

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL SAFETY AND HEALTH
RADIATION PROTECTION AND RELEASE PREVENTION
MONTHLY REPORT**

DECEMBER 1, 2011 THROUGH DECEMBER 31, 2011

SECTION I OFFICE OF THE DIRECTOR

SECTION 11 BUREAU OF X-RAY COMPLIANCE

SECTION 111 BUREAU OF ENVIRONMENTAL RADIATION

SECTION IV BUREAU OF NUCLEAR ENGINEERING

SECTION V BUREAU OF RELEASE PREVENTION

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL SAFETY AND HEALTH
RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT
MONTHLY REPORT – DECEMBER 1 THROUGH DECEMBER 31, 2011**

SECTION I

OFFICE OF THE DIRECTOR

Highlights of the Monthly Report

1. Inadvertent Discharge of Hypochlorite at Hope Creek

On December 28, PSEG made a four hour non-emergency notification to the Nuclear Regulatory Commission (NRC) as required by 10 CFR 50.72(b)(2)(xi). This notification resulted from PSEG being required to report a chemical spill into the Delaware River to an offsite agency (i.e., NJDEP).

Following a planned Station Service Water (SSW) pump swap, a motor operated valve (MOV) failed to close in a water treatment system for the SSW pump that had been taken out of service. A manual isolation was closed by locally stationed operators. The malfunction of the MOV resulted in the discharge of approximately 17 gallons of 15% sodium hypochlorite into the idle SSW pump intake which communicates with the Delaware River. The idle SSW pump was restarted thus withdrawing the residual chemical from the intake and directing it to the plant treatment systems. A sample was obtained from the Delaware River just outside the SSW intake structure and there was no detectable chlorine in the sample. A two hour report of the spill was made to the NJDEP.

There was no impact on plant operations. All safety related equipment continued to function as required. There were no injuries or reported wildlife impact. PSEG is performing an evaluation to fully understand the impact of the MOV malfunction and to prevent re-occurrence.

2. Federally-Mandated Changes to Radiological Emergency Preparedness Program

FEMA released a major revision to its Radiological Emergency Preparedness Program Manual in October, 2011 that greatly expands the scope of preparedness activities, and during December staff from the Bureau attended a series of meetings with the New Jersey State Police Office of Emergency Management, PSEG Nuclear, Exelon and county representatives to chart a path towards meeting the new requirements. Bureau Chief Pat Mulligan and representatives of the Office of Emergency Management also attended a series of meetings with FEMA, the Nuclear Regulatory Commission, and other interested parties in New Hampshire to learn more about the changes. It is expected that most municipalities and emergency response organizations throughout the State will now be required to participate at some level in nuclear emergency preparedness. The State Radiological Emergency Response Plan is slated to be completely rewritten over a thirty-month implementation time frame.

Original signed by

Paul Baldauf, P.E.
Director

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL SAFETY AND HEALTH
RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT**

December 1 - 31, 2011

SECTION II – BUREAU OF X-RAY COMPLIANCE (BXC)

A. From the Chief’s Desk

Contact: Paul Orlando (609) 984-5809

During the month of December, bureau staff continued to work towards attainment of its FY-2012 work plan goals. A mid-year report on progress towards these goals will be presented in the January monthly report.

B. Registration and Support Section

Contact: Ann Martz Phone: (609) 984-5464

Machine Source Registration and Renewal Fees

The Bureau initiated fiscal year 2012 registration renewal invoicing in July. The final batch for renewal invoices was mailed at the end of September, 2011 with a due date of November 30, 2011. The Registration and Support Section continues to invoice registrants for new x-ray equipment as it is installed. The table below represents monthly and year to date activities.

Machine Source Fees Invoiced and Collected for FY 2012					
Invoiced Dec 2011	Collected Dec 2011	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
\$95,211	\$87,755	3,189,021	\$2,509,941	\$19,426	79%

Progress on Collection of FY 2012 Registration Fees

Renewal Groups	Paid 8/31/11	Paid 9/30/11	Paid 10/31/11	Paid 11/30/11	Paid 12/31/2011	Paid 1/31/2012
A-F	83%	94%	96%	97%	98%	
G-L	53%	84%	92%	95%	96%	
M-R	14%	56%	78%	94%	95%	
S-Z			49%	81%	93%	

Monthly Machine Source Registration Activity

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	14	19	21	18	16	17							105
Terminated Facilities	31	43	30	30	24	27							185
Net Change (Facilities)	-17	-24	-09	-12	-8	-10	0	0	0	0	0	0	-80
New Registrations	89	177	135	126	131	120							778
Stored Registrations	33	67	72	63	33	36							304
Disposed registrations	74	102	66	17	68	69							396
Net Change (Machines)	-18	+8	-3	-4	23	15	0	0	0	0	0	0	21

Technologist Certification License and Renewal Fees

The Technologist Certification Section continues to invoice individuals for initial licenses and examinations as they occur. The table below represents monthly and fiscal year-to-date activities.

Technologist Certification Examination & License Fees FY 2012 Invoiced & Collected				
Invoice Type	Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected
Examinations	\$0	\$0	\$640	\$800
Initial Licenses	\$4,320	\$4,280	\$42,500	\$42,540
Renewal Licenses	\$1,300	\$3,820	\$12,320	\$26,490
Totals	\$5,620	\$8,100	\$55,420	\$69,830

C. Machine Source Section

Contact: Ramona Chambus (609) 984-5370

The machine source section is charged with the responsibility of inspecting all x-ray machines used within the state. Below is a summary of the inspection initiatives that the section is engaged in.

Medical Diagnostic Quality Assurance Inspections

One initiative of the machine source section is the inspection of medical facilities that perform diagnostic x-ray procedures to ensure that they have implemented a quality assurance program. Department regulations require that each facility implement a program of its x-ray equipment that includes the periodic performance of quality control tests and in-depth annual equipment performance testing by Department certified medical physicists. The goal of the quality assurance program is for facilities to ensure optimal operation of the x-ray equipment in order to achieve high quality diagnostic x-ray images while simultaneously maintaining/reducing patient radiation exposure to acceptable levels. As part of the Bureau's inspections, image quality and

patient radiation exposure metrics are gathered and evaluated as an indicator of facility performance. These measurables are reported to the facility along with the results of similar facilities performing similar x-ray studies.

Image Quality

As part of the Bureau's quality assurance inspection program, an x-ray image of our image quality (IQ) phantom is taken and scored by the inspector in six criteria: background density, high contrast resolution, noise and artifacts, density uniformity, low contrast detail and low contrast resolution. Additionally our database calculates an overall image quality score which is reported to the facility.

A report is generated and sent to each facility at which an IQ film was done. This report identifies which category (excellent, good, fair or poor) each of the six tests and the overall score the IQ falls into. The report explains IQ and its determining factors. Facilities with poor IQ scores are asked to consult with their physicist and determine the cause of the poor IQ, take corrective actions to improve IQ, and send a report of their findings and corrective actions to the BXC within thirty days.

In December 2011, IQ evaluations were performed on 96 x-ray units with the following results:

- 44 units (46%) had excellent image quality scores.
- 49 units (51%) had good image quality scores.
- 2 units (2%) had fair image quality scores.
- 1 unit (1%) had poor image quality scores.

Entrance Skin Exposures

Entrance skin exposure (ESE) is a measurement of the radiation exposure a patient receives from a single x-ray at skin surface. There are three main factors that affect ESE: technique factors, film-screen speed, and film processing. A key element of our strategy is to ensure that facilities are aware of their ESE and to encourage them to take steps to reduce their ESE if it is high.

When the Bureau conducts inspections to determine compliance with New Jersey Administrative Code 7:28, a measurement of entrance skin exposure (ESE) is taken. A report containing the measurement results is sent to each facility at which an ESE measurement was taken. This report categorizes the facilities measured ESE as low, average, high or extremely high. Facilities with extremely high ESE readings are asked to consult with their physicist and determine the cause of the extremely high ESE, take corrective actions to reduce the x-ray machine ESE, and send a report of their findings and corrective actions to the BXC within thirty days.

Medical Facilities

Prior to the implementation of quality assurance regulations in May 2001, baseline data revealed that twenty-five percent of New Jersey facilities had extremely high ESE. These facilities are delivering unnecessary radiation exposure to its patients. The Bureau has documented a steady

decrease in the number of facilities with extremely high patient radiation exposure since the implementation of its quality assurance program.

In December 2011, ESE measurements were calculated on 55 x-ray units that performed lumbo-sacral spine x-rays. One unit (2%) had extremely high ESE measurements.

In December 2011, ESE measurements were calculated on five x-ray units that performed chest x-rays. One unit (20%) had extremely high ESE measurements.

In December 2011, ESE measurements were calculated on 38 x-ray units that performed foot x-rays. No units (0%) had an extremely high ESE measurement.

Dental Facilities

The Bureau collected baseline ESE data on dental x-ray machines for two years and after evaluating this data, established the ranges for four ESE categories similar to those in the medical quality assurance program (low, average, high and extremely high). When this data was examined it revealed that twenty percent of New Jersey dental machines had high or extremely high ESE. Facilities with extremely high ESE are delivering unnecessary radiation exposure to its patients.

Dental facilities use three speeds of film: D, E, F or *Insight*. (*Insight* is the branded name of Kodak's F speed film). Dental facilities also use two types of digital imaging: direct radiography (DR) or computed radiology (CR); also referred to as phosphor storage plates (PSP). Slower speed films require higher patient radiation dose to produce an acceptable image. D is the slowest speed and requires sixty percent more radiation than F to produce an acceptable image. Direct radiography requires the least radiation.

An inexpensive way to reduce radiation is to change to a faster speed film. Our research determined that F speed film costs only five cents more per film than D speed. No changes in equipment or processing are necessary to use a faster speed film. While direct radiography systems have the lowest average ESE, they do require the purchase of new, more costly equipment.

When the Bureau conducts inspections to determine compliance with New Jersey Administrative Code 7:28, a measurement of entrance skin exposure (ESE) is taken. A report is generated and sent to each facility at which an ESE measurement was taken. This report gives the ESE and identifies which category the ESE falls into. The report explains ESE and its determining factors. Facilities with extremely high ESE readings are asked to consult with their film representative or physicist and determine the cause of the extremely high ESE, make changes to reduce ESE, and send a report of their findings and corrective actions to the BXC within thirty

days. The table below depicts the current ESE ranges for the various imaging systems used.

ESE Ranges Measured in Milliroentgens (mR)				
Film Speed	Low	Average	High	Extremely High
D	0 to 100	101 to 285	286 to 350	≥351
E	0 to 75	76 to 190	191 to 245	≥246
E/F, F, Insight	0 to 50	51 to 150	151 to 205	≥206
Image Receptor				
CR (PSP)	0 to 35	36 to 170	171 to 215	≥216
Digital	0 to 20	21 to 110	111 to 160	≥161

In December 2011, ESE measurements were calculated on two dental x-ray units that used D speed film. No units (0%) were measured as having extremely high ESE.

In December 2011, no ESE measurements were calculated on dental x-ray units that used E speed film.

In December 2011, ESE measurements were calculated on two dental x-ray units that use E/F, F or Insight speed film. No units (0%) were measured as having extremely high ESE.

In December 2011, ESE measurements were calculated on four dental x-ray units that used DR digital imaging. No units (0%) were measured as having extremely high ESE.

In December 2011, no ESE measurements were calculated on one dental x-ray unit that used CR digital imaging. No units (0%) were measured as having extremely high ESE.

Dental Amalgam Inspections

Effective October 1, 2009, all dental facilities that generate amalgam waste were required to install amalgam separators (N.J.A.C. 7:14A-1 et seq.). In March 2010, the Bureau met with Division of Water Quality staff to discuss the dental amalgam requirements and to develop an amalgam questionnaire. This questionnaire would be provided to each dental facility when they are scheduled for an x-ray inspection. During each inspection, the inspector verifies the information on the questionnaire and visually inspects that an amalgam separator has been installed. In December 2011, five amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2012 is 73.

Inspection Activity and Items of Non-compliance

A three-page Inspector Activity Report of inspections performed, enforcement documents issued and a description of the non-compliances found follows this report.

D. Technologist Certification Section

Contact: Al Orlandi (609) 984-5890

The Section continues to process examination and license applications, investigate complaints and respond to inquiries during the month of December. Statistical information is attached at the end of the Bureau report. In addition to its regular business functions, the following highlights are reported:

Medical Physicist and Medical Physicist Assistant Certification Renewal:

In October 2011, all 239 medical physicists and medical physicist assistants certified under N.J.A.C. 7:28-22 entitled "Quality Assurance Programs for Medical Diagnostic X-Ray Installations" were invoiced for the renewal of their certifications that expired on December 31, 2011. The total assessment is \$5,975. As of December 31, 2011, 205 certifications (86%) have been renewed.

Annual School Fee:

In November 2, 2011, fifty-five Board approved schools of radiologic technology were invoiced for their 2012 annual fee. The total assessment is \$33,000. Payment of the annual fee is required by January 2, 2012. As of December 31, 2011, 34 schools (62%) have paid their annual school fees.

Staff Training

All staff completed on-line courses entitled "State of New Jersey's Workplace Violence: Act or React?" and "The New Jersey State Policy Prohibiting Discrimination in the Workplace".

E. Mammography Section

Contact: Ramona Chambus (609) 984-5356

Stereotactic Facilities Inspected

The Mammography Section inspected three facilities with stereotactic/needle localization breast biopsy unit during the month of December. There were no Administrative Orders and Notices of Prosecution issued. A total of 16 of the 60 planned stereotactic facility inspections have been performed since July 1, 2011.

Mammography Facilities Inspected

Mammography facilities are inspected by the Bureau's certified MQSA inspectors under the Mammography Quality Standards Act (MQSA). Any areas of non-compliance discovered during MQSA facility inspections are classified into one of three categories: Level 1, Level 2 and Level 3. Level 1 and Repeat Level 2 non-compliances are the most serious and the facility June receive a warning letter from the FDA. The facility has fifteen days from the date of the inspection to respond to the FDA detailing the corrective actions they have taken. Level 2 and Repeat Level 3 non-compliances are considered serious. The facility must respond with their corrective actions within thirty days. Level 3 non-compliances are considered less serious and

the facility is expected to correct the non-compliance in a timely manner. Inspectors will review facility corrective actions at the next annual inspection.

The Mammography Section inspected 15 facilities in December. There was one facility found to have non-compliance issues. A total of 68 of the 224 facilities scheduled to be inspected under the current FDA MQSA contract have been inspected to date. The contract will expire on July 31, 2012.

Facility Non-compliance Discovered

There were no facilities with **Level 1** non-compliances.

There were three facilities with **Level 2** non-compliances.

Failed to produce documents verifying that the interpreting physician met the continuing experience requirement of having interpreted or multi-read 960 mammograms in 24 months.

There were no facilities with **Level 3** non-compliances.

A table of inspection details can be found at the end of the BXC report.

F. Enforcement Services Section

Contact: Jennifer Daino (609) 984-5359

BUREAU OF X-RAY COMPLIANCE

ENFORCEMENT ACTIONS FOR DECEMBER 2011

Total Admin. Orders Issued	Admin. Orders Effective	Admin. Orders Pending	Admin. Orders Closed	Total Notices of Prosecution Issued	Effective Notices of Prosecution	Pending Notices of Prosecution	Closed Notice of Prosecution	Total Formal Enforcement Documents
15	2	11	2	11	3	8	0	26

PENALTY AMOUNT ASSESSED AND COLLECTED FOR ACTIONS ISSUED

Total Amount Assessed in December 2011	Total Amount Assessed for FY 12 to Date	Total Amount Collected for FY 12 Assessments	Total Amount Collected in FY 12 for Previous FY Assessments	Total Amount Collected in FY 12
\$11,250.00	\$ 73,050.00	\$ 37,600.00	\$19,645.00	\$ 57,245.00

BUREAU OF ENVIRONMENTAL RADIATION

ENFORCEMENT ACTIONS FOR DECEMBER 2011

Total Admin. Orders Issued	Admin. Orders Effective	Admin. Orders Pending	Total Notices of Prosecution Issued	Effective Notices of Prosecution	Pending Notices of Prosecution	Total Formal Enforcement Documents
4	2	2	0	0	0	4

PENALTY AMOUNT ASSESSED AND COLLECTED FOR ACTIONS ISSUED

Total Amount Assessed in December 2011	Total Amount Assessed for FY 12 to Date	Total Amount Collected for FY 12 Assessments	Total Amount Collected in FY 12 for Previous FY Assessments	Total Amount Collected in FY 12
\$ 0.00	\$ 2,750.00	\$ 1,250.00	\$ 750.00	\$ 2,000.00

Inspector: ALL

Discipline: ALL

Number of Inspections Performed

<u>Inspection Type</u>	<u>Inspection Description</u>	<u>Facilities Inspected</u>	<u>Machines Inspected</u>	<u>Machines Audited</u>	<u>Machines Uninspected</u>
1	ROUTINE INSPECTION	13	34		19
11	INVESTIGATION	1			1
12	STEREOTACTIC INSPECTION	3	3		
15	QA INSPECTION ROUTINE LEVEL 1	80	92	131	8
17	QA VIOLATION INSPECTION ON SITE	3	1	1	1
20	ESE INSPECTION	1	1		
26	DENTAL ESE INSPECTION	3	4		
Total On-Site Inspections:		104	135	132	29
6	OFFICE VIOLATION RESPONSE REVIEW	2		2	
18	OFFICE QA VIOLATION RESPONSE REVIEW	15		18	
23	OFFICE TECH CERT INSPECTION	1		1	
Total Office Inspections:		18		21	0

Number of Enforcement Documents Issued

NOV	8
AO	12
NOP	9
Amount of Penalties	\$11,100

Inspector: ALL

Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations	
			By DN	By Cod
Violations Cited Non-QA				
Dental				
D-002	16.8(a)1	Survey of environs not available or not performed	1	1
Particle Accelerator Non Medical				
P-099	20.11(b)	monitor radiation levels	1	1
Radiographic				
R-004	15.3(c)1	Adjust rect lbc/laser system on new or used eq sold or trans after 7/1/69	2	2
R-049	15.3(g)4	kVp accuracy meets manuf specs or 10% of indicated. Measured _____ % at _____	1	1
R-314	15.9(a)8	Written safety rules provided to each operator	1	1
R-327	15.10(b)2	Survey completed and submitted within 60 days	1	1
Registration				
REG1	3.1 (a) and (b)	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	2	2
TC				
TC-001	19.3(c)	x-rayed humans without a valid NJ license	2	2
Veterinary				
V-001	7.1(a)	veterinary unit no radiation safety survey of the environs	1	1
Total Violations Cited Non-QA			12	
Violations Cited QA				
Quality Assurance				
QA-010	22.5(a)1	QA manual not complete.	1	1
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	11	11
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	5	5
QA-023	22.5(e)	Failed to immediately initiate steps to bring processing into compliance.	1	1
QA-027	22.5(g)	Failed to immediately initiate corrective action. Following item in table 1 was out of compliance:	1	1
QA-032	22.5(j)	Did not keep test record for at least one year.	1	1
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	2	2

Inspector: ALL

Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations	
			By DN	By Cod
Violations Cited QA				
Quality Assurance				
QA-039	22.6(a)4	No Corrective Action Plan for Fluoro	1	1
QA-097	22.8(f)1	Registrant failed to immediately initiate corrective action recommended	1	1
QA-153	22.11(b)1	Manufacturers QA recommendations and operating manual not maintained at facility.	1	1
QA-154	22.11(b)2	Failed to document quality assurance its program and quality control tests.	1	1
QA-155	22.11(b)3	Instructions on phantom and testing not available.	1	1
Total Violations Cited QA				27
Total Violations				39

**TECHNOLOGIST CERTIFICATION SECTION
MONTH OF DECEMBER**

LICENSE CATEGORY	D I A G N O S T I C R A D	N U C M E D I C I N E	R A D T H E R A P Y	D E N T A L R A D	C H E S T R A D	P O D I A T R I C R A D	O R T H O P E D I C R A D	U R O L O G I C R A D	T O T A L M O N T H	FY TO DATE	TOTAL DUE THIS FY
Initial Licenses Issued	22	2	6	33	-	-	-	-	63	606	N/A
Licenses Renewed	12	2	-	24	-	-	-	-	38	245	N/A
Total Licensed	9,194	1,160	810	11,253	129	39	9	-	22,594	N/A	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	5	N/A
Investigations Conducted	-	1	-	1	-	-	-	-	2	15	30
Licenses Verified	139	10	-	219	-	-	-	-	368	2,865	8,000
Expired Licenses	-	-	-	1	-	-	-	-	1	9	N/A
Unlicensed	-	-	-	-	-	2	-	-	2	16	N/A
NOP's Issued	-	-	-	1	-	2	-	-	3	25	N/A
Penalty (\$)	-	-	-	\$150	-	\$800	-	-	\$950	\$10,250	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	2	N/A
Approved Educational Schools	16	3	3	35	1	-	1	-	59	N/A	N/A
New School Applications Evaluated	-	-	-	0	-	-	-	-	1	3	6
JRCERT Reaccreditation Reports Evaluated	-	-	1	-	-	-	-	-	1	1	5
School Inspection Conducted	-	-	-	-	-	-	-	-	0	4	14
Total Programs Evaluated	-	-	1	1	-	-	-	-	2	8	25
Clinical Applications Approved	-	-	-	62	-	-	-	-	62	515	900

**Bureau of X-ray Compliance
Mammography Section
December 2011**

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY	
MQSA								
Facilities Inspected	0	10	5	0	15	68	224	
Machines Inspected	0	19	7	0	26	90		
FDA Violations Level 1	0	0	0	0	0	0		
FDA Violations Level 2	0	1	0	0	1	9		
FDA Violations Level 3	0	0	0	0	0	0		
Registrations	0	0	0	0	0	5		
Stored	0	0	0	0	0	10		
Canceled	0	0	0	0	0	0		
Stereotactic								
Facilities Inspected	0	1	2	0	3	16		60
Machines Inspected	0	1	2	0	3	20		
Notice of Violation	0	0	0	0	0	0		
Administrative Order	0	0	0	0	0	0		
Notice of Prosecution	0	0	0	0	0	0		
Registrations	0	0	0	0	0	1		
Stored	0	0	0	0	0	2		
Canceled	0	0	0	0	0	0		

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL SAFETY AND HEALTH
RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT
BUREAU OF ENVIRONMENTAL RADIATION
DECEMBER 1, 2011 THROUGH DECEMBER 31, 2011

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION

TRANSFORMATION

A. RADIOACTIVE MATERIALS PROGRAM

Diffuse NARM

Staff processed two license renewals. Staff also processed an amendment to bring a license for pilot treatment systems into NJEMS.

Contact: Karen Flanigan (609) 292-1938

General Licensing

Staff continues to receive certification of registrations and quarterly reports from manufacturers and distributors. Invoices are mailed and the database is continually updated.

Contact: Ed Truskowski (609) 984-5542
Emelia Taubel (609) 984-5557

Decommissioning

Four license terminations were completed this month. Staff reviewed various decommissioning documents for Sayreville Seaport Associates, and Picatinny Arsenal.

Contact: Jenny Goodman (609) 984-5498

Medical, Industrial, and Reciprocity

During the month of December, 2011 the Radioactive Materials Program (RMP) responded to three (10) radiation incidents:

1. On December 5, 2011, a member of the Radioactive Materials Program (RMP) was informed by Trenton Dispatch that a load of scrap metal from a facility in Rahway set off a radiation alarm at a scrap yard in Kentucky. The load was returned to Rahway. The facility isolated a compass as the cause of the elevated readings. The compass was secured until removed by the Army for disposal.
2. On December 6, 2011, Trenton Dispatch informed a member of the RMP that a load of scrap from the New York City Department of Sanitation (NYCDOS) had set off the radiation alarm at a scrap facility in Jersey City. The load was rejected and returned to the NYCDOS. New York City radiation control officials were notified.

3. On December 8, 2011, Trenton Dispatch informed the RMP that two 50-gallon drums marked with the radiation trefoil were seen in an unsecured area in Gibbsboro. The RMP requested Camden County to conduct an initial investigation. A Camden County inspector investigated the drums. No elevated radiation readings were detected. The county coordinated the removal of the drums, with assistance from the DEP's Bureau of Emergency Response, if necessary.
4. On December 15, 2011, Trenton Dispatch informed the RMP that a load of municipal solid waste (MSW) from a waste processor in Lodi had set off the radiation alarm at an incinerator in Newark. The load was rejected and returned to the facility in Lodi. It was secured pending arrival of an outside consultant who supervised the dumping and sorting of the load. Some items contaminated with I-131 were discovered. These items will be secured on-site to allow for decay. The rest of the load was released for routine disposal.
5. On December 16, 2011, Trenton Dispatch informed a member of the RMP that a load of MSW from a waste facility in Jersey City set off the radiation alarm at an incinerator in Newark. The load was rejected and returned to the Jersey City facility. It was secured for a few days to allow for decay in storage. It was then returned to the incinerator and processed without incident.
6. On December 19, 2011, Trenton Dispatch informed the RMP that a load of MSW from a waste processor in Passaic had set off the radiation alarm at an incinerator in Newark. The load was rejected and returned to the facility in Passaic. It was secured for a few days to allow for decay in storage. It was then returned to the incinerator and processed without incident.
7. On December 19, 2011, Trenton Dispatch informed the RMP that a load of MSW from a waste hauler in Newark had set off the radiation alarm at an incinerator in Newark. The load was rejected and returned to the facility in Newark. It was secured pending proper disposition.
8. On December 20, 2011, the Pennsylvania Department of Environmental Protection (PADEP) informed the RMP that two loads of material from the Bordentown Water Department set off the radiation alarm at a landfill in Pennsylvania. The loads were rejected and returned to Bordentown. The loads will be secured pending appropriate disposal.
9. On December 22, 2011, Trenton Dispatch informed a member of the RMP that a load of MSW from a waste facility in Jersey City set off the radiation alarm at an incinerator in Newark. The load was rejected and returned to the Jersey City facility. It was secured for a few days to allow for decay in storage. It was then returned to the incinerator and processed without incident.

10. On December 29, 2011, the PADEP informed the RMP that a load of MSW from a waste hauler in Jersey City had set off the radiation alarm at an incinerator in Pennsylvania (PA). The load was rejected, but the material had been identified as I-131. The load was therefore diverted to a landfill in PA that can accept material contaminated with I-131. No further action was required.

Contact: William Csaszar (609) 984-5555

Police Incidents

At 6:00 p.m. on December 13, 2011, Trenton Dispatch informed a member of the RMP that Homeland Security was holding a package of material at an airport in order to confirm that the addressee was a known entity and licensed to receive the material. Homeland Security was contacted and confirmation was provided. The shipment was then allowed to proceed.

On Saturday, December 24, 2011, Trenton Dispatch informed a member of the RMP that a State Trooper had reported that their radiation pager had been set off by a patron attending an event in East Rutherford. Upon investigation, it was discovered that the patron had undergone a recent medical procedure. The patron was allowed to proceed. No assistance was required.

Contact: William Csaszar (609) 984-5462

Routine Activities of the Radioactive Materials Program This Month

10/01/09 – 12/31/11	Number of Amendments Processed:	1152	31
	Number of Renewals Processed:	122	6
	Number of Initial Applications Processed:	64	2
	Number of Licenses merged: (since becoming an Agreement State)	710	7
	Number of Terminations:	113	4
	Number of Reciprocity Requests Received:	950	51
	Number of Incidents:	212	8
	Number of Inspections:	294	7

Contact: William Csaszar (609) 984-5555
 Jenny Goodman (609) 984-5498

B. RADON SECTION

Outreach

Events- Radon informational material was provided to the Somerset County Health Department for an employee Health Fair conducted on December 1, 2011.

Radon Meeting/Training Workshop- the Rutgers Contract (DEP-070) is still under review with the Division of Law.

National Radon Action Month- (NRAM) - Order forms for outreach materials continue to be received and processed in anticipation of NRAM which is held in January. Radon Partner letters are being sent out with each order encouraging partners to submit their activities on the Radon Leader Saving Lives website.

Lobby monitor and postmaster e-mail information announcing January as National Radon Action Month was prepared and is currently under in-house review.

Website Updates- Updated information was prepared for inclusion on the radon website consisting of the radon poster contest winners and Radon Action Partnership Award recipients and is currently under in-house review.

Radon Poster Contest- Letters were sent to all schools and students (175) that participated in the poster contest along with a certificate of appreciation, a small gift, and a radon informational brochure. In addition, release forms have been submitted by all parents/guardians of our poster contest winners. Upon completion of an in-house review, the winners will be announced on our website along with a link to view their posters.

Contact: Linda Z. Jordan (609) 984-5434

Program Administration Fee Billing Report

On December 15, 2011, the Program Administration Fee (PAF) billing for the semiannual period from January 1, 2011 to June 30, 2011 was sent to Treasury for printing and mailing. The total amount billed was \$80,586.00.

Contact: Herb Roy (609) 984-5433

Inspections

No business inspections were conducted in December. There were two inspections on the schedule, but due to extenuating circumstances both needed to be rescheduled for January.

The business inspection schedule for 2012 is being followed. The businesses that are due for January inspections have been contacted. Dates have not been finalized yet.

Contact: Charles Renaud (609) 984-5423

Complaints

One complaint was received and is currently being reviewed.

Contact: Charles Renaud (609) 984-5423

Electrets

Four electrets devices were mailed out to two addresses. Two of the devices have been returned and the homeowner has been appropriately notified.

Contact: Charles Renaud (609) 984-5423

Special Projects

The business inspection checklists and review checklists were updated to reflect the current mail merge business applications.

Contact: Charles Renaud (609) 984-5423

Measurement and Mitigation Radon Certifications

A total of 66 radon professional applications were approved. They consisted of three measurement specialists, two mitigation specialist and 61 measurement technicians. Business application approvals consisted of one mitigation business.

Contact: Anita Kopera (609) 984-5543

C. NONIONIZING RADIATION SECTION

Radiofrequency and Microwave Heaters, Sealers and Industrial Ovens

No sources were registered or inspected this month.

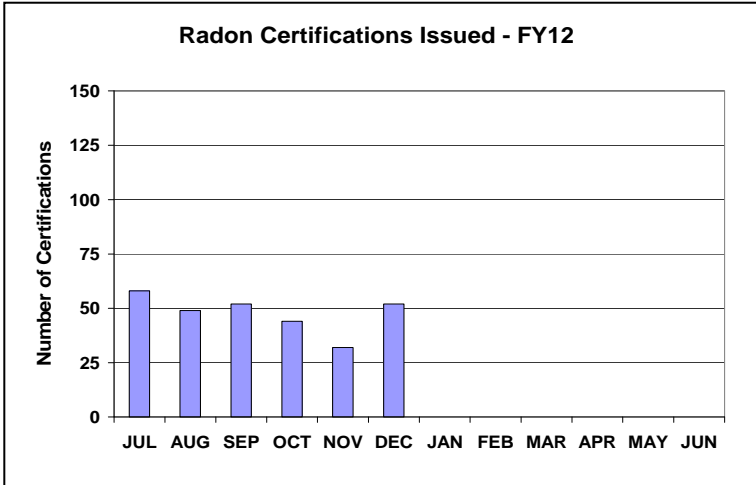
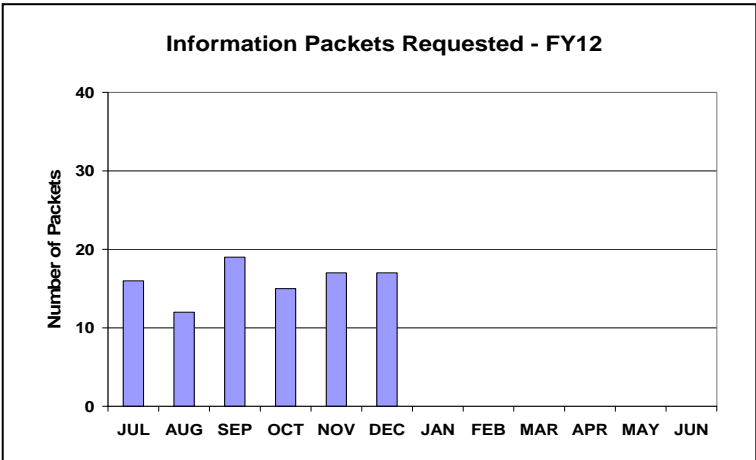
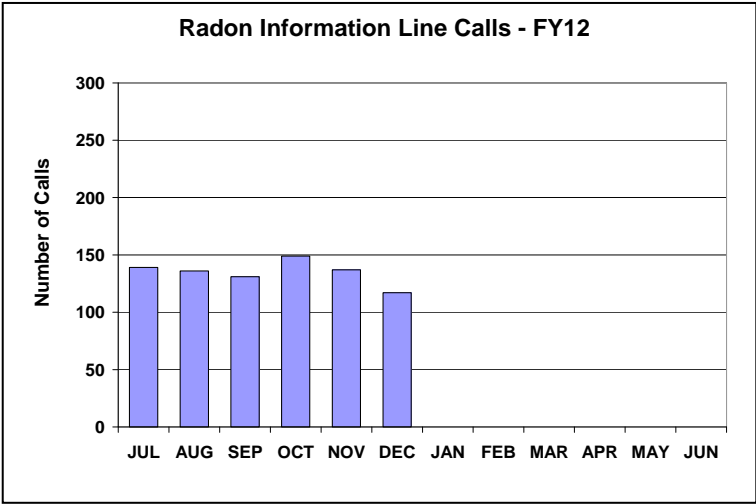
Contact: Deborah Riggs Wenke (609) 984-5521

Training

On December 8th, Ms. Wenke attended a general workplace hazard and fall protection awareness course; presented through the UMDNJ School of Public Health.

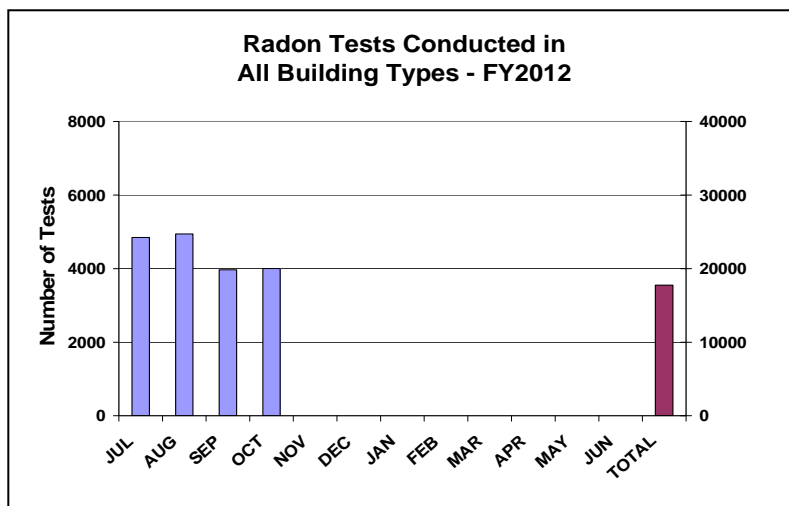
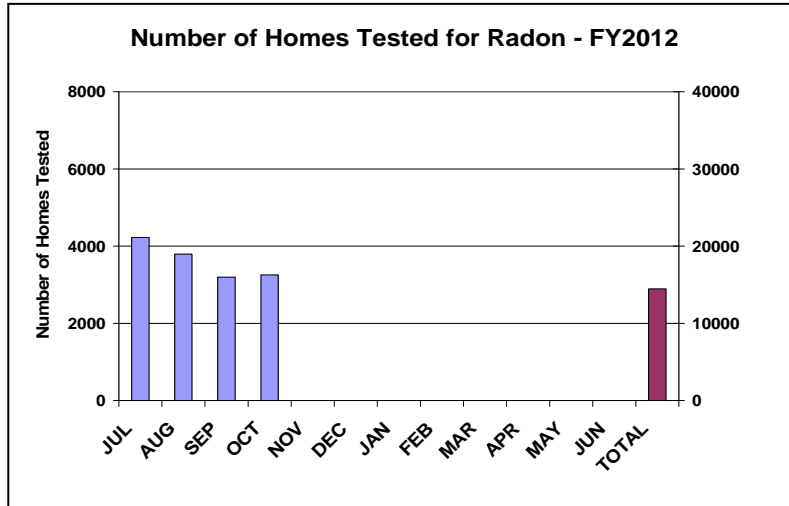
Contact: Deborah Riggs Wenke (609) 984-5521

BUREAU OF ENVIRONMENTAL RADIATION SUMMARY OF STATISTICS



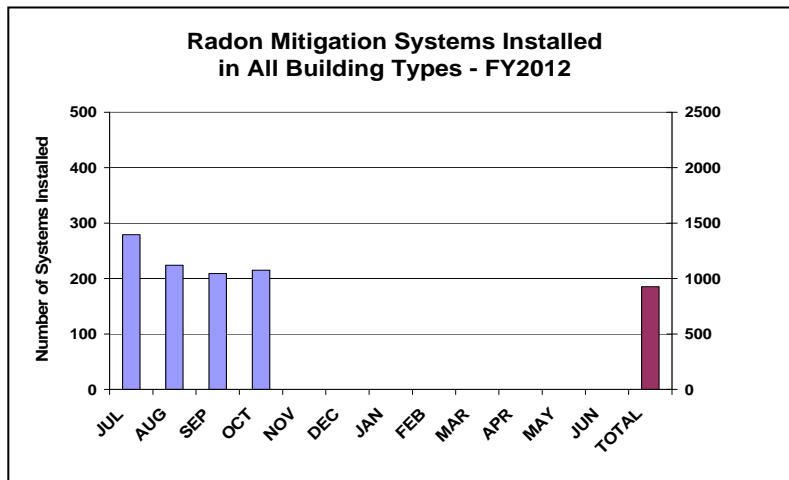
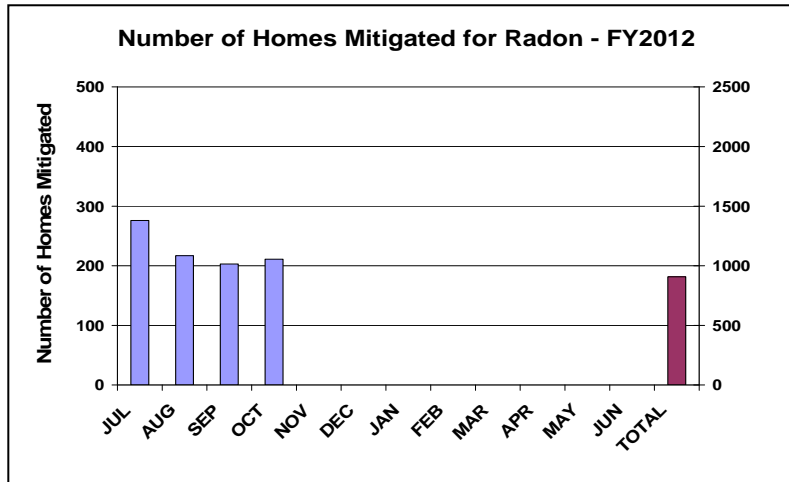
Radon testing and mitigation data is submitted to the Radon Section monthly by all certified radon businesses. This data has been collected for all building types since the implementation of the radon certification regulations in 1991. According to N.J.A.C. 7:28-27.28 (a) and (e), Radon test results and mitigation reports for November 2011 are due by January 1, 2012.

RADON TEST RESULTS



Radon testing and mitigation data is submitted to the Radon Section monthly by all certified radon businesses. This data has been collected for all building types since the implementation of the radon certification regulations in 1991. According to N.J.A.C. 7:28-27.28 (a) and (e), Radon test results and mitigation reports for November 2011 are due by January 1, 2012.

RADON MITIGATION SYSTEM INSTALLATIONS



**RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT
BUREAU OF NUCLEAR ENGINEERING
DECEMBER 2011 MONTHLY REPORT**

SECTION IV

SIGNIFICANT ACCOMPLISHMENTS/ISSUES

None

OTHER INFORMATION
Nuclear Power Plant Operation

Oyster Creek

Oyster Creek operated at 100% power during the month.

Contact: Rich Pinney (609) 984-7558

Hope Creek

Hope Creek operated at 100% power throughout December with the exception that power was reduced to approximately 76% on December 17 for scheduled main turbine valve testing and control rod pattern adjustment. Additional scheduled control rod pattern adjustments were made during December with power being reduced to about 97%.

Contact: Jerry Humphreys (609) 984-7469

Salem Unit 1

Salem Unit 1 began the month at full power, the unit reduced power to 83% power on December 5th as a result as an operations error during equipment tag out for replacing a condensate polisher resin trap. The unit returned to full power on December 7th and ran at essentially full power for the remainder of the month.

Contact: Elliot Rosenfeld (609) 984-7548

Salem Unit 2

Salem Unit 2 ran at essentially full power for the entire month.

Contact: Elliot Rosenfeld (609) 984-7548

Inadvertent Discharge of Hypocholite at Hope Creek

On December 28, PSEG made a four hour non-emergency notification to the Nuclear Regulatory Commission (NRC) as required by 10 CFR 50.72(b)(2)(xi). This notification resulted from

PSEG being required to report a chemical spill into the Delaware River to an offsite agency (i.e., NJDEP).

Following a planned Station Service Water (SSW) pump swap, a motor operated valve (MOV) failed to close in a water treatment system for the SSW pump that had been taken out of service. A manual isolation was closed by locally stationed operators. The malfunction of the MOV resulted in the discharge of approximately 17 gallons of 15% sodium hypochlorite into the idle SSW pump intake which communicates with the Delaware River. The idle SSW pump was restarted thus withdrawing the residual chemical from the intake and directing it to the plant treatment systems. A sample was obtained from the Delaware River just outside the SSW intake structure and there was no detectable chlorine in the sample. A two hour report of the spill was made to the NJDEP.

There was no impact on plant operations. All safety related equipment continued to function as required. There were no injuries or reported wildlife impact. PSEG is performing an evaluation to fully understand the impact of the MOV malfunction and to prevent re-occurrence.

Contact: Jerry Humphreys (609) 984-7469

NRC Response to Earthquake and Tsunami Event at the Fukushima Power Plants in Japan

In the days following the Fukushima Dai-ichi nuclear accident in Japan, the NRC directed its staff to establish a senior-level agency task force to conduct a methodical and systematic review of the NRC's processes and regulations to determine whether the agency should make additional improvements to its regulatory system and to make recommendations to the Commission for its policy direction. The tasking included objectives for a near-term and a longer term review.

Only July 12, 2011, the Task Force released the report, "Recommendations for Enhancing Reactor Safety in the 21st Century, the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident" (SECY-11-0093). The report contained twelve overarching recommendations.

On October 3, 2011 the NRC staff released its recommendations for the prioritization of its recommendations. The recommendations were prioritized into three tiers:

Tier 1: Should be started without unnecessary delay and for which sufficient resource flexibility, including availability of critical skill sets, exists.

Tier 2: Can not be initiated in the near term due to factors that include the need for further technical assessment and alignment, dependence on Tier 1 issues, or availability of critical skill sets. These actions do not require long-term study and can be initiated when sufficient technical information and applicable resources become available.

Tier 3: Require further NRC study to support a regulatory action, have an associated shorter-term action that needs to be completed to inform the longer-term action, are dependent on the availability of critical skill sets, or are dependent on the resolution of Recommendation 1 (see above).

The NRC is planning a series of public meetings to discuss the recommendations and to gather information from the nuclear industry, the public and other stakeholders.

The BNE, through webcasts and conference calls, is attending meetings of relevance to NJ plants. Summaries for the meetings held in December are listed below:

NRC/Industry Meeting on Staffing and Communications

On December 12, 2011, the NRC held the first public meeting concerning the Task Force recommendations at its headquarters in Rockville, MD. The purpose of the meeting was to discuss nuclear plant staffing for multiunit events on the same site and provisions for communications power during a prolonged SBO. These are both Tier 1 recommendations. Representatives from the NRC staff, Nuclear Energy Institute (NEI), nuclear station owners, nuclear industry consultants, state government representatives, and the public were in attendance. The supervisor and one member of the BNE Engineering Section attended via webinar. The meeting lasted approximately 1 ½ hours.

The NRC has not finalized the parameters for which the staffing analysis is to be based. NEI expressed a concern as to the sequencing and prioritization of staffing based on one unit being damaged worse than the other during the same event. One member of the public who had worked on a previous project concerning staffing during security events provided insight into documents and studies that are available and may be of use in developing and meeting requirements for multiunit events. The NRC is planning on issuing a letter in the February 2012 to the nuclear station owners addressing multiunit staffing for emergencies.

Providing a means for powering communication equipment during a prolonged SBO was also discussed. The requirements for the necessary amount of communication equipment already exist. As a result of the events in Japan, the NRC is concerned as to the nuclear stations' abilities to maintain power to this equipment for an extended time. The length of time to be assumed in the analysis has not been determined and there was considerable discussion concerning this time. NEI is also addressing communications power with the nuclear industry. In the late January 2012, the NRC should be issuing a letter to the nuclear station owners addressing the powering of emergency communication equipment.

NEI is in the process of developing a white paper on these subjects for submittal to the NRC. A follow-up public meeting will be held on January 9, 2012.

NRC/Industry Meeting - Containment Hardened Vent Reliability

On December 15, 2011, the NRC held a public meeting on the Fukushima issue related to the reliability of containment hardened vent designs. A BNE Engineer attended the conference call. Approximately 25 people attended.

The containment hardened vent system allows venting of drywell high pressure (and/or hydrogen) post-design bases accident to protect the integrity of the primary containment (drywell). This venting could result in high radiological levels beyond the site boundary.

The NRC is moving quickly on this and the other Fukushima issues at the direction of the Commission. The NRC stated that any resulting actions which would be required by the NRC must be “inspectable” and “enforceable”. The intent is to evaluate the reliability of existing individual plants’ hardened vent design in light of the poor performance of Fukushima’s design.

Discussion topics included the consequences of hydrogen explosions, loss of offsite power and loss of cooling as related to existing GE Mark 1 and 2 containment hardened vent design. It was noted that European vent designs are filtered vents while U.S. designs are not. Also, the use of passive rupture disks in venting was discussed.

The NRC has targeted April for the Commission’s order. The next conference call/meeting will be scheduled for late January early February. No specific NRC recommended actions have yet been identified. The BWR Owners Group is providing industry input.

NRC Public Teleconference – Fukushima Flooding and Seismic Protection

On December 14, 2011, the NRC held a public meeting on the Fukushima flooding (external flooding) and seismic (including tsunami) issues. A BNE Engineer attended the conference call. Approximately 40 people attended.

The NRC stated that any resulting actions which would be required by the NRC must be “inspectable”. The intent is to demonstrate how existing individual plants with older design bases stack up against current flooding and seismic requirements.

The nuclear industry group, NEI, stated that it is preparing an NRC requested white paper, currently a work in progress, which was supporting a “flex approach” that would allow flexibility in what equipment and how quickly that equipment was needed to be in place at individual plants to respond to the beyond design basis external flooding and seismic issues. The “flex approach” elicited many NRC questions.

The NRC has targeted mid-June for the timeframe to provide the Commission with the staff’s recommendations on flooding and April for seismic walk down criteria. The next conference call/meeting will be scheduled for mid to late January.

The call was concluded with the NRC taking the position that the plants are safe for these beyond design basis event. No specific NRC recommended actions have yet been identified.

Contact: Ron Zak (609) 984-7458 or Jerry Humphreys (609) 984-7469

BNE Onsite Activities at Artificial Island

A BNE engineer met with the Salem Plant Manager on December 6th. Among the topics discussed were: the results of Unit 1’s 21st refueling outage and recent operating challenges.

Contact: Elliot Rosenfeld (609) 984-7548 or Jerry Humphreys at (609) 984-7469

Radioactive Materials Shipment Notifications

The Bureau of Nuclear Engineering is responsible for tracking certain radioactive materials that are transported in New Jersey. Advance notification for these radioactive materials are in three categories: 1) Spent Fuel and Nuclear Waste; 2) Highway Route Control Quantity Shipments; and 3) Radionuclides of Concern. Each category has to meet certain packaging and notification requirements established by the federal government. Below is a table representing the number of shipments completed in December 2011.

Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	2	2

Contact: Rich Pinney (609) 984-7558

Facility Inspections

Woodstown Forward Command Post	12/14/11
Woodstown Emergency News Center	12/21/11
Salem Emergency Operations Facility	12/21/11
Berkeley Forward Command Post	12/22/11
Toms River Emergency Operations Facility	12/21/11
Toms River Joint Operations Facility	12/21/11

Contact: Carol Shepard (609) 984-7457

Federally-Mandated Changes to Radiological Emergency Preparedness Program

FEMA released a major revision to its Radiological Emergency Preparedness Program Manual in October, 2011 that greatly expands the scope of preparedness activities, and during December staff from the Bureau attended a series of meetings with the New Jersey State Police Office of Emergency Management, PSEG Nuclear, Exelon and county representatives to chart a path towards meeting the new requirements. Bureau Chief Pat Mulligan and representatives of the Office of Emergency Management also attended a series of meetings with FEMA, the Nuclear Regulatory Commission, and other interested parties in New Hampshire to learn more about the changes. It is expected that most municipalities and emergency response organizations throughout the State will now be required to participate at some level in nuclear emergency preparedness. The State Radiological Emergency Response Plan is slated to be completely rewritten over a thirty-month implementation time frame.

Contact: Pat Mulligan (609) 984-7701

Radiological Environmental Monitoring Program

The BNE conducts a comprehensive Radiological Environmental Monitoring Program (REMP) in the environs surrounding New Jersey's four nuclear generating stations. The program collected 77 samples during the month of December 2011. The number and type of samples collected are given in the table below.

Sample results are entered into the BNE's database for tracking and trending of environmental results. Data obtained from these analyses are used to determine the effect, if any, of the operation of New Jersey's nuclear power plants on the environment and the public. BNE staff reviews all results to ensure that required levels of detection have been met and that state and federal radiological limits have not been exceeded. Any exceedances, or anomalous data, are investigated. The REMP includes the development of an Annual Environmental Surveillance and Monitoring Report and/or annual data tables for the environs of the Oyster Creek and Salem/Hope Creek nuclear power plants. The report and/or tables, covering sampling results conducted during the prior calendar year, can be found on the NJDEP website at <http://www.nj.gov/dep/rpp/bne/index.htm>, along with reports from previous years. As of the drafting of this monthly report, the annual NJBNE REMP data summary tables are available on the website through calendar year 2010.

Questions regarding specific test results or the annual environmental report can be directed to Karen Tuccillo. Results of specific analyses can be obtained by request.

COUNT OF SAMPLES COLLECTED IN DECEMBER 2011

<u>SAMPLE MEDIUM</u>	<u>NUMBER OF SAMPLES</u>
AIR FILTER	27
AIR CHARCOAL	27
MILK	4
SURFACE WATER	4
WELL WATER	6
AQUATIC SEDIMENT	5
VEGETABLES	4
TOTAL SAMPLES	77

Contact: Karen Tuccillo (609) 984-7443

Update on Salem-1 Tritium Leak Remediation and Salem-2 Monitoring

During the month of December 2011, 42 groundwater split samples were collected and shipped to the BNE's contract laboratory, GEL Laboratories, for radiological analysis.

Contacts: Compton Alleyne (609) 984-7455 or Paul E. Schwartz (609) 984-7539

Update on Oyster Creek Tritium Monitoring

In December 2011, 12 surface water samples and 19 groundwater monitoring well samples were collected and shipped to GEL Laboratories. Results of the analyses can be found on the BNE website at: <http://www.nj.gov/dep/rpp/bne/FinalOCH3.pdf>.

Contacts: Karen Tuccillo (609) 984-7443, Compton Alleyne (609) 984-7455 or Paul E. Schwartz (609) 984-7539

Nuclear Reactor Systems Training at PSE&G

A staff member attended nuclear plant systems training at the Salem / Hope Creek nuclear facility during the week of December 5, 2011. This week long training course conducted by PSE&G is designed to familiarize the student with all of the systems involved in the operation of a nuclear power plant. In particular, this course focused on the Hope Creek Nuclear Generating Station.

Contact: Compton Alleyne (609) 984-7455

Effluent Release Data

The BNE monitors the effluents released from all four (4) nuclear generating stations each month. The reported effluents include fission and activation products, total iodine, total particulate and tritium released to the atmosphere and water. Prior to August 2010, effluent release data had been reported in scientific notation. Beginning with the BNE's reporting of August 2010 monthly effluent data, all data will be reported in whole numbers, or fractions thereof.

At the Oyster Creek, Hope Creek and Salem nuclear power plants, releases to the air and water are monitored each month and compared to historic releases. Releases to the atmosphere are from the 112-meter stack (Oyster Creek) or various monitored building vents (Oyster Creek, Hope Creek and Salem).

Prior to October 2010, Oyster Creek did not routinely release liquid effluents to the environment. In accordance with a DEP Directive (EA ID #: PEA100001) issued to the Oyster Creek Nuclear Generating Station, and the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11), Exelon is required to cleanup and remove tritium discharges released onsite from underground pipe leaks that occurred during calendar year 2009. In late October 2010, the remedial pumping of groundwater at Oyster Creek was initiated in support of the ongoing tritium groundwater remediation project. With DEP approval, Exelon is pumping groundwater from a dedicated pumping well, continuously measuring the concentration of tritium in the extracted groundwater, and discharging it into the plant's cooling water intake structure, allowing it to mix with the cooling water throughout the plant and discharge to the canal. This liquid effluent data is reported below. Additional information on the Oyster Creek tritium leak is available at the DEP website, <http://www.state.nj.us/dep/rpp/bne/octritium.htm>.

Effluent data from the Salem, Hope Creek, and Oyster Creek nuclear power plants for November 2011 are included below.

PSEG Nuclear Radioactive Effluent Releases Nuclear Environmental Engineering Section For the Period of 11-01-11 to 11-30-11					
<u>Hope Creek</u> <u>Gaseous</u> <u>Effluents</u>			<u>Hope Creek</u> <u>Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	0	Ci	Fission Products	0.0032	Ci
Iodines	0.00016	Ci	Tritium	1.95	Ci
Particulates	0.000011	Ci			
Tritium	0	Ci			
<u>Salem Unit 1</u> <u>Gaseous Effluent</u>			<u>Salem Unit 1</u> <u>Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	0.0094	Ci	Fission Products	0.0037	Ci
Iodines	0	Ci	Tritium	51.1	Ci
Particulates	0	Ci			
Tritium	5.59	Ci			
<u>Salem Unit 2</u> <u>Gaseous Effluent</u>			<u>Salem Unit 2</u> <u>Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	0.0265	Ci	Fission Products	0.0037	Ci
Iodines	0	Ci	Tritium	62.6	Ci
Particulates	0	Ci			
Tritium	0.055	Ci			

Ci = curies of activity

**Exelon Nuclear
Radioactive Effluent Releases
Nuclear Environmental Engineering Section
For the Period of 11-01-11 to 11-30-11**

**Oyster Creek
Gaseous Effluent
Elevated Releases**

**Oyster Creek
Gaseous Effluent
Ground Releases**

<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	20.8	Ci	Fission Gases	0	Ci
Iodines	0.0004	Ci	Iodines	0	Ci
Particulates	0.8	Ci	Particulates	0.046	Ci
Tritium	5.16	Ci	Tritium	0.075	Ci

**Exelon Nuclear
Radioactive Effluent Releases
Nuclear Environmental Engineering Section**

Oyster Creek Liquid Effluent Groundwater Remediation

For the Period of 11-01-11 to 11-30-11

<u>Effluent</u>		
Tritium	0.049	Ci

Ci = curies of activity

Contact: Paul E. Schwartz (609) 984-7539

Continuous Radiological Environmental Surveillance Telemetry System

Thirty-two Continuous Radiological Environmental Surveillance Telemetry (CREST) sites are located in the environs of Oyster Creek, Salem I, II, and Hope Creek nuclear generating stations. CREST is a part of the Air Pollution/Radiation Data Acquisition and Early Warning System, a remote data acquisition system whose central computer is located in Trenton, New Jersey. Sites are accessed via dedicated phone lines or cellular communication and polled for radiological and meteorological data every minute.

The Air Pollution/Radiation Data Acquisition and Early Warning System is equipped with a threshold alarm of twenty-five (25) microRoentgens per hour. The system notifies staff via text messages and email alerts if the threshold is exceeded, providing 24-hour coverage of potential radiological abnormalities surrounding each nuclear facility.

Contact: Ann Pfaff (609) 984-7451

The following tables include the average ambient radiation levels at each site for the month of December:

Artificial Island CREST System Ambient Radiation Levels December 2011 Derived From One Minute Averages UNITS = mR/Hr				
AI1	AI2	AI3	AI4	AI5
.0067	.0070	.0069	.0076	.0071
AI6	AI7	AI8	AI9	AI10
****	****	.0060	.0073	.0057

Oyster Creek CREST System Ambient Radiation Levels December 2011 Derived From One Minute Averages UNITS = mR/Hr			
OC1	OC2	OC3	OC4
.0071	.0058	.0066	****
OC5	OC6	OC7	OC8
.0059	.0062	.0058	****
OC9	OC10	OC11	OC12
.0061	.0056	.0056	.0057
OC13	OC14	OC15	OC16
.0054	.0056	.0079	.0062

**** indicates no data

Contact: Ann Pfaff (609) 984-7451

Air and Radiation Data Acquisition and Early Warning System

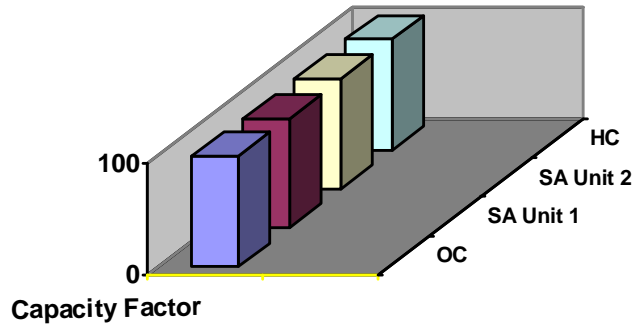
Verizon completed installation of “plain old telephone service” (POTS) lines at all of the radiation monitoring stations around Salem/Hope Creek Nuclear Generating Stations in December 2011. These telephone lines will be used as an alternate means of data transmission should wireless service become unavailable. Dial-up modems and associated equipment must be installed by the Bureau of Nuclear Engineering’s (BNE) contract vendor at each location to complete the project. Verizon also is working on a similar work order to install POTS lines at all of the monitoring stations surrounding Oyster Creek Nuclear Generating Station.

Verizon Wireless staff met on-site with the BNE’s contract vendor in December 2011 to test signal strength and discuss options for improvement at two stations experiencing transmission difficulties. Significant diagnostics at the monitoring stations as well as through Verizon’s network and the Garden State Network were completed to locate failure points and offer potential resolutions. Problems at one station have been resolved, pending additional site maintenance measures, but a second station will require more investigation for alternate solutions.

Contact: Ann Pfaff (609) 984-7451

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance - December 2011



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR DECEMBER 2011

Emergency events (EEs) at nuclear power plants are classified, in increasing order of severity, as an Unusual Event (UE), Alert, Site Area Emergency (SAE), and General Emergency (GE). Non-emergency events (NEEs) are less serious events that require notification of the NRC within one to four hours. The nuclear power plants operating in New Jersey also notify the BNE of NEEs. The BNE analyzes the NEEs as part of its surveillance of nuclear power plant operation.

	DEC 2011		JAN – DEC 2011		JAN – DEC 2010	
	EE	NEE	EE	NEE	EE	NEE
OYSTER CREEK	0	1	1	5	0	4
SALEM 1	0	1	0	2	0	5
SALEM 2	0	0	1	1	0	5
SALEM SITE	0	0	1	1	0	1
HOPE CREEK	0	1	1	5	0	2

**BUREAU OF RELEASE PREVENTION
DPCC - DECEMBER MONTHLY REPORT**

SECTION V

Plan Submission, Renewals and Amendments

Discharge Prevention, Containment and Countermeasure (DPCC) and Discharge Cleanup and Removal (DCR) Plans are the means that regulated facilities use to show compliance with the discharge prevention regulations. They present the facilities' means of preventing the release of hazardous substances, as well as response measures and equipment that are in place if a release does occur. The review and approval of these plans, and their renewals and amendments, are a primary purpose of the program. Plans are renewed on a three year schedule.

<u>DPHS Output</u>	This Month	FY 2012 to date
Plans Received	1	5
Plans Initially Approved	0	1
Plans Denied	0	0
Plan Renewals Received	5	46
Plan Renewals Approved	4	46
Plan Renewals Denied	0	0
Plan Amendments Received	2	24
Plan Amendments Approved	4	26

The current backlog of plan renewals past their renewal date is 83, with no plans currently denied. This is an increase of 3 in the number of backlogged plans with no change in the number denied.

Inspections

In order to verify compliance with the discharge prevention rule requirements, three types of inspections are routinely performed: annual, technical review, and compliance. Annual inspections cover all aspects of compliance and are performed at facilities during each of the two years between plan renewals. Technical review inspections are performed in conjunction with plan and plan amendment reviews and are to ensure that the plan accurately reflects the facility. Compliance inspections are a variety of less comprehensive inspections covering things like upgrade schedules, booming requirements, or storage capacity determinations, and will be performed only as resources allow, or if required such as when a facility claims its capacity has fallen below the regulatory threshold.

<u>DPHS Output</u>	This Month	FY 2012 to date
Annual Audits	12	59
Technical Review Inspections	6	58
Compliance Inspections	0	24
Follow-up Site Visits	0	4
Follow-up Document Reviews	2	20
Incident/Complaint Investigations	0	0

Enforcement Actions

When non-compliance is determined, enforcement action is taken. NOVs are issued by the inspectors while still at the facilities for minor violations that have specified time periods for compliance without penalty assessment. AONOCAPAs are issued to assess penalties and specify corrective actions. NOCAPAs serve to only assess penalties. NOVs and AONOCAPAs require tracking the violator's return to compliance, including inspections and review of paperwork. When an initiated by the alleged violator or the program or when an alleged violator requests a hearing on an enforcement action, case management is the process of settlement or adjudication that results in a settlement document or a contested case hearing.

<u>DPHS Output</u>	This Month	FY 2012 to date
AO/NOCAPA	0	1
Notice of Violation	1	13
Settlements	5	13

Penalties are associated with AO/NOCAPAs and settlement documents. When an enforcement action is appealed, the penalty is suspended. When an appeal is settled and a reduced penalty is agreed to, the original penalty is cancelled.

<u>DPHS Output</u>	This Month	FY 2012 to date
New Penalty Assessments (Total Dollar Amount)	\$33,917	\$65,717
Payments Received	\$2,450	\$42,125
Penalties Cancelled	\$0	\$0
Penalties Suspended	n.a.	\$219,750

Discharge Confirmation Reports

Facilities are required to prepare and submit incident reports. Reports received by the Bureau are assigned to staff for review. Upon review the incidents are entered on the FACITS database and correspondence is sent to the facility. These records of discharges are used during annual audits

and the review of plan renewals. While no DCRs will be reviewed this fiscal year, they will be logged and filed.

<u>DPHS Output</u>	This Month	FY 2012 to date
DCRs Submitted	6	89
DCRs Assigned	0	0
<u>DPHS Output</u>	This Month	FY 2012 to date
OPRA Information Requests	30	117
Referrals received	0	0
Referral responses issued	0	0
DCRs Accepted	0	0

Communications and Outreach

Prepare responses (not related to security) to referrals, OPRA requests, enforcement histories, analyses of proposed legislation or regulations, fiscal notes, correspondence etc. after determining the impacts on the programs and their ability to perform core functions.

Rule Making Activity

The DPHS program has initiated the rule making for readoption of N.J.A.C. 7:1E. A Legal Affairs Specialist and a Deputy Attorney General have been assigned to this activity. In accordance with A2721/S2013, signed into law in April, the sunset date of the DPHS rules has been extended to February of 2014. Legal advice has been requested on approaches to de minimus concentration.

Training

Section Chief Beth Reddy and Chemical Safety Engineer Audrey Dorofy attended AED/CPR refresher training.

Five staff members of the program have completed the Violence in the Workplace and Workplace Harassment online training. One member completed one of the two.

Other Items

Environmental Engineer 3 Chris Lucien attended the organizational meeting of the GIS users group.

Bureau of Release Prevention - TCPA Monthly Report – December 2011

Program Background

The Toxic Catastrophe Prevention Act (TCPA) (the Act), N.J.S.A. 13:1K-19 et seq., was enacted in 1985 and became effective in January 1986. The goal of the Act is to protect the public from catastrophic accidental releases of extraordinarily hazardous substances (EHSs) into the environment. The impetus for the Act was the infamous December 1984 accidental release of methyl isocyanate at a plant in Bhopal, India that resulted in the deaths of 2,500 people and significant releases with offsite impacts that occurred in New Jersey in 1985. The TCPA Program rules, N.J.A.C. 7:31 require owners or operators of facilities having toxic, flammable, and reactive EHSs at specified threshold quantities to anticipate the circumstances that could result in accidental EHS releases and to take precautionary or preemptive actions to prevent such releases by implementing a risk management program. The key elements of a risk management program include process safety information, process hazard analysis with risk assessment, standard operating procedures, operator training, mechanical integrity/preventive maintenance, management of change, safety reviews: design and pre-startup, compliance audits, EHS accident investigation, employee participation, hot work permits, contractors, emergency response, and inherently safer technology review. Number of facilities and processes registered in the TCPA Program, the summary of the total EHS inventories currently managed by the Program, and the summary of the potential impacts of the current inventories of the EHS under worst case scenarios are shown in the following tables 1 through 4.

Table 1. Number of Facilities and Processes Registered in the TCPA Program

<u>Sector</u>	<u>Number of Facilities</u>	<u>Number of Processes</u>	<u>Maximum Number of Processes per Facility</u>
Chemical	40	65	13
Petroleum Refinery	4	26	14
Food	14	14	1
Water/wastewater treatment	11	12	2
Power Generation	6	6	1
Other	16	18	2
Total Active	91	141	
Temporary Discontinuance	0	3	
Total	91	142	

Table 2. Summary of EHS Inventory at Registered Facilities

Number of EHSs Handled	67
Total EHS Quantity (Pounds) at Registered Facilities	268,212,278
Total # EHS Hazard Units (H.U.) (1 H.U. = 1 multiple of an EHS threshold quantity)	56,304
Range of EHS Registration Amount (Pounds) per Facility	100 to 16,000,000 (Toxic EHS), 119,700,000 (Flammable EHS)

Table 3. Summary of the potential impacts for Toxic and Flammable/Reactive EHS Worst Case Scenarios*

<u>Number of People Impacted</u>	<u>Number of Toxic Worst Case Scenarios</u>	<u>Number of Flammable/Reactive Worst Case Scenarios</u>
250,000 – 12,000,000	8	0
50,0001 – 250,000	5	0
10,001 – 50,000	9	1
5,001 – 10,000	10	1
1,001 – 5,000	14	2
101 – 1,000	13	9
0 - 100	20	25
Total	75	36

Table 4. Number of Toxic and Flammable EHS Worst Case Scenarios That Impact Public Receptors

<u>Type of Public Receptor</u>	<u>Number of Toxic Worst Case Scenarios That Impact This Type of Public Receptor</u>	<u>Number of Flammable and Reactive Worst Case Scenarios That Impact This Type of Public Receptor</u>
Commercial	56	20
Hospitals	17	0
Prisons	17	2
Recreation Areas	46	8
Residences	62	18
Schools	41	6

* The worst case scenario is the release of the EHS contents of the largest vessel in a process. For toxic EHSs, the vapor cloud of an acutely toxic concentration is modeled to determine the downwind distance. For flammable and reactive EHSs, an explosion is modeled to determine the distance of an overpressure wave. The distance of the worst case scenario then is used to estimate the population number that could be impacted using Census data and also whether the worst case can impact other public receptors such as commercial entities, hospitals, prisons, recreation areas, residences, and schools. Distances for toxic EHSs range from 0 to 25 miles, and distances for flammable and reactive EHSs range from 0 to 1.3 miles.

New Covered Process Audits

The TCPA Program reviews all applications for new TCPA covered processes to ensure the process incorporates good engineering practices and to verify that an appropriate Risk management program is in place prior to introducing the EHS into the process. Reviewing RMPs for new EHS processes will protect public health by minimizing the risk of accidental EHS releases. The administrative review is completed in the office, and the technical review is completed at the site.

The consent agreement for Sunoco Partners Mktg. & Terminals, LP, Newark, was executed in December.

The administrative review for a new facility submittal by VWR International LLC was completed in December. The submittal was administratively complete.

Inherently Safer Technology Review Reports

Pursuant to rules adopted in 2008, facilities prepare Inherently Safer Technology (IST) Review Reports and submit them to the Department for review. Facilities must evaluate potential alternatives to reduce the EHS release amount, substitute less hazardous materials, use EHSs in the least hazardous process conditions or form, and design equipment and processes to minimize the potential for equipment failure and human error. Facilities are required to conduct the IST review and to evaluate identified IST alternatives to determine whether they are feasible. The IST alternatives are not mandated to be implemented. If the facilities decide to implement any of the ISTs, the implementation schedule is required to be included in the IST review report submitted to the Department. Facilities must submit updates to their IST reports every time they update and revalidate their process hazard analysis with risk assessment, which is required for significant modifications and every five years.

In accordance with the Bureau’s FY2012 Workplan, the TCPA Program will ensure that facilities submit IST reports to the Department when required; however, the submittals are not being reviewed to evaluate compliance with the IST report requirements.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
Additional information (revised report) received	0	1	2
Initial new facility (or new covered process) reports received	1	1	2
Updated IST reports received	1	8	12

Standard Compliance Inspections and Audits

The TCPA Program conducts on-site standard compliance inspections (SCIs) of facilities’ risk management programs (RMPs) to evaluate compliance with the TCPA rules. Also, the TCPA Program conducts audits of existing facilities and audits of new covered processes at new and existing facilities. SCIs are a comprehensive review of the facility’s risk management program elements, which includes reviewing the facility’s policies and procedures in place for each program element, the engineering documentation for each of the processes, the records and reports demonstrating implementation of each program element, interviews with the staff and management, and inspection of the process and control room areas. This will promote prevention of accidental releases and efficient facility-wide management of EHSs. The program goal is to conduct a SCI annually at each existing facility that has an offsite impact and all others triennially.

In December 2011, the TCPA program completed audits at the following facilities: Rinchem Co.

In December 2011, the TCPA program completed standard inspections at the following facilities: Reckitt Benckiser Inc., Kuehne Chemical Co. Inc., Falcon Safety Products, Linde Gas North America

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
SCIs of existing RMPs completed	4	6	16
Audits of newly registered, new covered processes, or existing facilities completed	1	4	10
Unannounced Brief Compliance Inspections	0	1	1
Preliminary determination letters (DCA or DCAA sent (for audits conducted))	1	3	3
Signed CA, CAA, or Recommendation letters issued	1/0/0	2/3/0	2/7/0

Other Compliance Inspections

The TCPA Program conducts brief compliance inspections to follow up compliance with issued enforcement actions, to determine TCPA applicability at non-registered sites, and to investigate accidental releases.

The TCPA Program conducted the following the month of December 2011:

Non-registered facility inspections: Hi-Temp Specialty Metals Inc., PPG Aerospace – PRC Desoto, GE Aviation Systems LLC, Reheis Inc.

TCPA registrant Brief Compliance Inspections: none

Follow-up inspections: American Spraytech LLC, Benjamin Moore & Company, Trenton City, Bayonne Plant Holding LLC, Al & John Inc.

Follow-up submittal evaluations: Bayonne Plant Holding LLC

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
Non-registered sites inspected for TCPA compliance	4	11	39
Brief compliance inspections of TCPA registrants	0	1	1
Follow-up inspections for compliance with signed CAs, CAAs, and enforcement actions	4	7	18
Follow-up submittal evaluations for compliance with signed CAs, CAAs, and enforcement actions	1	2	4
Accident investigations	0	0	0

Enforcement Actions

When non-compliance is determined, enforcement action is taken, by issuing Prescribed Enforcement Actions (PEAs). Notices of Violation (NOVs) are issued for minor violations that have specified time periods for compliance without penalty assessment. Administrative Orders and Notices of Civil Administrative Penalty Assessments (AONOCAPAs) are issued to assess penalties and specify corrective actions. Notices of Civil Administrative Penalty Assessments (NOCAPAs) serve to only assess penalties. NOVs and AONOCAPAs require tracking the

violator's return to compliance, including inspections and review of paperwork. When an alleged violator requests a hearing on an enforcement action, case management is the process of settlement or adjudication that results in a settlement document, a Negotiated Enforcement Action (NEA) such as an Administrative Consent Order (ACO) or Settlement Agreement, or a contested case administrative hearing.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
Issue AO/NOCAPA	0	0	0
Issue Notice of Violation	0	0	0
Issue Settlements (Executed NEA)	0	3	9

Penalties are associated with AO/NOCAPAs and settlement documents. When an enforcement action is appealed, the penalty is suspended. When an appeal is settled and a reduced penalty is agreed to, the original penalty is cancelled.

The following enforcement actions were issued December 2011:

Prescribed Enforcement Actions: none

Notice of Violation: none

Executed Negotiated Enforcement Actions: none

<u>TCPA Output</u>		This Month		FY 2012 to date	
		Dollar Amount	Number of Cases	Dollar Amount	Number of Cases
New Penalty Assessments (EAs issued)	PEAs	0	0	0	0
	NEAs	0	0	74,550.00	7
Payments Received	PEAs	0	0	0	0
	NEAs	5,000.00	1	55,255.00	7
Penalties Cancelled (PEAs rescinded or superseded by NEAs)		500.00	1	52,230.61	3
Penalties Suspended (PEAs with hearing request)		0	0	150,917.18	9

Risk Management Plan Reviews

The TCPA Program reviews submitted Risk Management Plans (RMPlans) to determine completeness and compliance with the TCPA rule. This is necessary to verify correct registration information, worst case scenario data, and risk management program information. RMPlans are submitted by facilities for corrections to an existing RMPlan and for complete updates of the RMPlan, which are required every five years at a minimum and for specified major changes. Office reviews of submitted RMPlans are completed by assigned environmental engineers.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
RMPlans received	3	16	33
RMPlans reviewed	0	10	28

Annual Report Reviews

TCPA facilities are required to submit an annual report that summarizes their risk management program activities for the year. The facilities' preparation of annual reports promotes effective risk management of EHSs and pollution prevention which minimizes the potential for occurrences of accidental EHS releases. The T CPA Program issues reminder letters to facilities prior to the upcoming due date of the annual report. The annual reports are reviewed for completeness, and the T CPA Program responds with comments within 60 days of report receipt.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
Reminder letters issued	12	32	52
Reports received	5	24	34
Reports reviewed	0	17	28

Rulemaking

There was no rulemaking activity this month.

Fees

The T CPA program imposes fees to provide funding. This entails the generation of bills and the collection of fees including issuance of the Annual T CPA Fee Schedule Report, which is published in the New Jersey Register and mailed to all T CPA program registrants. This will assure that the program has resources to fulfill the mandates of the Act and can continue to prevent accidental releases of EHS.

The T CPA FY2012 Fee Notice and Fee Schedule report was prepared for review in October 2011.

<u>TCPA Output</u>	This Month		FY 2012 to date	
	Dollar Amount	Number of Cases	Dollar Amount	Number of Cases
Annual Fee Bills issued, Existing Facilities	0	0	0	0
Annual Fee Bills collected, Existing Facilities	0	0	0	0
Annual Fee Bills issued, New Registered Facilities	8,434.63	1	34,149.65	4
Annual Fee Bills collected, New Registered Facilities	0	0	17,358.46	2

<u>TCPA Output</u>	This Month		FY 2012 to date	
	Dollar Amount	Number of Cases	Dollar Amount	Number of Cases
Supplemental Fee Bills issued	0	0	1,022.68	1
Supplemental Fee Bills collected	0	0	5,678.32	2

Procedures and Guidance Documents Maintenance and Development

The TCPA program develops new SOPs and revises existing TCPA SOPs to provide guidance to TCPA staff for the performance of the work functions. Also, the TCPA program develops guidance documents to be used by the regulated community to facilitate compliance with TCPA requirements. Finally, new and revised TCPA form letters (NJEMS templates) are developed to communicate decisions on enforcement actions, risk management plan reviews, annual/triennial report reviews, and new process reviews effectively.

No new or updated SOPs were completed this month.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
New & revised technical guidance docs. prepared & distributed	0	0	0
New & revised SOPs prepared	0	1	3
Form letters revised (update NJEMS template documents)	0	0	0

Communications and Outreach

Prepare responses (not related to security) to referrals, OPRA requests, enforcement histories, analyses of proposed legislation or regulations, fiscal notes, correspondence etc. after determining the impacts on the programs and their ability to perform core functions.

<u>TCPA Output</u>	This Month	2nd Quarter to date	FY 2012 to date
OPRA Information Requests - TCPA	0	0	0
Referrals received	0	0	1
Referral responses issued	0	0	1

Other Communications Activities:

- none

Other Items

- Staff members continued with Department training courses this month:
 - Violation in the Workplace
 - Discrimination