002	N. CV YARD NRC ANGLE WELL 40-46'
855	SL	2956	<0.05	<0.06	---	3/15/2002	N.C.V. YARD ABH NO. 27 60' TO 70'
856	SL	2957	<0.13	<0.13	---	3/15/2002	N C.V. YARD ABH NO 27 70' TO 80'
857	GW	2960	<1.36 E-8	<1.34 E-8	<343 pCi/L	3/20/2002	N. CV YARD NRC ANGLE WELL INITIAL SAMPLE

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-31
CV Backfill & Subsurface Positive Sample Results (see Figs. 2-31 & 2-32)

No.	TYPE	SAMPLE No.	Cs-137	Co-60	H-3	SAMPLE DATE	SAMPLE DESCRIPTION
1	WA	2417	1.1 E-8	1.3 E-8	<312 pCi/L	1/17/2002	ABH #25 AFTER DRILLING
2	GW	2559	1.03 E-8	<1.24 E-8	<306 pCi/L	2/6/2002	N. C.V. YARD. A.B.H. #25
3	SL	2865	0.9	<0.05	----	3/6/2002	OBSERVATION WELL 0-4 B 5'
4	SL	1966	0.7	<0.12	----	11/6/2001	0-10' N CV YARD GC HOLE #56 (812' ELEVATION)
5	SL	2864	0.7	<0.1	----	3/6/2002	OBSERVATION WELL 0-4 B WELL SURFACE (795' ELEVATION)
6	SL	2866	0.68	<0.149	----	3/6/2002	OBSERVATION WELL 0-4 B 10'
7	SL	2649	0.6	<0.1	----	2/13/2002	ANNULUS WELL A-2 5-10'
8	SL	2785	0.3	<0.1	----	2/26/2002	ABH #1 W. CV ANNULUS 15-20'
9	SL	2784	0.25	<0.14	----	2/26/2002	ABH #1 W. CV ANNULUS 10-15'
10	SL	2163	0.2	<0.08	----	11/19/2001	SR-2 WELL 0-10' (812' ELEVATION)
11	SL	2554	0.18	<0.1	----	2/6/2002	E. C.V. YARD. OW3B. 10' TO 15'.
12	SL	1958	0.17	<0.06	----	11/6/2001	0-10' N. CV YARD GC HOLE #49 (812' ELEVATION)
13	SL	2479	0.17	<0.1	----	1/22/2002	ABH #25 N. CV ANNULUS 70-80'
14	SL	2631	0.17	<0.1	----	2/12/2002	W. CV YARD ABH #8 50-60'
15	SL	2490	0.13	<0.09	----	1/22/2002	N. CV YARD IN ANNULUS ABH #24 50-60'
16	SL	2664	0.13	<0.08	----	2/15/2002	W.C.V. YARD ABH NO.10 40'TO 50'
17	SL	2817	0.13	<0.08	----	3/6/2002	ABH #4 25-30'
18	SL	2555	0.12	<0.1	----	2/6/2002	E. C.V. YARD. OW3B. 15' TO 20'.
19	SL	2776	0.12	<0.11	----	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 10-15'
20	SL	2938	0.12	<0.12	----	3/14/2002	N. CV YARD PRW #1 0-5' (795' ELEVATION)
21	SL	2937	0.11	<0.091	----	3/13/2002	N. CV YARD OBSERVATION WELL OW2B 50-57'
22	SL	2634	0.1	<0.1	----	2/12/2002	W. CV YARD ABH #9 10-15'
23	SL	2774	0.1	<0.11	----	2/25/2002	OBSERVATION WELL 0-4A W. CV ANNULUS 0-5' (795' ELEVATION)
24	SL	2786	0.1	<0.08	----	2/26/2002	ABH #1 W. CV ANNULUS 20-30'
25	SL	2823	0.1	<0.1	----	3/6/2002	ABH #5 25-30'
26	SL	2923	0.092	<0.11	----	3/11/2002	N.E. CV YARD OBSERVATION WELL 0-2B 0-5' (796' ELEVATION)
27	SL	2476	0.09	<0.12	----	1/22/2002	ABH #25 N. CV ANNULUS 40-50'
28	SL	2487	0.09	<0.1	----	1/22/2002	N CV YARD IN ANNULUS ABH #24 30-40'
29	SL	2782	0.08	<0.08	----	2/26/2002	ABH #1 W. CV ANNULUS 0-5' (795' ELEVATION)
30	SL	2783	0.07	<0.09	----	2/26/2002	ABH #1 W. CV ANNULUS 5-10'
31	SL	1839	0.06	0.06	----	11/2/2001	10-20' N. CV YARD G.C. HOLE #39
32	SL	1874	0.06	<0.07	----	11/5/2001	30-40' N. CV YARD G.C. HOLE #39
33	SL	2793	0.05	<0.12	----	2/26/2002	ABH #2 W. CV ANNULUS 5-10'
34	SL	2795	0.05	<0.07	----	2/26/2002	ABH #2 W. CV ANNULUS 15-20'
35	SL	2816	0.05	<0.09	----	3/6/2002	ABH #4 0-25' (795' ELEVATION)

NOTE: All water samples are reported in uCi/ml except for H-3 which is reported in pCi/L. Soil samples are in pCi/g.

Table 2-32
SNEC Results of Groundwater Duplicates Split with NRC and ORISE

WELL	SAMPLE DATE	TRITIUM (pCi/L)	Cs-137(pCi/L)	Cs-134(pCi/L)	Co-60(pCi/L)
GEO-5	4/2/02	<308	<14.0	<13.5	<13.2
GEO-8	4/1/02	<308	<13.3	<12.3	<12.3
MW-4	4/2/02	<308	<8.0	<9.3	<8.3
OW-3	4/2/02	<342	<8.3	<9.6	<9.3
OW-3R	4/2/02	<308	<10.9	<10.9	<9.4
OW-4R	4/2/02	<308	<12.2	<12.2	<11.2
OW-5R	4/1/02	<310	<8.7	<9.5	<9.6
OW-6	4/2/02	<308	<12.4	<10.9	<12.0
OW-7R	4/2/02	<308	<13.4	<13.0	<12.4
NRC ANGLE WELL	4/2/02	<308	<7.9	<8.6	<8.6

See reference 2-34 for NRC/ORISE data

Table 2-33
CV Steel Liner Activation Sample Results

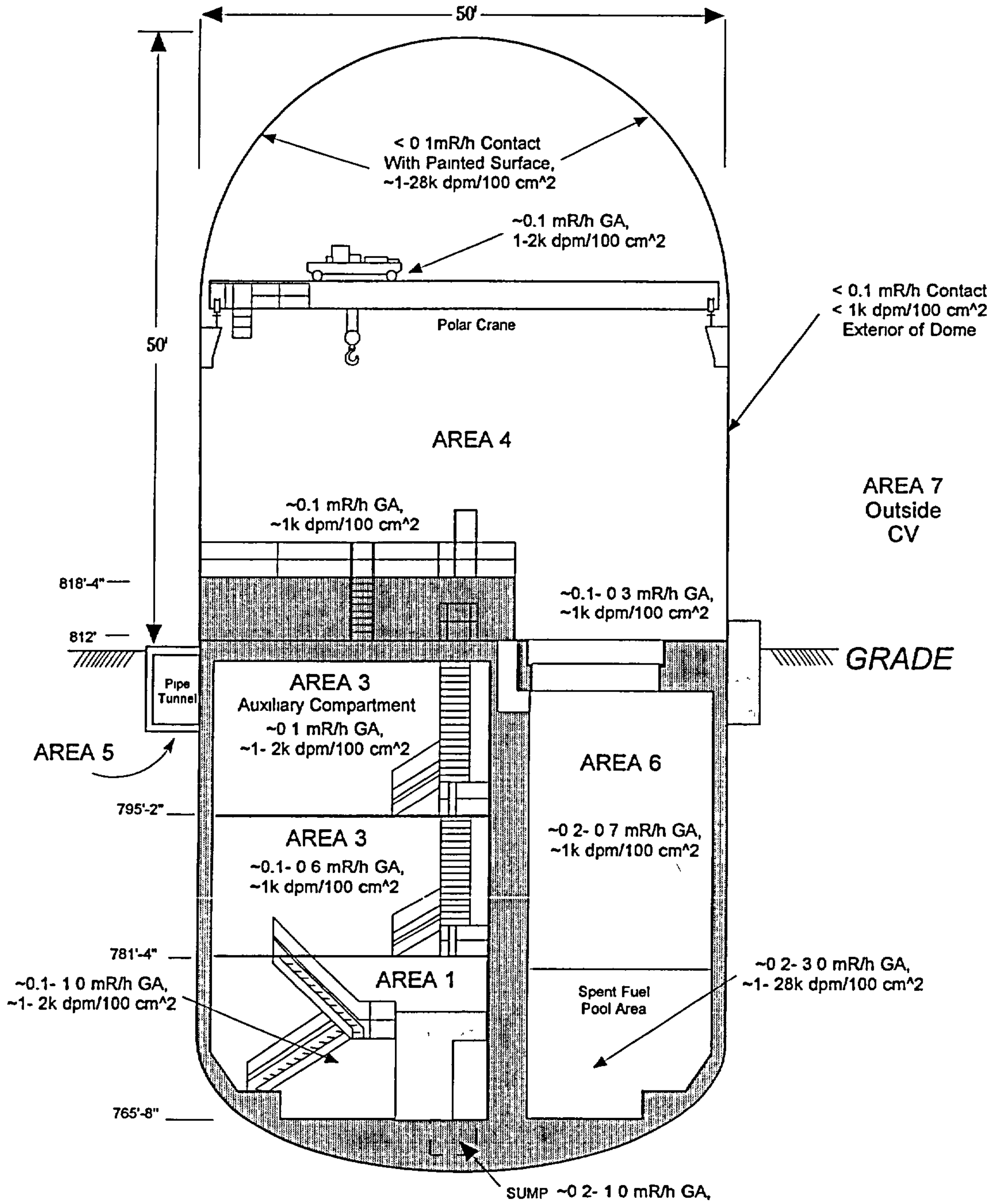
Location #	Sample No.	Co-60 (pCi/g)	Ni-59 (pCi/g)	Ni-63 (pCi/g)	Cs-137 (pCi/g)	Grams
1	SXST3067-1	< 3.39	< 261.6	< 30.35	**16.9**	2.10
2	SXST3068-2	< 2.85	< 25.89	< 10.38	**59**	2.53
3	SXST3069-3	< 1.49	< 85.12	< 10.96	**2.3**	4.23
4	SXST3070-4	**2.64**	< 72.84	**20.23**	**180**	2.75
5	SXST3071-5	**3.43**	< 182.82	< 27.11	**9.26**	1.51
6	SXST3072-6	< 0.95	< 61.62	< 12.8	**1.12**	6.68
7	SXST3073-7	< 1.79	< 33.15	< 3.8	**3.03**	2.75
8	SXST3074-8	< 1.96	< 31.51	< 5.25	**3.36**	3.16
9	SXST3075-9	**2.06**	< 9.21	< 4.46	**1.37**	3 59
10	SXST3067-10	**2.78**	< 24.35	< 8.54	**24.8**	3.25
11	SXST3077-11	< 1.17	< 32.61	< 4.84	< 1.16	4.71
12	SXST3078-12	< 1.11	< 186.79	< 20.46	**2.3**	5 67
13	SXST3079-13	< 2.13	< 38.84	< 4.29	**5.08**	2 20
14	SXST3080-14	< 1.02	< 42.97	< 4.99	**1.9**	4.76
15	SXST3081-15	< 1.91	< 13 2	< 4.02	**3.44**	2.13
16	SXST3082-16	< 1.66	< 37.4	< 4.33	**3.0**	3.49
17	SXST3083-17	< 1.56	< 39.32	< 5.11	< 1.69	3.29
18	SXST3084-18	< 2.29	< 97.43	< 9.46	**2.55**	1.81
19	SXST3085-19	< 1.48	< 41.33	< 5.9	< 1.38	2.80
20	SXST3086-20	< 1.22	< 280.85	< 36.21	< 1.13	5.88
21	SXST3087-21	< 2.12	< 14.65	< 3.89	< 1.45	3 05

Note: See Figure 2-33 for sample locations
The Cs-137 is as a result of surface contamination on the CV steel liner.

Figure 2-1

SNEC FACILITY SITE AREA LOCATIONS
Average Contamination Levels and
General Area Exposure Rates

(All dpm/100 cm^2 values represent smearable activity)

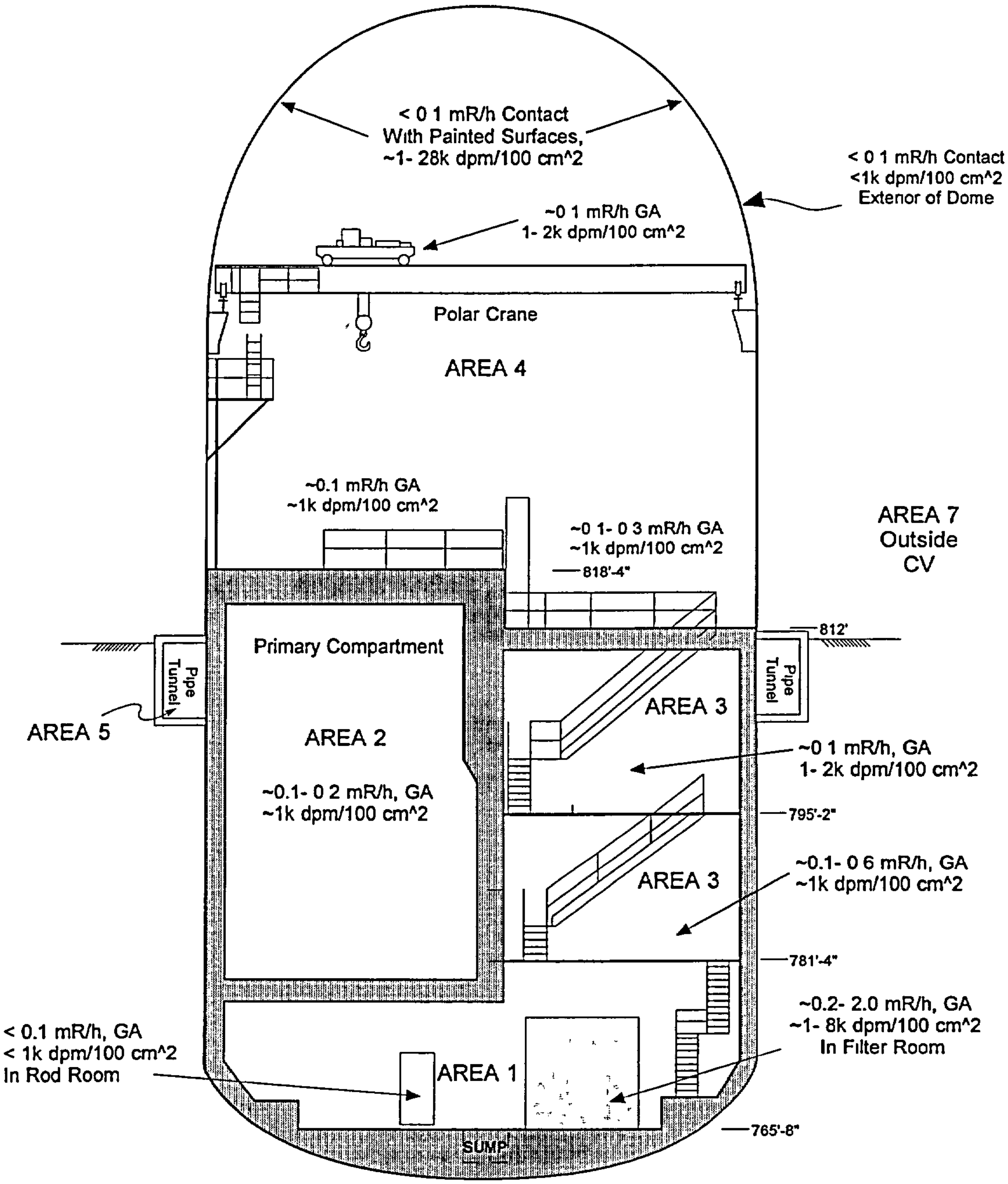


SNEC FACILITY SITE AREA LOCATIONS
Rotary Bridge Crane, Sectional View
(Looking West)

Figure 2-2

SNEC FACILITY SITE AREA LOCATIONS
Average Contamination Levels and General Area Exposure Rates

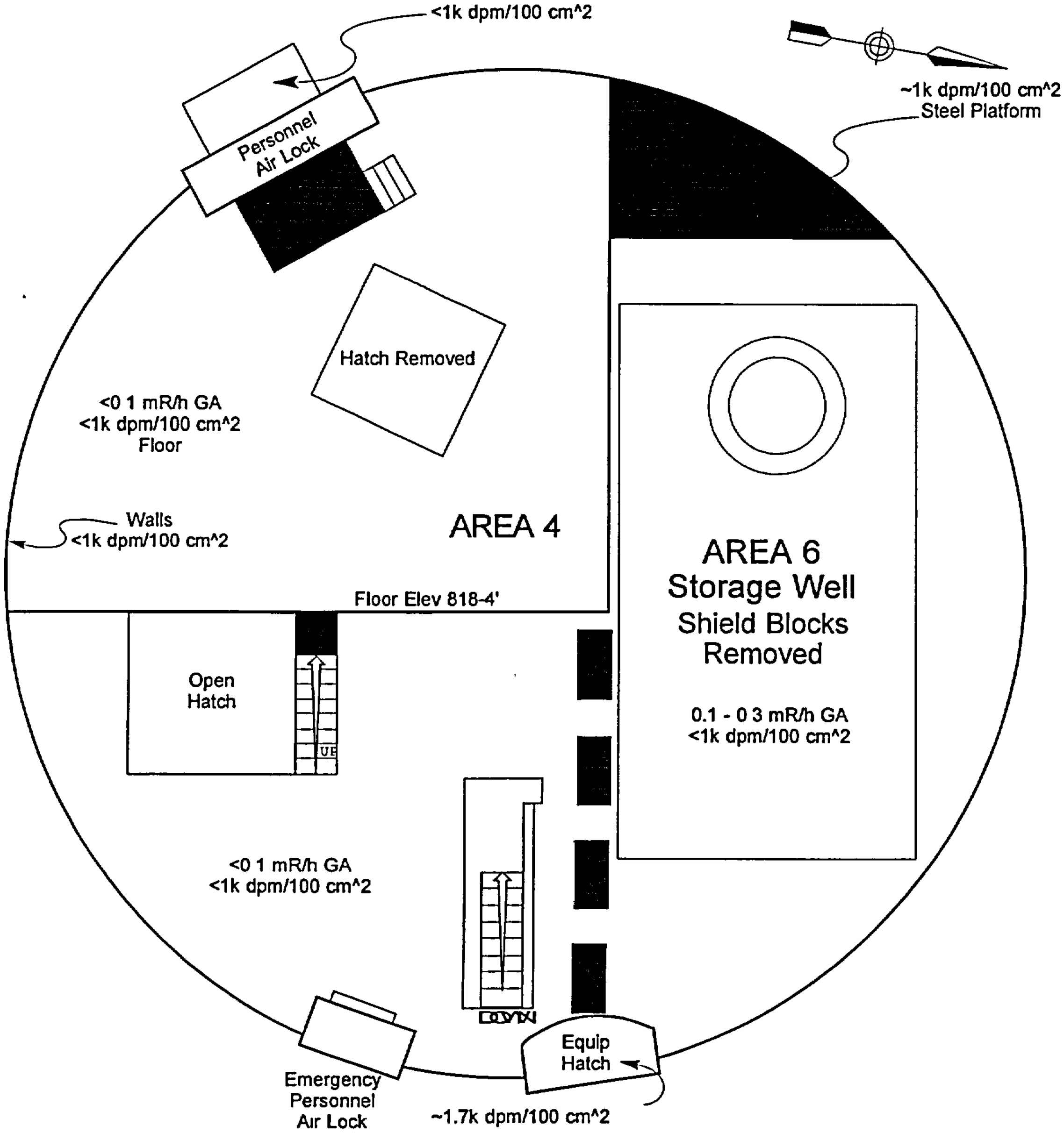
(All dpm/100 cm^2 values represent smearable activity)



SNEC FACILITY AREA LOCATIONS
Containment Vessel, Sectional View
(Looking North)

Figure 2-3

SNEC FACILITY AREA LOCATIONS
Average Contamination Levels and
General Area Exposure Rates

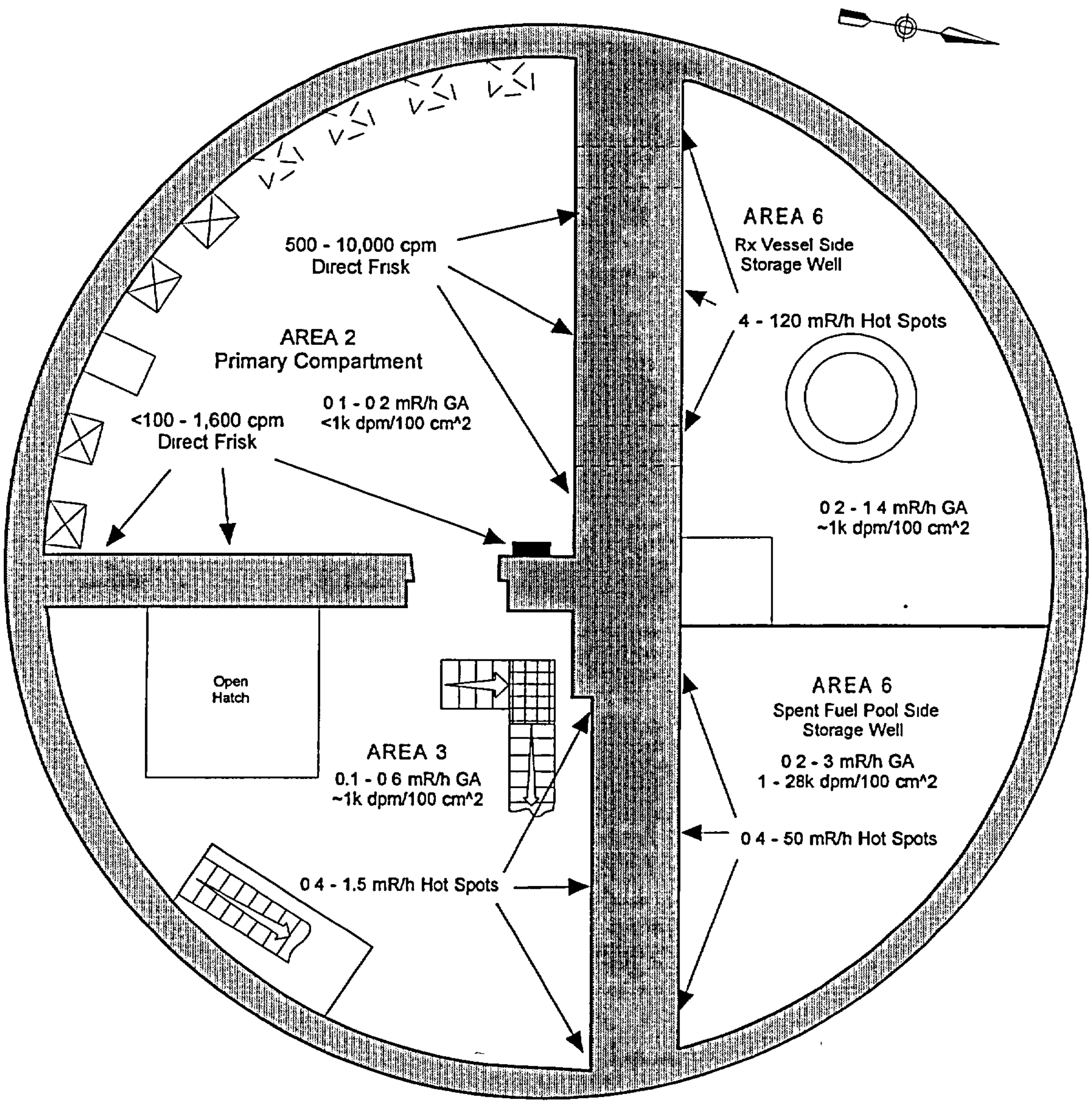


CONTAINMENT VESSEL (CV) -- Plan View Above Operating Floor Elev 812'-0"

(All dpm/100 cm^2 values represent smearable activity)

Figure 2-4

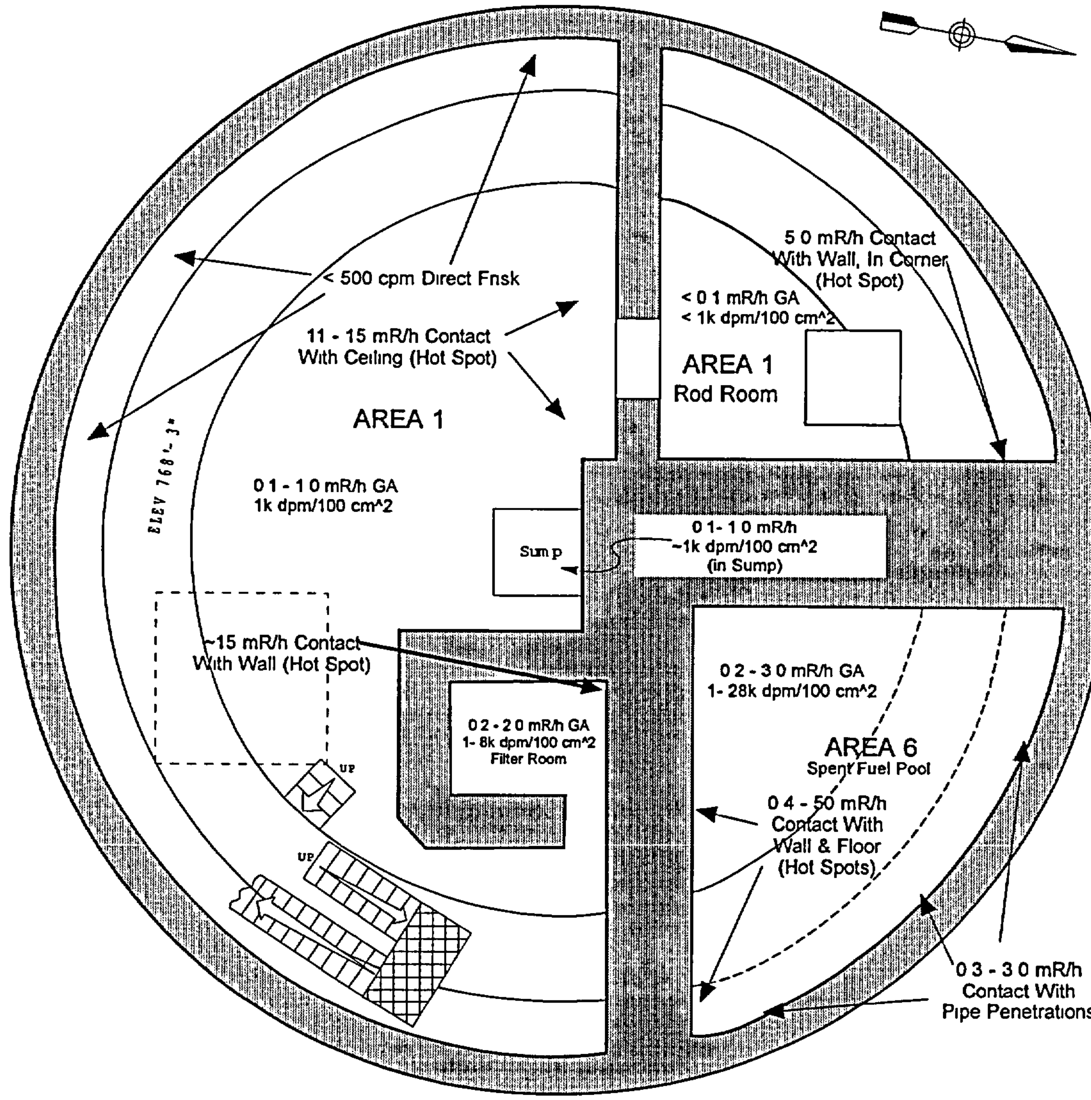
SNEC FACILITY SITE AREA LOCATIONS
Average Contamination Levels and
General Area Exposure Rates



CONTAINMENT VESSEL (CV) -- Areas by Quadrants
Plan Above Operating Floor Elev 781'-4"
(All dpm/100 cm^2 values represent smearable activity)

Figure 2-5

SNEC FACILITY SITE AREA LOCATIONS
Average Contamination Levels and
General Area Exposure Rates



CONTAINMENT VESSEL (CV) -- Areas by Quadrant
Plan Above Operating Floor Elev 765'-8"

(All dpm/100 cm^2 values represent smearable activity)

Figure 2-6

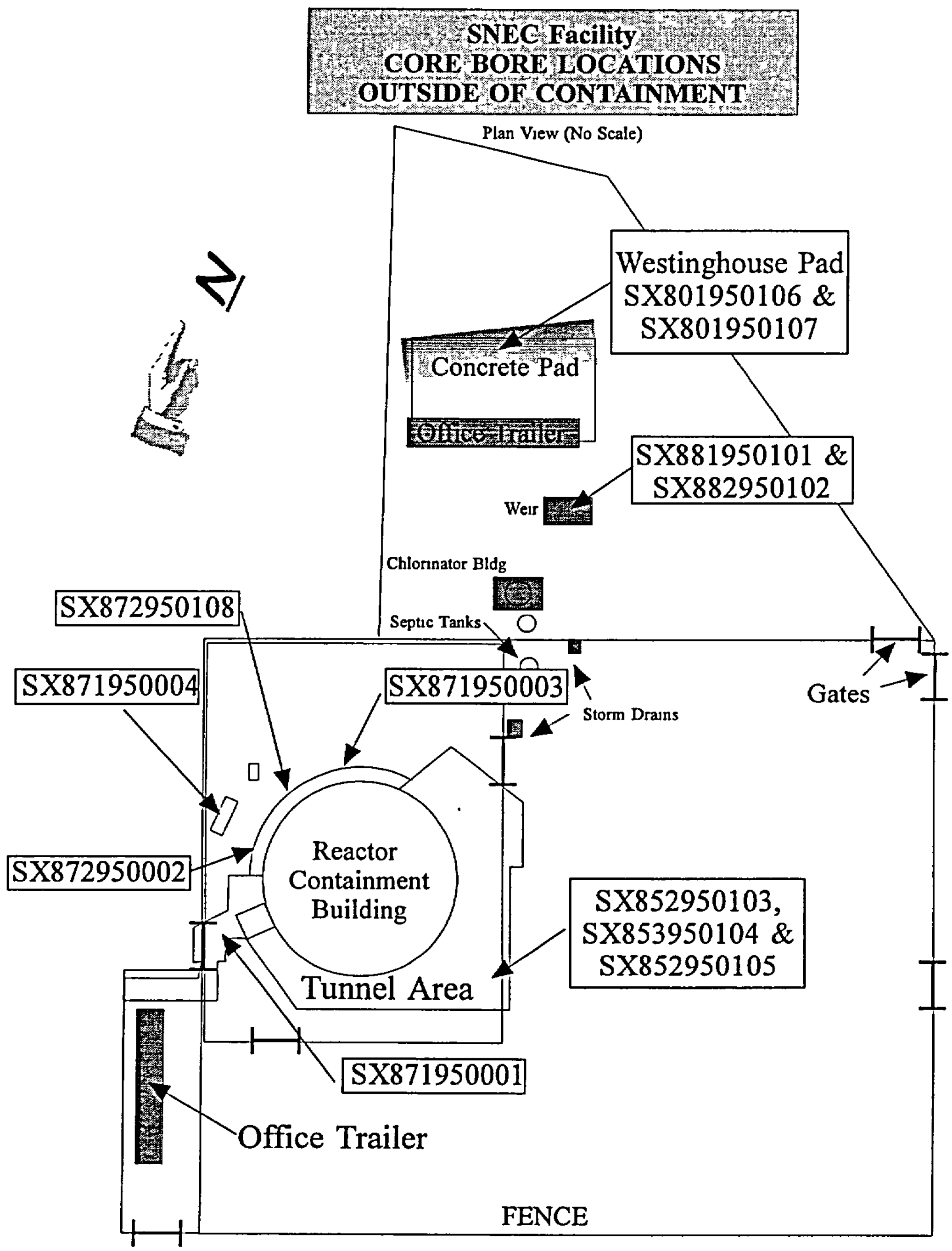
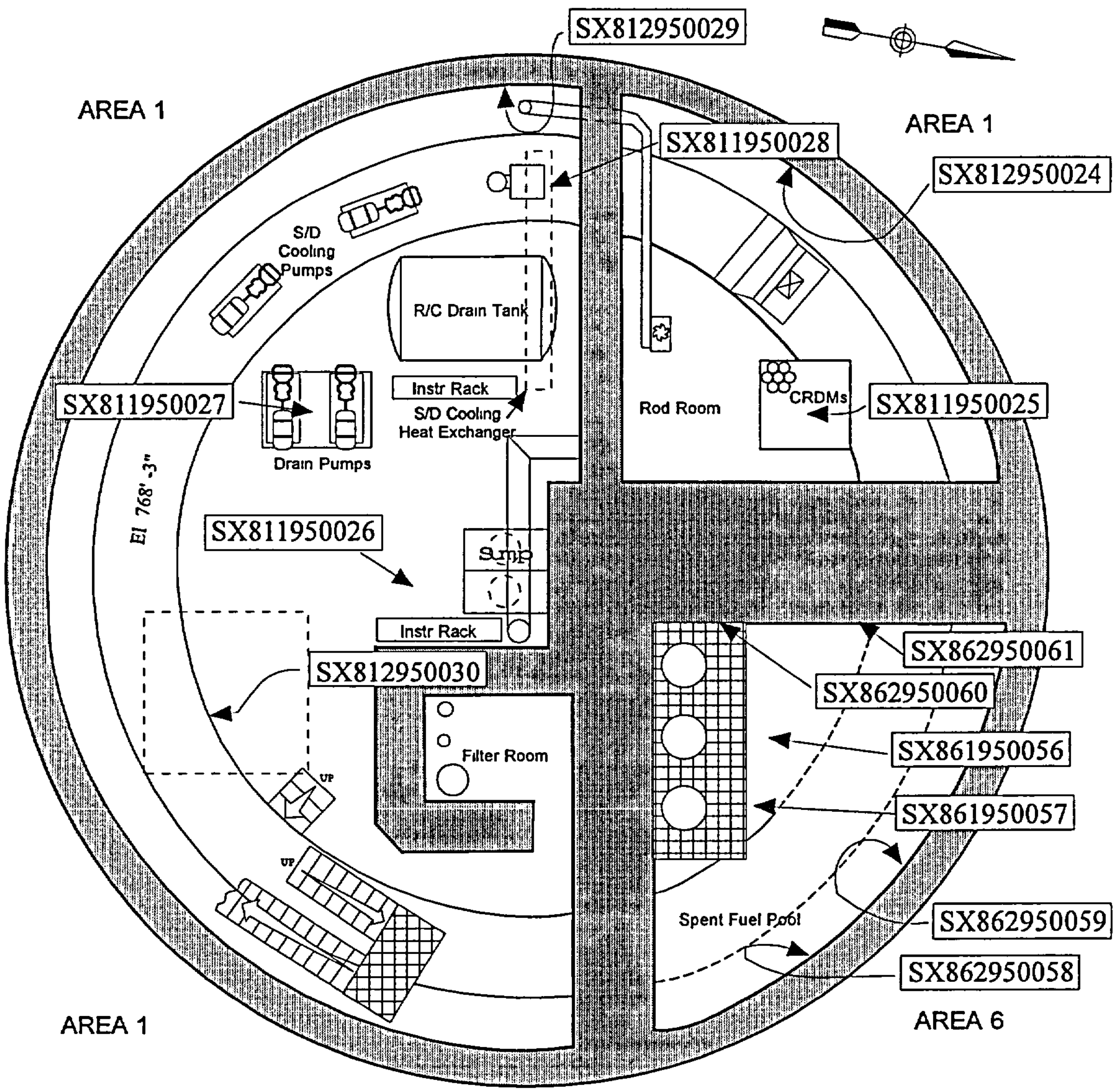

SNEC Facility
CORE BORE LOCATIONS
OUTSIDE OF CONTAINMENT
Plan View (No Scale)
N
Westinghouse Pad
SX801950106 &
SX801950107
Concrete Pad
Office Trailer
SX881950101 &
SX882950102
Weir
Chlorinator Bldg
Septic Tanks
SX872950108
SX871950004
SX871950003
Storm Drains
Gates
SX872950002
Reactor
Containment
Building
SX852950103,
SX853950104 &
SX852950105
Tunnel Area
SX871950001
Office Trailer
FENCE

Figure 2-7

SNEC FACILITY AREA MAP AND
CORE BORE SAMPLE LOCATIONS

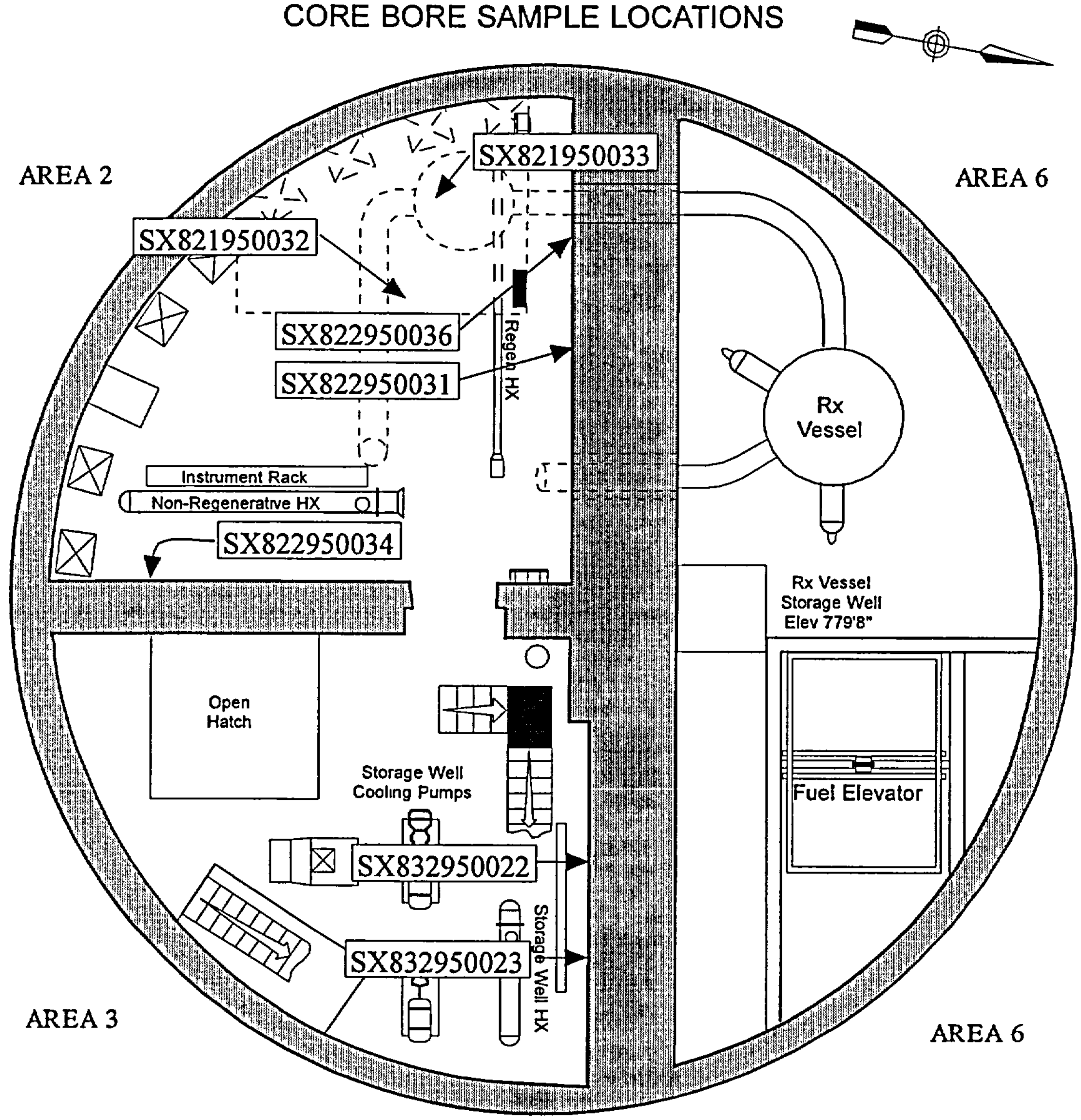


CONTAINMENT VESSEL (CV) -- Areas by Quadrant
Plan Above Operating Floor Elev 765'-8"

NO SCALE

Figure 2-8

SNEC FACILITY AREA MAP AND
CORE BORE SAMPLE LOCATIONS

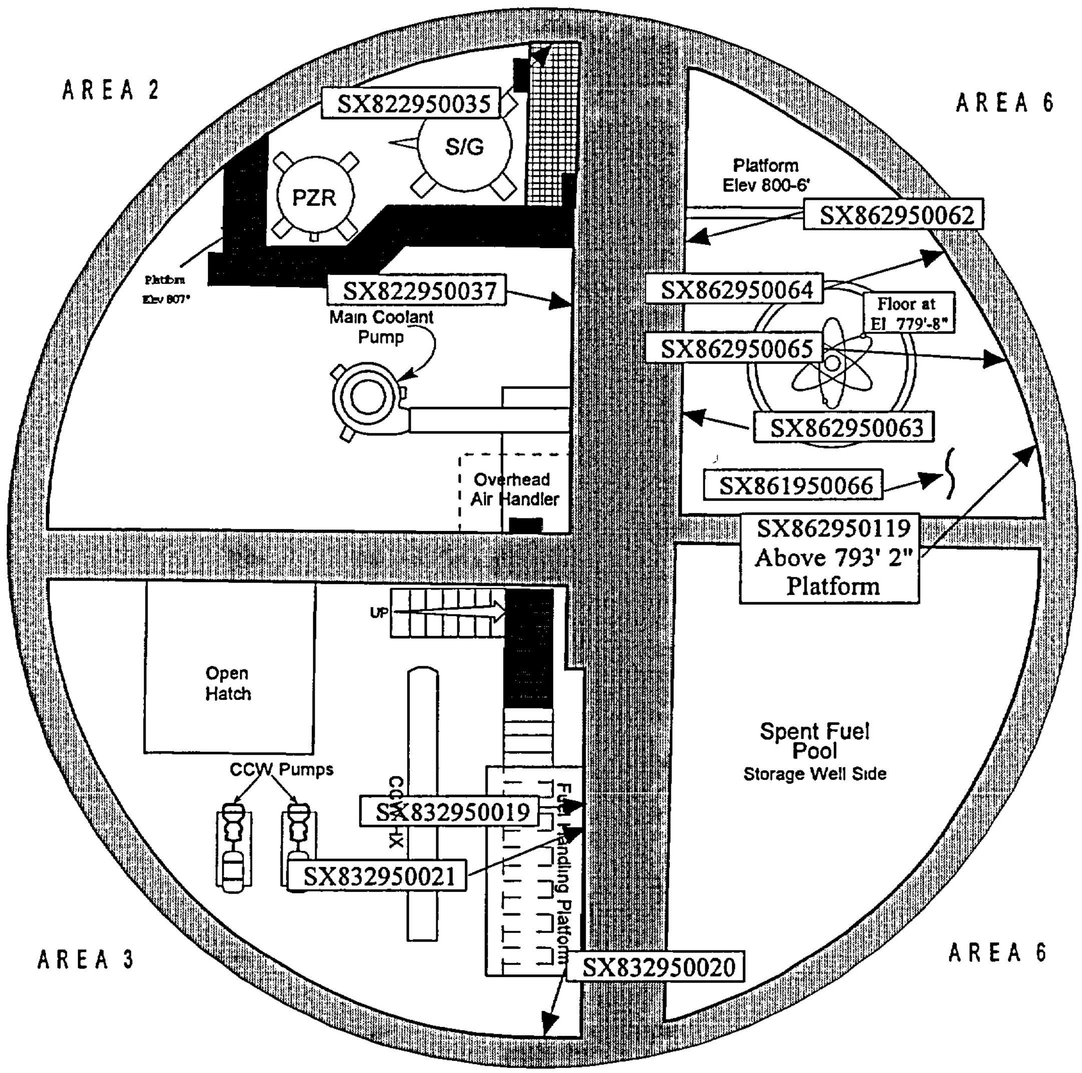


CONTAINMENT VESSEL (CV) -- Areas by Quadrants
Plan Above Operating Floor Elev 781'-4"

NO SCALE

Figure 2-9

SNEC FACILITY AREA MAP AND CORE BORE SAMPLE LOCATIONS

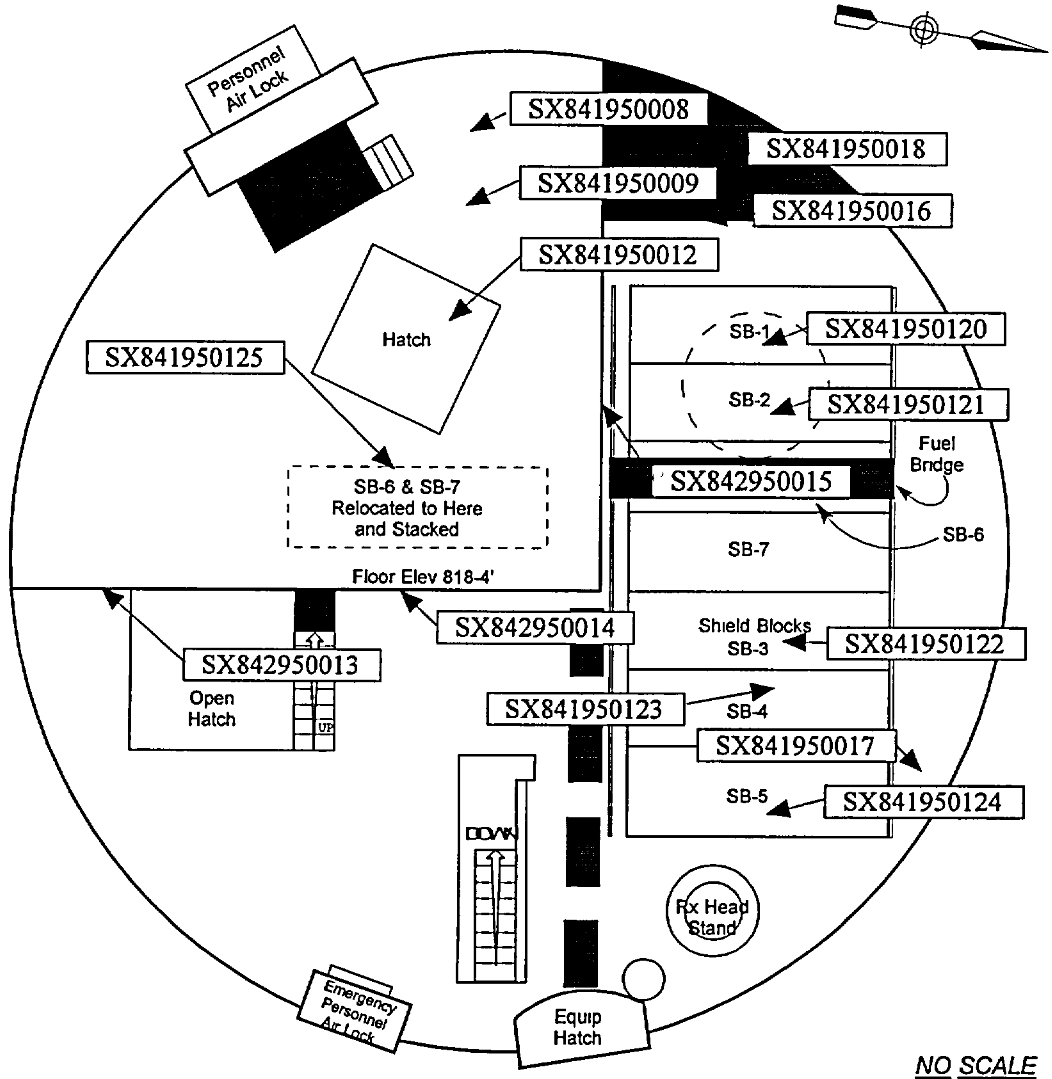


CONTAINMENT VESSEL (CV) -- Areas by Quadrant
Plan Above Operating Floor Elev 795'-2"

NO SCALE

Figure 2-10

SNEC FACILITY AREA MAP AND
CORE BORE SAMPLE LOCATIONS



ALL AREA 4

CONTAINMENT VESSEL (CV) -- Plan View Above
Operating Floor Elev 812'-0"

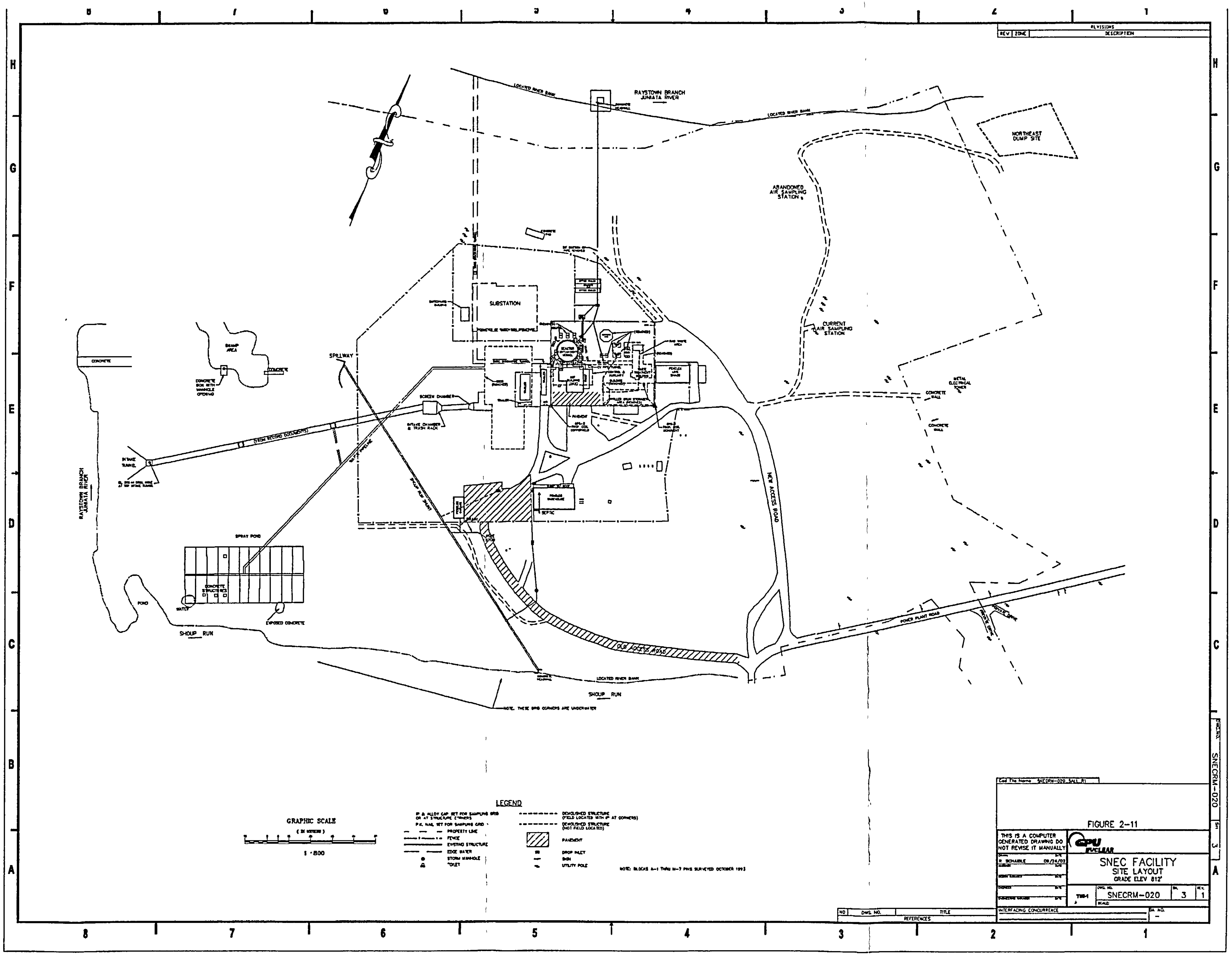
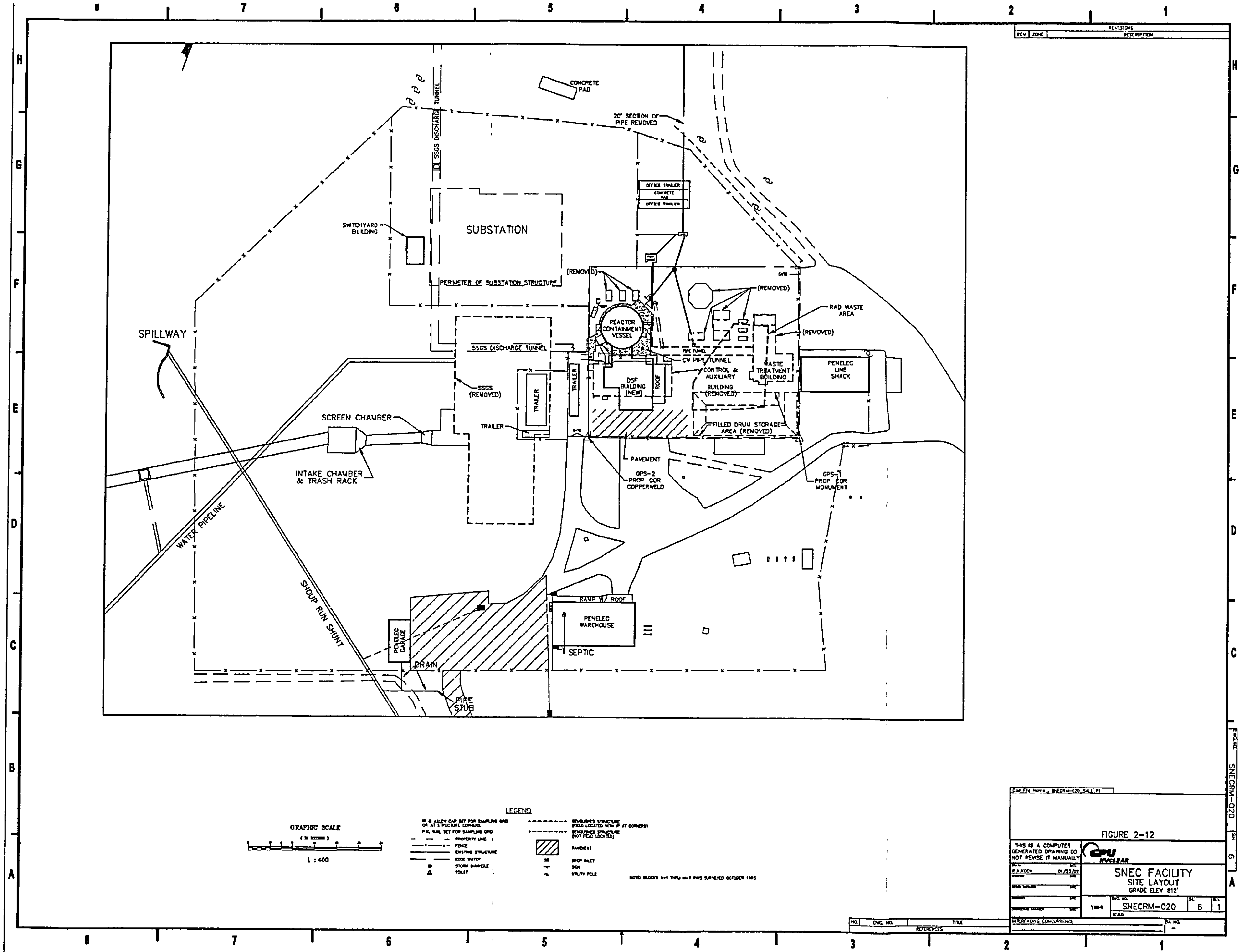


FIGURE 2-11

SNEC FACILITY
SITE LAYOUT
GRADE ELEV 812'


SPILLWAY
CONCRETE PAD
20" SECTION OF PIPE REMOVED
SSGS DISCHARGE TUNNEL
OFFICE TRAILER
CONCRETE PAD
OFFICE TRAILER
SWITCHYARD BUILDING
SUBSTATION
PERIMETER OF SUBSTATION STRUCTURE
(REMOVED)
REACTOR CONTAINMENT VESSEL
RAD WASTE AREA
PIPE TUNNEL
CV PIPE TUNNEL
CONTROL & AUXILIARY BUILDING (REMOVED)
WASTE TREATMENT BUILDING
PENELEC LINE SHACK
DSF BUILDING (NEW)
ROOF
TRAILER
SSGS (REMOVED)
FILLED DRUM STORAGE AREA (REMOVED)
SCREEN CHAMBER
PAVEMENT
GPS-2 PROP COR COPPERWELD
GPS-1 PROP COR MONUMENT
INTAKE CHAMBER & TRASH RACK
WATER PIPELINE
SHOUP RUN SHUNT
RAMP W/ ROOF
PENELEC WAREHOUSE
SEPTIC
PENELEC GARAGE
DRAIN
PIPE STUB
GRAPHIC SCALE
(IN METERS)
1 : 400
LEGEND
PROPERTY LINE
FENCE
EXISTING STRUCTURE
EDGE WATER
STORM MANHOLE
TOILET
PAVEMENT
DROP INLET
SIGN
UTILITY POLE
NOTE: BLOCKS A-1 THRU H-7 PHIS SURVEYED OCTOBER 1993
FIGURE 2-12
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
R.A.KOCH
01/23/02
GPU NUCLEAR
SNEC FACILITY
SITE LAYOUT
GRADE ELEV 812'
SNECRM-020
6
1
REVISIONS
REV
ZONE
DESCRIPTION
REFERENCES
INTERFACING CONCURRENCE

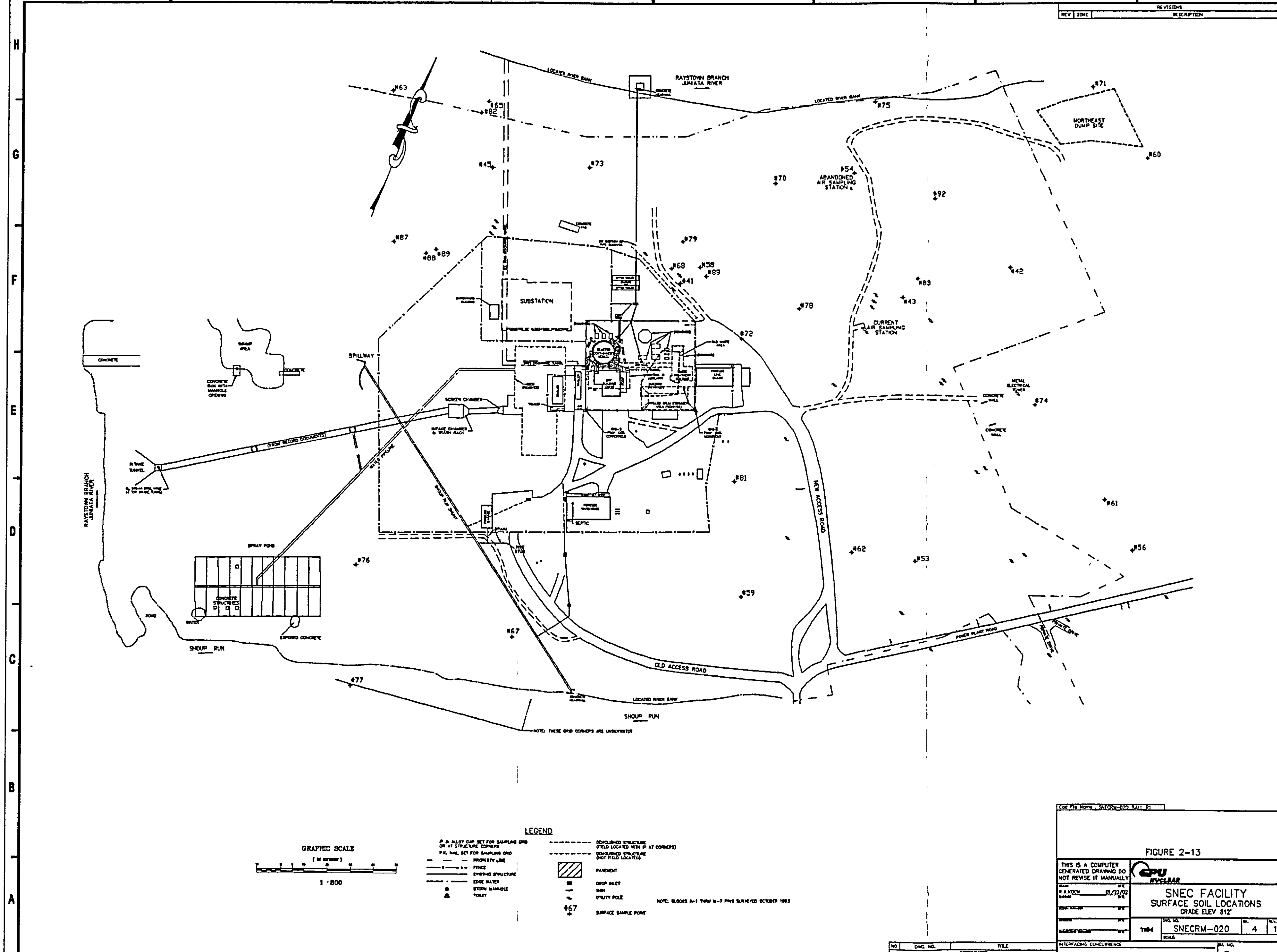
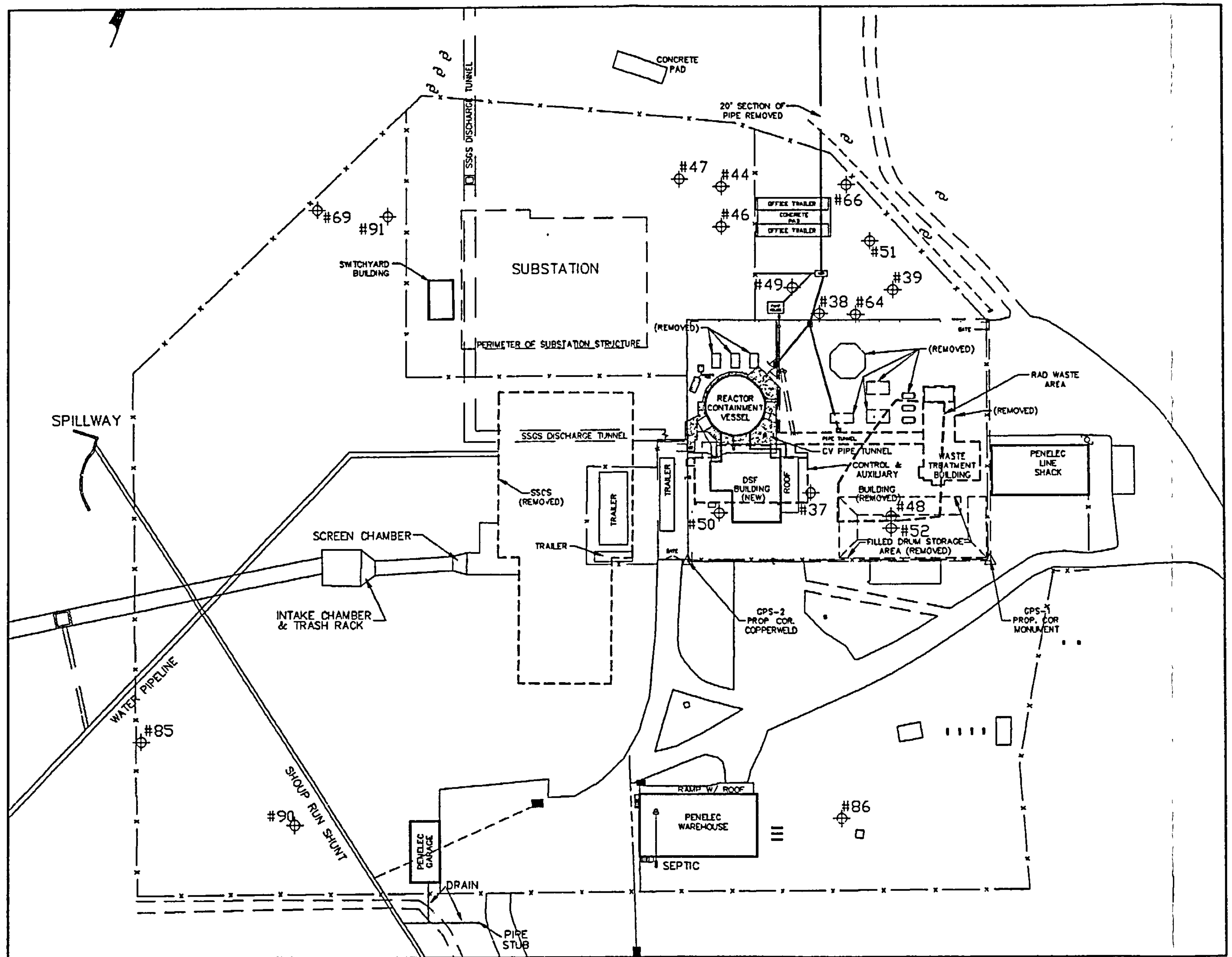

RAYSTOWN BRANCH JUNIATA RIVER
LOCATED RIVER BANK
NORTHEAST DUMP SITE
ABANDONED AIR SAMPLING STATION
CURRENT AIR SAMPLING STATION
SUBSTATION
SPILLWAY
SCREEN CHAMBER
INTAKE CHAMBER & TRASH RACK
SWAMP AREA
CONCRETE
SPRAY POND
CONCRETE STRUCTURES
POND
WATER
EXPOSED CONCRETE
SHOUP RUN
OLD ACCESS ROAD
NEW ACCESS ROAD
POWER PLANT ROAD
SEPTIC
METAL ELECTRICAL TOWER
CONCRETE WALL
NOTE: THESE GRID CORNERS ARE UNDERWATER
#63 #65 #82 #45 #73 #70 #54 #92 #71 #75 #60 #87 #88 #89 #79 #68 #58 #89 #41 #83 #42 #43 #78 #72 #74 #81 #61 #76 #62 #53 #56 #59 #67 #77
LEGEND
GRAPHIC SCALE
1 : 800
NOTE: BLOCKS A-1 THRU H-7 PINS SURVEYED OCTOBER 1993
SURFACE SAMPLE POINT
PROPERTY LINE
FENCE
EXISTING STRUCTURE
EDGE WATER
STORM MANHOLE
TOILET
PAVEMENT
DROP INLET
UTILITY POLE
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
GPU NUCLEAR
SNEC FACILITY
SURFACE SOIL LOCATIONS
GRADE ELEV 812'
SNECRM-020
4
1
REVISIONS
REFERENCES
INTERFACING CONCURRENCE

FIGURE 2-13



GRAPHIC SCALE

1 : 400

LEGEND

IP & ALLOY CAP SET FOR SAMPLING GRID OR AT STRUCTURE CORNERS
P.K. NAIL SET FOR SAMPLING GRID
PROPERTY LINE
FENCE
EXISTING STRUCTURE
EDGE WATER
STORM MANHOLE
TOILET
DEMOLISHED STRUCTURE (FIELD LOCATED WITH IP AT CORNERS)
DEMOLISHED STRUCTURE (NOT FIELD LOCATED)
PAVEMENT
DROP INLET
SIGN
UTILITY POLE
#67 SURFACE SAMPLE POINT

NOTE, BLOCKS A-1 THRU H-7 PINS SURVEYED OCTOBER 1993

Cad File Name : SNECRM-020 SALL RD

FIGURE 2-14

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

R.A.KOCH 1/23/02

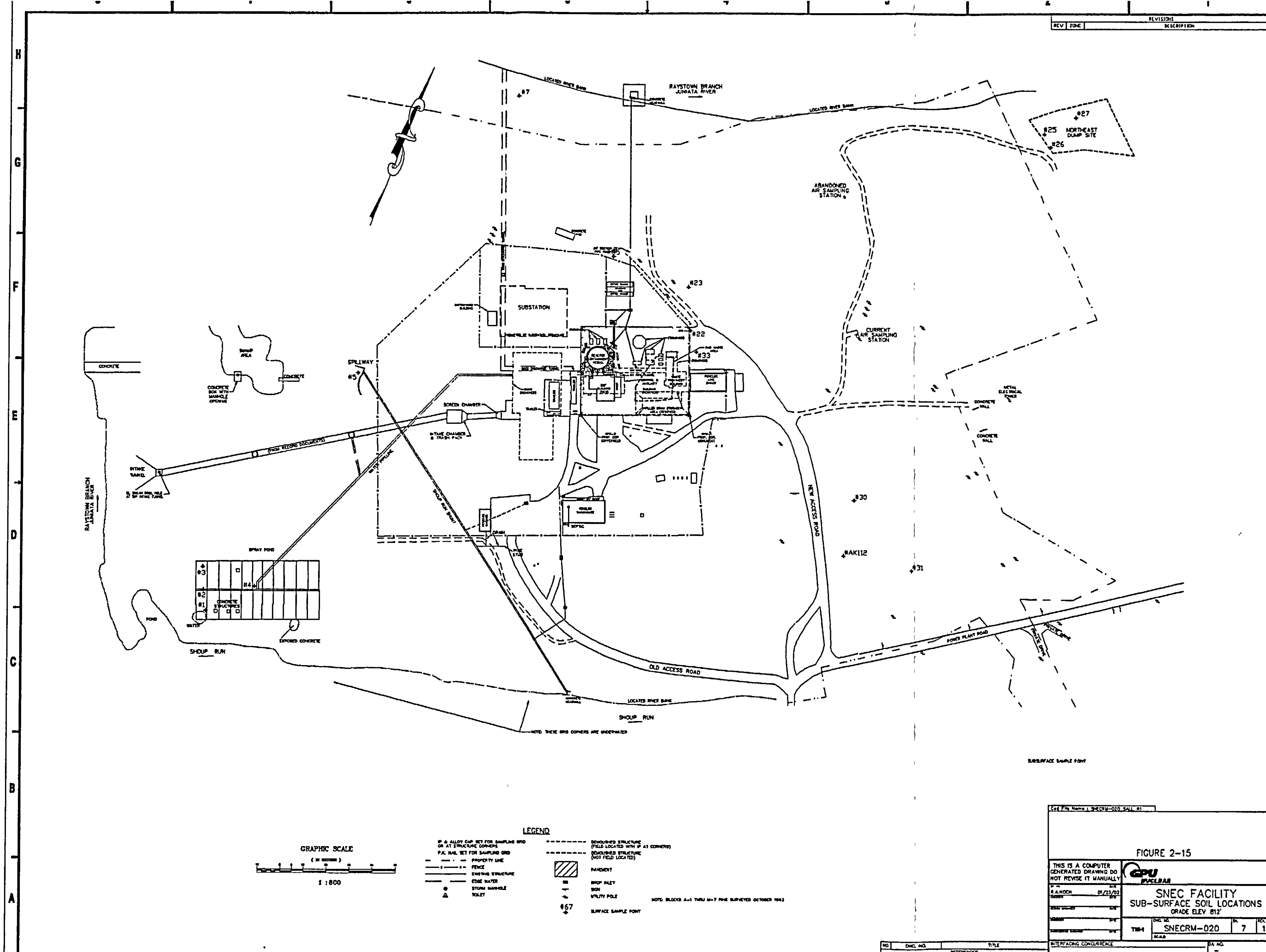
SNEC FACILITY
SURFACE SOIL LOCATIONS
GRADE ELEV 812'

TMI-1 | DWG. NO. SNECRM-020 | SH. 5 | REV. 1

INTERFACING CONCURRENCE

DA NO. –

SNECRM-020 SH 5


RAYSTOWN BRANCH JUNIATA RIVER
#7
#25 NORTHEAST DUMP SITE
#27
#26
ABANDONED AIR SAMPLING STATION
#23
SUBSTATION
#22
#33
CURRENT AIR SAMPLING STATION
SPILLWAY
#5
SCREEN CHAMBER
INTAKE CHAMBER & TRASH RACK
INTAKE TUNNEL
(FROM RECORD DOCUMENTS)
CONCRETE
CONCRETE BOX WITH MANHOLE OPENING
SWAMP AREA
CONCRETE WALL
METAL ELECTRICAL TOWER
NEW ACCESS ROAD
#30
#AK112
#31
SPRAY POND
#3
#4
#2
#1
CONCRETE STRUCTURES
POND
WATER
EXPOSED CONCRETE
SHOUP RUN
OLD ACCESS ROAD
POWER PLANT ROAD
LOCATED RIVER BANK
NOTE: THESE GRID CORNERS ARE UNDERWATER
SUBSURFACE SAMPLE POINT
GRAPHIC SCALE
1 : 800
LEGEND
PROPERTY LINE
FENCE
EXISTING STRUCTURE
EDGE WATER
STORM MANHOLE
TOILET
PAVEMENT
UTILITY POLE
#67
SURFACE SAMPLE POINT
NOTE: BLOCKS A-1 THRU H-7 WERE SURVEYED OCTOBER 1993
REVISIONS
REV
ZONE
DESCRIPTION
NO.
DWG. NO.
TITLE
REFERENCES
INTERFACING CONCURRENCE
BA NO.
FIGURE 2-15
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
GPU NUCLEAR
R.A.KOCH 01/23/02
SNEC FACILITY
SUB-SURFACE SOIL LOCATIONS
GRADE ELEV 812'
SNECRM-020
7
1
SNECRM-020
SH 7

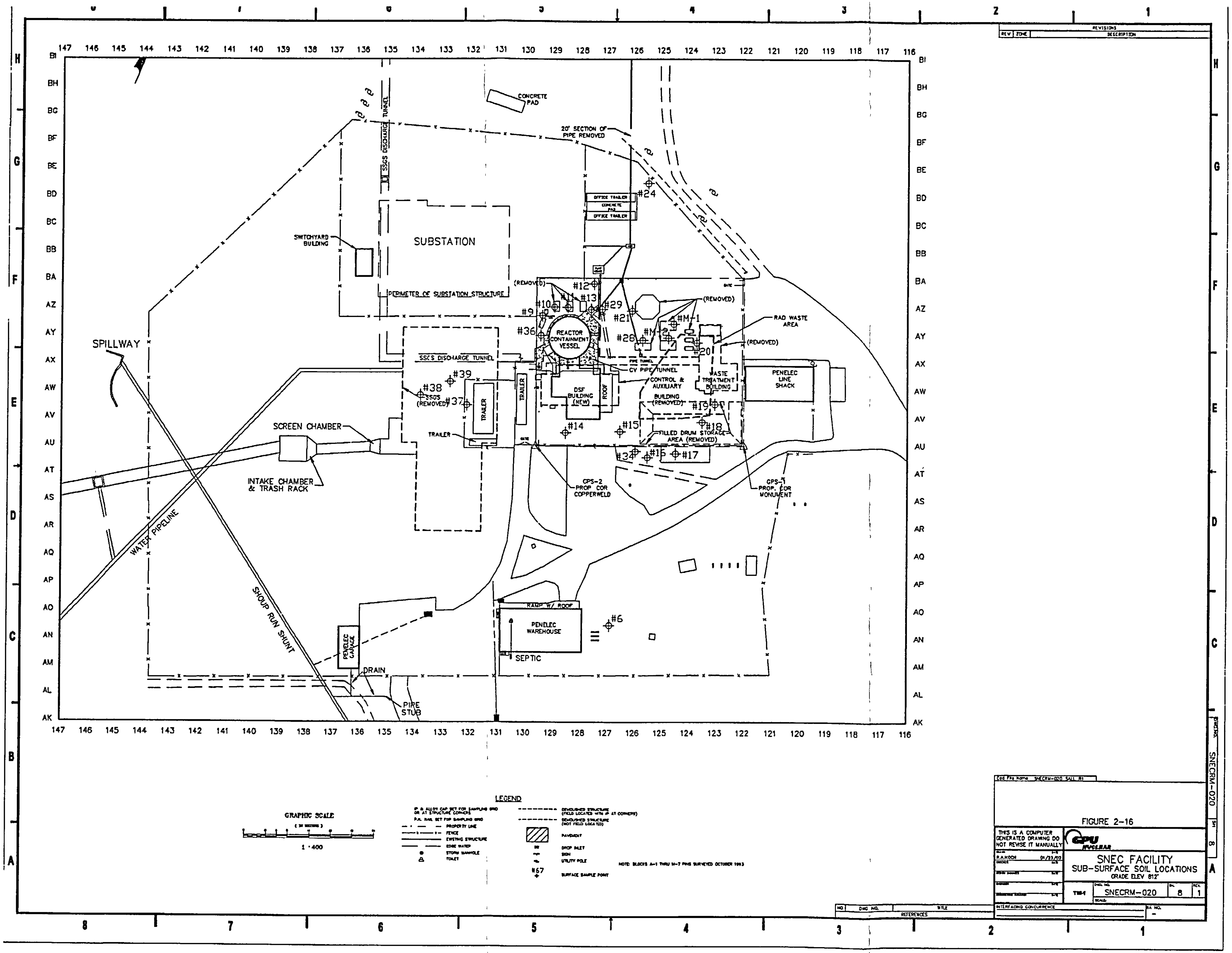
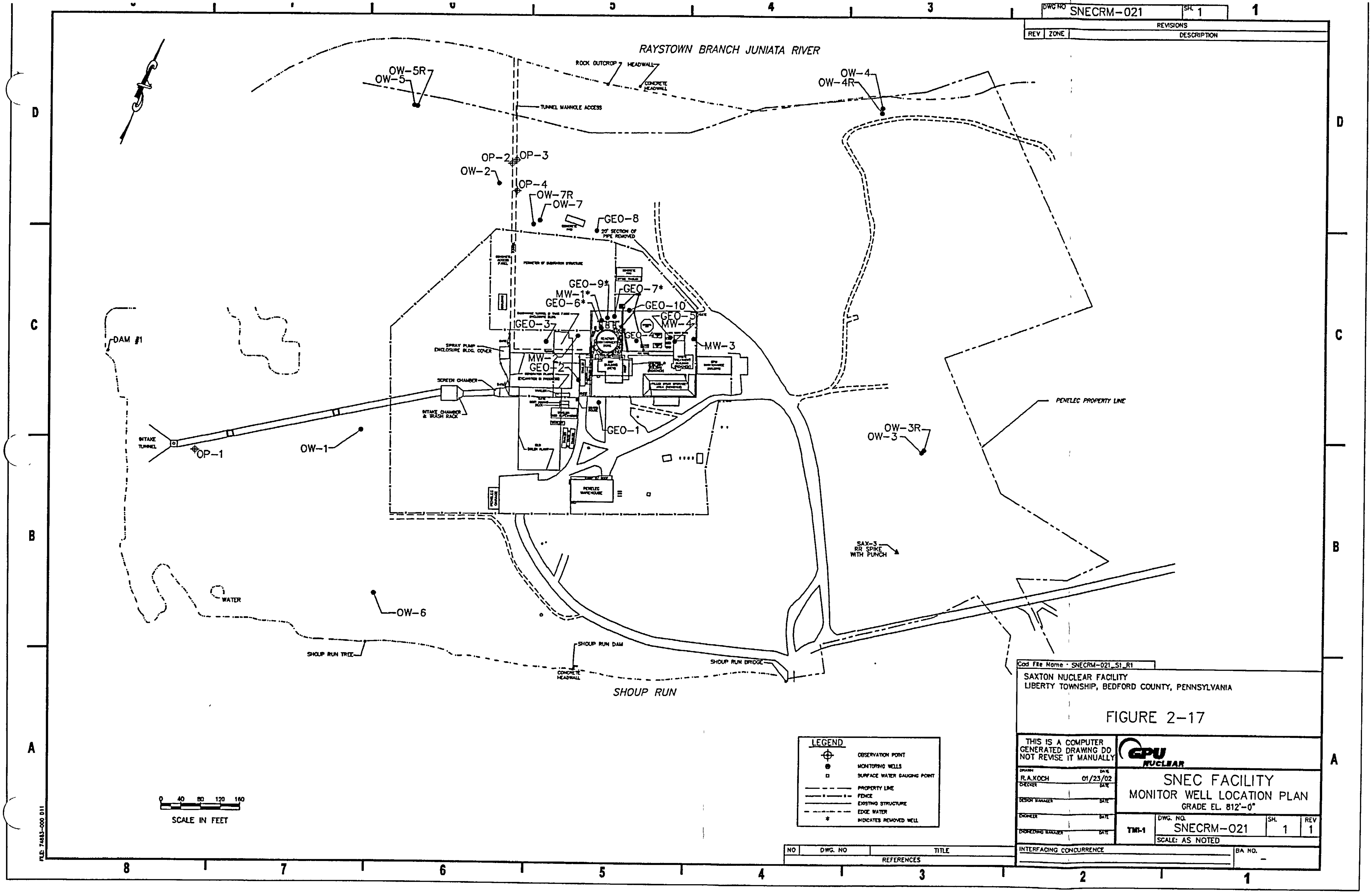


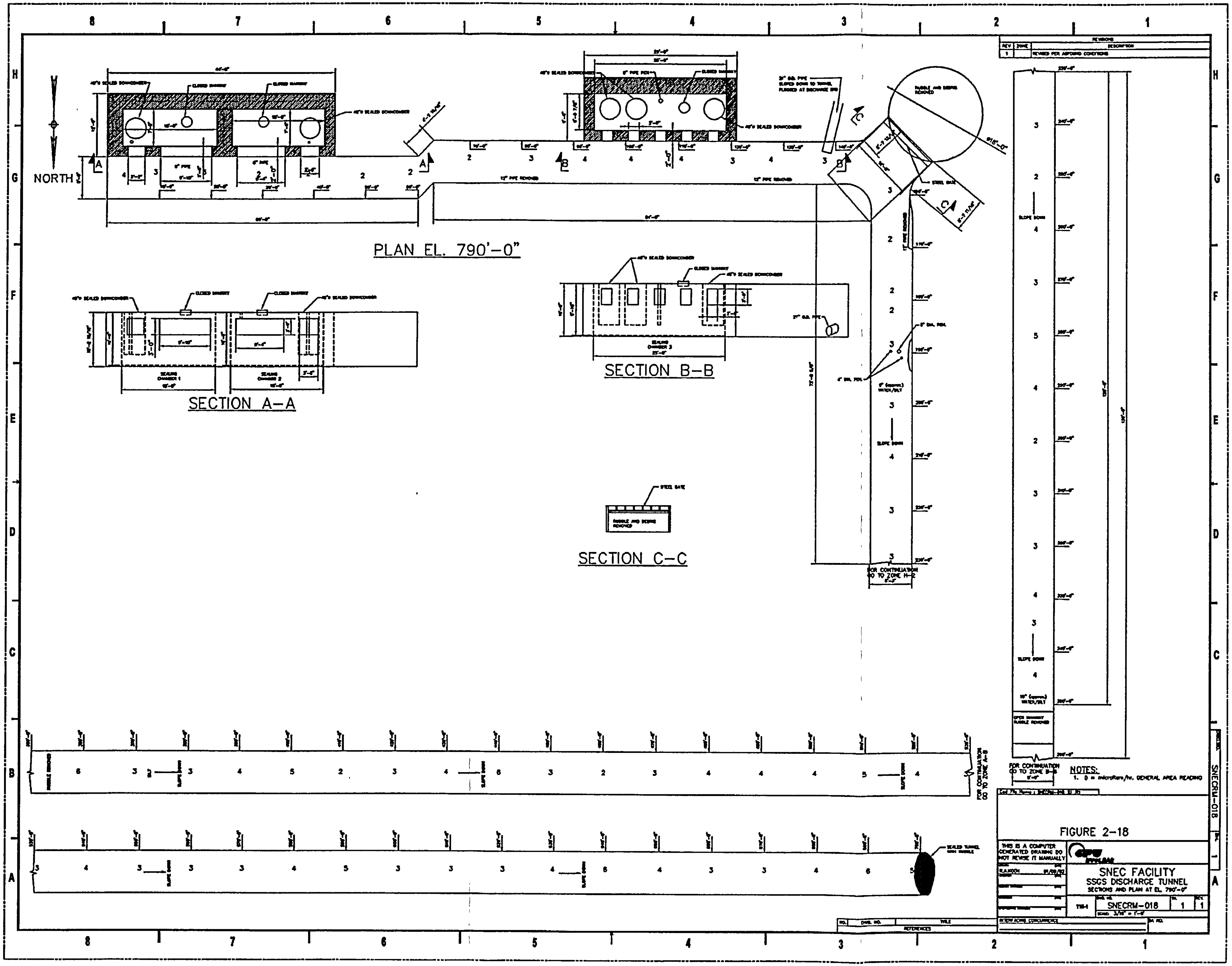
FIGURE 2-16

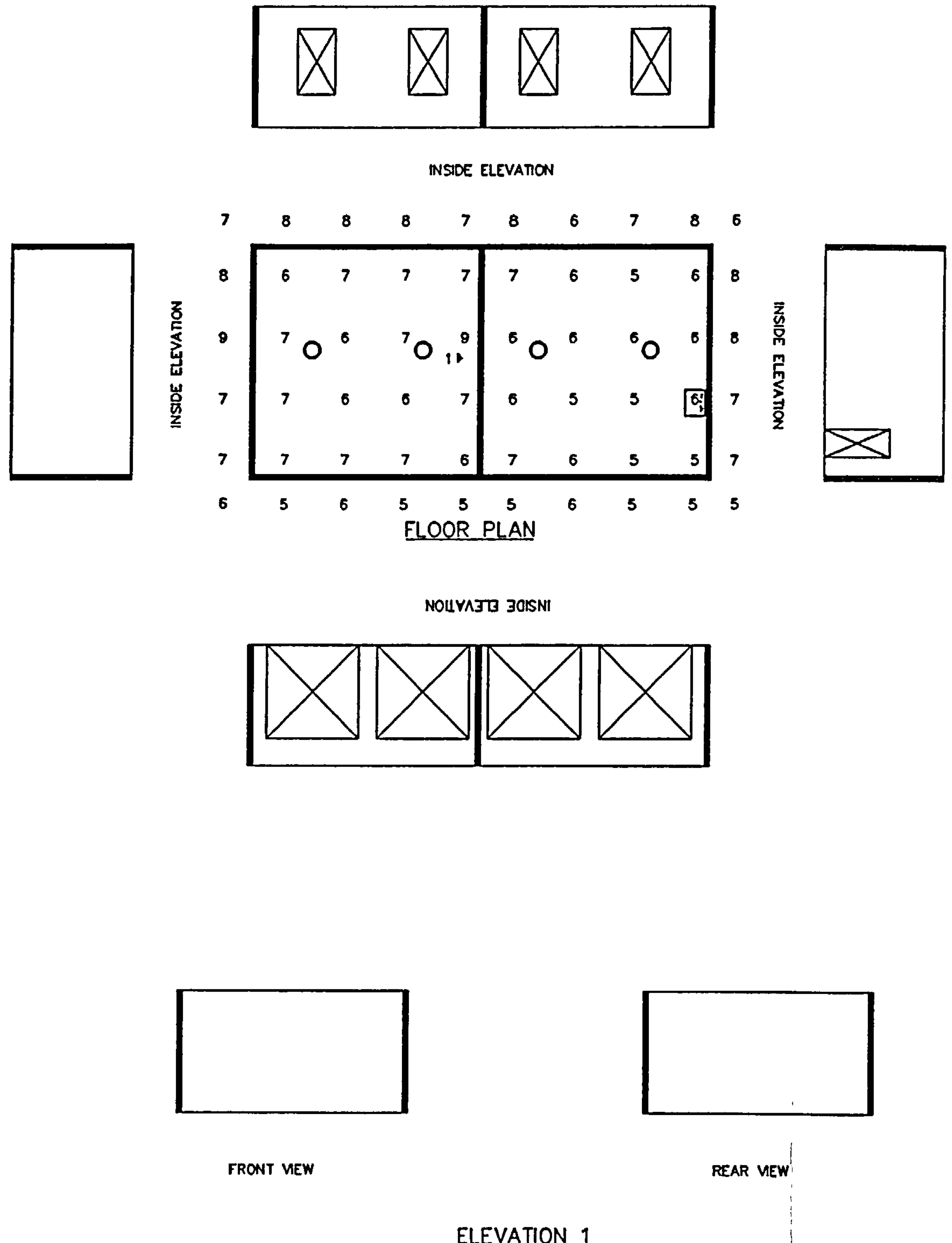
SNEC FACILITY
SUB-SURFACE SOIL LOCATIONS
GRADE ELEV 812'

SNECRM-020



DWG NO SNECRM-021 SH. 1
REVISIONS
REV ZONE DESCRIPTION
RAYSTOWN BRANCH JUNIATA RIVER
ROCK OUTCROP
HEADWALL
CONCRETE HEADWALL
TUNNEL MANHOLE ACCESS
OW-5R
OW-5
OW-4
OW-4R
OP-2
OP-3
OW-2
OP-4
OW-7R
OW-7
GEO-8
20' SECTION OF PIPE REMOVED
GEO-9*
MW-1*
GEO-7*
GEO-6*
GEO-10
GEO-5
MW-4
GEO-3
GEO-4
MW-3
MW-
GEO-2
GEO-1
DAM #1
SPRAY PUMP ENCLOSURE BLDG. COVER
SCREEN CHAMBER
INTAKE CHAMBER & TRASH RACK
INTAKE TUNNEL
OP-1
OW-1
PENELEC PROPERTY LINE
OW-3R
OW-3
PENELEC WAREHOUSE
SAX-3 RR SPIKE WITH PUNCH
WATER
OW-6
SHOUP RUN TREE
SHOUP RUN DAM
CONCRETE HEADWALL
SHOUP RUN BRIDGE
SHOUP RUN
0 40 80 120 160
SCALE IN FEET
LEGEND
OBSERVATION POINT
MONITORING WELLS
SURFACE WATER GAUGING POINT
PROPERTY LINE
FENCE
EXISTING STRUCTURE
EDGE WATER
* INDICATES REMOVED WELL
NO DWG. NO TITLE
REFERENCES
Cad File Name : SNECRM-021_S1_R1
SAXTON NUCLEAR FACILITY
LIBERTY TOWNSHIP, BEDFORD COUNTY, PENNSYLVANIA
FIGURE 2-17
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
GPU NUCLEAR
DRAWN R.A.KOCH DATE 01/23/02
CHECKER DATE
DESIGN MANAGER DATE
ENGINEER DATE
ENGINEERING MANAGER DATE
SNEC FACILITY
MONITOR WELL LOCATION PLAN
GRADE EL. 812'-0"
TMI-1
DWG. NO. SNECRM-021 SH. 1 REV 1
SCALE: AS NOTED
INTERFACING CONCURRENCE
BA NO. -
FILE: 74853-000 011


PLAN EL. 790'-0"
NORTH
SECTION A-A
SECTION B-B
SECTION C-C
NOTES:
FIGURE 2-18
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
SNEC FACILITY
SSGS DISCHARGE TUNNEL
SECTIONS AND PLAN AT EL. 790'-0"
SNECRM-018
SNECRM-018



NOTES:

1. 5 = microRem/hr, GENERAL AREA READING.

DWG.NO. SNECRM-014 SH. 1

REVISIONS

REV	ZONE	DESCRIPTION

Cad File Name : SNECRM-014_S1_R0

FIGURE 2-19

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

SNEC FACILITY
PENELEC GARAGE
GRADE EL 812'-0"

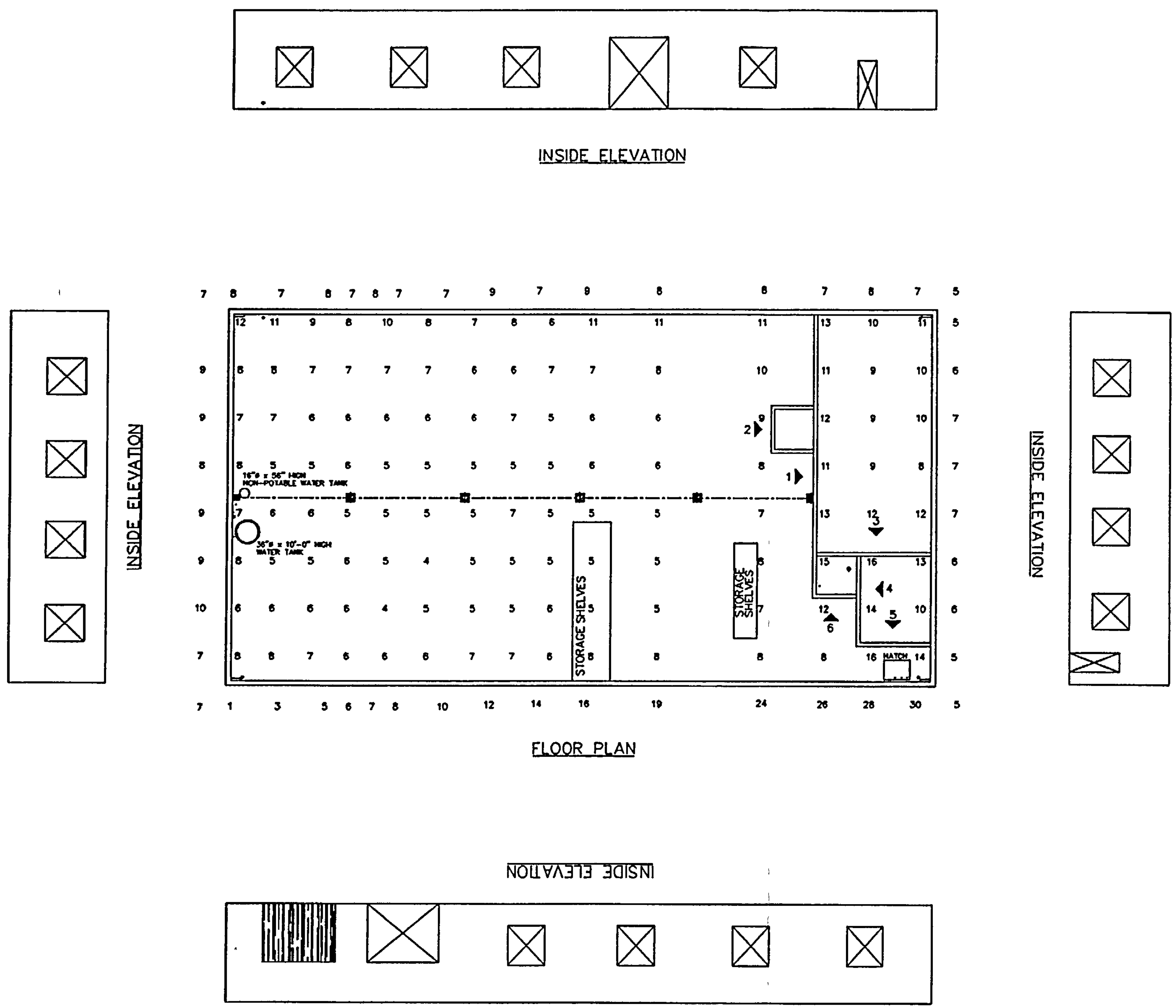
DRAWN R. SCHAIBLE	DATE 08/19/99
CHECKER R.A.KOCH	DATE 01/17/00
DESIGN MANAGER	DATE
ENGINEER	DATE
ENGINEERING MANAGER	DATE

TMI-1 DWG. NO. SNECRM-014 SH. 1 REV. 0
SCALE: 1/8"=1'-0"

INTERFACING CONCURRENCE | BA NO.

NO.	DWG. NO.	TITLE

REFERENCES



NOTES:
1. 5 = microRem/hr. GENERAL AREA READING.

Cad File Name : SNECRM-013_S1_R0

FIGURE 2-20

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

DRAWN R. SCHAIBLE	DATE 07/15/99
CHECKED R.A.KOCH	DATE 01/17/00

SNEC FACILITY
PENELEC WAREHOUSE
FLOOR PLAN AND EXTERIOR WALL ELEVATIONS

TMI-1

DWG. NO.	SH.	REV.
SNECRM-013	1	0

SCALE: 1/8"=1'-0"

INTERFACING CONCURRENCE

BA NO.

NO.	DWG. NO.	TITLE

REFERENCES

DWG NO.	SH.
SNECRM-013	1

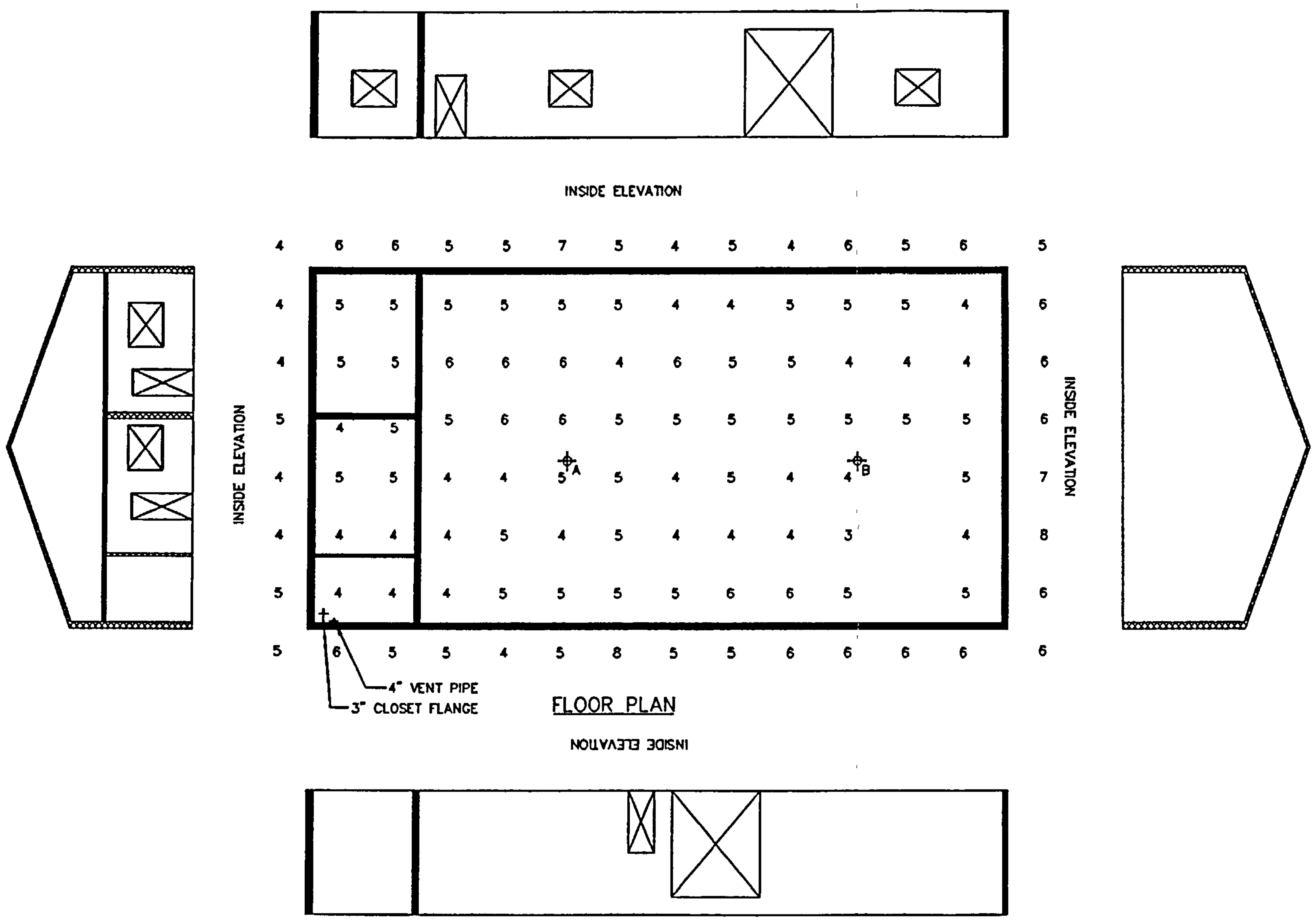
REVISIONS

REV	ZONE	DESCRIPTION

DWG.NO. SNECRM-015 SH. 1

REV	ZONE	DESCRIPTION

REVISIONS



NOTES:

1. 5 = microRem/hr, GENERAL AREA READING.

Cad File Name : SNECRM-015_S1_R0

FIGURE 2-21

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

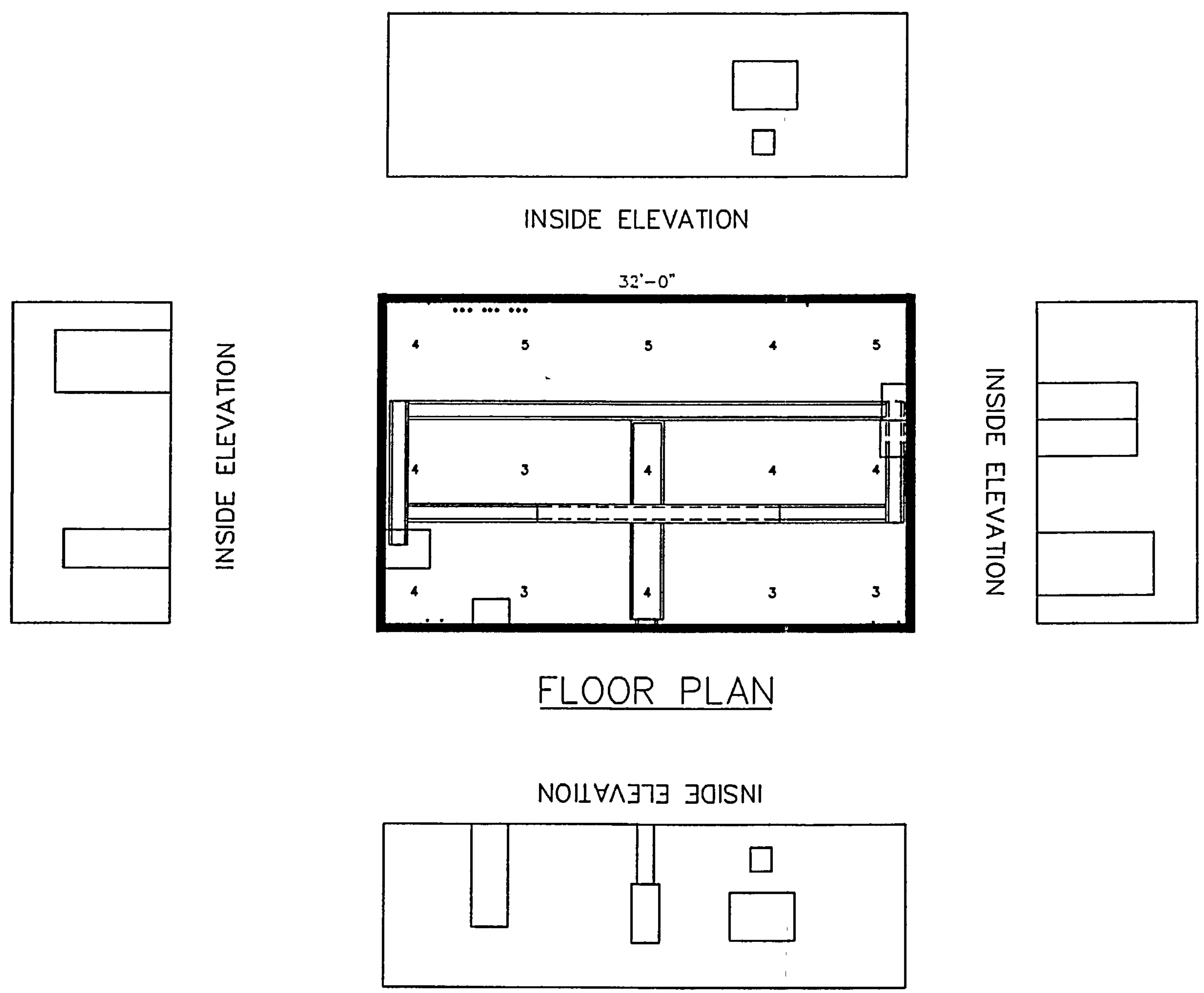
DRAWN R. SCHAIBLE	DATE 08/19/99	SNEC FACILITY
CHECKER R.A.KOCH	DATE 01/17/00	PENELEC LINE SHACK
DESIGN MANAGER	DATE	LINE DEPT. BUILDING FLOOR PLAN AND EXTERIOR WALL ELEVATIONS
ENGINEER	DATE	SAXTON — DWG. NO. SNECRM-015 — SH. 1 — REV 0
ENGINEERING MANAGER	DATE	SCALE: 1/8"=1'-0"

INTERFACING CONCURRENCE — BA NO.

NO.	DWG. NO.	TITLE
	REFERENCES	

DWG. NO. SNECRM-017 SH. 1

REV	ZONE	DESCRIPTION



FLOOR PLAN

NOTES:
1. 5 = microRem/hr, GENERAL AREA READING.

Cad File Name : SNECRM-017_S1_R0

FIGURE 2-22

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

DRAWN R.A.KOCH DATE 01/17/00

CHECKER

DESIGN MANAGER

ENGINEER

ENGINEERING MANAGER

SNEC FACILITY
PENELEC SWITCHYARD BLDG.
FACILITY FLOOR PLAN AND INTERIOR WALL ELEVATIONS

SAXTON DWG. NO. SNECRM-017 SH. 1 REV. 0

SCALE: 1/4"=1'-0"

INTERFACING CONCURRENCE

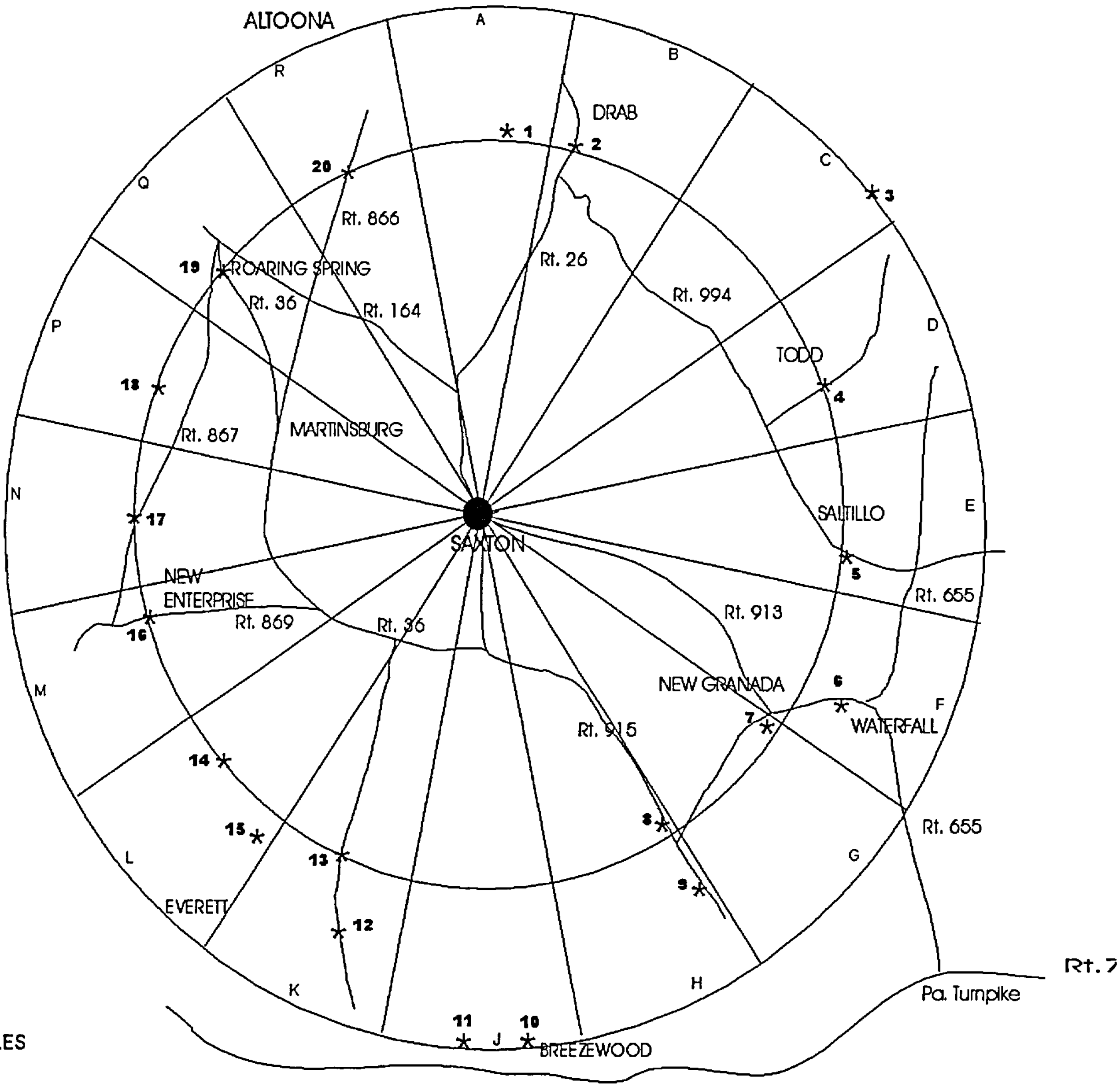
BA NO.

NO.	DWG. NO.	TITLE

REFERENCES

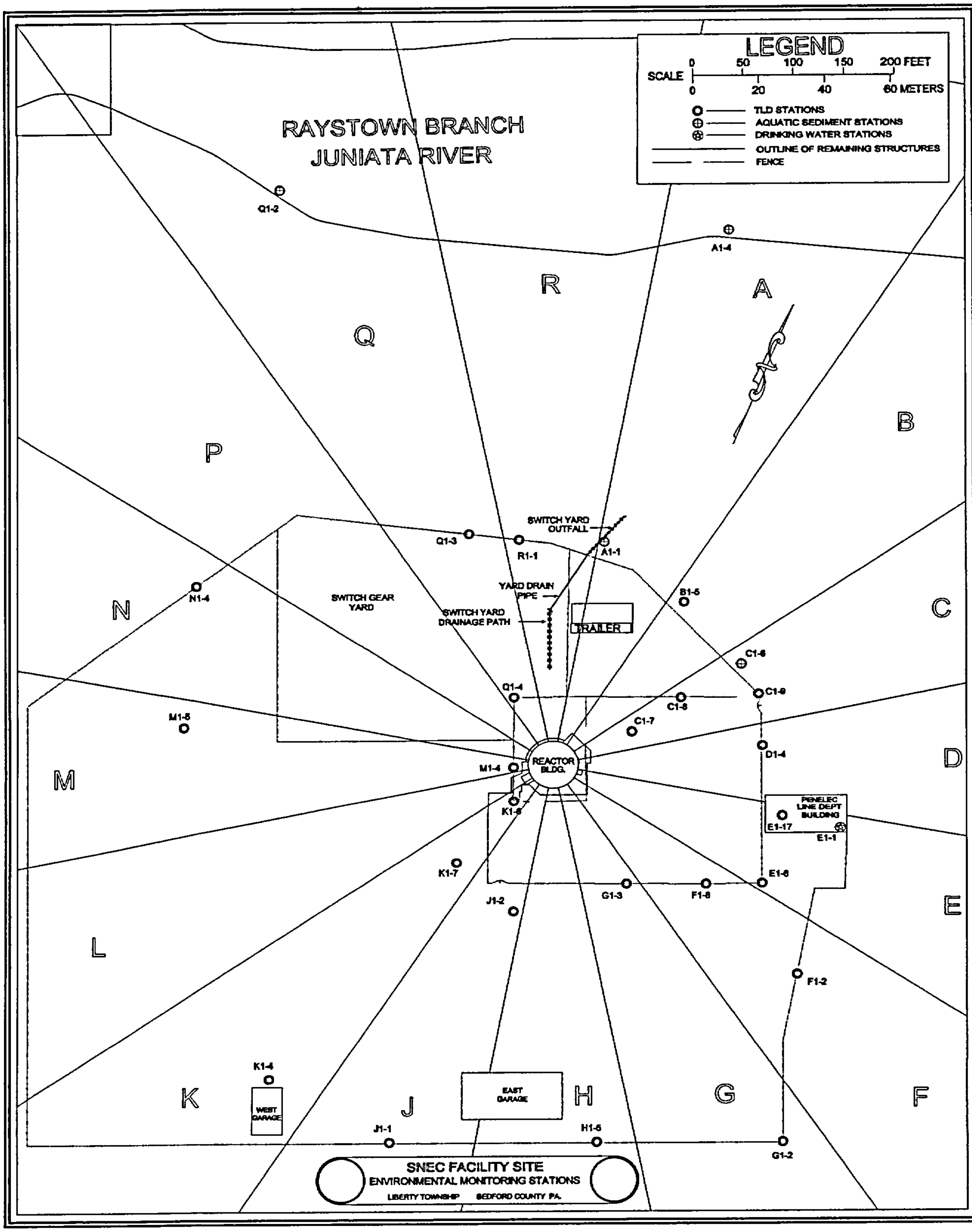
Figure 2-23, Map of the background sampling locations

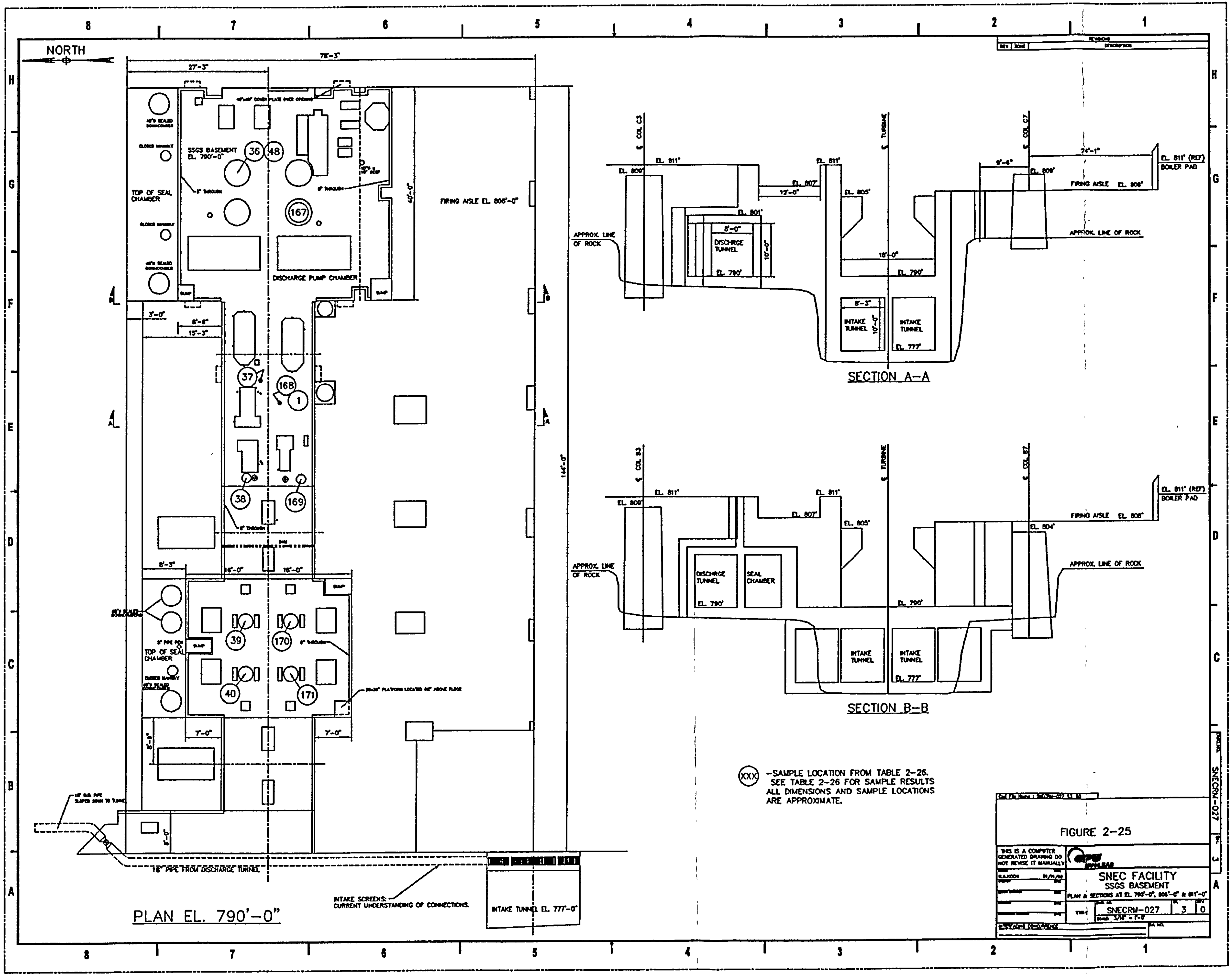
GPU
NUCLEAR



SCALE APPROXIMATE
2.5 INCHES = APPX 10 MILES
◯ = APPX 10 & 15 MILES

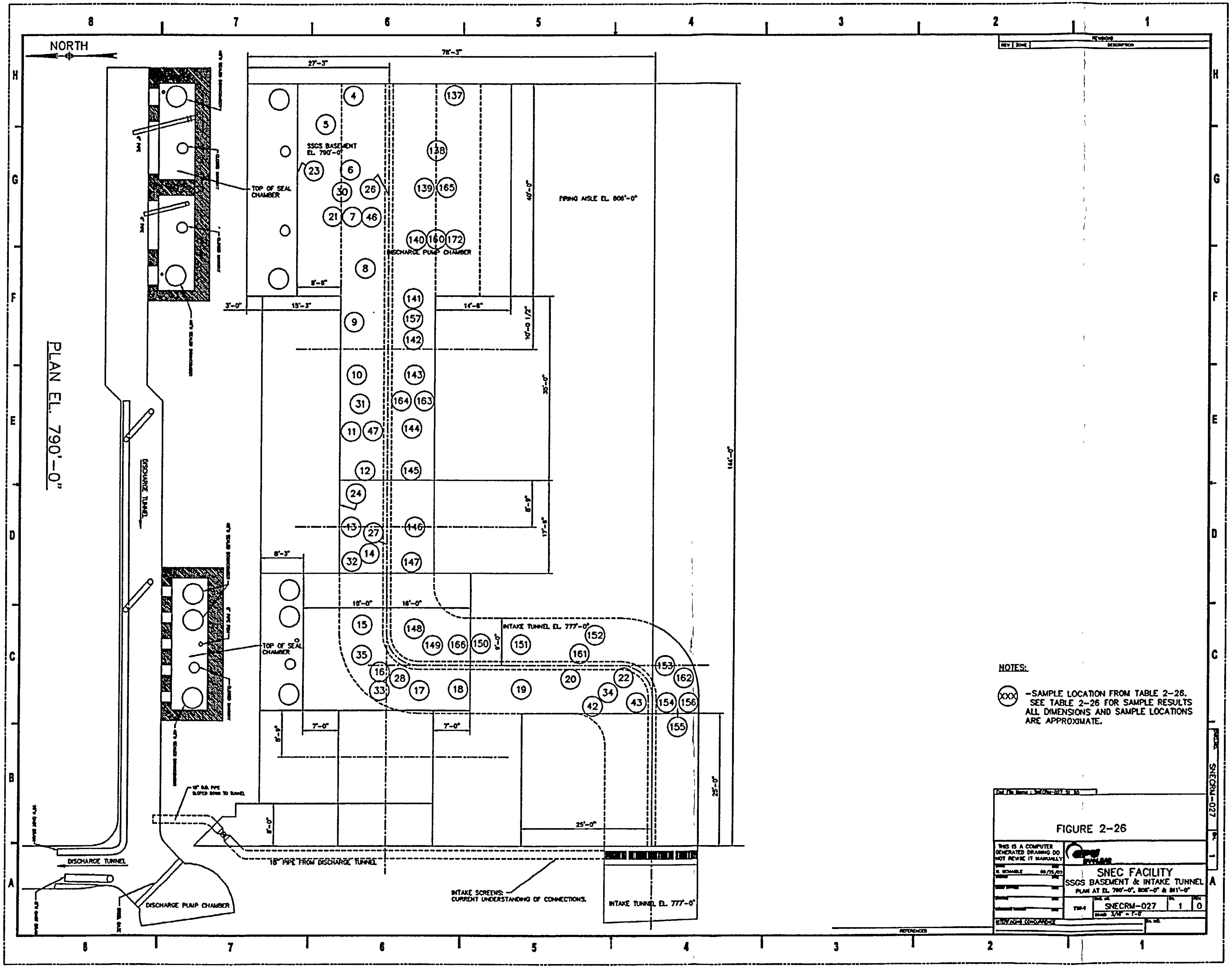
Figure 2-24, Map of the REMP Sampling locations



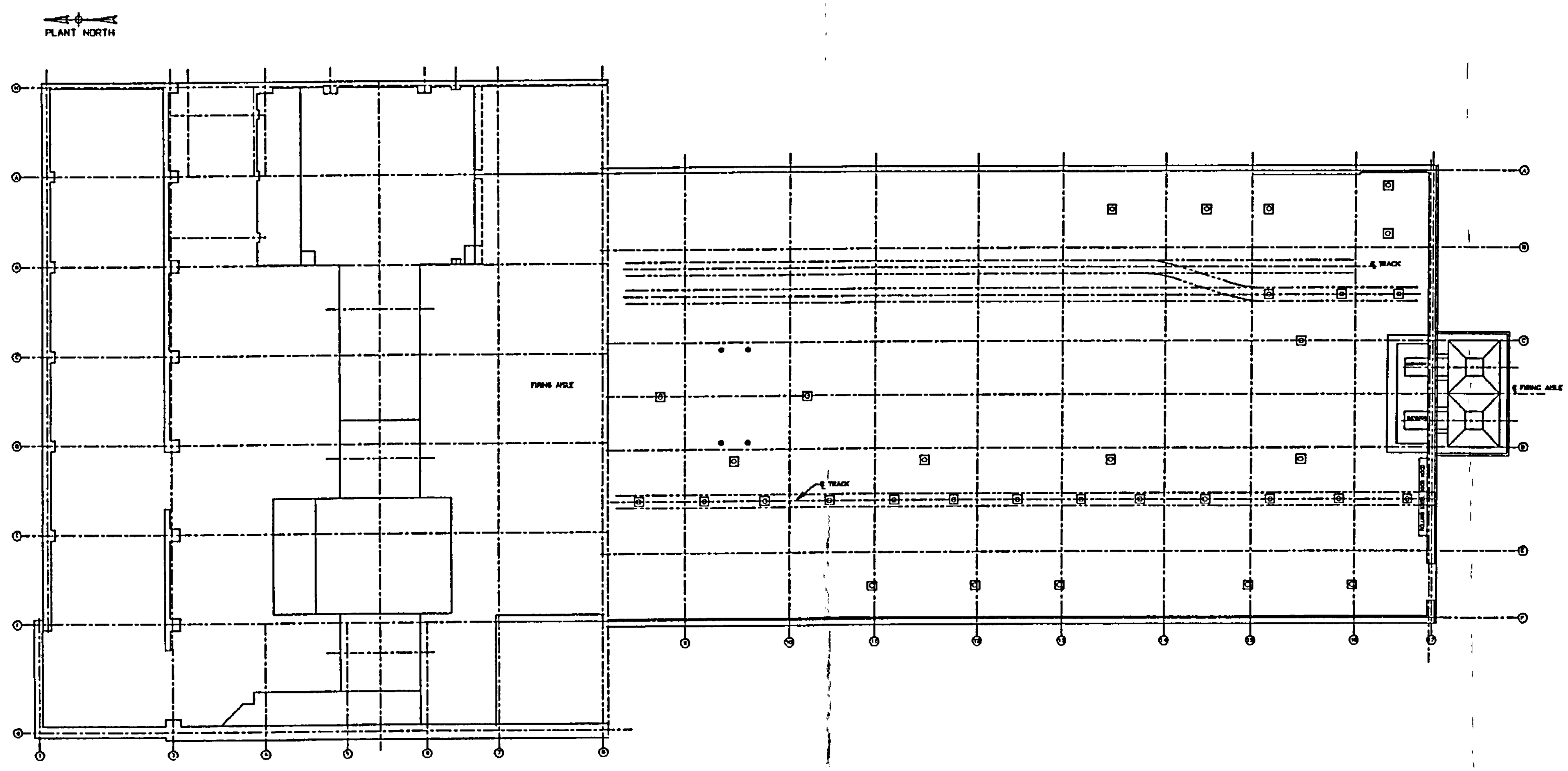


NORTH
SSGS BASEMENT
EL. 790'-0"
TOP OF SEAL CHAMBER
DISCHARGE PUMP CHAMBER
FIRING AISLE EL. 806'-0"
18" PIPE FROM DISCHARGE TUNNEL
INTAKE SCREENS: CURRENT UNDERSTANDING OF CONNECTIONS.
INTAKE TUNNEL EL. 777'-0"
PLAN EL. 790'-0"
36
48
167
37
168
1
38
169
39
170
40
171
SECTION A-A
SECTION B-B
APPROX. LINE OF ROCK
DISCHRGE TUNNEL
SEAL CHAMBER
INTAKE TUNNEL
BOILER PAD
FIRING AISLE EL. 808'
EL. 811' (REF)
EL. 790'
EL. 777'
XXX -SAMPLE LOCATION FROM TABLE 2-26.
SEE TABLE 2-26 FOR SAMPLE RESULTS
ALL DIMENSIONS AND SAMPLE LOCATIONS
ARE APPROXIMATE.
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
SNEC FACILITY
SSGS BASEMENT
SNECRM-027

FIGURE 2-25



NORTH
PLAN EL. 790'-0"
SSGS BASEMENT EL. 790'-0"
TOP OF SEAL CHAMBER
DISCHARGE PUMP CHAMBER
FIRING AISLE EL. 808'-0"
DISCHARGE TUNNEL
INTAKE TUNNEL EL. 777'-0"
18" PIPE FROM DISCHARGE TUNNEL
INTAKE SCREENS: CURRENT UNDERSTANDING OF CONNECTIONS.
78'-3"
27'-3"
15'-3"
14'-6"
16'-0"
7'-0"
25'-0"
144'-0"
NOTES:
-SAMPLE LOCATION FROM TABLE 2-26. SEE TABLE 2-26 FOR SAMPLE RESULTS ALL DIMENSIONS AND SAMPLE LOCATIONS ARE APPROXIMATE.
FIGURE 2-26
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
SNEC FACILITY
SSGS BASEMENT & INTAKE TUNNEL
PLAN AT EL. 790'-0", 808'-0" & 811'-0"
SNECRM-027



TURBINE BLDG & BOILER PAD
PLAN EL. 811'-0"

NOTES:

▣ -DENOTES DRAIN LOCATION

FIGURE 2-27

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

SNEC FACILITY
SSGS - BOILER PAD
PLANT SITE GRADE EL. 811'-0"

R. SCHAIBLE 09/25/02

SAXTON

DWG. NO.	SH.	REV.
SNECRM-031	1	0

SCALE: AS NOTED

SNECRM-031

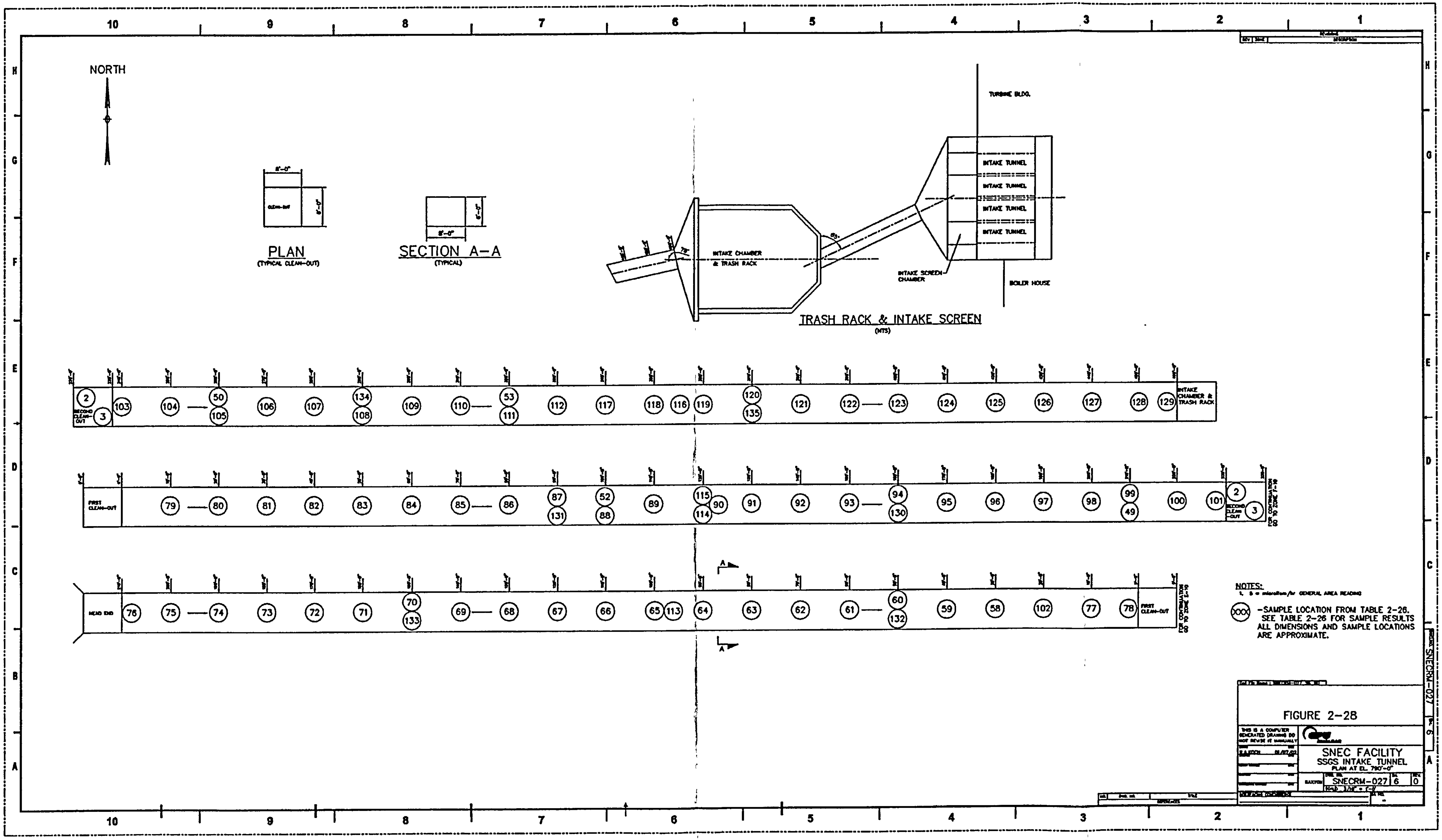
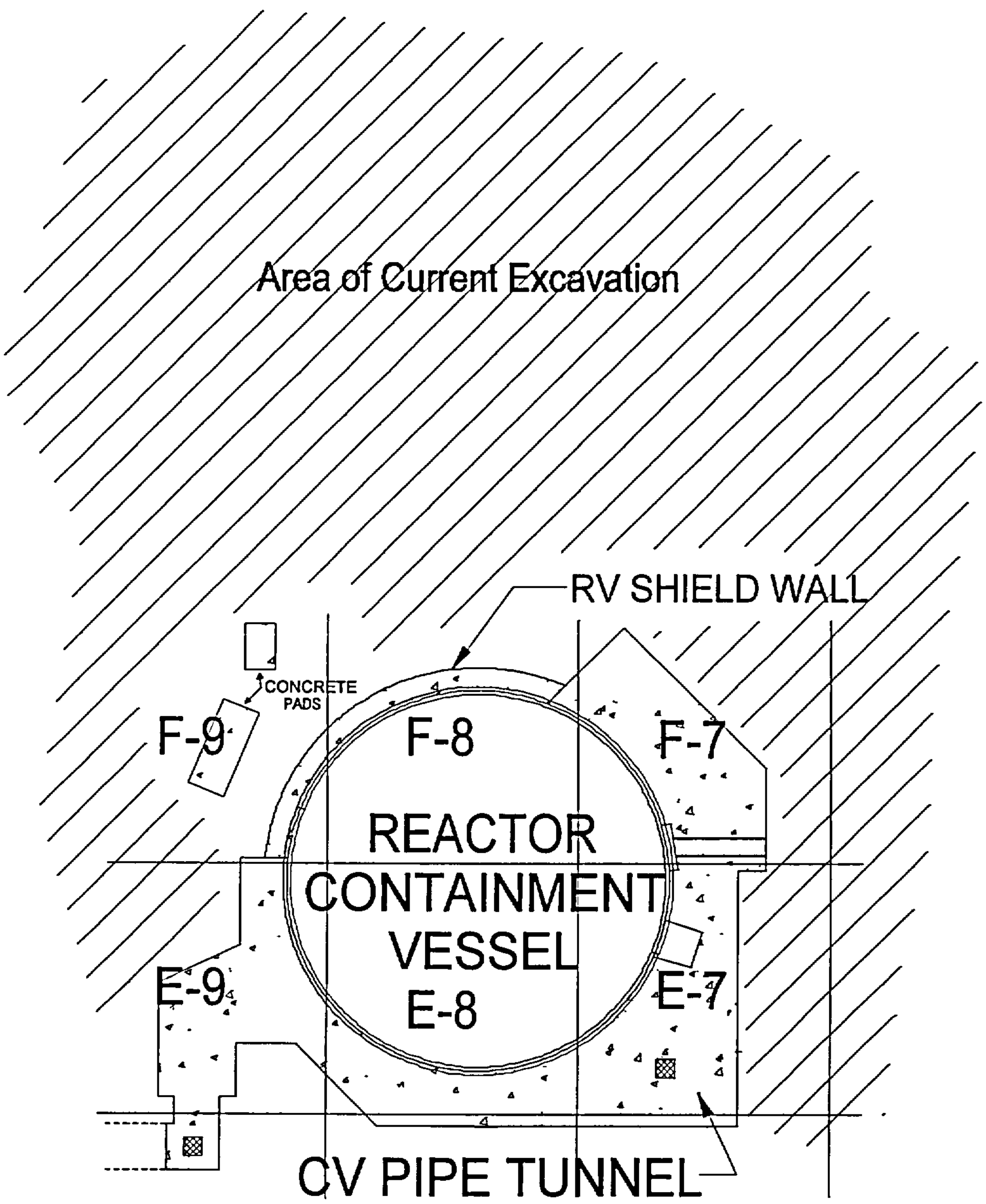

NORTH
PLAN
(TYPICAL CLEAN-OUT)
SECTION A-A
(TYPICAL)
TURBINE BLDG.
INTAKE TUNNEL
INTAKE TUNNEL
INTAKE TUNNEL
INTAKE TUNNEL
INTAKE CHAMBER & TRASH RACK
INTAKE SCREEN CHAMBER
BOILER HOUSE
TRASH RACK & INTAKE SCREEN
(NTS)
SECOND CLEAN-OUT
INTAKE CHAMBER & TRASH RACK
FIRST CLEAN-OUT
HEAD END
NOTES:
-SAMPLE LOCATION FROM TABLE 2-26. SEE TABLE 2-26 FOR SAMPLE RESULTS ALL DIMENSIONS AND SAMPLE LOCATIONS ARE APPROXIMATE.
SNEC FACILITY
SSGS INTAKE TUNNEL
PLAN AT EL. 790'-0"
SNECRM-027
FIGURE 2-28

Figure 2-29

SOIL REMEDIATION NEAR SNEC CV

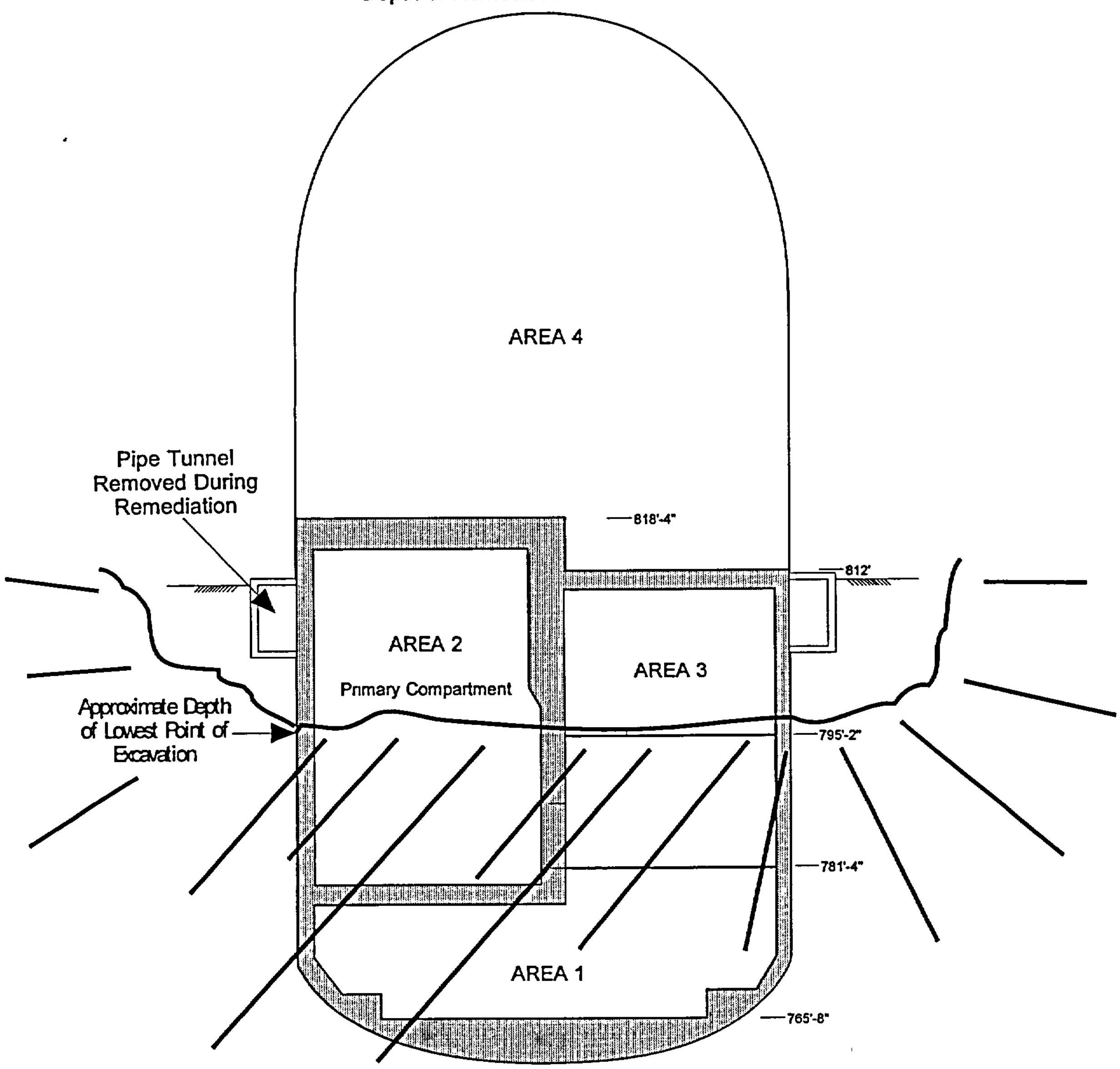


(Plan View)

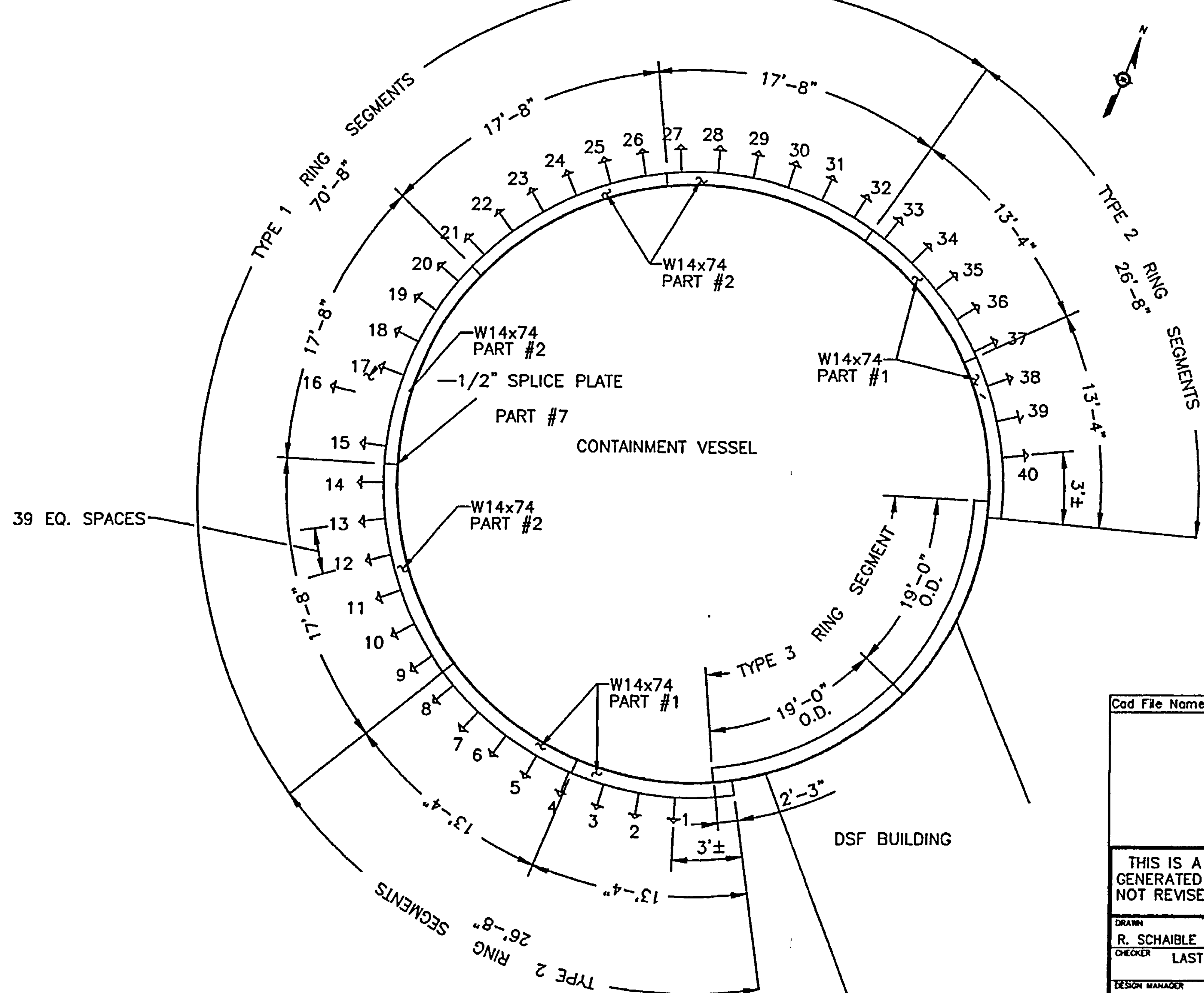
Figure 2-30

SNEC FACILITY CV

Sketch Shows Approximate Depth of Remediation Efforts to Date



Containment Vessel, Sectional View (Looking North)
NOTE: CV Internals Not Shown in Correct Orientation With Respect to Excavated Areas



PLAN
SCALE: NONE

NOTE:
ANCHORS 1–5 AND 36–40 TO RECEIVE
1 3/4"ø BOLTS. ALL OTHERS TO RECEIVE
1 3/8"ø BOLTS.

Cad File Name : SNECRM-033_R0

FIGURE 2–31

NO.	DWG. NO.	TITLE
	REFERENCES	

THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY

GPU NUCLEAR

DRAWN R. SCHAIBLE	DATE 08/28/02
CHECKER LAST DATED	DATE
DESIGN MANAGER	DATE
ENGINEER	DATE
ENGINEERING MANAGER	DATE

SNEC FACILITY
REMOVAL OF CONTAINMENT VESSEL CONCRETE
ANCHOR BOLT INSTALLATION

SNEC	DWG. NO. SNECRM–033	SH. N/A	REV. 0
	SCALE: NONE		

INTERFACING CONCURRENCE

BA NO.

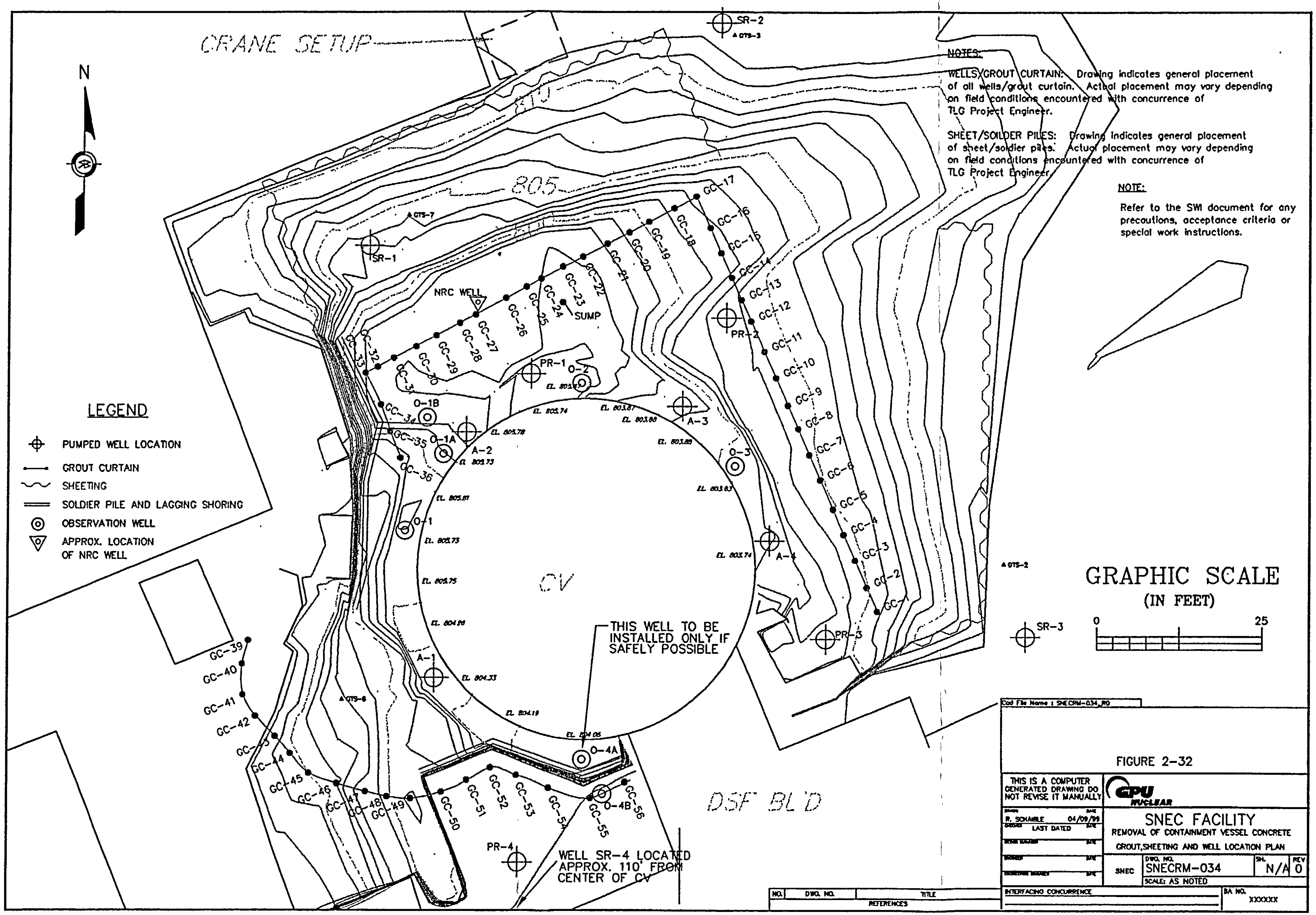

CRANE SETUP
N
NOTES:
WELLS/GROUT CURTAIN: Drawing indicates general placement of all wells/grout curtain. Actual placement may vary depending on field conditions encountered with concurrence of TLG Project Engineer.
SHEET/SOLDIER PILES: Drawing indicates general placement of sheet/soldier piles. Actual placement may vary depending on field conditions encountered with concurrence of TLG Project Engineer.
NOTE:
Refer to the SWI document for any precautions, acceptance criteria or special work instructions.
LEGEND
PUMPED WELL LOCATION
GROUT CURTAIN
SHEETING
SOLDIER PILE AND LAGGING SHORING
OBSERVATION WELL
APPROX. LOCATION OF NRC WELL
805
SR-1
SR-2
SR-3
NRC WELL
SUMP
PR-1
PR-2
PR-3
PR-4
A-1
A-2
A-3
A-4
O-1
O-1A
O-1B
O-2
O-3
O-4A
O-4B
CV
THIS WELL TO BE INSTALLED ONLY IF SAFELY POSSIBLE
WELL SR-4 LOCATED APPROX. 110' FROM CENTER OF CV
DSF BL'D
GRAPHIC SCALE
(IN FEET)
0
25
FIGURE 2-32
THIS IS A COMPUTER GENERATED DRAWING DO NOT REVISE IT MANUALLY
R. SCHAIBLE 04/09/99
LAST DATED
GPU NUCLEAR
SNEC FACILITY
REMOVAL OF CONTAINMENT VESSEL CONCRETE
GROUT, SHEETING AND WELL LOCATION PLAN
SNEC
DWG. NO. SNECRM-034
SH. N/A
REV 0
SCALE: AS NOTED
INTERFACING CONCURRENCE
BA NO. XXXXXX
NO.
DWG. NO.
TITLE
REFERENCES

Figure 2-33
CV Steel Liner Activation Sample Results