CP&L
Carolina Power & Light Company
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MAY 15 2000

SERIAL: BSEP 00-0063

Technical Specification 5.6.2
NPDES Permit No. NC0007064

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62
1999 RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Gentlemen:

In accordance with Brunswick Steam Electric Plant (BSEP) Technical Specification Section 5.6.2, Carolina Power & Light (CP&L) Company submits the enclosed Radiological Environmental Operating Report for 1999 for BSEP, Unit Nos. 1 and 2. A copy is being forwarded to the North Carolina Division of Water Quality in accordance with National Pollutant Discharge Elimination System Permit No. NC0007064, Section I.C.4.

Please refer any questions regarding this submittal to Mr. Leonard R. Beller, Supervisor - Licensing, at (910) 457-2073.

Sincerely,

Warren J. Dorman
Manager - Regulatory Affairs
Brunswick Steam Electric Plant

PSJ/psj

Enclosure: 1999 Radiological Environmental Operating Report

IE25

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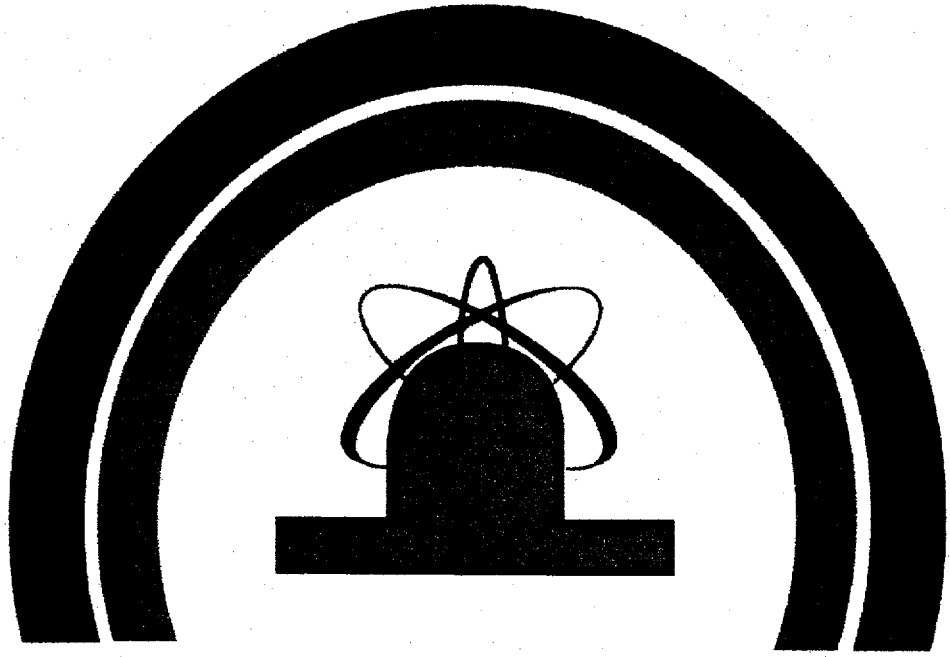
ENCLOSURE

BRUNSWICK STEAM ELECTRIC PLANT
1999 RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

RADIOLOGICAL
ENVIRONMENTAL OPERATING



REPORT
1999

BRUNSWICK STEAM ELECTRIC PLANT
CAROLINA POWER & LIGHT

SHEARON HARRIS ENERGY &
ENVIRONMENTAL CENTER
CAROLINA POWER & LIGHT COMPANY
NEW HILL, NORTH CAROLINA

RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
FOR
BRUNSWICK STEAM ELECTRIC PLANT
JANUARY 1 THROUGH DECEMBER 31, 1999

Prepared by:

Sharon P. Langdon

Reviewed by:

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EXECUTIVE SUMMARY

The Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, is operated by Carolina Power & Light (CP&L) Company under licenses granted by the Nuclear Regulatory Commission (NRC). BSEP Technical Specification 5.6.2 and BSEP Offsite Dose Calculation Manual (ODCM) establish the requirements of the Radiological Environmental Monitoring Program. This report provides the results of the Radiological Environmental Monitoring program from January 1, 1999 through December 31, 1999.

The Radiological Environmental Monitoring program was established in 1973. Radiation and radioactivity in various environmental media have been monitored for more than 25 years, including monitoring in excess of a year prior to commencing operation. Monitoring is also provided for control locations which would not be impacted by operations of BSEP. Using the data from the control locations and the historical data collected prior to operation, analyses of data from locations which could potentially be impacted by the operations of BSEP were performed. Radiation levels show no measurable change from pre-operational radiation levels.

Monitoring results for environmental media are summarized as follows:

- Air-monitoring results are similar or less than the concentrations of radioactivity from pre-operation monitoring. These observations are also consistent with past operational data.

- Milk was unavailable due to no milk (milch) animals (goat or cow) currently identified within the environs of the plant; therefore, no exposure pathway exists.

- Terrestrial vegetation includes broadleaf vegetation and results indicate no detectable activity.

- Aquatic organism monitoring includes fish (free swimmers and bottom feeders), invertebrates (shellfish (SH)), and benthic organisms ((BO) organisms that live on the bottom of the ocean). Results indicated no detectable activity.

- Surface water results indicate no detectable activity.

- External radiation dose showed no measurable change from pre-operational data.

The continued operation of BSEP has not significantly contributed radiation or the presence of radioactivity in the environmental media monitored. The measured concentrations of radioactivity and radiation are well within applicable regulatory limits.

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

PURPOSE AND REQUIREMENTS FOR THE RADIOLOGICAL MONITORING PROGRAM

Although the operation of a nuclear generating station results in the raising of background radiation only a small amount, it is important to measure these emissions of radioactivity and radiation to access their impact on the surrounding populations. The purpose of the radiological environmental monitoring program is to measure accumulation of radioactivity in the environments, to determine whether this radioactivity is the result of operations of BSEP, and to assess the potential dose to the off-site population based on the cumulative measurements of radioactivity of plant origin. Radiological monitoring programs provide an additional verification of the containment and radiological controls of nuclear generating stations.

The radiological monitoring program was established in 1973 and continues to collect samples and evaluate them for 26 years.
Requirements are established for the radiological monitoring program as follows:

- Technical Specifications
- Off-Site Dose Calculation Manual (ODCM)
- various procedures

Additional guidance regarding the radiological monitoring program may be found in the following:

- NRC Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I"
- NRC Regulatory Guide 4.13, "Performance, Testing, and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications"
- NRC Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment"

General Site Description

BSEP consists of two boiling water reactors with a design rating of 1631 Megawatts electric (Mwe) (820 Mwe, Unit 1, and 811 Mwe, Unit 2). Commercial production was initiated by Unit 2 on November 3, 1975 and by Unit 1 on March 18, 1977. BSEP is located in Brunswick County, North Carolina. The site is along state route 87 approximately two and a half miles north of Southport and is displayed on the map of southeastern North Carolina (Figure 1). The community of Boiling Spring Lakes is about three miles northwest of the site. The towns of Caswell Beach and Oak Island are on a barrier island south of the plant. The site is also approximately 16 miles south of Wilmington, North Carolina.

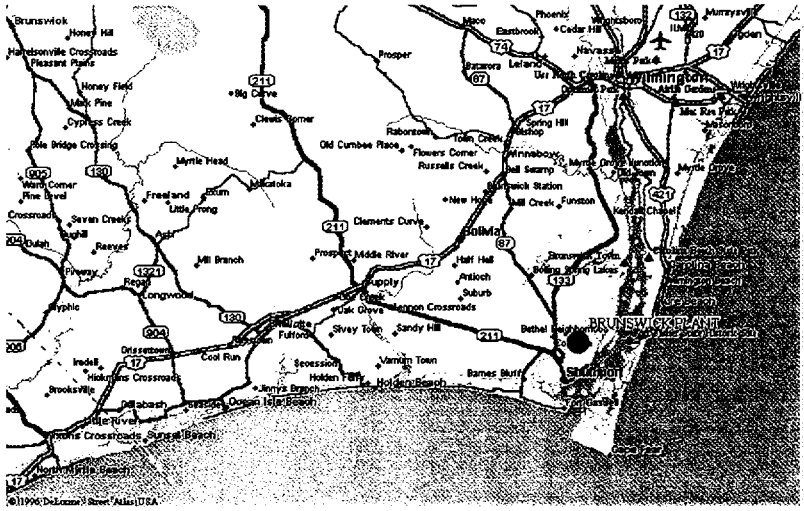


Figure 1: Location of Brunswick Steam Electric Plant

The Cape Fear River is east of the plant, and cooling water is drawn from the river through a canal. The cooling water is discharged to the Atlantic Ocean through a canal, pumping station, and piping. The discharge point is south of the town of Caswell Beach.

The plant site varies in elevation from sea level to 30 feet above mean sea level (M.S.L.). It is surrounded by extensive marshes. The lower Cape Fear River is an important nursery area for shell fish, and other marine species.

The local economy supports significant recreational, industrial, agricultural, and government contributions. There is well developed recreational use of the barrier islands south and east of the site. Fishing and boating are popular activities. Commercial fishing is also an important industry in the community. Agriculture utilizes some of the land within 50 miles of the site; such as small truck farms, cattle, poultry, and row crops including corn, soybeans and tobacco. Industrial activity includes the Archer-Daniels-Midland Chemical Company, a manufacturer of citric acid located one and a half miles southeast of the plant. In conjunction with the citric acid plant is a small electrical generating station operated by Cogentrix, Inc. This coal fired station is composed of two units rated at 55 Mwe each.

Transportation is a significant industry in the local economy, with the Port of Wilmington north of the site. The shipping channel is just east of the site in the Cape Fear River. Also the Sunny Point Military Ocean Terminal is located approximately four and one half miles north of the plant site on the Cape Fear River.

RADIOLOGICAL MONITORING PROGRAM QUALITY ASSURANCE

A required component of the environmental radiological monitoring program is the Quality Assurance Program. The standards for the quality assurance program are established in NRC Regulatory Guide (R.G.) 4.15, "Quality Assurance for Radiological Monitoring Programs." According to R.G. 4.15, the purpose of the quality assurance program is "(1) to identify deficiencies in the sampling and measurement processes to those responsible for these operations so that corrective action can be taken, and (2) to obtain some measure of confidence in the results of the monitoring programs in order to assure the regulatory agencies and the public that the results are valid." This provides the opportunity to implement corrective actions that address possible deficiencies. Examples of the activities of the quality assurance program include:

- regular review of sample collection and records
- regular review of laboratory procedures and methods
- participation in the Analytics, Inc., Environmental Cross-Check Program, which provides an independent assessment of the quality of laboratory results.
- the use of known concentrations of radioactivity in test samples by the laboratory to ensure consistent quality results on an ongoing basis.

RADIOLOGICAL MONITORING PROGRAM GENERAL DESCRIPTION

Although the contribution to background radiation is small, CP&L has established this program to measure the exposure pathways to man. An exposure pathway describes the source of the radiological exposure. The primary forms of potential radiological emissions from the plant are airborne and liquid discharge. The following pathways are monitored external dose, ingestion of radioactive materials, and the inhalation of radioactive material. Specific methods and different environmental media are required to assess each pathway. Table 1 provides a list of the media used to assess each of these pathways.

Table 1

Media Used to Assess Exposure Pathways to Man

Pathway of Exposure to Man	Media Sampled
External Dose	Thermoluminescent Dosimetry (TLD) Shoreline Sediment
Ingestion	Broadleaf Vegetation Fish and Invertebrates Surface Water
Inhalation	Air Samples (Particulate & Radioiodine)

Sampling Locations

Sampling locations are chosen based upon meteorological factors, preoperation monitoring, and results of the land use surveys. A number of locations are selected as controls. Control stations are selected because they are very unlikely to be affected by operation of the plant. Sample locations may be seen in Figures 2 and 3. A description of each sample location may be found in Table 2.

Radiological Sampling Locations

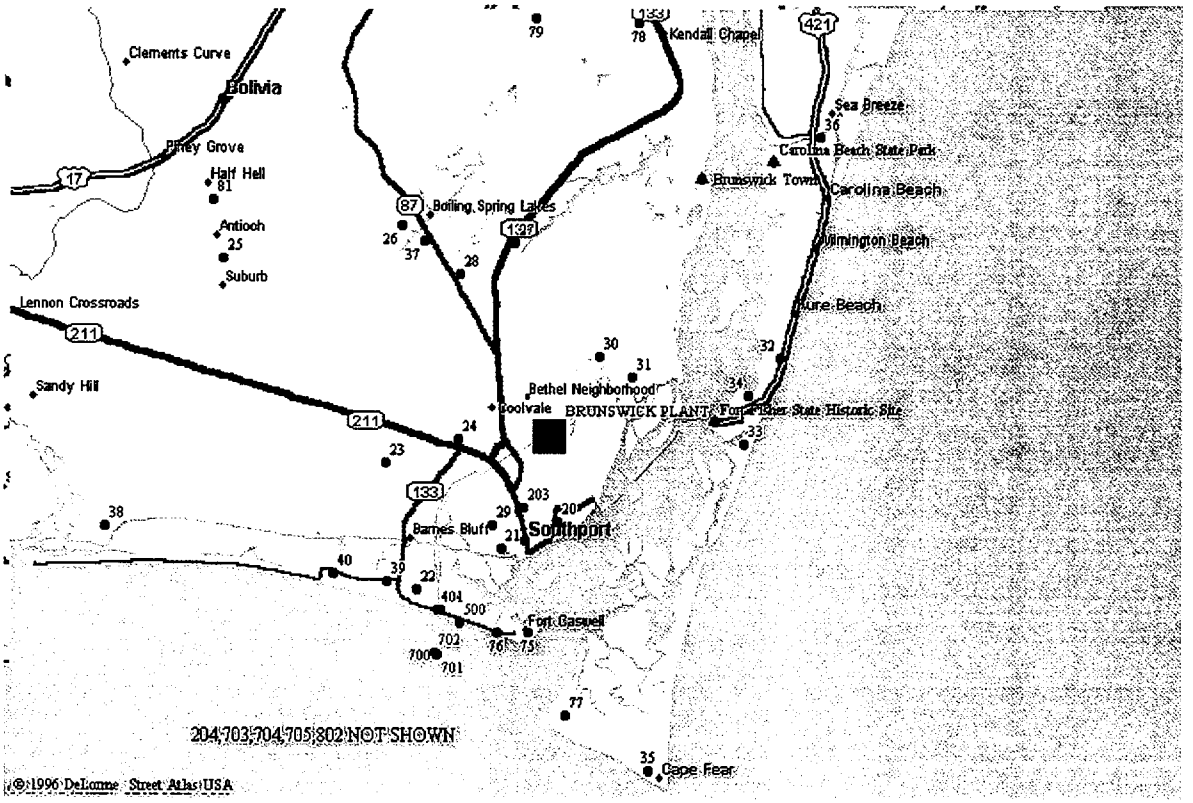


Figure 2: Radiological Sampling Locations (Distant from Plant) (Scale 1 inch = 3.08 miles)

Thermoluminescent dosimeter locations are displayed in black, ingestion and waterborne pathways in blue, and the inhalation or air sampling station in red.

Stations not illustrated:

204 (Sutton Plant in Wilmington) (Control Air Station)

703, 704, 705 (Location not Specified in the Atlantic Ocean)(Control Fish Station)

802 (Location not specified) (Control Vegetation)

Radiological Sampling Locations

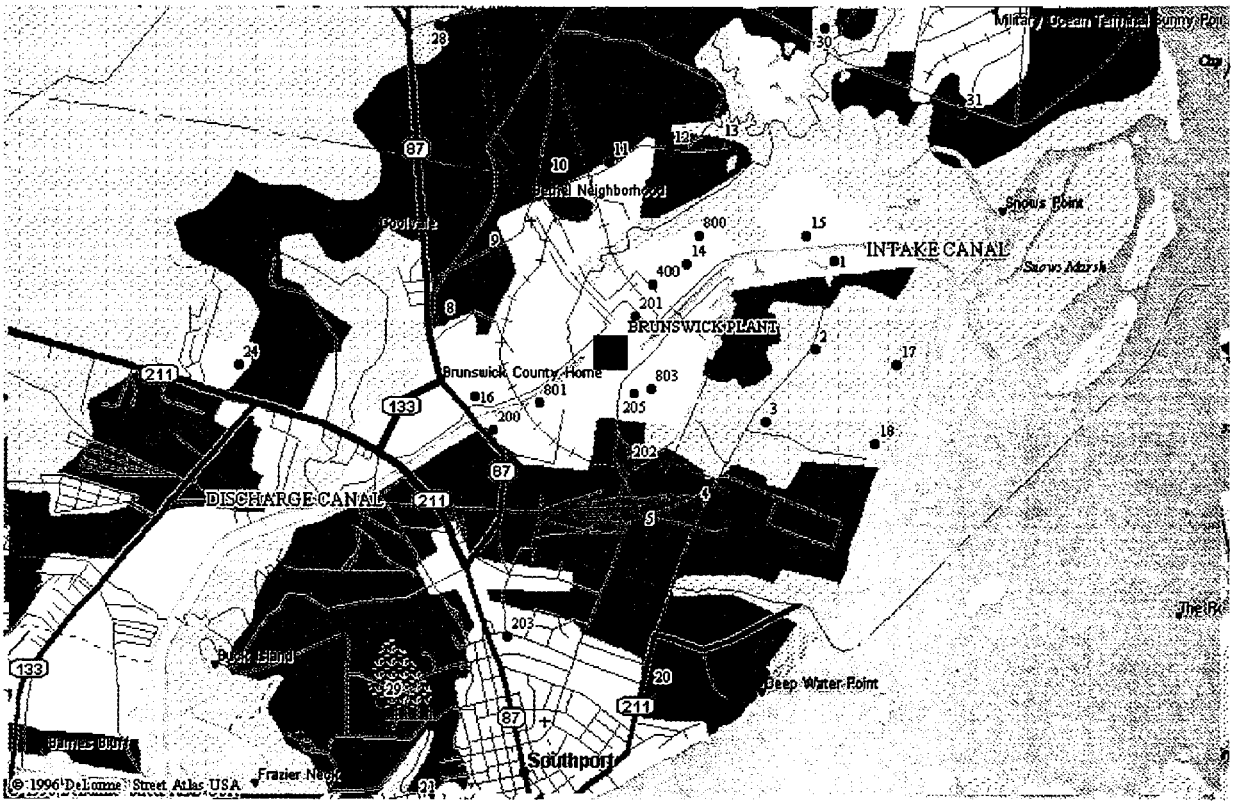


Figure 3: Radiological Sampling Locations (Nearest Plant) (Scale 1 inch = .8 miles)

Thermoluminescent dosimeter locations are displayed in black, ingestion and waterborne pathways in blue, and inhalation or air sampling stations in red.

Stations not illustrated:

204 (Sutton Plant in Wilmington) (Control Air Station)

703, 704, 705 (Location not Specified in the Atlantic Ocean)(Control Fish Station)

802 (Location not specified) (Control Vegetation)

Table 2

Brunswick Steam Electric Plant

Radiological Monitoring Sampling Locations

Sample Type	Location & Description	Frequency	Sample Size	Analysis
Air Cartridge (AC)	200--1.0 mile SW Visitors Center 201--0.6 mile NE PMAC (Highest D/Q) 202--1.0 mile S substation--construction rd. 203--2.3 miles SSW Southport substation 204--23 miles NNE Sutton Plant* 205--0.6 mile SSE Spoil Pond	Weekly	10,000 ft^3 (300 m^3)	Iodine
Air Particulate (AP)	200--1.0 mile SW Visitors Center 201--0.6 mile NE PMAC (Highest D/Q) 202--1.0 mile S substation-construction rd. 203--2.3 miles SSW Southport substation 204--23 miles NNE Sutton Plant* 205--0.6 mile SSE Spoil Pond	Weekly	10,000 ft^3 (300 m^3)	Gross Beta (Weekly) Composite Gamma (Quarterly)
Fish (FI)	700--.5 miles SSW Atlantic Ocean @ discharge (free-swimmers) 701--5.5 miles SSW Atlantic Ocean @ discharge (bottom-feeders) 702--5.5 miles SSW Atlantic Ocean @ discharge (invertebrates) 703--Atlantic Ocean; location not specified* (free-swimmers) 704--Atlantic Ocean; location not specified* (bottom-feeders) 705--Atlantic Ocean; location not specified* (invertebrates)	Semiannual (In Season)	500 grams (wet)	Gamma
Broadleaf Vegetation (BL)	800--0.7 mile NE intake canal 801--0.6 mile SW discharge canal 802--10 miles; location not specified* 803--0.6 mile SSE Spoil Pond	Monthly (As available)	500 grams (wet)	Gamma
Shoreline Sediment (SS)	500--4.9 miles SSW; beach near OD pumps	Semiannual	500 grams	Gamma
Surface Water (SW)	400--0.7 mile NE intake canal* 401--4.9 miles SSW discharge canal @OD pumps	Monthly composite	4 liters	Gamma Tritium

* Control Stations

Table 2 (Continued)

Brunswick Steam Electric Plant

Radiological Monitoring Sampling Locations

Sample Type	Location & Description	Frequency	Sample Sz	Analysis
Thermoluminescent Dosimetry (TLD)	1 1.1 miles E Moore St. extension 2 1.0 mile ESE Moore St. ext. 3 0.9 mile SE Moore St. extension 4 1.1 miles SSE Moore St. ext. 5 1.1 miles S Leonard St. 6 1.0 mile SSW BEMCO Power Line 7 1.0 mile SW Hwy 87 at r.o.w. 8 1.2 miles W Hwy 87 9 1.0 mile WNW Bethel Church Rd. 10 0.9 mile NW Bethel Church Rd. 11 0.9 mile NNW Bethel Church Rd. 12 1.0 mile N Bethel Church Rd. 13 1.2 miles NNE Bethel Church Rd. 14 0.5 mile NE intake canal 15 0.9 mile ENE intake canal 16 1.0 mile WSW discharge canal 17 1.5 miles ESE A.D.M. property 18 1.7 miles SE A.D.M. property 20 2.0 miles S church on Stewart St. 21 2.9 miles SSW West St. Sea Captain Motel 22 5.3 miles SW Caswell Beach Rd. 23 4.6 miles WSW near airport 24 3.0 miles W Hwy 211 25 8.7 miles WNW Antioch Church 26 5.9 miles NW W.Boiling Springs Rd 27 5.0 miles NNW Hwy 133 28 4.2 miles NW South Brunswick HS 29 2.6 miles SSW Southport Elem. School 30 2.0 miles NE Sunny Point MOT 31 2.6 miles ENE Sunny Point MOT 32 5.7 miles ENE Ft. Fisher AFB 33 4.0 miles E Ferry Slip N.H. Co. 34 5.5 miles ENE Ft. Fisher Museum 35 7.5 miles SSE Bald Head Island 36 9.3 miles NE Carolina Beach 37 5.5 miles NW Boiling Spring Lakes 38 11.0 miles W at Sunset Harbor 39 5.3 miles SW Oak Island Comm Svcs Bldg 40 6.9 miles WSW Oak Island Town Hall 75 4.5 miles S Ft. Caswell Bapt. Assy. 76 4.8 miles SSW at Caswell Beach 77 5.3 miles S at Bald Head Island 78 10.0 miles NNE Hwy. 133 at SR 1521 79 9.5 miles N SR 1539 at SR 1521 81 10.0 miles WNW Midway Rd. at SR 1508*	Quarterly	Not Applicable	TLD Reading

*Control Stations

SUMMARY OF RADIOLOGICAL MONITORING PROGRAM

This report presents the results of the Radiological Environmental Monitoring Program conducted during 1999 for BSEP. The program was conducted in accordance with the Off-site Dose Calculation Manual Specifications (ODCMS), and applicable procedures.

The 1999 Annual Radiological Environmental Operating Report (REOR) has been prepared and submitted in accordance with Technical Specification 5.6.2 and ODCMS 7.4.1. The report applies to both BSEP Unit Nos. 1 and 2 (License Nos. DPR-71 and DPR-62, respectively).

Nine-hundred twenty-nine samples were collected from indicator and control locations from six environmental media types and analyzed during the year. No detectable radioactivity (or radioactivity which did not differ significantly from the corresponding control) was observed in any of the 775 measurements taken at indicator locations in 1999. All samples analyzed met the Lower Limit of Detection (LLD) requirements as established by ODCMS Table 7.3.15-3.

The radiological environmental data indicates that BSEP operations in 1999 had no significant impact on the environment or public health and safety. No measurable radiation exposure is attributed to any off-site member of the public due to the operations of BSEP.

Comparison of the current data with preoperational (1973, 1974) information (Tables 4 and 5) indicate that air particulate filter gross beta activity and ambient gamma radiation levels were lower in 1999.

A statistical summary of all the data gathered in 1999 has been compiled in Table 5.

TABLE 3
BRUNSWICK STEAM ELECTRIC PLANT
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY

Brunswick Steam Electric Plant
Brunswick County, North Carolina

Docket Numbers - 50-324 and 325
Calendar Year 1999

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD)[1]	All Indicator Locations[2] Mean Range	Location w/Highest Annual Mean Name, Distance, and Direction	Location w/Highest Annual Mean Mean Range[2]	Control Locations Mean Range[2]
Air Cartridge (pCi/m^3)	I-131 308[3]	3.0E-2	All less than LLD		All less than LLD	All less than LLD
Air Particulate (pCi/m^3)	Gross Beta 308[3]	3.0E-3	1.73E-2 (256/256)[7] 5.49E-3 - 3.86E-2	Southport Substation 2.3 miles SSW	1.82E-2 (51/51)[7] 7.25E-3 - 3.86E-2	1.80E-2 (52/52)[7] 7.19E-3 - 3.94E-2
	Gamma[4] 24	See Table 8	All less than LLD		All less than LLD	All less than LLD
Broadleaf Vegetation (pCi/g, wet)	Gamma[4] 48	See Table 8	All less than LLD		All less than LLD	All less than LLD
Fish and Invertebrates (pCi/g, wet)	Gamma[4] 12	See Table 8	All less than LLD		All less than LLD	All less than LLD
Sediments--Shoreline (pCi/g, dry)	Gamma[4] 2	See Table 8	All less than LLD		All less than LLD	No control
Surface Water (pCi/l)	Gamma[4] 24	See Table 8	All less than LLD		All less than LLD	All less than LLD
	Tritium 24	3.25E+2(24/24)[6][7]	All less than LLD		All less than LLD	All less than LLD
TLD (mR per quarter)[5]	TLD Readout 179[3]		9.66E+0 (175/176)[7] 7.40E+0 - 1.39E+1	Caswell Beach 4.8 miles SSW	1.22E+1 (4/4)[7] 1.04E+1 -1.39E+1	1.11E+1 (4/4)[7] 9.30E+0 - 1.27E+1

FOOTNOTES TO TABLE 3

1. LLD is calculated based on 4.66 standard deviations above background using typical sample sizes and counting times. Due to counting statistics and varying volumes, occasionally lower LLDs are achieved. See Table 6.

2. Mean and range are based on detectable measurements only. The fractions of detectable measurements at specific locations are indicated in parentheses.

3. Missing samples are discussed in Missed Samples and Analyses.

4. Summary of gamma analysis results in this report does not include the following naturally occurring isotopes since most environmental samples contained some or all of these: Be-7, K-40, Tl-208, Pb-212, Bi-212, Bi-214, Pb-214, Ra-226, and Ac-228.

5. TLD dose is reported in milliroentgen (mR) per 90-day period (quarter) beginning in 1995. This is the exposure standard used to compare data to the NRC.

6. The tritium LLD was lowered to 3.25 E+2 pCi/L in June 1996. The LLD was lowered at the request of CP&L in order to maintain comparable LLD values with the North Carolina Division of Radiation Protection (NCDRP) and the South Carolina Department of Health and Environmental Control (SCDHEC) laboratories.

7. The numbers in parentheses [i.e. Row Surface Water Tritium 3.25E+2(24/24) for LLD] indicate how many samples that specific value and column apply to in relation to the total number of samples for that column heading.

INTERPRETATIONS AND CONCLUSIONS

Air Monitoring

The average gross beta concentration measured in 256 air particulate (AP) samples collected at indicator stations during 1999 was 1.73 E-2 picocuries per cubic meter (pCi/m^3). The preoperational (1973-1974) average concentration was 8.2 E-2 pCi/m^3, while the average activity in the recent past (1994-1998) was 1.79 E-2 pCi/m^3 (Table 4). The airborne concentrations of gross beta activity in 1999 are indicative of natural background and do not indicate any abnormal activities originating from the nuclear operations at BSEP. Figures 4 through 8 depict the monthly variations of these values.

Gamma analyses of the composited air particulate filters indicated that all of the radionuclides indicative of plant effluents were at concentrations less than their respective LLDs. All radionuclides positively identified by the radionuclide analyses were typical of naturally occurring materials.

Analyses of 256 indicator location air cartridges (AC) for the collection of radioiodines indicated that concentrations of those radionuclides, and particularly I-131, were less than the LLD.

Milk

No milk (milch) sampling locations are currently identified in BSEP environs, and therefore no sampling of this media was available.

Vegetation

Food crops were not grown in the vicinity of the plant in 1999, and this media was represented by indigenous vegetation samples consisting primarily of wild cherry and wax myrtle leaves. Thirty-six samples were collected from indicator locations and 12 from the control location. No detectable activities relating to plant effluents were detected in this sampling media in 1999.

Fish and Invertebrates

Fish (free swimmers and bottom feeders), invertebrate (shellfish), and benthic organisms samples are collected semiannually from two locations: (1) near the Atlantic Ocean discharge pipe at Caswell Beach and (2) a control location in the Atlantic Ocean not influenced by plant operations. In all 12 samples, the radionuclide content was determined to be less than the respective LLDs for the gamma-emitting radionuclides.

Shoreline Sediments

Two shoreline sediments are drawn from the beach area near the pumping station location at Caswell Beach. In both samples, the radionuclide content was determined to be less than the respective LLDs for gamma-emitting radionuclides.

Surface Water

Surface water is sampled monthly from the intake and discharge canal. These samples are analyzed for gamma-emitting radionuclides and for tritium. The analyses indicated that no detectable concentrations of radionuclides appeared in the 12 indicator samples. Neither of these samples indicated any detectable concentrations of tritium in the 12 indicator samples. Figure 9 depicts the observed tritium concentrations for 1999.

External Radiation Exposure

The environmental data on external radiation exposure for 1999 was essentially unchanged from 1989-1998 with an average exposure for all indicator locations of 9.7 mR per quarter. The average exposure observed over the preoperational period was 1.02 mR per week observed from the fourth quarter of 1972 through the second quarter of 1975. Table 5 provides a comparison of recent data with the preoperational and historical data.

The highest average exposure occurred at Caswell Beach 4.8 miles SSW. The exposure was 12.2 mR per quarter. Figure 10 depicts average inner and outer ring TLD data for each quarter of 1999. This depiction does not indicate a significant higher exposure rate for the inner versus the outer ring. This is interpreted as demonstrating that no discernible off-site exposure has occurred from plant operations.

TABLE 4

Brunswick Steam Electric Plant

GROSS BETA AIR PARTICULATE ACTIVITY AVERAGES

	Gross Beta Activity (pCi/m^3)							
	Preoperational		Recent Operational					
Location	1973	1974	1994	1995	1996	1997	1998	1999
AP-200	2.2 E-2	1.4 E-1	1.8 E-2	1.8 E-2	1.7 E-2	1.7 E-2	1.8 E-2	1.7 E-2
AP-201	3.1 E-2	1.4 E-1	1.8 E-2	1.9 E-2	1.7 E-2	1.7 E-2	1.9 E-2	1.8 E-2
AP-202	3.4 E-2	1.4 E-1	1.8 E-2	1.8 E-2	1.7 E-2	1.7 E-2	1.8 E-2	1.7 E-2
AP-203	2.4 E-2	1.3 E-1	1.9 E-2	1.9 E-2	1.7 E-2	1.7 E-2	1.9 E-2	1.8 E-2
AP-204*	2.5 E-2	1.3 E-1	1.9 E-2	1.9 E-2	1.8 E-2	1.8 E-2	1.8 E-2	1.8 E-2
AP-205	____	____	1.9 E-2	1.8 E-2	1.7 E-2	1.7 E-2	1.8 E-2	1.7 E-2

*Control location

TABLE 5

Brunswick Steam Electric Plant

HISTORICAL TLD RESULTS (1972-1999)

Year	Average Exposure of All TLD Monitoring Locations (mR per week)
1972 (4th Qtr.)	0.80
1973	1.25
1974	0.97
1975 (1st, 2nd Qtr)	0.80
1976	0.98
1977	1.32
1978	1.24
1979	0.93
1980	0.90
1981	0.96
1982	1.18
1983	1.21
1984	0.98
1985	1.03
1986	0.89
1987	0.92
1988	0.86
1989	0.75
1990	0.76
1991	0.76
1992	0.75
1993	0.78
1994	0.77
1995	10.1 (mR per quarter)*
1996	10.1 (mR per quarter)
1997	10.1 (mR per quarter)
1998	9.7 (mR per quarter)
1999	9.7 (mR per quarter)

*TLD exposure in mR per quarter beginning in 1995. The equivalent weekly exposure is 0.78 mR.

MISSED SAMPLES AND ANALYSES

Air Cartridge and Air Particulates

No samples were available for:

AC/AP-201, May 17, blown fuse.
AC/AP-203, August 23, blown fuse.
AC/AP-201, September 20, blown fuse caused by bad switch and loose wiring.
AC/AP-203, December 6, pump failure (carbon vanes).

Food Crops / Vegetation

No food crops were grown in the vicinity of the plant in 1999; therefore, none were collected. This media was represented by indigenous vegetation samples (Broadleaf vegetation) consisting primarily of wild cherry and wax myrtle leaves. Wild cherry vegetation samples were not available during the months of January, February, March, April and December, while wax myrtle vegetation samples were not available during the months of May, June, July, August, September, October, and November of 1999.

Thermoluminescent Dosimeters (TLDs)

One, of a possible 180 TLD samples, was missing during 1999. The missing TLD occurred:

First Quarter - TLD 25 was missing in the field when the utility pole, to which it was attached, was removed. The TLD was placed on a pole approximately 100 feet away.

Note: TLD points 41 thru 74 are not ODCMS TLD sample points and are not listed. TLD sample points 19 and 80 have been retired.

ANALYTICAL PROCEDURES

Gross Beta

Gross beta radioactivity measurements are made utilizing a Tennelec Low-Background Alpha/Beta Counting System. The LLD for air particulates is approximately 3.0 E-3 pCi/m^3.

Air particulate samples are mounted in two-inch stainless steel planchets and counted directly for 50 minutes.

Tritium

Liquid samples requiring tritium analysis are treated with a small amount of sodium hydroxide and potassium permanganate crystals and then distilled. Five milliliters of the distillate are mixed with 13 milliliters of liquid scintillation cocktail and counted in a liquid scintillation counter for 500 minutes. The LLD for this count time was approximately 3.25 E+2 pCi/L. This lower LLD was established in June 1996 to compare our tritium LLDs and NCDRP's reportable concentrations, in the Split Sample Program's Annual Report.

Iodine-131

Iodine-131 airborne concentrations are analyzed by the intrinsic germanium (Ge) gamma spectrometry systems. The cartridges are placed on the detector, and each charcoal cartridge is counted individually for 1,500 seconds with an approximate LLD of 3.0E-2 pCi/m^3.

Gamma Spectrometry

Gamma spectrum analysis utilizes intrinsic germanium detectors with thin aluminum windows housed in steel and lead shields. The analyzer system is the Canberra Nuclear 9900 Gamma Spectroscopy System. Table 6 summarizes LLD values derived from instrument sensitivity based upon a blank sample background.

Air particulate filter quarterly composites are placed in a Petri dish and analyzed directly for 7,000 seconds. The count time was increased in 1997 from 3,600 sec. to 7,000 sec. due to decreased sample volumes.

Liquid samples are boiled down to reduce the volume, transferred to 1000-ml Marinelli beaker, and analyzed for 10,000 seconds.

Shoreline sediments are dried, ground, weighed, and then analyzed in a Marinelli beaker for 1,500 seconds.

Broadleaf vegetation is weighed wet and analyzed in a Marinelli beaker for 7,500 seconds.

Fish samples and edible portions of invertebrate organisms are cleaned, dressed, and placed in a Marinelli beaker for analysis for 1,500 seconds.

Thermoluminescent Dosimetry

Each area monitoring station includes a TLD packet, which is a polyethylene bag containing three calcium sulfate phosphors contained in a Panasonic UD-814 badge. The TLD is light-tight, and the bag is weather-resistant.

Dosimeters are machine annealed before field placement. Following exposure in the field, each dosimeter is read utilizing a Panasonic TLD reader. This instrument integrates the light photons emitted from traps as the dosimeter is heated above 150°C. The photons from the lower-energy traps are automatically eliminated through a preheat cycle. Calibration is checked regularly using dosimeters irradiated to known doses. Prior to the measurement of each dosimeter, the instrument is checked through use of an internal constant light source as a secondary standard.

The exposure reported is corrected for exposure received in transit and during storage through the use of control dosimeters.

Interlaboratory Comparison Program

The Radiochemistry Laboratory at the Harris Energy & Environmental Center in New Hill, North Carolina, provides radioanalytical services for CP&L's nuclear plant radiological environmental surveillance programs. In fulfillment of ODCM Operational Requirements, the laboratory is a

participant in the Analytics, Inc., Environmental Cross-Check Program and uses its performance in this program as a major determinant of the accuracy and precision of its analytical results. The change in vendors for the Interlaboratory Program was due to the EPA Environmental Cross-Check Program's termination for utility participation as of December 31, 1995.

During 1999, 65 analyses were completed on 16 samples representing five major environmental media (i.e., water, milk, air filters, soil, and air cartridges). Data on the known activities and the standard deviations for the 65 analyses have been received from Analytics, Inc.

If any Cross-Check samples or checks exceed internal controls, corrective actions are taken. Three of the 65 analyses exceeded the ± 20% ratio to the known value as supplied by Analytics, Inc.

Lower Limits of Detection

All samples analyzed met the LLD required by ODCMS Table 7.3.15-3. Typical "a priori" LLD values for the samples analyzed are listed in Table 6.

TABLE 6
TYPICAL LOWER LIMITS OF DETECTION (A PRIORI)
GAMMA SPECTROMETRY

Surface Water Samples (Saline Water)	
Isotope	**LLD (pCi/l)**
Mn-54	7
Co-58	6
Fe-59	11
Co-60	8
Zn-65	16
Zr-Nb-95	6
Cs-134	7
Cs-137	7
Ba-La-140	6
Other Expected Gamma Emitters	4 to 167
Air Particulates (Quarterly Composite)	
Isotope	**LLD (pCi/m^3)**
I-131	0.043
Cs-134	0.001
Cs-137	0.001
Other Expected Gamma Emitters	0.001 to 0.043
Shoreline Sediment	
Isotope	**LLD (pCi/kg, dry)**
Cs-134	72
Cs-137	49
Other Expected Gamma Emitters	41 to 873
Fish	
Isotope	**LLD (pCi/kg, wet)**
Mn-54	38
Co-58	50
Fe-59	25
Co-60	63
Zn-65	110
Cs-134	63
Cs-137	48
Other Expected Gamma Emitters	25 to 1314
Food Products and Vegetation	
Isotope	**LLD (pCi/kg, wet)**
I-131	29
Cs-134	34
Cs-137	31
Other Expected Gamma Emitters	5 to 568

LAND-USE CENSUS

PURPOSE OF THE LAND-USE CENSUS

The land-use census identifies the pathways (or routes) that radioactive material may reach the general populations near commercial nuclear generating stations. This is accomplished by completing studies each year that identify how the surrounding lands are used by the population. A comprehensive census of the use of the land within a five mile distance of the plant is completed during the growing season each year. This information is used for dose assessment and to identify changes to the stations sampled and the type of samples. These results ensure that the Radiological Environmental Monitoring Program (REMP) is based upon current data regarding human activity in the vicinity of the plant. Therefore, the purpose of the land-use census is both to ensure the monitoring program is current as well as to provide data for the calculation of estimated radiation exposure.

The pathways that are evaluated are:

- Ingestion Pathway - Results from eating food crops that may have radioactive materials deposited on them from the soil or atmosphere. Another pathway is through drinking milk from local cows or goats if these are present. The grass used to feed these animals may have incorporated or had deposited on it radioactive materials that can be transferred to the milk.

- Direct Radiation Exposure Pathway- Results from deposition of radioactive materials on the ground or from passage of these radioactive materials in the air.

- Inhalation Pathway- Results from breathing radioactive materials transported in the air.

Methodology

The following must be identified within the five mile radius of the plant for each of the 16 meteorological sectors (compass direction from which the winds may blow, for example NNE [North North East]):

- The nearest resident
- The nearest garden of greater that 500 square feet, producing broadleaf vegetables

- The nearest milk animal

The primary method is visual inspection from roadside within the five mile radius, with the exception of the Sunny Point Military Ocean Terminal. This information is supplemented with data from aerial photographs, information from county extension agents, and farm supply businesses.

1999 Land-Use Census Results

The 1998 and 1999 results of the survey for the nearest resident, garden, milk and meat animals in each sector are compared in Table 7.

The resident portion of the census conducted in April of 1999 identified changes in the distances of the nearest resident from plant center in two sectors. The garden portion of the census identified changes in the distances of the nearest garden in an additional five sectors.

A garden was added in the North (N) sector at 0.7 miles, and the nearest garden location changed in the South (S) sector at 1.2 miles, SouthWest (SW) sector at 2.9 miles, WestSouthWest (WSW) sector at 1.4 miles, and the WestNorthWest (WNW) sector at 1.2 miles. Neither milk or meat animals are located with the 5 miles of the plant.

Results of the 1999 Land Use and Garden Census indicate stable use of land, confirming that current control locations are appropriate, and no changes are needed for dose assessment and environmental motoring.

TABLE 7

Brunswick Steam Electric Plant

LAND-USE CENSUS COMPARISONS (1998-1999)

NEAREST PATHWAY (MILES)

SECTOR	RESIDENT		GARDEN		MILK/MEAT ANIMALS	
	1999	1998	1999	1998	1999	1998
N	0.7*	0.9	0.7*	None	None	None
NNE	0.8	0.8	1.2	1.2	None	None
NE	None	None	None	None	None	None
ENE	None	None	None	None	None	None
E	None	None	None	None	None	None
ESE	1.5	1.5	1.5	1.5	None	None
SE	0.9	0.9	None	None	None	None
SSE	1.0	1.0	None	None	None	None
S	1.2*	1.5	1.2*	1.5	None	None
SSW	1.2	1.2	1.5	1.5	None	None
SW	1.0	1.0	2.9*	1.0	None	None
WSW	1.2	1.2	1.4*	1.2	None	None
W	0.8	0.8	0.8	1.2	None	None
WNW	0.8	0.8	1.2*	1.1	None	None
NW	0.9	0.9	1.0	1.0	None	None
NNW	0.8	0.8	4.4	4.4	None	None

* Represents a change from the previous year.

Figure 4 For BSEP From 1/1/99 To 12/31/99

AIR PARTICULATE for GROSS BETA -Activity (pCi/cubic meter)

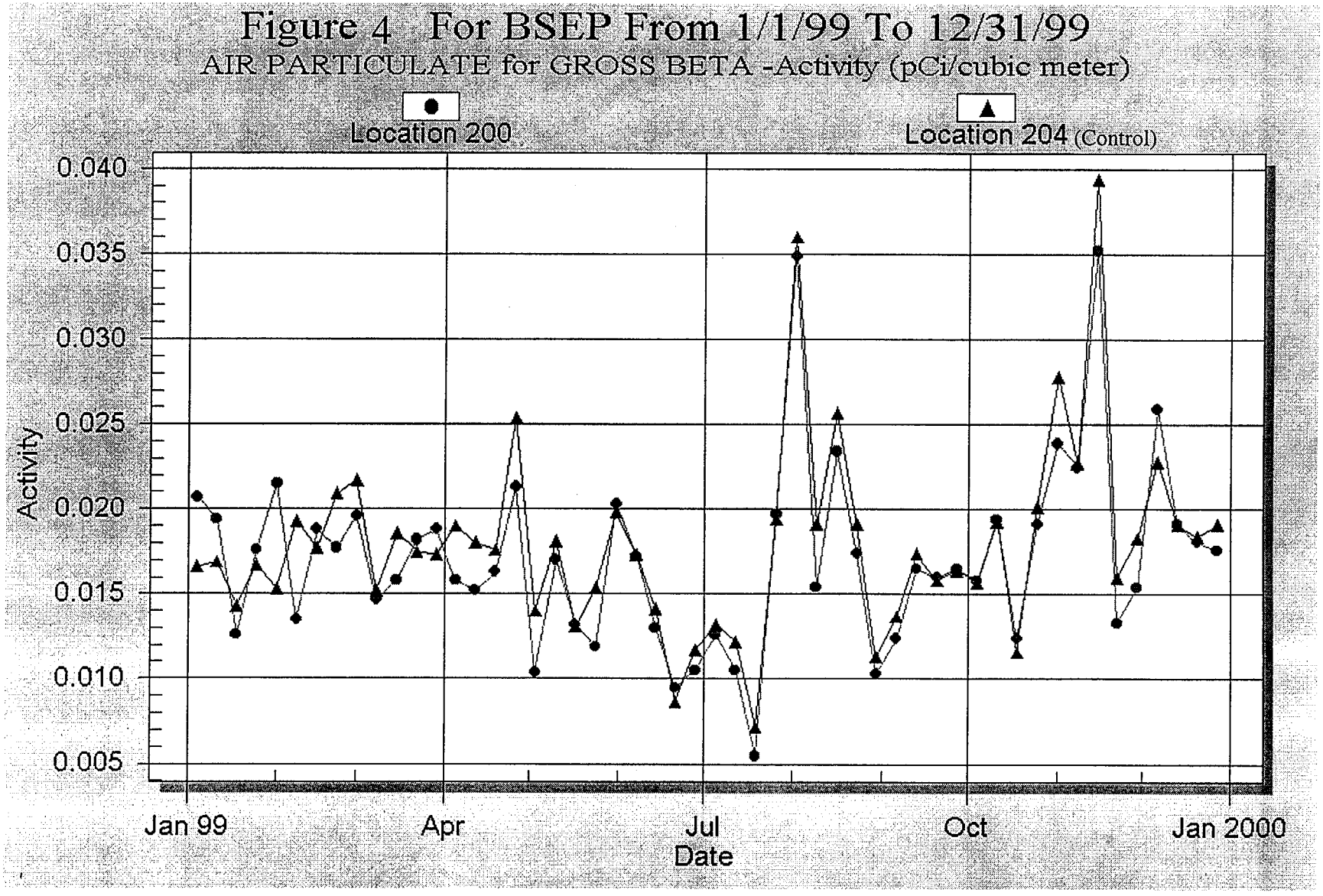


Figure 5 For BSEP From 1/1/99 To 12/31/99

AIR PARTICULATE for GROSS BETA - Activity (pCi/cubic meter)

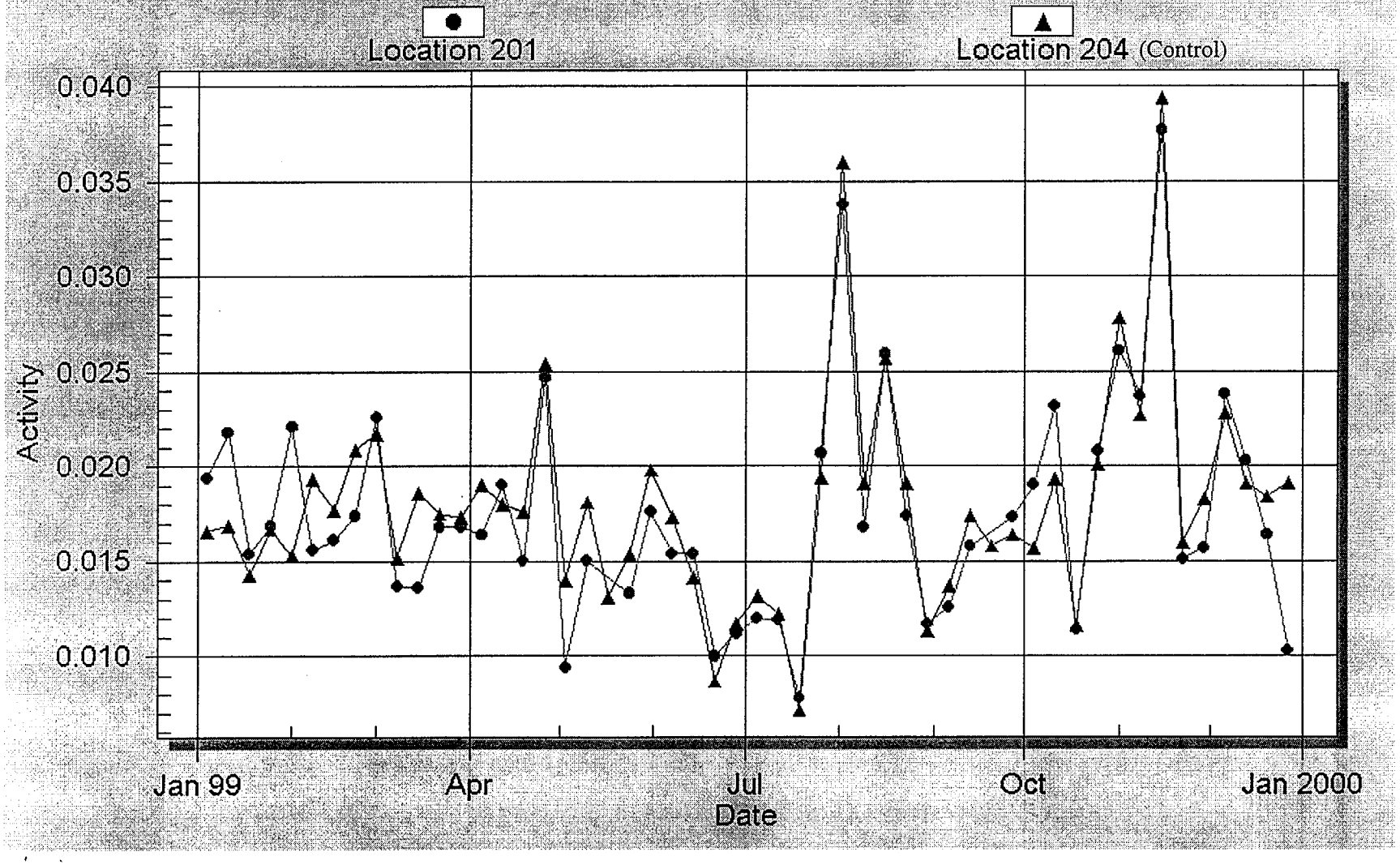
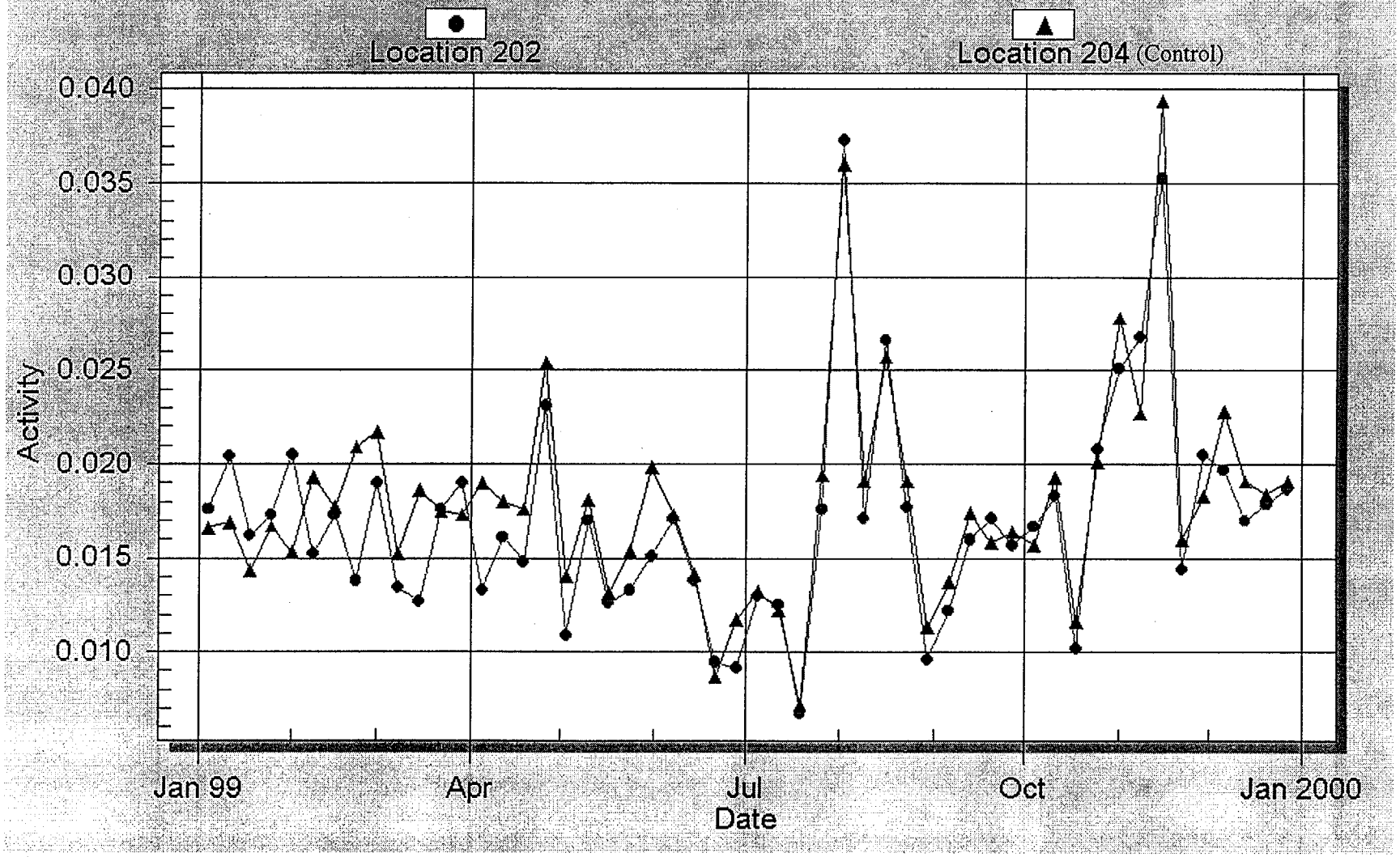


Figure 6 For BSEP From 1/1/99 To 12/31/99

AIR PARTICULATE for GROSS BETA - Activity (pCi/cubic meter)



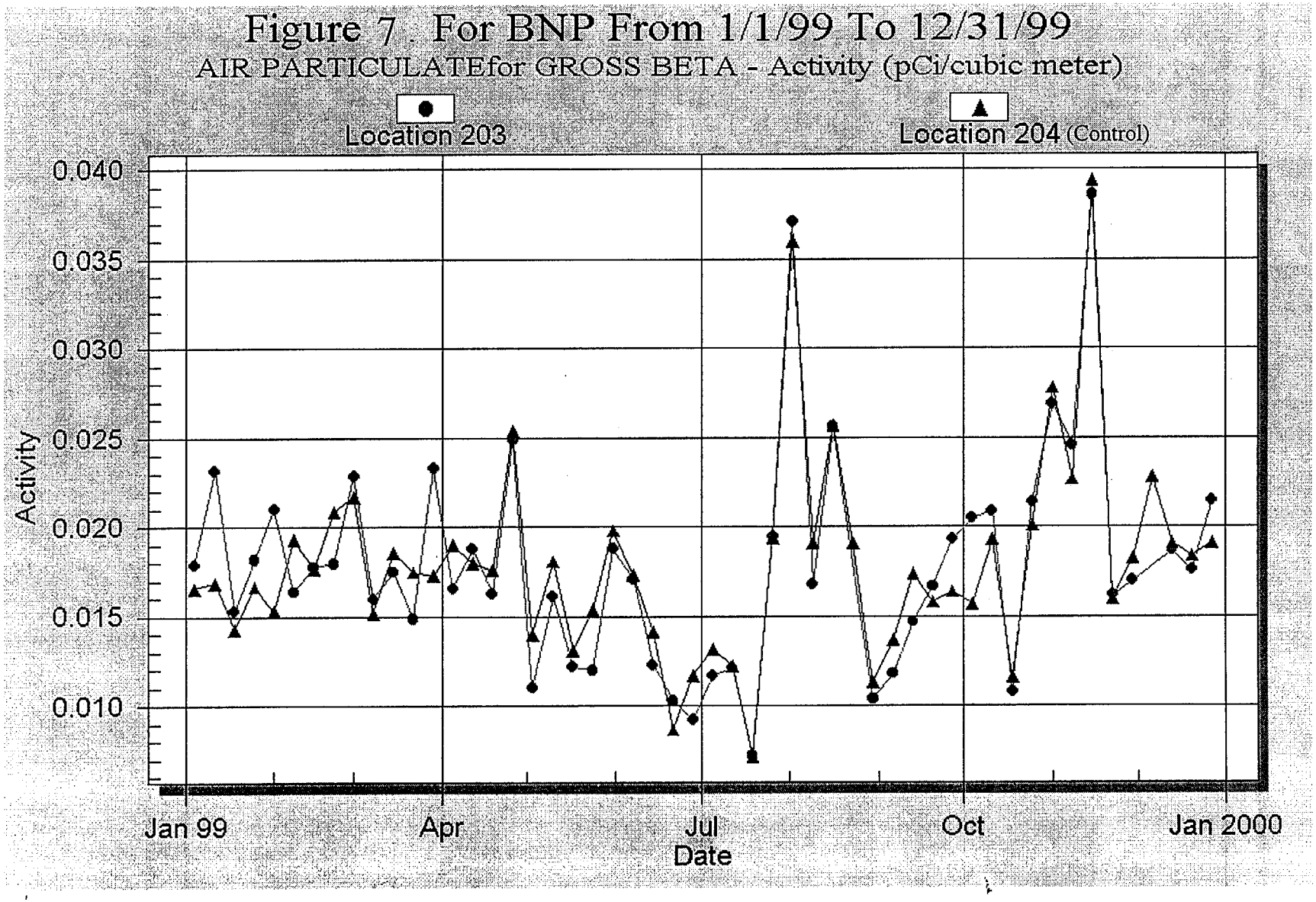


Figure 7. For BNP From 1/1/99 To 12/31/99
AIR PARTICULATEfor GROSS BETA - Activity (pCi/cubic meter)
Location 203
Location 204 (Control)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
Activity
Jan 99
Apr
Jul
Oct
Jan 2000
Date

Figure 8 For BSEP From 1/1/99 To 12/31/99

AIR PARTICULATE for GROSS BETA - Activity (pCi/cubic meter)

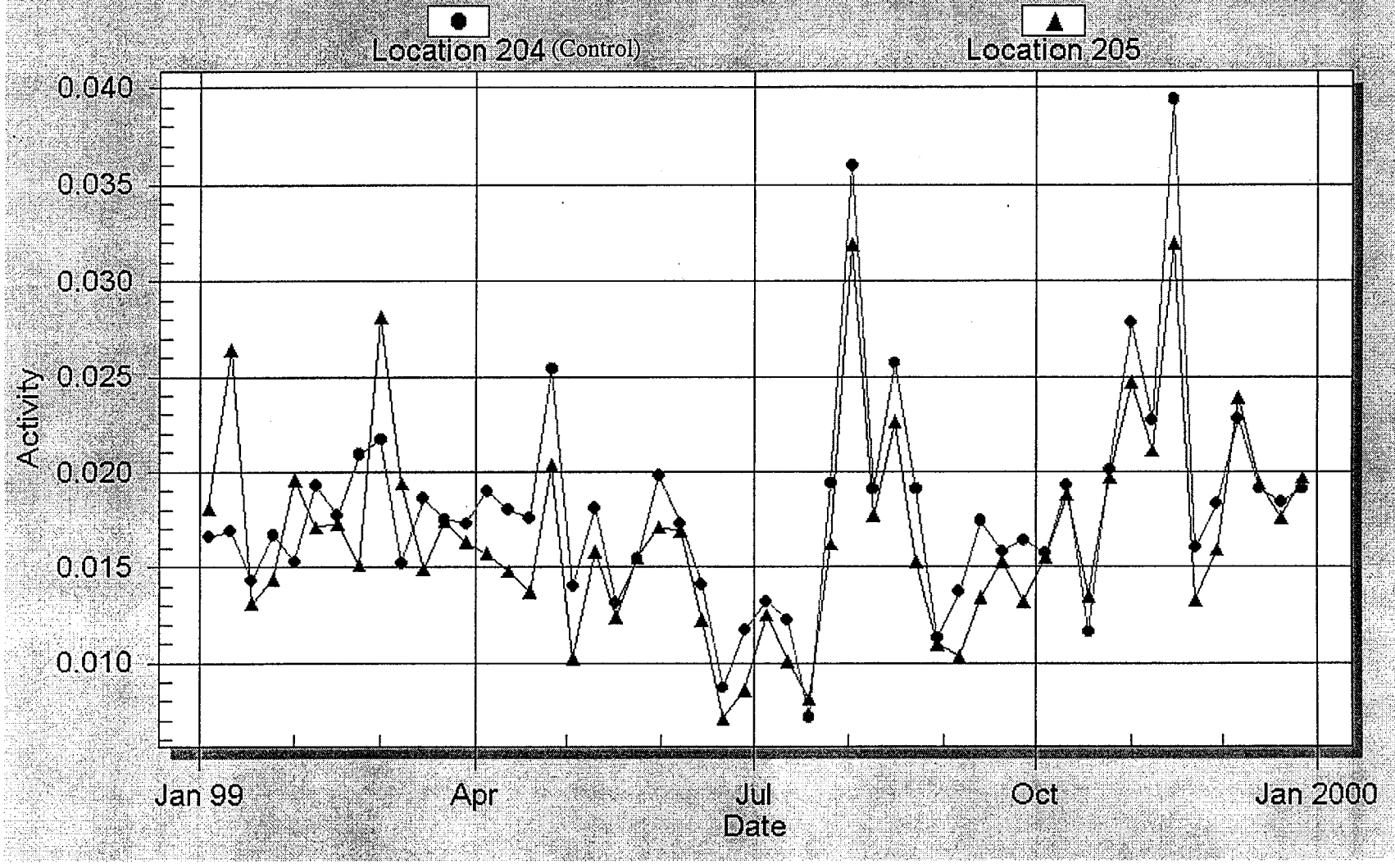


Figure 9 BSEP 1999 Surface Water Tritium

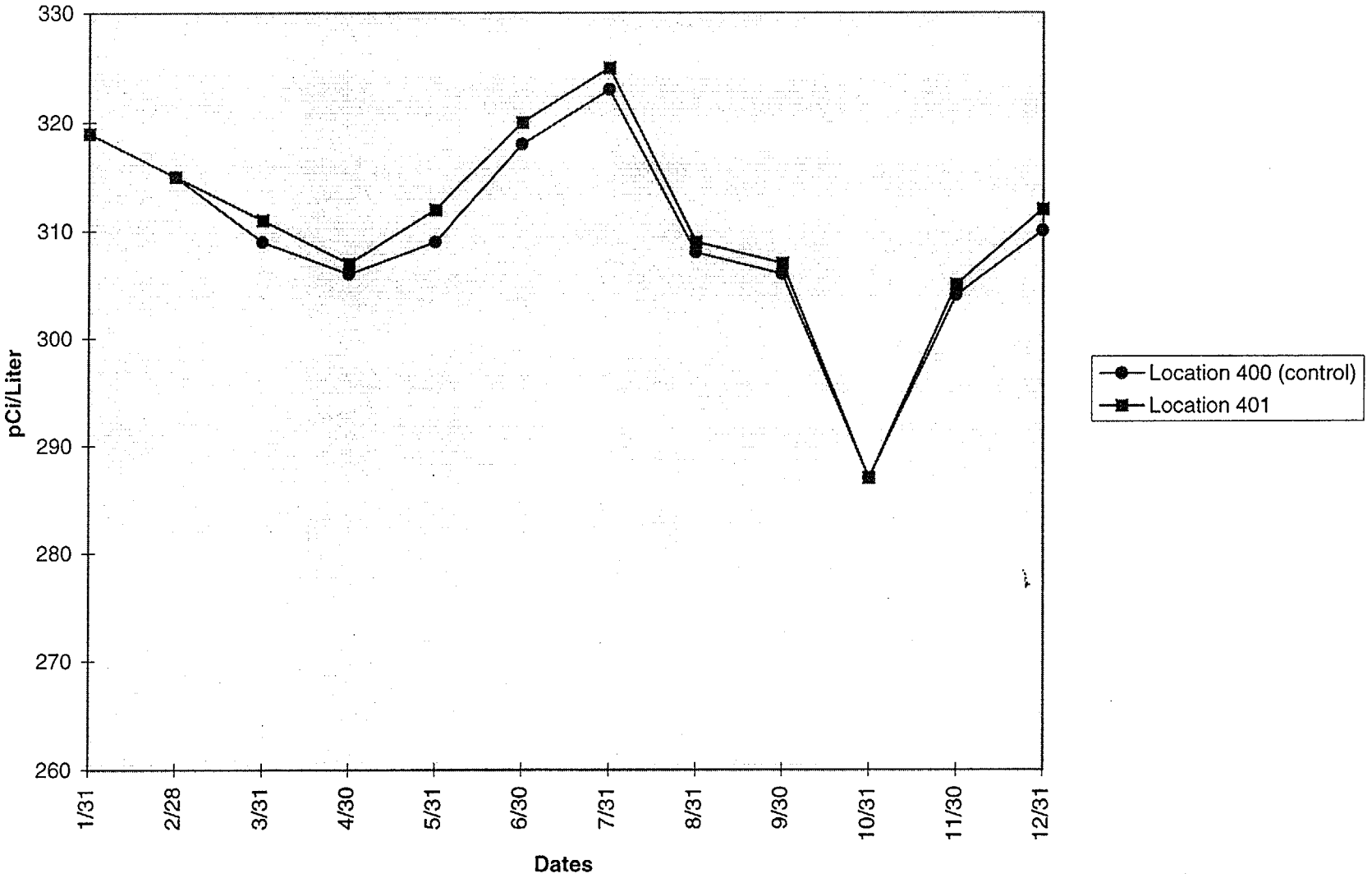
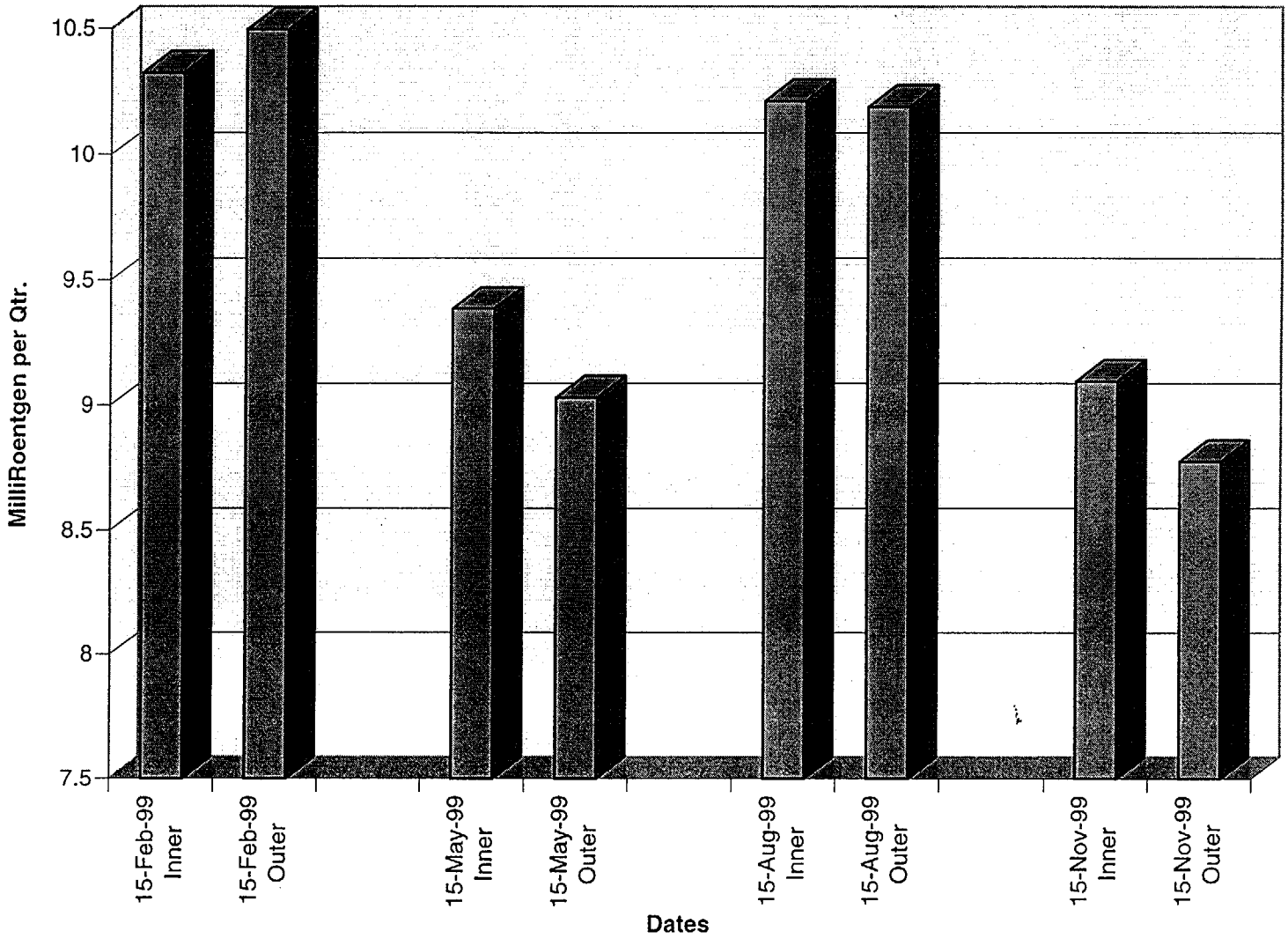


Figure 10 BSEP 1999 TLD Averages for Inner and Outer Ring Locations



CP&L

1999 Radiological Environmental

Monitoring TLD Report

Brunswick Steam Electric Plant

1999 CP&L Radiological Environmental Monitoring TLD Report Comments

- TLD points 41 thru 74 are not ODCMS TLD sample points and are not listed.
- TLD sample points 19 and 80 have been retired and are not used.
- TLD # 25 was missing First Quarter 1999.

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	SampleDate	Dose	2SigmaError
1	1.1 MI E - MOORE ST EXTENSION	02/15/99	9.7	2.1
1	1.1 MI E - MOORE ST EXTENSION	05/15/99	9.9	1.7
1	1.1 MI E - MOORE ST EXTENSION	08/15/99	9.9	2.7
1	1.1 MI E - MOORE ST EXTENSION	11/15/99	9.4	0.6
2	1.0 MI ESE - MOORE ST EXTENSION	02/15/99	10.6	2
2	1.0 MI ESE - MOORE ST EXTENSION	05/15/99	10.1	0.9
2	1.0 MI ESE - MOORE ST EXTENSION	08/15/99	9.8	2.5
2	1.0 MI ESE - MOORE ST EXTENSION	11/15/99	9.5	1
3	0.9 MI SE - MOORE ST EXTENSION	02/15/99	9.1	1.6
3	0.9 MI SE - MOORE ST EXTENSION	05/15/99	11.4	2.2
3	0.9 MI SE - MOORE ST EXTENSION	08/15/99	8.9	2.7
3	0.9 MI SE - MOORE ST EXTENSION	11/15/99	10.5	0.9
4	1.1 MI SSE - MOORE ST EXTENTION	02/15/99	10	1.7
4	1.1 MI SSE - MOORE ST EXTENTION	05/15/99	10	1.3
4	1.1 MI SSE - MOORE ST EXTENTION	08/15/99	9.9	2.5
4	1.1 MI SSE - MOORE ST EXTENTION	11/15/99	9.2	0.8
5	1.1 MI S - LEONARD ST	02/15/99	9.8	1.5
5	1.1 MI S - LEONARD ST	05/15/99	9.5	1.1
5	1.1 MI S - LEONARD ST	08/15/99	9.9	2.5
5	1.1 MI S - LEONARD ST	11/15/99	9.1	0.6
6	1.0 MI SSW - BEMCO POWER LINE	02/15/99	9.3	1.9
6	1.0 MI SSW - BEMCO POWER LINE	05/15/99	7.8	0.8
6	1.0 MI SSW - BEMCO POWER LINE	08/15/99	8.6	2.4
6	1.0 MI SSW - BEMCO POWER LINE	11/15/99	7.8	0.6
7	1.0 MI SW - HWY 87 AT RIGHT-OF-WAY	02/15/99	9.7	1.8
7	1.0 MI SW - HWY 87 AT RIGHT-OF-WAY	05/15/99	10.2	1.5
7	1.0 MI SW - HWY 87 AT RIGHT-OF-WAY	08/15/99	9.8	2.6
7	1.0 MI SW - HWY 87 AT RIGHT-OF-WAY	11/15/99	9.4	0.8
8	1.2 MI W - HWY 87	02/15/99	9.3	1.9
8	1.2 MI W - HWY 87	05/15/99	9.5	0.8
8	1.2 MI W - HWY 87	08/15/99	9.5	2.5
8	1.2 MI W - HWY 87	11/15/99	9.8	0.9

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	SampleDate	Dose	2SigmaError
9	1.0 MI WNW - BETHEL CHURCH RD	02/15/99	11.3	2.3
9	1.0 MI WNW - BETHEL CHURCH RD	05/15/99	8.9	2.2
9	1.0 MI WNW - BETHEL CHURCH RD	08/15/99	11.9	2.6
9	1.0 MI WNW - BETHEL CHURCH RD	11/15/99	8.6	1.2
10	0.9 MI NW - BETHEL CHURCH RD	02/15/99	8.8	1.6
10	0.9 MI NW - BETHEL CHURCH RD	05/15/99	7.8	1
10	0.9 MI NW - BETHEL CHURCH RD	08/15/99	8.9	2.5
10	0.9 MI NW - BETHEL CHURCH RD	11/15/99	7.8	0.6
11	0.9 MI NNW - BETHEL CHURCH RD	02/15/99	11.9	1.7
11	0.9 MI NNW - BETHEL CHURCH RD	05/15/99	9.1	0.8
11	0.9 MI NNW - BETHEL CHURCH RD	08/15/99	12.3	2.7
11	0.9 MI NNW - BETHEL CHURCH RD	11/15/99	9.3	1.1
12	1.0 MI N - BETHEL CHURCH RD	02/15/99	10.1	1.8
12	1.0 MI N - BETHEL CHURCH RD	05/15/99	9.6	2.1
12	1.0 MI N - BETHEL CHURCH RD	08/15/99	10.5	2.6
12	1.0 MI N - BETHEL CHURCH RD	11/15/99	9.5	0.7
13	1.2 MI NNE - BETHEL CHURCH RD	02/15/99	9.9	1.7
13	1.2 MI NNE - BETHEL CHURCH RD	05/15/99	8.3	1.1
13	1.2 MI NNE - BETHEL CHURCH RD	08/15/99	8.7	2.7
13	1.2 MI NNE - BETHEL CHURCH RD	11/15/99	8.1	1
14	0.5 MI NE - INTAKE CANAL	02/15/99	11.4	1.7
14	0.5 MI NE - INTAKE CANAL	05/15/99	11.1	1.8
14	0.5 MI NE - INTAKE CANAL	08/15/99	11.7	2.5
14	0.5 MI NE - INTAKE CANAL	11/15/99	11	0.6
15	0.9 MI ENE - INTAKE CANAL	02/15/99	11.7	2.3
15	0.9 MI ENE - INTAKE CANAL	05/15/99	10.1	1.6
15	0.9 MI ENE - INTAKE CANAL	08/15/99	10.7	2.6
15	0.9 MI ENE - INTAKE CANAL	11/15/99	9.8	0.9
16	1.0 MI WSW - DISCHARGE CANAL	02/15/99	9.9	1.6
16	1.0 MI WSW - DISCHARGE CANAL	05/15/99	9.2	0.6
16	1.0 MI WSW - DISCHARGE CANAL	08/15/99	9.7	2.7
16	1.0 MI WSW - DISCHARGE CANAL	11/15/99	8.6	1.1

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	SampleDate	Dose	2SigmaError
17	1.5 MI ESE - PFIZER PROPERTY	02/15/99	12	2.2
17	1.5 MI ESE - PFIZER PROPERTY	05/15/99	9.7	0.6
17	1.5 MI ESE - PFIZER PROPERTY	08/15/99	12.6	3.2
17	1.5 MI ESE - PFIZER PROPERTY	11/15/99	9.8	0.9
18	1.7 MI SE - PFIZER PROPERTY	02/15/99	10.9	2.4
18	1.7 MI SE - PFIZER PROPERTY	05/15/99	8	0.6
18	1.7 MI SE - PFIZER PROPERTY	08/15/99	11	2.5
18	1.7 MI SE - PFIZER PROPERTY	11/15/99	7.6	0.6
20	2.0 MI S - MOORE ST	02/15/99	8.2	1.6
20	2.0 MI S - MOORE ST	05/15/99	7.6	1.2
20	2.0 MI S - MOORE ST	08/15/99	7.6	2.5
20	2.0 MI S - MOORE ST	11/15/99	7.4	0.8
21	2.9 MI SSW - WEST ST AT SEA CAPTAIN	02/15/99	11.7	1.7
21	2.9 MI SSW - WEST ST AT SEA CAPTAIN	05/15/99	9.1	0.8
21	2.9 MI SSW - WEST ST AT SEA CAPTAIN	08/15/99	11.5	2.5
21	2.9 MI SSW - WEST ST AT SEA CAPTAIN	11/15/99	8.3	0.6
22	5.3 MI SW - CASWELL BEACH RD	02/15/99	10.5	2
22	5.3 MI SW - CASWELL BEACH RD	05/15/99	9.5	1.5
22	5.3 MI SW - CASWELL BEACH RD	08/15/99	9.7	2.7
22	5.3 MI SW - CASWELL BEACH RD	11/15/99	9.3	0.9
23	4.6 MI WSW - NEAR AIRPORT	02/15/99	10.4	1.7
23	4.6 MI WSW - NEAR AIRPORT	05/15/99	7.7	0.7
23	4.6 MI WSW - NEAR AIRPORT	08/15/99	10.3	2.4
23	4.6 MI WSW - NEAR AIRPORT	11/15/99	7.4	0.7
24	3.0 MI W - HWY 211	02/15/99	10.2	1.7
24	3.0 MI W - HWY 211	05/15/99	10.1	1
24	3.0 MI W - HWY 211	08/15/99	10.4	2.5
24	3.0 MI W - HWY 211	11/15/99	9.9	0.6
25	8.7 MI WNW - ANTIOCH BAPTIST CHURCH	05/15/99	9.7	0.8
25	8.7 MI WNW - ANTIOCH BAPTIST CHURCH	08/15/99	9	2.7
25	8.7 MI WNW - ANTIOCH BAPTIST CHURCH	11/15/99	9.2	0.6

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	SampleDate	Dose	2SigmaError
26	5.9 MI NW - W BOILING SPRINGS RD	02/15/99	12.7	1.6
26	5.9 MI NW - W BOILING SPRINGS RD	05/15/99	10.3	1.1
26	5.9 MI NW - W BOILING SPRINGS RD	08/15/99	12.6	2.7
26	5.9 MI NW - W BOILING SPRINGS RD	11/15/99	10	1.3
27	5.0 MI NNW - HWY 133	02/15/99	10	2
27	5.0 MI NNW - HWY 133	05/15/99	7.9	0.6
27	5.0 MI NNW - HWY 133	08/15/99	9.9	2.4
27	5.0 MI NNW - HWY 133	11/15/99	8.4	1
28	4.2 MI NW - AT SOUTH BRUNSWICK HS	02/15/99	10.4	1.6
28	4.2 MI NW - AT SOUTH BRUNSWICK HS	05/15/99	8.9	0.6
28	4.2 MI NW - AT SOUTH BRUNSWICK HS	08/15/99	9.9	2.4
28	4.2 MI NW - AT SOUTH BRUNSWICK HS	11/15/99	9.1	1.6
29	2.6 MI SSW - SOUTHPORT ELEMENTARY SCHOOL	02/15/99	9.5	1.8
29	2.6 MI SSW - SOUTHPORT ELEMENTARY SCHOOL	05/15/99	8.5	0.8
29	2.6 MI SSW - SOUTHPORT ELEMENTARY SCHOOL	08/15/99	8.8	2.4
29	2.6 MI SSW - SOUTHPORT ELEMENTARY SCHOOL	11/15/99	8.1	0.9
30	2.0 MI NE - SUNNY POINT MOT	02/15/99	12.7	2
30	2.0 MI NE - SUNNY POINT MOT	05/15/99	9.3	0.8
30	2.0 MI NE - SUNNY POINT MOT	08/15/99	12.6	2.7
30	2.0 MI NE - SUNNY POINT MOT	11/15/99	9.3	0.9
31	2.6 MI ENE - SUNNY POINT MOT	02/15/99	10	1.8
31	2.6 MI ENE - SUNNY POINT MOT	05/15/99	10.9	0.6
31	2.6 MI ENE - SUNNY POINT MOT	08/15/99	10.2	2.7
31	2.6 MI ENE - SUNNY POINT MOT	11/15/99	10.5	0.5
32	5.7 MI ENE - FT FISHER AFB HOUSING	02/15/99	12.5	2.3
32	5.7 MI ENE - FT FISHER AFB HOUSING	05/15/99	10.6	2.2
32	5.7 MI ENE - FT FISHER AFB HOUSING	08/15/99	12.3	2.5
32	5.7 MI ENE - FT FISHER AFB HOUSING	11/15/99	10.2	0.9
33	4.0 MI E - FERRY SLIP IN NEW HANOVER CO	02/15/99	9.6	1.8
33	4.0 MI E - FERRY SLIP IN NEW HANOVER CO	05/15/99	7.8	0.7
33	4.0 MI E - FERRY SLIP IN NEW HANOVER CO	08/15/99	8.7	2.5
33	4.0 MI E - FERRY SLIP IN NEW HANOVER CO	11/15/99	7.9	0.9

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	Plant	SampleDate	Dose	2SigmaError
34	5.5 MI ENE - FT FISHER MUSEUM	BNP	02/15/99	9.7	1.6
34	5.5 MI ENE - FT FISHER MUSEUM	BNP	05/15/99	9	1.9
34	5.5 MI ENE - FT FISHER MUSEUM	BNP	08/15/99	8.7	2.5
34	5.5 MI ENE - FT FISHER MUSEUM	BNP	11/15/99	8.8	1.3
35	7.5 MI SSE - BALD HEAD ISLAND	BNP	02/15/99	8	1.6
35	7.5 MI SSE - BALD HEAD ISLAND	BNP	05/15/99	7.8	0.8
35	7.5 MI SSE - BALD HEAD ISLAND	BNP	08/15/99	8	2.6
35	7.5 MI SSE - BALD HEAD ISLAND	BNP	11/15/99	7.9	0.8
36	9.3 MI NE - CAROLINA BEACH	BNP	02/15/99	9.6	1.8
36	9.3 MI NE - CAROLINA BEACH	BNP	05/15/99	7.9	0.8
36	9.3 MI NE - CAROLINA BEACH	BNP	08/15/99	9	2.5
36	9.3 MI NE - CAROLINA BEACH	BNP	11/15/99	7.8	0.5
37	5.5 MI NW - BOILING SPRING LAKES	BNP	02/15/99	9	1.7
37	5.5 MI NW - BOILING SPRING LAKES	BNP	05/15/99	7.5	0.8
37	5.5 MI NW - BOILING SPRING LAKES	BNP	08/15/99	9.2	2.6
37	5.5 MI NW - BOILING SPRING LAKES	BNP	11/15/99	7.5	0.5
38	11.0 MI W - SUNSET HARBOR	BNP	02/15/99	9	1.7
38	11.0 MI W - SUNSET HARBOR	BNP	05/15/99	8.1	0.8
38	11.0 MI W - SUNSET HARBOR	BNP	08/15/99	9.1	2.5
38	11.0 MI W - SUNSET HARBOR	BNP	11/15/99	8.1	1
39	5.3 MI SW - OAK ISLAND COMM SVCS BLDG	BNP	02/15/99	9.3	1.6
39	5.3 MI SW - OAK ISLAND COMM SVCS BLDG	BNP	05/15/99	8.7	1
39	5.3 MI SW - OAK ISLAND COMM SVCS BLDG	BNP	08/15/99	8.7	2.4
39	5.3 MI SW - OAK ISLAND COMM SVCS BLDG	BNP	11/15/99	8.9	0.5
40	6.9 MI WSW - OAK ISLAND TOWN HALL	BNP	02/15/99	8.8	1.8
40	6.9 MI WSW - OAK ISLAND TOWN HALL	BNP	05/15/99	8.6	1.5
40	6.9 MI WSW - OAK ISLAND TOWN HALL	BNP	08/15/99	8.3	2.5
40	6.9 MI WSW - OAK ISLAND TOWN HALL	BNP	11/15/99	8.2	1.4
75	4.5 MI S - FT CASWELL BAPTIST ASSEMBLY	BNP	02/15/99	11.4	1.7
75	4.5 MI S - FT CASWELL BAPTIST ASSEMBLY	BNP	05/15/99	10.4	1.1
75	4.5 MI S - FT CASWELL BAPTIST ASSEMBLY	BNP	08/15/99	10.8	2.5
75	4.5 MI S - FT CASWELL BAPTIST ASSEMBLY	BNP	11/15/99	9.7	0.5

BSEP Radiological Environmental TLD Report

Dose: mR/std. qtr.

TLD	TLD Location Description	SampleDate	Dose	2SigmaError
76	4.8 MI SSW - CASWELL BEACH	02/15/99	13.2	1.6
76	4.8 MI SSW - CASWELL BEACH	05/15/99	11.4	0.9
76	4.8 MI SSW - CASWELL BEACH	08/15/99	13.9	2.5
76	4.8 MI SSW - CASWELL BEACH	11/15/99	10.4	1.6
77	5.3 MI S - BALDHEAD ISLAND	02/15/99	10.8	1.9
77	5.3 MI S - BALDHEAD ISLAND	05/15/99	9.2	2
77	5.3 MI S - BALDHEAD ISLAND	08/15/99	11.1	2.5
77	5.3 MI S - BALDHEAD ISLAND	11/15/99	8.9	1.1
78	10.0 MI NNE - HWY 133 AT SR 1521	02/15/99	10.1	1.8
78	10.0 MI NNE - HWY 133 AT SR 1521	05/15/99	8.7	1.8
78	10.0 MI NNE - HWY 133 AT SR 1521	08/15/99	9.5	2.4
78	10.0 MI NNE - HWY 133 AT SR 1521	11/15/99	8.3	1.1
79	9.5 MI N - SR 1539 AT SR 1521	02/15/99	12.4	2.3
79	9.5 MI N - SR 1539 AT SR 1521	05/15/99	9.7	1.4
79	9.5 MI N - SR 1539 AT SR 1521	08/15/99	12.3	2.7
79	9.5 MI N - SR 1539 AT SR 1521	11/15/99	9.3	0.9
81	10.0 MI WNW - MIDWAY RD AT SR 1508	02/15/99	12.4	1.9
81	10.0 MI WNW - MIDWAY RD AT SR 1508	05/15/99	10.1	0.6
81	10.0 MI WNW - MIDWAY RD AT SR 1508	08/15/99	12.7	2.6
81	10.0 MI WNW - MIDWAY RD AT SR 1508	11/15/99	9.3	0.6

CP&L

1999 Radiological Environmental

Monitoring

Analysis Report

Brunswick Steam Electric Plant

1999 CP&L Radiological Environmental Monitoring Analysis Report Comments

- Efficiency values are not included for Air Cartridge samples requiring radioiodine analysis (I-131), because gamma software does not report these values.
- The Less than LLD (<LLD) represents that no activity was present, but lists the LLD values.
- There are no 2 sigma error values reported when activity is <LLD.
- No samples were available for Air Cartridge and Air Particulates (AC/AP) indicated below:
    - AC/AP-201 May 17
    - AC/AP-203 August 23
    - AC/AP-201 September 20
    - AC/AP-203 December 6

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
200	- 1.0 MI SW - VISITORS CENTER	01/04/99	272.20	3.77E-001	2.07E-002	3.49E-003	3.66E-003
		01/11/99	281.50	3.77E-001	1.94E-002	3.34E-003	3.54E-003
		01/18/99	289.90	3.77E-001	1.26E-002	3.04E-003	3.70E-003
		01/25/99	288.20	3.77E-001	1.76E-002	3.20E-003	3.46E-003
		02/01/99	286.50	3.77E-001	2.15E-002	3.45E-003	3.58E-003
		02/08/99	289.50	3.77E-001	1.35E-002	3.07E-003	3.67E-003
		02/15/99	289.00	3.77E-001	1.88E-002	3.17E-003	3.22E-003
		02/22/99	284.10	3.77E-001	1.77E-002	3.25E-003	3.53E-003
		03/01/99	282.20	3.77E-001	1.96E-002	3.25E-003	3.28E-003
		03/08/99	283.80	3.77E-001	1.47E-002	3.24E-003	3.88E-003
		03/15/99	281.70	3.77E-001	1.58E-002	3.14E-003	3.49E-003
		03/22/99	284.40	3.77E-001	1.82E-002	3.25E-003	3.48E-003
		03/29/99	287.20	3.77E-001	1.88E-002	3.34E-003	3.66E-003
		04/05/99	284.80	3.75E-001	1.58E-002	3.18E-003	3.60E-003
		04/12/99	291.60	3.75E-001	1.52E-002	3.10E-003	3.54E-003
		04/19/99	285.10	3.75E-001	1.63E-002	3.22E-003	3.64E-003
		04/26/99	291.70	3.75E-001	2.13E-002	3.36E-003	3.41E-003
		05/03/99	280.00	3.75E-001	1.04E-002	2.84E-003	3.49E-003
		05/10/99	291.80	3.75E-001	1.70E-002	3.14E-003	3.41E-003
		05/17/99	290.30	3.75E-001	1.32E-002	2.97E-003	3.49E-003
		05/24/99	293.90	3.74E-001	1.19E-002	2.86E-003	3.42E-003
		05/31/99	298.20	3.74E-001	2.03E-002	3.36E-003	3.59E-003
		06/07/99	290.60	3.74E-001	1.72E-002	3.19E-003	3.48E-003
		06/14/99	294.90	3.74E-001	1.30E-002	2.88E-003	3.32E-003
		06/21/99	289.80	3.74E-001	9.48E-003	2.66E-003	3.26E-003
		06/28/99	294.60	3.74E-001	1.05E-002	2.94E-003	3.75E-003
		07/05/99	293.80	3.74E-001	1.26E-002	2.95E-003	3.52E-003
		07/12/99	294.40	3.74E-001	1.05E-002	2.91E-003	3.70E-003
		07/19/99	293.90	3.74E-001	5.49E-003	2.62E-003	3.70E-003
		07/26/99	294.70	3.74E-001	1.97E-002	3.49E-003	3.94E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
200	- 1.0 MI SW - VISITORS CENTER	08/02/99	296.20	3.74E-001	3.49E-002	3.91E-003	3.28E-003
		08/09/99	295.20	3.74E-001	1.54E-002	3.12E-003	3.57E-003
		08/16/99	297.90	3.74E-001	2.34E-002	3.44E-003	3.39E-003
		08/23/99	294.80	3.74E-001	1.74E-002	3.12E-003	3.32E-003
		08/30/99	300.30	3.74E-001	1.03E-002	2.82E-003	3.55E-003
		09/06/99	290.60	3.74E-001	1.24E-002	3.01E-003	3.66E-003
		09/13/99	295.70	3.74E-001	1.65E-002	3.13E-003	3.46E-003
		09/20/99	278.90	3.74E-001	1.60E-002	3.36E-003	3.96E-003
		09/27/99	292.40	3.74E-001	1.65E-002	3.04E-003	3.21E-003
		10/04/99	293.10	3.74E-001	1.58E-002	3.20E-003	3.69E-003
		10/11/99	294.60	3.74E-001	1.94E-002	3.38E-003	3.71E-003
		10/18/99	294.60	3.74E-001	1.24E-002	3.06E-003	3.79E-003
		10/25/99	288.30	3.74E-001	1.91E-002	3.37E-003	3.67E-003
		11/01/99	291.70	3.74E-001	2.39E-002	3.48E-003	3.38E-003
		11/08/99	292.10	3.74E-001	2.25E-002	3.33E-003	3.15E-003
		11/15/99	287.40	3.74E-001	3.52E-002	4.06E-003	3.56E-003
		11/22/99	271.30	3.74E-001	1.33E-002	3.17E-003	3.79E-003
		11/29/99	292.80	3.74E-001	1.54E-002	3.10E-003	3.51E-003
		12/06/99	221.40	3.74E-001	2.59E-002	4.36E-003	4.59E-003
		12/13/99	290.80	3.74E-001	1.91E-002	3.36E-003	3.66E-003
		12/20/99	284.70	3.74E-001	1.81E-002	3.43E-003	3.92E-003
		12/27/99	284.60	3.74E-001	1.76E-002	3.43E-003	3.96E-003
201	- 0.6 MI NE - PMAC	01/04/99	283.60	3.77E-001	1.94E-002	3.33E-003	3.51E-003
		01/11/99	277.40	3.77E-001	2.18E-002	3.50E-003	3.59E-003
		01/18/99	287.50	3.77E-001	1.54E-002	3.20E-003	3.74E-003
		01/25/99	286.40	3.77E-001	1.69E-002	3.18E-003	3.48E-003
		02/01/99	283.70	3.77E-001	2.21E-002	3.50E-003	3.62E-003
		02/08/99	287.60	3.77E-001	1.56E-002	3.20E-003	3.69E-003
		02/15/99	285.80	3.77E-001	1.61E-002	3.05E-003	3.26E-003
		02/22/99	282.10	3.77E-001	1.74E-002	3.25E-003	3.55E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point	Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
201 - 0.6 MI NE - PMAC	03/01/99	282.80	3.77E-001	2.26E-002	3.41E-003	3.27E-003
	03/08/99	200.00	3.77E-001	1.37E-002	4.21E-003	5.51E-003
	03/15/99	280.20	3.77E-001	1.36E-002	3.03E-003	3.51E-003
	03/22/99	282.80	3.77E-001	1.68E-002	3.19E-003	3.50E-003
	03/29/99	286.10	3.77E-001	1.68E-002	3.25E-003	3.67E-003
	04/05/99	284.30	3.75E-001	1.64E-002	3.22E-003	3.61E-003
	04/12/99	292.70	3.75E-001	1.90E-002	3.29E-003	3.53E-003
	04/19/99	286.10	3.75E-001	1.50E-002	3.15E-003	3.63E-003
	04/26/99	290.80	3.75E-001	2.47E-002	3.53E-003	3.42E-003
	05/03/99	278.80	3.75E-001	9.39E-003	2.78E-003	3.50E-003
	05/10/99	292.80	3.75E-001	1.50E-002	3.03E-003	3.40E-003
	05/24/99	294.40	3.74E-001	1.33E-002	2.94E-003	3.41E-003
	05/31/99	300.40	3.74E-001	1.76E-002	3.22E-003	3.56E-003
	06/07/99	291.10	3.74E-001	1.54E-002	3.09E-003	3.47E-003
	06/14/99	300.10	3.74E-001	1.54E-002	2.98E-003	3.26E-003
	06/21/99	293.20	3.74E-001	1.00E-002	2.67E-003	3.23E-003
	06/28/99	296.20	3.74E-001	1.12E-002	2.96E-003	3.73E-003
	07/05/99	302.60	3.74E-001	1.20E-002	2.85E-003	3.42E-003
	07/12/99	278.20	3.74E-001	1.19E-002	3.12E-003	3.91E-003
	07/19/99	280.90	3.74E-001	7.80E-003	2.86E-003	3.87E-003
	07/26/99	284.10	3.74E-001	2.07E-002	3.63E-003	4.09E-003
	08/02/99	284.20	3.74E-001	3.38E-002	3.97E-003	3.42E-003
	08/09/99	283.20	3.77E-001	1.68E-002	3.27E-003	3.69E-003
	08/16/99	283.80	3.74E-001	2.59E-002	3.67E-003	3.56E-003
	08/23/99	279.60	3.74E-001	1.74E-002	3.24E-003	3.50E-003
	08/30/99	285.00	3.74E-001	1.17E-002	3.01E-003	3.74E-003
	09/06/99	278.00	3.74E-001	1.26E-002	3.12E-003	3.83E-003
	09/13/99	254.30	3.74E-001	1.58E-002	3.46E-003	4.02E-003
	09/27/99	274.40	3.74E-001	1.73E-002	3.22E-003	3.42E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
201	- 0.6 MI NE - PMAC	10/04/99	266.60	3.74E-001	1.90E-002	3.60E-003	4.06E-003
		10/11/99	269.30	3.74E-001	2.32E-002	3.79E-003	4.06E-003
		10/18/99	276.70	3.74E-001	1.14E-002	3.16E-003	4.04E-003
		10/25/99	264.20	3.74E-001	2.08E-002	3.67E-003	4.01E-003
		11/01/99	267.20	3.74E-001	2.61E-002	3.79E-003	3.69E-003
		11/08/99	265.70	3.74E-001	2.37E-002	3.60E-003	3.46E-003
		11/15/99	264.10	3.74E-001	3.77E-002	4.39E-003	3.87E-003
		11/22/99	261.90	3.74E-001	1.51E-002	3.35E-003	3.93E-003
		11/29/99	267.90	3.74E-001	1.57E-002	3.33E-003	3.84E-003
		12/06/99	256.90	3.74E-001	2.38E-002	3.83E-003	3.96E-003
		12/13/99	261.90	3.74E-001	2.03E-002	3.68E-003	4.07E-003
		12/20/99	255.60	3.74E-001	1.64E-002	3.64E-003	4.37E-003
		12/27/99	177.90	3.74E-001	1.03E-002	4.52E-003	6.34E-003
202	- 1.0 MI S - SUBSTATION ON CONSTRUCTION RD	01/04/99	262.70	3.77E-001	1.76E-002	3.42E-003	3.79E-003
		01/11/99	279.00	3.77E-001	2.04E-002	3.42E-003	3.57E-003
		01/18/99	283.70	3.77E-001	1.62E-002	3.28E-003	3.79E-003
		01/25/99	280.00	3.77E-001	1.73E-002	3.25E-003	3.56E-003
		02/01/99	279.80	3.77E-001	2.05E-002	3.46E-003	3.67E-003
		02/08/99	282.80	3.77E-001	1.52E-002	3.22E-003	3.76E-003
		02/15/99	283.20	3.77E-001	1.73E-002	3.13E-003	3.29E-003
		02/22/99	282.60	3.77E-001	1.38E-002	3.05E-003	3.55E-003
		03/01/99	286.70	3.77E-001	1.90E-002	3.19E-003	3.23E-003
		03/08/99	284.40	3.77E-001	1.34E-002	3.17E-003	3.88E-003
		03/15/99	284.90	3.77E-001	1.27E-002	2.94E-003	3.45E-003
		03/22/99	281.00	3.77E-001	1.76E-002	3.25E-003	3.52E-003
		03/29/99	284.20	3.77E-001	1.90E-002	3.38E-003	3.70E-003
		04/05/99	281.40	3.75E-001	1.33E-002	3.07E-003	3.65E-003
		04/12/99	283.20	3.75E-001	1.61E-002	3.22E-003	3.64E-003
		04/19/99	281.50	3.75E-001	1.48E-002	3.17E-003	3.69E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
202	- 1.0 MI S - SUBSTATION ON CONSTRUCTION RD	04/26/99	281.40	3.75E-001	2.31E-002	3.54E-003	3.54E-003
		05/03/99	283.60	3.75E-001	1.09E-002	2.84E-003	3.44E-003
		05/10/99	281.50	3.75E-001	1.70E-002	3.23E-003	3.53E-003
		05/17/99	284.90	3.75E-001	1.26E-002	2.99E-003	3.56E-003
		05/24/99	286.00	3.74E-001	1.33E-002	3.00E-003	3.51E-003
		05/31/99	292.60	3.74E-001	1.51E-002	3.15E-003	3.66E-003
		06/07/99	282.20	3.74E-001	1.71E-002	3.25E-003	3.58E-003
		06/14/99	290.20	3.74E-001	1.38E-002	2.96E-003	3.37E-003
		06/21/99	284.80	3.74E-001	9.47E-003	2.70E-003	3.32E-003
		06/28/99	287.40	3.74E-001	9.14E-003	2.92E-003	3.85E-003
		07/05/99	290.00	3.74E-001	1.30E-002	3.00E-003	3.57E-003
		07/12/99	282.60	3.74E-001	1.25E-002	3.12E-003	3.85E-003
		07/19/99	288.10	3.74E-001	6.77E-003	2.74E-003	3.78E-003
		07/26/99	289.50	3.74E-001	1.76E-002	3.43E-003	4.01E-003
		08/02/99	289.50	3.74E-001	3.73E-002	4.07E-003	3.36E-003
		08/09/99	290.90	3.74E-001	1.71E-002	3.24E-003	3.62E-003
		08/16/99	291.80	3.74E-001	2.66E-002	3.63E-003	3.46E-003
		08/23/99	286.40	3.74E-001	1.77E-002	3.20E-003	3.42E-003
		08/30/99	290.80	3.74E-001	9.61E-003	2.85E-003	3.66E-003
		09/06/99	281.80	3.74E-001	1.22E-002	3.07E-003	3.78E-003
		09/13/99	284.00	3.74E-001	1.60E-002	3.20E-003	3.60E-003
		09/20/99	286.60	3.74E-001	1.71E-002	3.35E-003	3.86E-003
		09/27/99	283.60	3.74E-001	1.57E-002	3.06E-003	3.31E-003
		10/04/99	283.70	3.74E-001	1.67E-002	3.32E-003	3.82E-003
		10/11/99	285.20	3.74E-001	1.83E-002	3.41E-003	3.84E-003
		10/18/99	284.00	3.74E-001	1.02E-002	3.03E-003	3.93E-003
		10/25/99	272.90	3.74E-001	2.08E-002	3.59E-003	3.88E-003
		11/01/99	282.60	3.74E-001	2.51E-002	3.61E-003	3.49E-003
		11/08/99	281.20	3.74E-001	2.68E-002	3.62E-003	3.27E-003
		11/15/99	277.80	3.74E-001	3.53E-002	4.15E-003	3.68E-003
		11/22/99	279.60	3.74E-001	1.44E-002	3.15E-003	3.68E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
202	- 1.0 MI S - SUBSTATION ON CONSTRUCTION RD	11/29/99	282.80	3.74E-001	2.05E-002	3.45E-003	3.64E-003
		12/06/99	272.10	3.74E-001	1.97E-002	3.48E-003	3.74E-003
		12/13/99	279.60	3.74E-001	1.70E-002	3.35E-003	3.81E-003
		12/20/99	275.20	3.74E-001	1.79E-002	3.51E-003	4.06E-003
		12/27/99	274.50	3.74E-001	1.87E-002	3.58E-003	4.11E-003
203	- 2.3 MI SSW - SOUTHPORT SUBSTATION	01/04/99	267.60	3.77E-001	1.79E-002	3.39E-003	3.72E-003
		01/11/99	275.50	3.77E-001	2.32E-002	3.59E-003	3.62E-003
		01/18/99	283.20	3.77E-001	1.53E-002	3.23E-003	3.79E-003
		01/25/99	278.60	3.77E-001	1.82E-002	3.31E-003	3.58E-003
		02/01/99	274.30	3.77E-001	2.10E-002	3.53E-003	3.74E-003
		02/08/99	277.20	3.77E-001	1.64E-002	3.33E-003	3.83E-003
		02/15/99	275.50	3.77E-001	1.78E-002	3.22E-003	3.38E-003
		02/22/99	272.00	3.77E-001	1.80E-002	3.37E-003	3.68E-003
		03/01/99	269.80	3.77E-001	2.29E-002	3.53E-003	3.43E-003
		03/08/99	270.00	3.77E-001	1.60E-002	3.44E-003	4.08E-003
		03/15/99	269.70	3.77E-001	1.75E-002	3.33E-003	3.65E-003
		03/22/99	271.70	3.77E-001	1.49E-002	3.18E-003	3.64E-003
		03/29/99	247.40	3.77E-001	2.33E-002	3.95E-003	4.25E-003
		04/05/99	273.50	3.75E-001	1.66E-002	3.32E-003	3.75E-003
		04/12/99	280.80	3.75E-001	1.88E-002	3.38E-003	3.68E-003
		04/19/99	273.20	3.75E-001	1.63E-002	3.32E-003	3.80E-003
		04/26/99	279.30	3.75E-001	2.49E-002	3.64E-003	3.56E-003
		05/03/99	277.00	3.75E-001	1.10E-002	2.90E-003	3.52E-003
		05/10/99	281.60	3.75E-001	1.61E-002	3.18E-003	3.53E-003
		05/17/99	281.60	3.75E-001	1.22E-002	2.99E-003	3.60E-003
		05/24/99	282.40	3.74E-001	1.20E-002	2.96E-003	3.56E-003
		05/31/99	288.40	3.74E-001	1.88E-002	3.37E-003	3.71E-003
		06/07/99	281.00	3.74E-001	1.71E-002	3.26E-003	3.60E-003
		06/14/99	290.00	3.74E-001	1.23E-002	2.88E-003	3.37E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
203	- 2.3 MI SSW - SOUTHPORT SUBSTATION	06/21/99	284.50	3.74E-001	1.03E-002	2.75E-003	3.32E-003
		06/28/99	287.40	3.74E-001	9.22E-003	2.92E-003	3.85E-003
		07/05/99	288.00	3.74E-001	1.17E-002	2.95E-003	3.59E-003
		07/12/99	289.70	3.74E-001	1.21E-002	3.04E-003	3.76E-003
		07/19/99	285.70	3.74E-001	7.25E-003	2.79E-003	3.81E-003
		07/26/99	289.50	3.74E-001	1.95E-002	3.52E-003	4.01E-003
		08/02/99	266.80	3.74E-001	3.71E-002	4.28E-003	3.64E-003
		08/09/99	283.00	3.74E-001	1.68E-002	3.29E-003	3.72E-003
		08/16/99	287.60	3.74E-001	2.56E-002	3.62E-003	3.51E-003
		08/30/99	288.20	3.74E-001	1.04E-002	2.92E-003	3.70E-003
		09/06/99	281.90	3.74E-001	1.18E-002	3.05E-003	3.78E-003
		09/13/99	280.10	3.74E-001	1.47E-002	3.16E-003	3.65E-003
		09/20/99	266.90	3.74E-001	1.67E-002	3.51E-003	4.14E-003
		09/27/99	279.00	3.74E-001	1.93E-002	3.29E-003	3.37E-003
		10/04/99	277.50	3.74E-001	2.05E-002	3.57E-003	3.90E-003
		10/11/99	279.50	3.74E-001	2.09E-002	3.58E-003	3.91E-003
		10/18/99	282.20	3.74E-001	1.08E-002	3.08E-003	3.96E-003
		10/25/99	272.90	3.74E-001	2.14E-002	3.62E-003	3.88E-003
		11/01/99	275.20	3.74E-001	2.69E-002	3.76E-003	3.58E-003
		11/08/99	274.80	3.74E-001	2.46E-002	3.57E-003	3.34E-003
		11/15/99	271.10	3.74E-001	3.86E-002	4.35E-003	3.77E-003
		11/22/99	270.90	3.74E-001	1.62E-002	3.33E-003	3.80E-003
		11/29/99	275.60	3.74E-001	1.70E-002	3.33E-003	3.73E-003
		12/13/99	277.70	3.74E-001	1.87E-002	3.45E-003	3.83E-003
		12/20/99	275.40	3.74E-001	1.76E-002	3.49E-003	4.06E-003
		12/27/99	275.20	3.74E-001	2.15E-002	3.71E-003	4.10E-003
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	01/04/99	274.60	3.77E-001	1.66E-002	3.26E-003	3.63E-003
		01/11/99	273.60	3.77E-001	1.69E-002	3.28E-003	3.64E-003
		01/18/99	282.20	3.77E-001	1.43E-002	3.19E-003	3.81E-003
		01/25/99	283.30	3.77E-001	1.67E-002	3.19E-003	3.52E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	02/01/99	280.90	3.77E-001	1.53E-002	3.18E-003	3.65E-003
		02/08/99	279.90	3.77E-001	1.93E-002	3.45E-003	3.80E-003
		02/15/99	279.70	3.77E-001	1.77E-002	3.18E-003	3.33E-003
		02/22/99	276.70	3.77E-001	2.09E-002	3.47E-003	3.62E-003
		03/01/99	275.90	3.77E-001	2.17E-002	3.41E-003	3.35E-003
		03/08/99	278.50	3.77E-001	1.52E-002	3.31E-003	3.96E-003
		03/15/99	277.20	3.77E-001	1.86E-002	3.33E-003	3.55E-003
		03/22/99	278.60	3.77E-001	1.75E-002	3.26E-003	3.55E-003
		03/29/99	281.80	3.77E-001	1.73E-002	3.31E-003	3.73E-003
		04/05/99	278.80	3.75E-001	1.90E-002	3.39E-003	3.68E-003
		04/12/99	284.90	3.75E-001	1.80E-002	3.30E-003	3.62E-003
		04/19/99	283.50	3.75E-001	1.76E-002	3.30E-003	3.66E-003
		04/26/99	283.50	3.75E-001	2.54E-002	3.63E-003	3.51E-003
		05/03/99	278.80	3.75E-001	1.40E-002	3.05E-003	3.50E-003
		05/10/99	288.60	3.75E-001	1.81E-002	3.22E-003	3.45E-003
		05/17/99	279.80	3.75E-001	1.31E-002	3.06E-003	3.62E-003
		05/24/99	285.30	3.74E-001	1.54E-002	3.12E-003	3.52E-003
		05/31/99	291.90	3.74E-001	1.98E-002	3.39E-003	3.67E-003
		06/07/99	280.40	3.74E-001	1.73E-002	3.27E-003	3.60E-003
		06/14/99	289.40	3.74E-001	1.41E-002	2.98E-003	3.38E-003
		06/21/99	282.70	3.74E-001	8.69E-003	2.66E-003	3.35E-003
		06/28/99	286.10	3.74E-001	1.17E-002	3.07E-003	3.86E-003
		07/05/99	289.70	3.74E-001	1.32E-002	3.02E-003	3.57E-003
		07/12/99	284.40	3.74E-001	1.22E-002	3.09E-003	3.83E-003
		07/19/99	288.00	3.74E-001	7.19E-003	2.77E-003	3.78E-003
		07/26/99	290.90	3.74E-001	1.94E-002	3.51E-003	3.99E-003
		08/02/99	292.50	3.74E-001	3.60E-002	3.99E-003	3.32E-003
		08/09/99	288.30	3.74E-001	1.91E-002	3.36E-003	3.65E-003
		08/16/99	292.20	3.74E-001	2.57E-002	3.59E-003	3.46E-003
		08/23/99	288.40	3.74E-001	1.91E-002	3.26E-003	3.39E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	08/30/99	292.60	3.74E-001	1.13E-002	2.93E-003	3.64E-003
		09/06/99	275.90	3.74E-001	1.37E-002	3.21E-003	3.86E-003
		09/13/99	283.50	3.74E-001	1.74E-002	3.27E-003	3.61E-003
		09/20/99	283.70	3.74E-001	1.58E-002	3.31E-003	3.90E-003
		09/27/99	284.20	3.74E-001	1.64E-002	3.09E-003	3.30E-003
		10/04/99	285.50	3.74E-001	1.57E-002	3.25E-003	3.79E-003
		10/11/99	282.60	3.74E-001	1.93E-002	3.48E-003	3.87E-003
		10/18/99	281.30	3.74E-001	1.16E-002	3.13E-003	3.97E-003
		10/25/99	277.80	3.74E-001	2.01E-002	3.51E-003	3.81E-003
		11/01/99	253.20	3.74E-001	2.78E-002	4.02E-003	3.89E-003
		11/08/99	277.20	3.74E-001	2.27E-002	3.45E-003	3.31E-003
		11/15/99	274.10	3.74E-001	3.94E-002	4.36E-003	3.73E-003
		11/22/99	273.20	3.74E-001	1.60E-002	3.30E-003	3.77E-003
		11/29/99	280.00	3.74E-001	1.83E-002	3.36E-003	3.67E-003
		12/06/99	268.20	3.74E-001	2.28E-002	3.67E-003	3.79E-003
		12/13/99	269.80	3.74E-001	1.91E-002	3.54E-003	3.95E-003
		12/20/99	268.90	3.74E-001	1.84E-002	3.60E-003	4.15E-003
		12/27/99	268.00	3.74E-001	1.91E-002	3.66E-003	4.21E-003
205	- 0.6 MI SSE - SPOIL POND	01/04/99	269.00	3.77E-001	1.81E-002	3.39E-003	3.70E-003
		01/11/99	242.90	3.77E-001	2.64E-002	4.07E-003	4.10E-003
		01/18/99	279.80	3.77E-001	1.31E-002	3.14E-003	3.84E-003
		01/25/99	289.80	3.77E-001	1.44E-002	3.02E-003	3.44E-003
		02/01/99	288.10	3.77E-001	1.96E-002	3.34E-003	3.56E-003
		02/08/99	292.30	3.77E-001	1.71E-002	3.23E-003	3.63E-003
		02/15/99	279.40	3.77E-001	1.73E-002	3.16E-003	3.33E-003
		02/22/99	271.40	3.77E-001	1.51E-002	3.22E-003	3.69E-003
		03/01/99	217.10	3.77E-001	2.81E-002	4.36E-003	4.26E-003
		03/08/99	246.70	3.77E-001	1.94E-002	3.86E-003	4.47E-003
		03/15/99	283.70	3.77E-001	1.49E-002	3.07E-003	3.47E-003
		03/22/99	287.60	3.77E-001	1.74E-002	3.18E-003	3.44E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point	Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
205 - 0.6 MI SSE - SPOIL POND	03/29/99	295.40	3.77E-001	1.63E-002	3.15E-003	3.56E-003
	04/05/99	294.00	3.75E-001	1.57E-002	3.10E-003	3.49E-003
	04/12/99	301.20	3.75E-001	1.48E-002	3.01E-003	3.43E-003
	04/19/99	294.00	3.75E-001	1.37E-002	3.01E-003	3.53E-003
	04/26/99	304.80	3.75E-001	2.03E-002	3.21E-003	3.26E-003
	05/03/99	291.90	3.75E-001	1.02E-002	2.73E-003	3.34E-003
	05/10/99	304.20	3.75E-001	1.58E-002	2.99E-003	3.27E-003
	05/17/99	296.20	3.75E-001	1.24E-002	2.89E-003	3.42E-003
	05/24/99	292.80	3.74E-001	1.55E-002	3.07E-003	3.43E-003
	05/31/99	304.90	3.74E-001	1.71E-002	3.16E-003	3.51E-003
	06/07/99	291.80	3.74E-001	1.69E-002	3.16E-003	3.46E-003
	06/14/99	303.10	3.74E-001	1.22E-002	2.78E-003	3.23E-003
	06/21/99	287.30	3.74E-001	7.13E-003	2.53E-003	3.29E-003
	06/28/99	296.30	3.74E-001	8.62E-003	2.82E-003	3.73E-003
	07/05/99	297.50	3.74E-001	1.25E-002	2.91E-003	3.48E-003
	07/12/99	290.00	3.74E-001	1.01E-002	2.92E-003	3.75E-003
	07/19/99	293.60	3.74E-001	8.12E-003	2.78E-003	3.71E-003
	07/26/99	296.10	3.74E-001	1.62E-002	3.31E-003	3.92E-003
	08/02/99	295.20	3.74E-001	3.19E-002	3.80E-003	3.29E-003
	08/09/99	297.50	3.74E-001	1.77E-002	3.22E-003	3.54E-003
	08/16/99	295.90	3.74E-001	2.26E-002	3.42E-003	3.41E-003
	08/23/99	291.50	3.74E-001	1.53E-002	3.03E-003	3.36E-003
	08/30/99	196.90	3.74E-001	1.10E-002	4.02E-003	5.41E-003
	09/06/99	296.50	3.74E-001	1.03E-002	2.85E-003	3.59E-003
	09/13/99	359.40	3.74E-001	1.34E-002	2.56E-003	2.85E-003
	09/20/99	292.80	3.74E-001	1.53E-002	3.21E-003	3.78E-003
	09/27/99	285.40	3.74E-001	1.32E-002	2.90E-003	3.29E-003
	10/04/99	286.80	3.74E-001	1.55E-002	3.23E-003	3.77E-003
	10/11/99	295.40	3.74E-001	1.88E-002	3.34E-003	3.70E-003
	10/18/99	288.50	3.74E-001	1.35E-002	3.17E-003	3.87E-003
	10/25/99	289.30	3.74E-001	1.97E-002	3.39E-003	3.66E-003

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Particulate** Analysis: **Beta (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Efficiency	Activity	2 Sigma Error	LLD
205	- 0.6 MI SSE - SPOIL POND	11/01/99	293.00	3.74E-001	2.47E-002	3.43E-003	3.21E-003
		11/08/99	292.40	3.74E-001	2.11E-002	3.25E-003	3.14E-003
		11/15/99	290.20	3.74E-001	3.20E-002	3.90E-003	3.52E-003
		11/22/99	273.40	3.74E-001	1.33E-002	3.15E-003	3.76E-003
		11/29/99	289.60	3.74E-001	1.59E-002	3.15E-003	3.55E-003
		12/06/99	283.30	3.74E-001	2.39E-002	3.59E-003	3.59E-003
		12/13/99	291.40	3.74E-001	1.94E-002	3.37E-003	3.65E-003
		12/20/99	287.70	3.74E-001	1.76E-002	3.38E-003	3.88E-003
		12/27/99	287.60	3.74E-001	1.97E-002	3.50E-003	3.92E-003

MediaType: **Air Cartridge** Analysis: **Iodine**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
200	- 1.0 MI SW - VISITORS CENTER	01/04/99	272.20	< LLD	3.34E-002
		01/11/99	281.50	< LLD	2.72E-002
		01/18/99	289.90	< LLD	2.12E-002
		01/25/99	288.20	< LLD	2.64E-002
		02/01/99	286.50	< LLD	2.61E-002
		02/08/99	289.50	< LLD	1.56E-002
		02/15/99	289.00	< LLD	2.40E-002
		02/22/99	284.10	< LLD	1.87E-002
		03/01/99	282.20	< LLD	2.86E-002
		03/08/99	283.80	< LLD	3.28E-002
		03/15/99	281.70	< LLD	2.05E-002
		03/22/99	284.40	< LLD	2.20E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
200	- 1.0 MI SW - VISITORS CENTER	03/29/99	287.20	< LLD	2.22E-002
		04/05/99	284.80	< LLD	2.32E-002
		04/12/99	291.60	< LLD	2.26E-002
		04/19/99	285.10	< LLD	1.97E-002
		04/26/99	291.70	< LLD	2.26E-002
		05/03/99	280.00	< LLD	1.37E-002
		05/10/99	291.80	< LLD	2.48E-002
		05/17/99	290.30	< LLD	2.55E-002
		05/24/99	293.90	< LLD	2.24E-002
		05/31/99	298.20	< LLD	1.79E-002
		06/07/99	290.60	< LLD	3.58E-002
		06/14/99	294.90	< LLD	2.58E-002
		06/21/99	289.80	< LLD	2.22E-002
		06/28/99	294.60	< LLD	3.37E-002
		07/05/99	293.80	< LLD	2.62E-002
		07/12/99	294.40	< LLD	1.29E-002
		07/19/99	293.90	< LLD	2.25E-002
		07/26/99	294.70	< LLD	2.62E-002
		08/02/99	296.20	< LLD	3.72E-002
		08/09/99	295.20	< LLD	2.68E-002
		08/16/99	297.90	< LLD	1.64E-002
		08/23/99	294.80	< LLD	2.49E-002
		08/30/99	300.30	< LLD	1.80E-002
		09/06/99	290.60	< LLD	1.92E-002
		09/13/99	295.70	< LLD	1.29E-002
		09/20/99	278.90	< LLD	2.72E-002
		09/27/99	292.40	< LLD	2.35E-002
		10/04/99	293.10	< LLD	4.11E-002
		10/11/99	294.60	< LLD	1.29E-002
		10/18/99	294.60	< LLD	1.65E-002
		10/25/99	288.30	< LLD	2.31E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
200	- 1.0 MI SW - VISITORS CENTER	11/01/99	291.70	< LLD	2.44E-002
		11/08/99	292.10	< LLD	2.44E-002
		11/15/99	287.40	< LLD	2.91E-002
		11/22/99	271.30	< LLD	1.80E-002
		11/29/99	292.80	< LLD	2.39E-002
		12/06/99	221.40	< LLD	3.25E-002
		12/13/99	290.80	< LLD	3.39E-002
		12/20/99	284.70	< LLD	2.10E-002
		12/27/99	284.60	< LLD	2.84E-002
201	- 0.6 MI NE - PMAC	01/04/99	283.60	< LLD	3.64E-002
		01/11/99	277.40	< LLD	2.70E-002
		01/18/99	287.50	< LLD	2.36E-002
		01/25/99	286.40	< LLD	3.54E-002
		02/01/99	283.70	< LLD	2.30E-002
		02/08/99	287.60	< LLD	2.93E-002
		02/15/99	285.80	< LLD	3.32E-002
		02/22/99	282.10	< LLD	2.68E-002
		03/01/99	282.80	< LLD	3.98E-002
		03/08/99	200.00	< LLD	5.62E-002
		03/15/99	280.20	< LLD	3.25E-002
		03/22/99	282.80	< LLD	3.21E-002
		03/29/99	286.10	< LLD	2.34E-002
		04/05/99	284.30	< LLD	3.15E-002
		04/12/99	292.70	< LLD	2.03E-002
		04/19/99	286.10	< LLD	3.33E-002
		04/26/99	290.80	< LLD	2.30E-002
		05/03/99	287.80	< LLD	2.92E-002
		05/10/99	292.80	< LLD	2.79E-002
		05/24/99	294.40	< LLD	2.94E-002
		05/31/99	300.40	< LLD	2.48E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point	Sample Date	Quantity	Activity	LLD
201 - 0.6 MI NE - PMAC	06/07/99	291.10	< LLD	4.14E-002
	06/14/99	300.10	< LLD	3.19E-002
	06/21/99	293.20	< LLD	2.44E-002
	06/28/99	296.20	< LLD	3.36E-002
	07/05/99	302.60	< LLD	3.50E-002
	07/12/99	278.20	< LLD	3.13E-002
	07/19/99	280.90	< LLD	3.06E-002
	07/26/99	284.10	< LLD	3.21E-002
	08/02/99	284.20	< LLD	2.18E-002
	08/09/99	283.20	< LLD	3.58E-002
	08/16/99	283.80	< LLD	2.80E-002
	08/23/99	279.60	< LLD	3.68E-002
	08/30/99	285.00	< LLD	2.67E-002
	09/06/99	278.00	< LLD	3.30E-002
	09/13/99	254.30	< LLD	3.41E-002
	09/27/99	274.40	< LLD	2.46E-002
	10/04/99	266.60	< LLD	1.69E-002
	10/11/99	269.30	< LLD	3.53E-002
	10/18/99	276.70	< LLD	3.24E-002
	10/25/99	264.20	< LLD	3.47E-002
	11/01/99	267.20	< LLD	2.94E-002
	11/08/99	265.70	< LLD	3.07E-002
	11/15/99	264.10	< LLD	3.28E-002
	11/22/99	261.90	< LLD	3.16E-002
	11/29/99	267.90	< LLD	4.01E-002
	12/06/99	256.90	< LLD	2.95E-002
	12/13/99	261.90	< LLD	2.15E-002
	12/20/99	255.60	< LLD	3.02E-002
	12/27/99	177.90	< LLD	5.27E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
202	- 1.0 MI S - SUBSTATION ON CONSTRUCTION RD	01/04/99	262.70	< LLD	3.26E-002
		01/11/99	279.00	< LLD	1.94E-002
		01/18/99	283.70	< LLD	2.78E-002
		01/25/99	280.00	< LLD	3.59E-002
		02/01/99	279.80	< LLD	2.73E-002
		02/08/99	282.80	< LLD	3.07E-002
		02/15/99	283.20	< LLD	2.50E-002
		02/22/99	282.60	< LLD	3.30E-002
		03/01/99	286.70	< LLD	4.26E-002
		03/08/99	284.40	< LLD	3.91E-002
		03/15/99	284.90	< LLD	3.37E-002
		03/22/99	281.00	< LLD	3.40E-002
		03/29/99	284.20	< LLD	3.39E-002
		04/05/99	281.40	< LLD	3.26E-002
		04/12/99	283.20	< LLD	2.88E-002
		04/19/99	281.50	< LLD	2.52E-002
		04/26/99	281.40	< LLD	3.89E-002
		05/03/99	283.60	< LLD	4.32E-002
		05/10/99	281.50	< LLD	3.21E-002
		05/17/99	284.90	< LLD	3.87E-002
		05/24/99	286.00	< LLD	3.06E-002
		05/31/99	292.60	< LLD	2.61E-002
		06/07/99	282.20	< LLD	3.24E-002
		06/14/99	290.20	< LLD	2.91E-002
		06/21/99	284.80	< LLD	2.65E-002
		06/28/99	287.20	< LLD	4.13E-002
		07/05/99	290.00	< LLD	3.52E-002
		07/12/99	282.60	< LLD	3.23E-002
		07/19/99	288.10	< LLD	2.10E-002
		07/26/99	289.50	< LLD	3.47E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
202	- 1.0 MI S - SUBSTATION ON CONSTRUCTION RD	08/02/99	289.50	< LLD	4.99E-002
		08/09/99	290.90	< LLD	4.02E-002
		08/16/99	291.80	< LLD	3.88E-002
		08/23/99	286.40	< LLD	3.38E-002
		08/30/99	290.80	< LLD	4.12E-002
		09/06/99	281.80	< LLD	3.75E-002
		09/13/99	284.00	< LLD	3.14E-002
		09/20/99	286.60	< LLD	3.54E-002
		09/27/99	283.60	< LLD	3.32E-002
		10/04/99	283.70	< LLD	3.09E-002
		10/11/99	285.20	< LLD	3.09E-002
		10/18/99	284.00	< LLD	2.75E-002
		10/25/99	278.30	< LLD	1.94E-002
		11/01/99	282.60	< LLD	1.85E-002
		11/08/99	281.20	< LLD	2.76E-002
		11/15/99	277.80	< LLD	4.10E-002
		11/22/99	279.60	< LLD	2.95E-002
		11/29/99	282.80	< LLD	1.98E-002
		12/06/99	272.10	< LLD	3.97E-002
		12/13/99	279.60	< LLD	3.65E-002
		12/20/99	275.20	< LLD	2.50E-002
		12/27/99	274.50	< LLD	4.50E-002
203	- 2.3 MI SSW - SOUTHPORT SUBSTATION	01/04/99	267.60	< LLD	2.85E-002
		01/11/99	275.50	< LLD	4.26E-002
		01/18/99	283.20	< LLD	2.17E-002
		01/25/99	278.60	< LLD	2.89E-002
		02/01/99	274.30	< LLD	2.49E-002
		02/08/99	277.20	< LLD	4.44E-002
		02/15/99	275.50	< LLD	1.78E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
203	- 2.3 MI SSW - SOUTHPORT SUBSTATION	02/22/99	272.00	< LLD	3.68E-002
		03/01/99	269.80	< LLD	2.71E-002
		03/08/99	270.00	< LLD	4.50E-002
		03/15/99	269.70	< LLD	2.41E-002
		03/22/99	271.70	< LLD	3.85E-002
		03/29/99	274.40	< LLD	3.52E-002
		04/05/99	273.50	< LLD	3.22E-002
		04/12/99	280.80	< LLD	3.41E-002
		04/19/99	273.20	< LLD	2.56E-002
		04/26/99	279.30	< LLD	2.14E-002
		05/03/99	277.00	< LLD	3.40E-002
		05/10/99	281.60	< LLD	4.09E-002
		05/17/99	281.60	< LLD	2.55E-002
		05/24/99	282.40	< LLD	3.23E-002
		05/31/99	288.40	< LLD	3.63E-002
		06/07/99	281.00	< LLD	4.21E-002
		06/14/99	290.00	< LLD	2.14E-002
		06/21/99	284.50	< LLD	2.32E-002
		06/28/99	287.40	< LLD	3.36E-002
		07/05/99	288.00	< LLD	3.86E-002
		07/12/99	289.70	< LLD	3.52E-002
		07/19/99	285.70	< LLD	4.00E-002
		07/26/99	289.50	< LLD	3.88E-002
		08/02/99	266.80	< LLD	2.99E-002
		08/09/99	283.00	< LLD	4.02E-002
		08/16/99	287.60	< LLD	3.53E-002
		08/30/99	288.20	< LLD	3.86E-002
		09/06/99	281.90	< LLD	4.47E-002
		09/13/99	280.10	< LLD	3.64E-002
		09/20/99	266.90	< LLD	3.94E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
203	- 2.3 MI SSW - SOUTHPORT SUBSTATION	09/27/99	279.00	< LLD	3.83E-002
		10/04/99	277.50	< LLD	4.51E-002
		10/11/99	279.50	< LLD	4.40E-002
		10/18/99	282.20	< LLD	4.16E-002
		10/25/99	272.90	< LLD	4.32E-002
		11/01/99	275.20	< LLD	3.01E-002
		11/08/99	274.80	< LLD	4.43E-002
		11/15/99	271.10	< LLD	2.45E-002
		11/22/99	270.90	< LLD	3.15E-002
		11/29/99	275.60	< LLD	3.10E-002
		12/13/99	277.70	< LLD	4.07E-002
		12/20/99	275.40	< LLD	3.40E-002
		12/27/99	275.20	< LLD	3.80E-002
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	01/04/99	274.60	< LLD	3.17E-002
		01/11/99	273.60	< LLD	3.35E-002
		01/18/99	282.20	< LLD	3.75E-002
		01/25/99	283.30	< LLD	2.82E-002
		02/01/99	280.90	< LLD	3.26E-002
		02/08/99	279.90	< LLD	2.09E-002
		02/15/99	279.70	< LLD	2.68E-002
		02/22/99	276.70	< LLD	2.55E-002
		03/01/99	275.90	< LLD	3.72E-002
		03/08/99	278.50	< LLD	3.70E-002
		03/15/99	277.20	< LLD	3.38E-002
		03/22/99	278.60	< LLD	2.15E-002
		03/29/99	281.80	< LLD	2.07E-002
		04/05/99	278.80	< LLD	2.19E-002
		04/12/99	284.90	< LLD	2.57E-002
		04/19/99	283.50	< LLD	3.14E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	04/26/99	283.50	< LLD	2.86E-002
		05/03/99	278.80	< LLD	1.84E-002
		05/10/99	288.60	< LLD	2.93E-002
		05/17/99	279.80	< LLD	2.46E-002
		05/24/99	285.30	< LLD	2.37E-002
		05/31/99	291.90	< LLD	1.68E-002
		06/07/99	280.40	< LLD	4.38E-002
		06/14/99	289.40	< LLD	3.33E-002
		06/21/99	282.70	< LLD	2.00E-002
		06/28/99	286.10	< LLD	2.14E-002
		07/05/99	289.70	< LLD	2.35E-002
		07/12/99	284.40	< LLD	2.38E-002
		07/19/99	288.00	< LLD	1.71E-002
		07/26/99	290.90	< LLD	1.84E-002
		08/02/99	292.50	< LLD	3.91E-002
		08/09/99	288.80	< LLD	2.00E-002
		08/16/99	292.20	< LLD	2.38E-002
		08/23/99	288.40	< LLD	2.49E-002
		08/30/99	292.60	< LLD	2.78E-002
		09/06/99	275.90	< LLD	2.64E-002
		09/13/99	283.50	< LLD	1.33E-002
		09/20/99	283.70	< LLD	3.22E-002
		09/27/99	284.20	< LLD	2.05E-002
		10/04/99	285.50	< LLD	3.43E-002
		10/11/99	282.60	< LLD	3.19E-002
		10/18/99	281.30	< LLD	2.54E-002
		10/25/99	277.80	< LLD	2.20E-002
		11/01/99	253.20	< LLD	2.16E-002
		11/08/99	277.20	< LLD	2.70E-002
		11/15/99	274.10	< LLD	2.51E-002
		11/22/99	273.20	< LLD	1.90E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
204	- 23.0 MI NNE - SUTTON PLANT (CONTROL)	11/29/99	280.00	< LLD	3.15E-002
		12/06/99	268.20	< LLD	3.84E-002
		12/13/99	269.80	< LLD	2.54E-002
		12/20/99	268.90	< LLD	1.79E-002
		12/27/99	268.00	< LLD	2.42E-002
205	- 0.6 MI SSE - SPOIL POND	01/04/99	269.00	< LLD	4.20E-002
		01/11/99	242.90	< LLD	2.25E-002
		01/18/99	279.80	< LLD	3.52E-002
		01/25/99	289.80	< LLD	3.30E-002
		02/01/99	288.10	< LLD	3.21E-002
		02/08/99	292.30	< LLD	3.36E-002
		02/15/99	279.40	< LLD	2.84E-002
		02/22/99	271.40	< LLD	3.58E-002
		03/01/99	217.10	< LLD	4.13E-002
		03/08/99	246.70	< LLD	3.20E-002
		03/15/99	283.70	< LLD	3.16E-002
		03/22/99	287.60	< LLD	3.55E-002
		03/29/99	295.40	< LLD	3.15E-002
		04/05/99	294.00	< LLD	2.67E-002
		04/12/99	301.20	< LLD	2.66E-002
		04/19/99	294.00	< LLD	3.01E-002
		04/26/99	304.80	< LLD	3.16E-002
		05/03/99	291.90	< LLD	3.27E-002
		05/10/99	304.20	< LLD	3.21E-002
		05/17/99	296.20	< LLD	2.38E-002
		05/24/99	292.80	< LLD	2.49E-002
		05/31/99	304.90	< LLD	2.86E-002
		06/07/99	291.80	< LLD	1.60E-002
		06/14/99	303.10	< LLD	3.55E-002
		06/21/99	287.30	< LLD	3.31E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Air Cartridge** Analysis: **Iodine (Continued)**
Quantity: cubic meters
Activity: pCi/cubic meter

Sample Point		Sample Date	Quantity	Activity	LLD
205	- 0.6 MI SSE - SPOIL POND	06/28/99	296.30	< LLD	3.96E-002
		07/05/99	297.50	< LLD	2.60E-002
		07/12/99	290.00	< LLD	3.10E-002
		07/19/99	293.60	< LLD	2.13E-002
		07/26/99	296.10	< LLD	2.45E-002
		08/02/99	295.20	< LLD	3.36E-002
		08/09/99	297.50	< LLD	3.68E-002
		08/16/99	295.90	< LLD	2.69E-002
		08/23/99	291.50	< LLD	2.47E-002
		08/30/99	196.90	< LLD	4.86E-002
		09/06/99	296.50	< LLD	2.83E-002
		09/13/99	359.40	< LLD	2.33E-002
		09/20/99	292.80	< LLD	2.49E-002
		09/27/99	285.40	< LLD	1.87E-002
		10/04/99	286.80	< LLD	1.78E-002
		10/11/99	295.40	< LLD	3.44E-002
		10/18/99	288.50	< LLD	3.59E-002
		10/25/99	289.30	< LLD	3.53E-002
		11/01/99	293.00	< LLD	3.36E-002
		11/08/99	292.40	< LLD	3.17E-002
		11/15/99	290.20	< LLD	2.96E-002
		11/22/99	273.40	< LLD	2.85E-002
		11/29/99	289.60	< LLD	3.33E-002
		12/06/99	283.30	< LLD	2.67E-002
		12/13/99	291.40	< LLD	3.27E-002
		12/20/99	287.70	< LLD	3.15E-002
		12/27/99	287.60	< LLD	2.78E-002

BSEP Radiological Environmental Monitoring Analysis Report

MediaType: **Surface Water** Analysis: **Tritium**
Quantity: Liters
Activity: pCi/Liter

Sample Point		Sample Date	Quantity	Efficiency	Activity	LLD
400	- 0.7 MI NE - INTAKE CANAL (CONTROL)	01/31/99	0.01	4.34E-001	< LLD	3.19E+002
		02/28/99	0.01	4.33E-001	< LLD	3.15E+002
		03/31/99	0.01	4.31E-001	< LLD	3.09E+002
		04/30/99	0.01	4.33E-001	< LLD	3.06E+002
		05/31/99	0.01	4.32E-001	< LLD	3.09E+002
		06/30/99	0.01	4.34E-001	< LLD	3.18E+002
		07/31/99	0.01	4.34E-001	< LLD	3.23E+002
		08/31/99	0.01	4.34E-001	< LLD	3.08E+002
		09/30/99	0.01	4.33E-001	< LLD	3.06E+002
		10/31/99	0.01	2.85E-001	< LLD	2.87E+002
		11/30/99	0.01	4.32E-001	< LLD	3.04E+002
		12/31/99	0.01	4.30E-001	< LLD	3.10E+002
401	- 4.9 MI SSW - DISCHARGE CANAL	01/31/99	0.01	4.34E-001	< LLD	3.19E+002
		02/28/99	0.01	4.32E-001	< LLD	3.15E+002
		03/31/99	0.01	4.29E-001	< LLD	3.11E+002
		04/30/99	0.01	4.32E-001	< LLD	3.07E+002
		05/31/99	0.01	4.29E-001	< LLD	3.12E+002
		06/30/99	0.01	4.31E-001	< LLD	3.20E+002
		07/31/99	0.01	4.32E-001	< LLD	3.25E+002
		08/31/99	0.01	4.33E-001	< LLD	3.09E+002
		09/30/99	0.01	4.32E-001	< LLD	3.07E+002
		10/31/99	0.01	2.85E-001	< LLD	2.87E+002
		11/30/99	0.01	4.30E-001	< LLD	3.05E+002
		12/31/99	0.01	4.28E-001	< LLD	3.12E+002

CP&L

1999 Radiological Environmental

Monitoring Gamma Isotopic

Report

Brunswick Steam Electric Plant

1999 CP&L Radiological Environmental Monitoring Gamma Isotopic Report Comments

- No samples were available for Air Cartridge and Air Particulates (AC/AP) indicated below:

  - AC/AP-201 May 17
  - AC/AP-203 August 23
  - AC/AP-201 September 20
  - AC/AP-203 December 6

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **AIR PARTICULATE**
Quantity: CUBIC METERS
Activity: pCi/cubic meter

Sample Point			SampleDate	Quantity	Isotope	Activity	2 SigmaError
200	-	1.0 MI SW - VISITORS CENTER	02/15/99	3700.20	BE-7	1.38E-001	1.47E-002
			02/15/99	3700.20	K-40	1.19E-002	1.09E-002
			02/15/99	3700.20	TL-208	9.02E-004	6.13E-004
			02/15/99	3700.20	PB-212	1.68E-003	6.01E-004
			02/15/99	3700.20	BI-214	6.86E-003	1.75E-003
			02/15/99	3700.20	PB-214	6.38E-003	1.48E-003
			05/15/99	3777.30	BE-7	1.37E-001	1.60E-002
			05/15/99	3777.30	TL-208	8.83E-004	5.49E-004
			05/15/99	3777.30	PB-212	8.30E-004	6.57E-004
			05/15/99	3777.30	PB-214	1.56E-003	9.83E-004
			05/15/99	3777.30	RA-226	7.43E-003	6.95E-003
			08/15/99	3818.80	BE-7	1.09E-001	1.58E-002
			11/15/99	3687.40	BE-7	1.12E-001	1.86E-002
201	-	0.6 MI NE - PMAC	02/15/99	3606.00	BE-7	1.53E-001	1.75E-002
			02/15/99	3606.00	BI-214	1.98E-003	1.63E-003
			02/15/99	3606.00	RA-226	1.40E-002	1.26E-002
			05/15/99	3582.00	BE-7	1.29E-001	1.94E-002
			08/15/99	3495.90	BE-7	1.12E-001	1.64E-002
			08/15/99	3495.90	TL-208	1.12E-003	5.04E-004
			08/15/99	3495.90	PB-212	8.09E-004	4.82E-004
			11/15/99	3355.90	BE-7	1.18E-001	1.77E-002
202	-	1.0 MI S - SUBSTATION ON CONSTRUCTION RD	02/15/99	3655.10	BE-7	1.27E-001	1.75E-002
			02/15/99	3655.10	BI-214	3.03E-003	1.69E-003
			02/15/99	3655.10	PB-214	3.66E-003	1.74E-003
			05/15/99	3700.50	BE-7	1.43E-001	1.77E-002
			08/15/99	3735.60	BE-7	1.32E-001	1.74E-002
			11/15/99	3636.60	BE-7	1.34E-001	1.83E-002
203	-	2.3 MI SSW - SOUTHPORT SUBSTATION	02/15/99	3559.50	BE-7	1.32E-001	2.39E-002
			05/15/99	3660.70	BE-7	1.57E-001	1.75E-002
			05/15/99	3660.70	K-40	2.48E-002	1.06E-002
			05/15/99	3660.70	PB-212	1.28E-003	7.23E-004
			05/15/99	3660.70	PB-214	1.70E-003	1.31E-003

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **AIR PARTICULATE (Continued)**
Quantity: CUBIC METERS
Activity: pCi/cubic meter

Sample Point			SampleDate	Quantity	Isotope	Activity	2 SigmaError
203	-	2.3 MI SSW - SOUTHPORT SUBSTATION	08/15/99	3524.40	BE-7	1.26E-001	1.68E-001
			08/15/99	3524.40	K-40	1.51E-002	1.09E-002
			11/15/99	3400.90	BE-7	1.31E-001	1.52E-002
			11/15/99	3400.90	K-40	2.48E-002	1.04E-002
204	-	23.0 MI NNE - SUTTON PLANT (CONTROL)	02/15/99	3622.90	BE-7	1.45E-001	1.57E-002
			02/15/99	3622.90	K-40	2.20E-002	1.06E-002
			02/15/99	3622.90	PB-212	1.18E-003	6.58E-004
			02/15/99	3622.90	PB-214	2.02E-003	1.32E-003
			02/15/99	3622.90	RA-226	9.13E-003	8.72E-003
			05/15/99	3693.70	BE-7	1.44E-001	1.59E-002
			05/15/99	3693.70	K-40	1.67E-002	9.64E-003
			05/15/99	3693.70	TL-208	5.00E-004	4.17E-004
			05/15/99	3693.70	PB-214	2.60E-003	1.37E-003
			05/15/99	3693.70	RA-226	1.24E-002	1.01E-002
			08/15/99	3734.80	BE-7	1.18E-001	1.43E-002
			11/15/99	3559.80	BE-7	1.21E-001	2.09E-002
205	-	0.6 MI SSE - SPOIL POND	02/15/99	3543.20	BE-7	1.32E-001	1.34E-002
			02/15/99	3543.20	K-40	1.71E-002	1.05E-002
			02/15/99	3543.20	TL-208	8.32E-004	7.23E-004
			02/15/99	3543.20	PB-212	1.09E-003	5.33E-004
			02/15/99	3543.20	BI-214	2.20E-003	1.46E-003
			02/15/99	3543.20	PB-214	1.80E-003	1.12E-003
			05/15/99	3892.50	BE-7	1.45E-001	1.70E-002
			08/15/99	3788.30	BE-7	1.12E-001	2.08E-001
			11/15/99	3748.60	BE-7	1.39E-001	2.02E-002

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Broadleaf Vegetation** Media: **Cherry**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
800 - 0.7 MI NE - INTAKE CANAL	05/02/99	403.80	BE-7	1.07E+000	2.35E-001
	05/02/99	403.80	K-40	2.29E+000	5.43E-001
	06/01/99	501.70	BE-7	2.63E-001	1.78E-001
	06/01/99	501.70	K-40	4.56E+000	6.05E-001
	06/01/99	501.70	RA-226	4.80E-001	4.33E-001
	07/01/99	493.00	BE-7	5.46E-001	1.78E-001
	07/01/99	493.00	K-40	2.56E+000	3.73E-001
	08/02/99	504.00	BE-7	2.83E-001	1.51E-001
	08/02/99	504.00	K-40	4.33E+000	5.51E-001
	09/01/99	572.70	BE-7	4.68E-001	1.49E-001
	09/01/99	572.70	K-40	2.18E+000	3.13E-001
	10/01/99	526.00	BE-7	2.27E+000	2.12E-001
	10/01/99	526.00	K-40	1.80E+000	3.29E-001
	11/01/99	492.40	BE-7	1.64E+000	2.60E-001
	11/01/99	492.40	K-40	2.36E+000	4.30E-001
801 - 0.6 MI SW - DISCHARGE CANAL	05/02/99	445.70	BE-7	3.41E-001	1.77E-001
	05/02/99	445.70	K-40	3.00E+000	5.81E-001
	06/01/99	457.70	BE-7	5.39E-001	1.81E-001
	06/01/99	457.70	K-40	3.29E+000	5.30E-001
	06/01/99	457.70	PB-212	3.32E-002	3.01E-002
	07/01/99	486.30	BE-7	3.25E+000	1.96E-001
	07/01/99	486.30	K-40	2.36E+000	5.08E-001
	08/02/99	562.20	BE-7	8.15E-001	1.86E-001
	08/02/99	562.20	K-40	1.25E+000	4.08E-001
	09/01/99	559.20	BE-7	6.37E-001	1.79E-001
	09/01/99	559.20	K-40	2.89E+000	4.53E-001
	09/01/99	559.20	TL-208	2.83E-002	2.40E-002
	10/01/99	514.80	BE-7	1.31E+000	2.50E-001
	10/01/99	514.80	K-40	2.16E+000	4.77E-001
	11/01/99	470.60	BE-7	3.02E+000	3.39E-001
	11/01/99	470.60	K-40	2.18E+000	4.87E-001

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Broadleaf Vegetation** Media: **Cherry (Continued)**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point			SampleDate	Quantity	Isotope	Activity	2 SigmaError
802	-	10.0 MI - NOT SPECIFIED (CONTROL)	05/02/99	623.00	BE-7	6.02E-001	1.56E-001
			05/02/99	623.00	K-40	3.51E+000	4.27E-001
			06/01/99	623.90	BE-7	3.27E-001	1.75E-001
			06/01/99	623.90	K-40	1.98E+000	3.70E-001
			07/01/99	642.30	BE-7	3.64E-001	1.01E-001
			07/01/99	642.30	K-40	3.20E+000	3.63E-001
			08/02/99	536.30	BE-7	3.64E-001	1.62E-001
			08/02/99	536.30	K-40	4.44E+000	5.01E-001
			08/02/99	536.30	TL-208	1.88E-002	1.62E-002
			09/01/99	574.10	BE-7	6.92E-001	1.91E-001
			09/01/99	574.10	K-40	4.23E+000	4.77E-001
			10/01/99	554.20	BE-7	2.10E+000	2.58E-001
			10/01/99	554.20	K-40	4.24E+000	5.25E-001
			11/01/99	516.60	BE-7	2.27E+000	2.43E-001
			11/01/99	516.60	K-40	2.84E+000	4.11E-001
803	-	0.6 MI SSE - SPOIL POND	05/02/99	579.00	BE-7	1.11E+000	2.01E-001
			05/02/99	579.00	K-40	2.86E+000	4.18E-001
			05/02/99	579.00	RA-226	4.74E-001	3.20E-001
			06/01/99	637.10	BE-7	4.57E-001	1.44E-001
			06/01/99	637.10	K-40	2.84E+000	3.91E-001
			07/01/99	467.20	BE-7	6.81E-001	2.02E-001
			07/01/99	467.20	K-40	2.31E+000	4.84E-001
			08/02/99	523.80	BE-7	2.72E-001	1.41E-001
			08/02/99	523.80	K-40	3.13E+000	4.05E-001
			08/02/99	523.80	BI-214	6.21E-002	3.17E-002
			08/02/99	523.80	PB-214	4.88E-002	3.12E-002
			09/01/99	606.90	BE-7	2.12E-001	1.58E-001
			09/01/99	606.90	K-40	3.75E+000	4.91E-001
			10/01/99	527.10	BE-7	1.16E+000	2.38E-001
			10/01/99	527.10	K-40	2.96E+000	5.25E-001
			11/01/99	484.60	BE-7	1.85E+000	2.68E-001
			11/01/99	484.60	K-40	3.55E+000	5.28E-001

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Broadleaf Vegetation** Media: **Wax Myrtle**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
800 - 0.7 MI NE - INTAKE CANAL	01/01/99	439.20	BE-7	1.28E+000	1.23E-001
	01/01/99	439.20	K-40	1.69E+000	2.41E-001
	02/01/99	409.20	BE-7	2.97E+000	2.82E-001
	02/01/99	409.20	K-40	1.52E+000	3.87E-001
	02/01/99	409.20	BI-214	1.61E-001	4.82E-001
	02/01/99	409.20	PB-214	9.47E-002	4.12E-002
	03/01/99	450.60	BE-7	1.84E+000	3.13E-001
	03/01/99	450.60	K-40	1.83E+000	4.02E-001
	03/01/99	450.60	BI-214	5.82E-002	4.42E-002
	04/01/99	415.70	BE-7	2.28E+000	3.40E-001
	04/01/99	415.70	K-40	2.34E+000	5.39E-001
	12/01/99	384.10	BE-7	1.32E+000	2.79E-001
	12/01/99	384.10	K-40	2.32E+000	5.61E-001
801 - 0.6 MI SW - DISCHARGE CANAL	01/01/99	486.80	BE-7	1.10E+000	2.01E-001
	01/01/99	486.80	K-40	1.52E+000	4.16E-001
	02/01/99	432.90	BE-7	1.64E+000	2.65E-001
	02/01/99	432.90	K-40	1.46E+000	4.13E-001
	03/01/99	430.30	BE-7	1.42E+000	1.70E-001
	03/01/99	430.30	K-40	1.41E+000	2.54E-001
	03/01/99	430.30	RA-226	2.51E-001	2.09E-001
	04/01/99	483.00	BE-7	1.66E+000	2.65E-001
	04/01/99	483.00	K-40	2.54E+000	4.13E-001
	04/01/99	483.00	PB-214	9.92E-002	4.94E-002
	12/01/99	484.80	BE-7	7.50E-001	1.89E-001
	12/01/99	484.80	K-40	1.64E+000	3.81E-001
802 - 10.0 MI - NOT SPECIFIED (CONTROL)	01/01/99	468.50	BE-7	1.77E+000	2.98E-001
	01/01/99	468.50	K-40	1.85E+000	3.98E-001
	02/01/99	461.70	BE-7	1.95E+000	2.28E-001
	02/01/99	461.70	K-40	1.95E+000	4.04E-001
	02/01/99	461.70	PB-214	1.18E-001	5.06E-002
	03/01/99	447.20	BE-7	2.20E+000	3.31E-001
	03/01/99	447.20	K-40	2.57E+000	4.92E-001

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Broadleaf Vegetation** Media: **Wax Myrtle (Continued)**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
802 - 10.0 MI - NOT SPECIFIED (CONTROL)	03/01/99	447.20	PB-214	6.97E-002	5.39E-002
	04/01/99	433.10	BE-7	2.44E+000	3.03E-001
	04/01/99	433.10	K-40	2.56E+000	5.27E-001
	12/01/99	466.70	BE-7	8.58E-001	2.53E-001
	12/01/99	466.70	K-40	2.42E+000	4.50E-001
803 - 0.6 MI SSE - SPOIL POND	01/01/99	483.70	BE-7	1.34E+000	2.62E-001
	01/01/99	483.70	K-40	2.97E+000	4.06E-001
	02/01/99	485.80	BE-7	1.45E+000	2.54E-001
	02/01/99	485.80	K-40	1.60E+000	4.23E-001
	03/01/99	445.80	BE-7	1.67E+000	2.65E-001
	03/01/99	445.80	K-40	1.85E+000	4.81E-001
	04/01/99	447.80	BE-7	2.53E+000	3.16E-001
	04/01/99	447.80	K-40	2.86E+000	4.88E-001
	12/01/99	517.10	BE-7	1.46E+000	2.32E-001
	12/01/99	517.10	K-40	2.52E+000	4.22E-001

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Fish and Invertebrates**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point			SampleDate	Quantity	Isotope	Activity	2 SigmaError
700	-	5.5 MI SSW - FREE SWIMMERS AT DISCHARGE	05/20/99	996.00	K-40	4.05E+000	7.90E-001
			10/28/99	541.80	K-40	3.98E+000	9.62E-001
701	-	5.5 MI SSW - BOTTOM FEEDER AT DISCHARGE	05/20/99	773.30	K-40	2.17E+000	7.20E-001
			10/28/99	517.20	K-40	2.94E+000	1.01E+000
703	-	FREE SWIMMERS - ATLANTIC OCEAN (CONTROL)	05/20/99	529.90	K-40	2.20E+000	7.96E-001
			10/28/99	517.30	K-40	3.19E+000	1.08E+000
704	-	BOTTOM FEEDER - ATLANTIC OCEAN (CONTROL)	05/20/99	407.30	K-40	2.11E+000	1.01E+000
			10/28/99	531.80	K-40	4.61E+000	1.14E+000

MediaType: **Invertebrates**
Quantity: GRAMS (wet)
Activity: pCi/gm wet

Sample Point			SampleDate	Quantity	Isotope	Activity	2 SigmaError
702	-	5.5 MI SSW - SH/BO* AT DISCHARGE	05/20/99	786.30	K-40	1.67E+000	6.05E-001
			10/28/99	536.50	K-40	1.67E+000	1.02E+000
705	-	SH/BO* - ATLANTIC OCEAN (CONTROL)	05/20/99	692.50	K-40	1.62E+000	6.08E-001
			10/28/99	590.00	K-40	2.63E+000	7.85E-001

* Shellfish/Benthic Organisms

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Shoreline Sediment**
Quantity: GRAMS (dry)
Activity: pCi/gm dry

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
500 - 4.9 MI SSW - DISCHARGE	10/28/99	1551.40	K-40	1.04E+000	3.43E-001
	10/28/99	1551.40	TL-208	1.12E-001	4.06E-002
	10/28/99	1551.40	PB-212	4.63E-001	5.84E-002
	10/28/99	1551.40	BI-214	6.02E-001	8.38E-002
	10/28/99	1551.40	PB-214	5.75E-001	9.14E-002
	10/28/99	1551.40	RA-226	9.96E-001	6.65E-001
	10/28/99	1551.40	AC-228	3.67E-001	1.13E-001

MediaType: **Surface Water**
Quantity: Liters
Activity: pCi/L

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
400 - 0.7 MI NE - INTAKE CANAL (CONTROL)	01/31/99	1.00	K-40	2.40E+002	8.00E+001
	01/31/99	1.00	PB-212	1.04E+001	5.68E+000
	01/31/99	1.00	BI-214	6.40E+001	1.29E+001
	01/31/99	1.00	PB-214	3.13E+001	1.03E+001
	02/28/99	1.00	K-40	1.84E+002	7.58E+001
	03/31/99	1.00	K-40	2.17E+002	1.06E+002
	03/31/99	1.00	PB-212	8.88E+000	8.41E+000
	03/31/99	1.00	BI-214	5.00E+001	1.83E+001
	03/31/99	1.00	PB-214	4.98E+001	1.38E+001
	04/30/99	1.00	K-40	1.88E+002	1.12E+002
	05/31/99	1.00	K-40	1.02E+002	8.49E+001
	06/30/99	1.00	K-40	3.61E+002	1.01E+002
	07/31/99	1.00	K-40	2.60E+002	8.65E+001
	08/31/99	1.00	K-40	3.95E+002	1.26E+002
	09/30/99	1.00	K-40	9.62E+001	7.20E+001
	10/31/99	1.00	RA-226	9.51E+001	8.09E+001
	11/30/99	1.00	K-40	1.30E+002	7.88E+001
	12/31/99	1.00	K-40	1.43E+002	9.31E+001

BSEP Radiological Environmental Monitoring Gamma Isotopic Report

MediaType: **Surface Water (Continued)**
Quantity: Liters
Activity: pCi/L

Sample Point	SampleDate	Quantity	Isotope	Activity	2 SigmaError
401 - 4.9 MI SSW - DISCHARGE CANAL	01/31/99	1.00	K-40	1.32E+002	7.80E+001
	01/31/99	1.00	TL-208	8.18E+000	5.26E+000
	01/31/99	1.00	PB-212	1.23E+001	6.77E+000
	01/31/99	1.00	BI-214	2.33E+001	1.09E+001
	01/31/99	1.00	PB-214	1.08E+001	8.54E+000
	02/28/99	1.00	K-40	2.46E+002	1.05E+002
	03/31/99	1.00	K-40	1.93E+002	1.09E+002
	04/30/99	1.00	K-40	2.47E+002	1.10E+002
	04/30/99	1.00	RA-226	1.56E+002	1.31E+002
	05/31/99	1.00	K-40	2.46E+002	8.40E+001
	06/30/99	1.00	K-40	2.65E+002	1.13E+002
	07/31/99	1.00	K-40	2.28E+002	9.96E+001
	08/31/99	1.00	K-40	3.88E+002	1.08E+002
	09/30/99	1.00	K-40	1.76E+002	8.99E+001
	10/31/99	1.00	NO-ACT		
	11/30/99	1.00	K-40	2.27E+002	9.82E+001
	12/31/99	1.00	K-40	1.52E+002	1.26E+002