

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

**OCTOBER 1, 2009 THROUGH OCTOBER 31, 2009**

<b>SECTION 1</b>	<b>OFFICE OF THE ASSISTANT DIRECTOR</b>
<b>SECTION 11</b>	<b>BUREAU OF RADIOLOGICAL HEALTH</b>
<b>SECTION 111</b>	<b>BUREAU OF ENVIRONMENTAL RADIATION</b>
<b>SECTION 1V</b>	<b>BUREAU OF NUCLEAR ENGINEERING</b>
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# **RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT**

## **MONTHLY REPORT**

**OCTOBER 1, 2009 THROUGH OCTOBER 31, 2009**

### **SECTION I - OFFICE OF THE ASSISTANT DIRECTOR**

#### **Highlights of the Monthly Report**

#### **1. The Nuclear Regulatory Commission (NRC) Accepts the Hope Creek and Salem License Renewal Applications for Formal Review**

On August 18, 2009 PSEG Nuclear LLC submitted license renewal applications for the Salem and Hope Creek plants to the NRC. If approved, the renewed licenses will expire as follows: Salem Unite 1 on August 13, 2036, Salem Unit 2 on April 18, 2040, and Hope Creek on April 11, 2046.

The NRC has completed their acceptance review of these applications and is proceeding with their review of the applications. Notices of acceptance of these applications were published in the Federal Register on October 23, 2009. The deadline for filing a hearing request and petition for intervention for either or both of these applications is December 22, 2009.

In addition, the NRC has published a Notice in the Federal Register that the NRC will be gathering information necessary to prepare a plant-specific supplement to the generic Environmental Impact Statement for nuclear plant license renewal. The NRC will hold a scoping meeting, in two sessions open to the public. These are scheduled on November 5, 2009 from 1 to 4 PM and from 7 to 10 PM at the Salem County Emergency Services Building in Woodstown, New Jersey. The NRC will host informal discussions with interested parties one hour before the start of each session.

The NRC projects that a decision will be reached on renewing these licenses by June 2011 if there is not a public hearing and by February 2012 if there is a public hearing.

The Bureau of Nuclear Engineering is in the process of reviewing both license renewal applications.

#### **2. Oyster Creek Federal Emergency Management Agency (FEMA) Graded Exercise**

On the evening of October 6, 2009 DEP emergency response personnel tested the New Jersey Radiological Emergency Response Plan (RERP) with the State Police Office of Emergency Management (SPOEM), Ocean County, and Exelon in a FEMA graded exercise at the Oyster Creek Nuclear Generating Station in Lacey Township. DEP staff activated the Emergency Operations Center (EOC) located at State Police Regional Operation and Intelligence Center (ROIC) in West Trenton, the Emergency Operations Facility (EOF) and the Joint Information

Center (JIC) located in Toms River, and the Forward Command Post (FCP) located in Berkeley Township. One state and one county field monitoring team also participated.

During the evaluated exercise, engineering and dose assessment was conducted at the EOF in order to formulate protective action recommendations. DEP staff presented accident assessment data and protective action recommendations at the EOC where the Governor's designee prepared protective action decisions for the public. Accident information and protective action decisions for the public were presented to the press at the JIC. Field monitoring teams characterized the extent of the radioactive plume and provided the FCP with field data. Each facility was evaluated against six evaluation areas outlined in FEMA's evaluation methodology.

On October 9, FEMA convened a post-exercise exit meeting to announce their preliminary findings. The announced the DEP's emergency facilities and field teams successfully met all evaluation objectives. A draft exercise report will be available in approximately 60 days. FEMA requires the testing and evaluation of the New Jersey RERP biennially at each nuclear generating site.

***Original Signed by***

Paul Baldauf, P.E.  
Assistant Director

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

**October 1 - 31, 2009**

**SECTION II – BUREAU OF RADIOLOGICAL HEALTH (BRH)**

**A. From the Chief’s Desk**

Contact: Paul Orlando (609) 984-5634

The Bureau continues to make progress on its fiscal year 2010 work plan goals.

**Nuclear Emergency Response**

Several staff members from the Bureau participated in the FEMA observed nuclear emergency response drill at Oyster Creek Nuclear Generating Station on October 9.

**B. Registration and Support Section**

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

**Machine Source Registration and Renewal Fees**

The Bureau has continued invoicing facilities their annual renewal registration fees for fiscal year 2010. Registrants with facility names starting with the letters S-Z were invoiced during October. The Registration and Support Section continues to invoice registrants for new x-ray equipment as it is installed. These invoice amounts contain initial application fees and prorated registration fees which are invoiced daily. The table below represents monthly and year to date activities.

<b>Machine Source Fees Invoiced and Collected for FY 2010</b>					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
\$647,746.00	\$810,080.00	\$2,730,271.00	\$2,002,146.00	\$8,891.00	73%

**Machine Source Unpaid Registration Fees**

As of October 31, 2009, six registrants remain delinquent in paying their FY 2008 registration fees. The Bureau has issued enforcement actions and assessed late fees and penalties to these facilities.

In January 2009, the Bureau established a new list of 365 facilities that are delinquent in paying \$132,428.00 in FY 2009 registration renewals. As of May 2009, 274 registrants (66%) paid their registration fees totaling \$109,189.00 (83%). The remaining 91 registrants owe \$23,239.00 (17%) of the original \$132,428.00 in delinquent registration fees. In May 2009, the Bureau

issued enforcement documents to these registrants. Seventy-seven first time violators were issued batch enforcement documents ordering them to pay their fees within 30 days of receipt of the document. Fifteen repeat violators were issued administrative orders and assessed late fees of \$25 per month, per machine.

As of October 31, 2009, all first time violators but one have responded to the batch enforcement actions and the Bureau has collected 99.8% of total due by these first time offenders.

<b>Facilities owe Registration fees '08</b>	<b>Facilities owe late fees only</b>	<b>Nonpayment registration &amp; late fees violations.</b>
<b>6</b>	<b>15</b>	<b>15</b>

### **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.

<b>Examinations</b>	\$0	\$0	\$800	\$800
<b>Initial Licenses</b>	\$6,580	\$6,140	\$36,340	\$35,240
<b>Renewal Licenses</b>	\$1,650	\$3,470	\$7,310	\$14,620
<b>Totals</b>	\$8,230	\$9,610	\$44,450	\$50,660

### **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.

#### **Image Quality**

One goal of the Bureau's quality assurance program is to increase image quality (IQ) by fifteen percent by 2007. The Bureau has observed a greater than twenty percent increase in image quality scores since the inception of the quality assurance program and continues to monitor image quality scores as part of this program. When the Bureau conducts inspections to determine compliance with the quality assurance program, an image of our IQ phantom is taken and scored by the inspector during the inspection. Six criteria are evaluated (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.

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, make changes to improve IQ, and send a report of their findings and corrective actions to the BRH within thirty days.

In October 2009, IQ evaluations were performed on one hundred and thirty-three (133) x-ray units with the following results:

Fifty-eight units (44%) had excellent image quality scores.

Sixty-four units (48%) had good image quality scores.

Eleven units (8%) had fair image quality scores.

No units (0%) had a poor image quality score.

## **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 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 physicist and determine the cause of the extremely high ESE, make changes to bring the ESE down, and send a report of their findings and corrective actions to the BRH within thirty days.

One goal of the Bureau's quality assurance program for medical facilities was to reduce entrance skin exposure (ESE) to patients from medical x-ray equipment by thirty-five percent by 2005. The Bureau met this goal in September 2004. We are continuing to monitor medical facilities' ESE to ensure these reductions remain in place and to encourage further improvements.

### **Medical Facilities**

The Bureau collected baseline ESE data on three major examinations (chest, lumbo-sacral spine and foot) for ten months before the start of the quality assurance program requirements in 2001. The Bureau divided ESE exposures into four categories: low, average, high and extremely high. When this baseline data was examined it showed that overall twenty-five percent of New Jersey facilities had extremely high ESE. These represent unnecessary radiation exposure to patients. The Bureau has documented a steady decrease in these unnecessary radiation exposures since the implementation of its quality assurance program.

In October 2009, ESE measurements were calculated on seventy-three x-ray units that performed lumbo-sacral spine x-rays. No units (0%) had extremely high ESE measurements.

In October 2009, ESE measurements were calculated on twenty x-ray units that performed chest x-rays. No units (0%) had extremely high ESE measurements.

In October 2009, ESE measurements were calculated on forty-six 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 overall 19.6 percent of New Jersey dental machines had high or extremely high ESE, which represents unnecessary radiation exposure to 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) – 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.

Data collected between January 18, 2002 and June 30, 2005 shows the following:

Film Speed	Number of Measurements	Average ESE	Range
D	5586	232.6 mR	3 mR to 1557 mR
E	559	176.1 mR	12 mR to 666 mR
F & I	1352	145.6 mR	7 mR to 731 mR

Digital Imaging	Number of Measurements	Average ESE	Range
DR	1416	99.0 mR	4 mR to 610 mR
CR-PSP	71	159.8 mR	34 mR to 444 mR

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 bring the ESE down, and send a report of their findings and corrective actions to the BRH within thirty days.

In October 2009, ESE measurements were calculated on one hundred and six dental x-ray units that used D speed film. No units had an extremely high ESE measurement.

In October 2009, ESE measurements were calculated on six dental x-ray units that used E speed film. One unit (17%) had an extremely high ESE measurement.

In October 2009, ESE measurements were calculated on thirty dental x-ray units that use F or Insight speed film. Six units (20%) had an extremely high ESE measurement.

In October 2009, ESE measurements were calculated on sixty two dental x-ray units that used DR digital imaging. Eight units (13%) had extremely high ESE measurements.

In October 2009, ESE measurements were calculated two dental x-ray units that used CR digital imaging.

### **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 continued to process license and examination applications, investigate complaints and respond to inquiries during the month of October. The Section has begun and completed several initiatives identified in the Bureau's FY 2010 work plan. Statistical information is attached at the end of the Bureau report. In addition to its regular business functions, the following highlights are reported:

#### **Nuclear Emergency Response Drill:**

On October 6, 2009, Al Orlandi participated in the FEMA Graded Nuclear Emergency Response Drill at Oyster Creek Generating Station in Ocean County. Mr. Orlandi was assigned to the Forward Command Post as Lead. FEMA evaluators found that the FCP and Field Monitoring Teams fulfilled all drill objectives.

#### **Limit Limited Dental Radiography School Inspections:**

As a Radiologic Technology Board of Examiners (Board) approved school in dental radiologic technology, schools must comply with the Board's approved curriculum and regulations relating to schools of dental radiologic technology. On October 14, 2009, staff conducted follow-up inspections at the two dental radiography programs sponsored by the University of Medicine and Dentistry of New Jersey (UMDNJ). During the first inspection, on August 18, 2009, student admission and academic records were not presented for inspection.

During the October 14, 2009 inspection, staff found that UMDNJ did not present all student admission and academic records are requested to complete the inspection. On October 27, 2009, additional student records were submitted. These records are currently under review.

#### **Medic Medical Physicist and Medical Physicist Assistant Certification**

## **Renewal:**

On October 20, 2009, all 236 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 will expire on December 31, 2009. The total assessment is \$5,900.

## **The Alliance for Quality Medical Imaging and Radiation Therapy (Alliance):**

The Alliance represents 24 professional, accreditation and certification organizations involved in the technical component of medical imaging examinations and radiation therapy treatments in the United States. For over ten years, the Alliance has worked to develop and implement education and certification standards for diagnostic radiologic technologists, nuclear medicine technologists, radiation therapy technologists, magnetic resonance imaging technologists, medical sonographers, medical dosimetrists and physicists who perform, plan, deliver and evaluate medical imaging procedures and radiation therapy treatments in the United States.

The Alliance met on October 25-27, 2009. Al Orlandi was invited to this meeting as the Conference of Radiation Control Program Directors (CRCPD) representative. The following is a list of topics discussed: (a) Health Care Reform Bills (H.R. 3200, S. 1679 and S. 1796); (b) Consistency, Accuracy, Responsibility, and Excellence in Medical Imaging and Radiation Therapy (CARE) Act (H.R. 3652); (c) American Medical Isotope Production Act (H.R. 3276); (d) Medicare Improvement for Patients and Providers Act (MIPPA) Final Rule; (e) 2010 Medicare Reimbursement for radiologic services and the access to these services if reimbursement is implemented as earlier proposed; (f) Education of operators of fluoroscopic equipment; (g) New York Times' article regarding medical radiation safety that will be published in November 2009; and (h) Outcomes of the "Image Gently" and "Step Lightly" campaigns to lower pediatric radiation exposures during radiographic, computed tomographic and fluoroscopic procedures. A full report has been submitted to the CRCPD. A full summary of the meeting is available upon request.

## **Radiologic Technology Board of Examiners (Board)**

The Board met on October 28, 2009. As a result, fifty-eight letters and reports were written and submitted to the appropriate parties. A full summary of the meeting is available upon request. The following are highlights of the major issues discussed at this meeting:

1. Reviewed issues and took action involving several schools of radiologic technology. This including (a) approval of two schools for dental radiologic technology, (b) approval of a clinical education center for one school of diagnostic radiologic technology and (c) approval of two new directors for schools of diagnostic radiologic technology.
2. Approved comments to be sent to the American Registry of Radiologic Technologists regarding its draft radiography examination content specifications and clinical competency requirements.
3. Reviewed enrollments reports and examination scores for students enrolled in diagnostic radiography and radiation therapy programs.
4. Approved the license reinstatement petition of a person with a suspended dental radiologic technology license and recommended to the Commission on Radiation

Protection that the license be reinstated with conditions. The Commission will consider this recommendation at its November 18, 2009 meeting.

#### **New Annual School Fee Assessed:**

On October 29, 2009, all 57 Radiologic Technology Board of Examiners approved schools of radiologic technology were invoiced for their 2010 annual fee. The total assessment is \$34,400. Payment of the annual fee is required by January 2, 2010.

#### **E. Mammography Section**

Contact: Ramona Chambus (609) 984-5356

#### **Stereotactic Facilities Inspected**

The Mammography Section inspected five facilities with stereotactic/needle localization breast biopsy units. There were no Administrative Orders and Notices of Prosecution issued. A total of seven stereotactic facility inspections have been performed since July 1, 2009.

#### **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 may 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 twenty facilities in October. There was one facility found to have non-compliance issues. A total of 40 of the 231 facilities scheduled to be inspected under the current FDA MQSA contract have been inspected to date. The contract will expire on July 31, 2010.

#### **Facility Non-compliances Discovered**

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

There was one facility with **Level 2** non-compliances which consisted of the following:

The time period between the previous and current Medical Physicist's Quality Control surveys exceeded 14 months.

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

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

**F. Enforcement Services Section**

Contact: Jennifer Daino (609) 984-5359

**BUREAU OF RADIOLOGICAL HEALTH ENFORCEMENT ACTIONS  
FOR OCTOBER 2009**

<b>Total Admin. Orders Issued</b>	<b>Admin. Orders Effective</b>	<b>Admin. Orders Pending</b>	<b>Admin. Orders Closed</b>	<b>Total Notices of Prosecution Issued</b>	<b>Effective Notices of Prosecution</b>	<b>Pending Notices of Prosecution</b>	<b>Closed Notice of Prosecution</b>	<b>Total Formal Enforcement Documents</b>
35	12	22	1	23	8	11	4	58

**PENALTY AMOUNT ASSESSED AND COLLECTED FOR ACTIONS ISSUED**

<b>Total Amount Assessed in October 2009</b>	<b>Total Amount Assessed for FY 10 to Date</b>	<b>Total Amount Collected for FY 10 Assessments</b>	<b>Total Amount Collected in FY 10 for Previous FY Assessments</b>	<b>Total Amount Collected in FY 10</b>
\$ 11,850.00	\$ 43,650.00	\$ 22,100.00	\$ 29,000.00	\$ 51,100.00

**BUREAU OF ENVIRONMENTAL RADIATION ENFORCEMENT ACTIONS  
FOR OCTOBER 2009**

<b>Total Admin. Orders Issued</b>	<b>Admin. Orders Effective</b>	<b>Admin. Orders Pending</b>	<b>Total Notices of Prosecution Issued</b>	<b>Effective Notices of Prosecution</b>	<b>Pending Notices of Prosecution</b>	<b>Total Formal Enforcement Documents</b>
6	1	5	6	1	5	12

**PENALTY AMOUNT ASSESSED AND COLLECTED FOR ACTIONS ISSUED**

<b>Total Amount Assessed in October 2009</b>	<b>Total Amount Assessed for FY 10 to Date</b>	<b>Total Amount Collected for FY 10 Assessments</b>	<b>Total Amount Collected in FY 10 for Previous FY Assessments</b>	<b>Total Amount Collected in FY 10</b>
\$ 2,550.00	\$ 7,550.00	\$ 2,500.00	\$ 1,200.00	\$ 3,700.00

Inspector: 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	102	272		24
4	NEXT	1	1		28
9	HAND DELIVERY	2			1
11	INVESTIGATION	2			
12	STEREOTACTIC INSPECTION	5	6		
15	QA INSPECTION ROUTINE LEVEL 1	164	136	102	9
22	NON-QA INSPECTION - HOSPITALS	1	4		73
<b>Total On-Site Inspections:</b>		<b>277</b>	<b>419</b>	<b>102</b>	<b>135</b>
6	OFFICE VIOLATION RESPONSE REVIEW	15		16	
18	OFFICE QA VIOLATION RESPONSE REVIEW	6		6	
23	OFFICE TECH CERT INSPECTION	3		3	
<b>Total Office Inspections:</b>		<b>24</b>		<b>25</b>	<b>0</b>

**Number of Enforcement Documents Issued**

NOV	14
AO	25
NOP	15
Amount of Penalties	\$9,400

Inspector: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations	
			By DN	By Cod
<b>Violations Cited Non-QA</b>				
<b>ACT</b>				
ACT-002	26:2D-23	No person shall obstruct, hinder, delay or interfere with Dept. inspections.	1	1
ACT-003	26:2D-35	X-rayed humans without a valid NJ license	4	4
<b>Dental</b>				
D-002	16.8(a)1	Survey of environs not available or not performed	4	4
D-016	16.3(a)7	kVp exceeds manufacturer's specifications (certified unit).	4	4
<b>Radiographic</b>				
R-309	15.9(a)3	Gonadal shielding > 0.5 mm lead equivalent not available.	1	1
R-314	15.9(a)8	Written safety rules provided to each operator	2	2
<b>Registration</b>				
REG1	3.1 (a) and (b)	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	4	4
<b>Therapy 1 Mev and Above</b>				
TA-088	14.4(t)4	failed to ensure that windows, mirrors, closed-circuit television provided to permit continuous observation of the patient during irradiation	1	1
<b>Therapy Below 1 Mev</b>				
TB-006	7:28-14.3(a)8iii	Pursuant to N.J.A.C. 7:28-14.3(a)8iii for therapeutic x-ray systems with energies less than one MeV, a timer system shall be provided which shall permit pre-setting and determination of exposure times to an accuracy of one second or less.	1	1
TB-007	7:28-14.3(c)5	Pursuant to N.J.A.C. 7:28-14.3(c)5. for therapeutic x-ray systems with energies less than one MeV, the calibration of the x-ray system shall include, but not be limited to, the following determinations; i. Verification that the x-ray system is operat	3	3
<b>Total Violations Cited Non-QA</b>			<b>25</b>	
<b>Violations Cited QA</b>				
<b>Quality Assurance</b>				
QA-009	22.3(a)	Failed to develop and continuously implement QA program.	1	1
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.	18	18
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	5	5

Inspector: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations	
			By DN	By Cod
<b>Violations Cited QA</b>				
<b>Quality Assurance</b>				
QA-023	22.5(e)	Failed to immediately initiate steps to bring processing into compliance.	2	2
QA-032	22.5(j)	Did not keep test record for at least one year.	3	3
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	5	5
QA-038	22.6(a)3	No Med Phys QC Survey for Fluoro	1	1
QA-063	22.7(a)2	QC tests from Table 3 (CT) not performed at the required intervals.	3	3
QA-064	22.7(a)3	No Med Phys QC Survey for CT	1	1
<b>Total Violations Cited QA</b>				<b>40</b>
<b>Total Violations</b>				<b>65</b>

**TECHNOLOGIST CERTIFICATION SECTION  
MONTH OF OCTOBER**

<b>LICENSE CATEGORY</b>	<b>D I A G N O S T I C  R A D</b>	<b>N U C  M E D I C I N E</b>	<b>R A D  T H E R A P Y</b>	<b>D E N T A L  R A D</b>	<b>C H E S T  R A D</b>	<b>P O D I A T R I C  R A D</b>	<b>O R T H O P E D I C  R A D</b>	<b>U R O L O G I C  R A D</b>
<b>Initial Licenses Issued</b>	<b>45</b>	<b>2</b>	<b>6</b>	<b>57</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Licenses Renewed</b>	<b>8</b>	<b>2</b>	<b>1</b>	<b>26</b>				
<b>Total Licensed</b>	<b>8,952</b>	<b>1,166</b>	<b>780</b>	<b>10,987</b>	<b>154</b>	<b>72</b>	<b>6</b>	<b>-</b>
<b>Exams Scheduled</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Investigations Conducted</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Licenses Verified</b>	<b>251</b>	<b>21</b>	<b>-</b>	<b>315</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Expired Licenses</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Unlicensed</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>NOP's Issued</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$900</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Penalty (\$)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Licenses Sanctioned</b>		<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Approved Educational Programs</b>	<b>16</b>	<b>3</b>	<b>4</b>	<b>35</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>-</b>
<b>Program Applications Evaluated</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Program On-site Evaluations</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Programs Evaluated</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Clinical Applications Approved</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>135</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

**Bureau of Radiological Health  
Mammography Section  
October 2009**

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
<b>MQSA</b>							
Facilities Inspected	1	12	7	0	20	40	231
Machines Inspected	1	15	9	0	25	50	
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	1	0	0	1	6	
FDA Violations Level 3	0	0	0	0	0	1	
Registrations	0	1	0	0	1	5	
Stored	0	3	1	0	4	13	
Canceled	0	0	0	0	0	0	
<b>Stereotactic</b>							
Facilities Inspected	0	1	4	0	5	7	60
Machines Inspected	0	1	4	0	5	7	
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	1	
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  
OCTOBER 1, 2009 THROUGH OCTOBER 31, 2009

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION

**A. Diffuse NARM, Source Material, General Licensing & Decommissioning Section**

Contaminated Sites

**Gloucester Titanium Company**

Staff participated in a conference call regarding the remedial investigation.

Contact: Jenny Goodman (609) 984-5498

**Shieldalloy Metallurgical Corporation (SMC)**

Staff assisted the Deputies Attorney General in responding to SMC's motion for a stay and SMC's complaint to restrain the Department from requiring SMC to remove radioactive slag and baghouse dust from its site in Newfield, New Jersey.

Contact: Jenny Goodman (609) 984-5498

**Oyster Creek Nuclear Generating Station (OCNGS)**

Site Remediation contacted staff regarding OCNGS's request to dispose of concrete rubble.

Contact: Jenny Goodman (609) 984-5498

Agreement State

**Licensing**

Staff continues to merge State and NRC radioactive material licenses and issue combined license amendments.

Contact: Nancy Stanley (609) 984-5452  
Ed Truskowski (609) 984-5542

## **Training**

Staff attended the NRC Transportation Regulations course the week of October 5<sup>th</sup> in Chattanooga, TN.

Contact Nancy Stanley (609) 984-5452

## Radionuclides in Water

## **Licensing**

Staff processed two license amendments.

Contact: Karen Flanigan (609) 292-1938

Staff issued one initial license.

Contact: Nancy Stanley (609) 984-5452  
Jenny Goodman (609) 984-5498

## **Inspections**

### **Aqua New Jersey-Hamilton (Central)**

Staff performed an inspection of licensed activities at Aqua New Jersey's Central wells. No items of non-compliance were identified.

Contact: Karen Flanigan (609) 292-1938  
Jenny Goodman (609) 984-5498

## **B. RADIOACTIVE MATERIALS PROGRAM**

During the month of October, 2009 the Radioactive Materials Program (RMP) responded to ten (10) radiation incidents:

1. On October 1, 2009, Trenton Dispatch informed the Radioactive Materials Program (RMP) that a load of scrap metal from a facility in Rahway had set off the radiation alarm at a scrap facility in Newark. The load was rejected and returned to the facility in Rahway. Further investigation determined that the cause of the elevated readings was some soil at the bottom of the container that held the scrap. The soil was placed into a bucket for proper disposition through a waste broker, while the rest of the load was released for routine processing.
2. On October 2, 2009, Trenton Dispatch informed a member of the RMP that a piece of scrap metal had set off a radiation alarm at a scrap facility in Sayreville. The scrap had already been accepted by the facility and was on a conveyor belt

for processing before it was detected. The origin of the item could not be determined. The item was isolated and will be secured pending proper disposition through a licensed waste broker.

3. On October 9, 2009, at 1:55 am, Trenton Dispatch informed a member of the RMP that a load of municipal solid waste (MSW) from the New York City Department of Sanitation (NYCDOS) had set off a radiation alarm at an incinerator in Newark. The load was rejected and returned to the NYCDOS. New York City radiation control officials were notified.
4. On October 9, 2009, Trenton Dispatch informed the RMP that a second load of MSW set off a radiation alarm at an incinerator in Newark. The load was rejected and returned to the hauler's facility in Newark. It was secured there for a few days, and then returned to the incineration facility on October 12, 2009, where it again set off their radiation alarm. The load returned to the hauler's facility once again. RMP personnel, who were in the area on October 14, 2009, surveyed the load and identified the contaminant as I-131. Since the hauler was not a transfer station, arrangements were made to have the load dumped and sorted under the supervision of an outside consultant at another location, approved by DEP's Solid Waste personnel. On October 16, 2009, the load was transported to an approved location, where it was dumped and sorted by an outside consultant. A contaminated diaper was found to be the cause of the elevated readings. The diaper was isolated and will be secured pending decay-in-storage. The rest of the load was released and processed without incident.
5. On October 20, 2009, Trenton Dispatch informed the RMP that a load of waste from a hospital in Newark set off a radiation alarm at an incinerator in Newark. The load was rejected and returned to the hospital. It was secured for a few days to allow for decay-in-storage. The load was then returned to the incinerator where it was processed without incident.
6. On October 20, 2009, Trenton Dispatch informed the RMP that a second load of waste set off the radiation alarm at an incinerator in Newark. This load originated from a hauler in Lyndhurst. The hauler stated that the load was from a hotel in Lyndhurst. The load was rejected and returned to Lyndhurst. It was secured for a few days to allow for decay-in-storage. The load was then returned to the incinerator where it was processed without incident.
7. On October 23, 2009, Trenton Dispatch informed the RMP that a load of MSW from Interstate Waste Service (Interstate) in Garfield set off the radiation alarm at an incinerator in Newark. The load was rejected and, per Interstate's request, taken to Interstate's facility in Jersey City. It was secured there for a few days to

allow for decay-in-storage. The load was then returned to the incinerator where it was processed without incident.

8. On October 29, 2009, the RMP was informed by an incinerator in Rahway that a load of waste from a hospital in Rahway had set off the incinerator's radiation alarm. The load was rejected and returned to the hospital. It was secured there for a few days to allow for decay-in-storage pending proper disposition.
9. On October 30, 2009, Trenton Dispatch informed the RMP that a rail car load of scrap metal had set off the radiation alarm at a scrap facility in Sayreville. The load was rejected and will be returned to the shipper. The final destination has yet to be determined. If outside of New Jersey, the appropriate out of state officials will be notified.
10. On October 30, 2009, Trenton Dispatch informed the RMP that a load of scrap from a scrap yard in Newark set off the radiation alarm at a scrap facility in Newark. The load was rejected and returned to the scrap yard. It will be secured there pending proper disposition.

Contact: William Csaszar (609) 984-5555

#### Police Pager Incidents

On October 30, 2009, Trenton Dispatch informed the RMP that a State Trooper's radiation alarm had been triggered by a passing vehicle. The vehicle was stopped and found to be transporting an instrument for a licensed facility. Since all the paperwork was in order, the vehicle was allowed to proceed. No further assistance was required.

Contact: William Csaszar (609) 984-5555

### **C. RADON SECTION**

#### Outreach

A Mitigation Oversight Program (MOP) inspection was conducted by the Radon Section on October 8, 2009 at home in Princeton. Findings from this inspection are currently being reviewed.

An exhibit booth was staffed by the Radon Section at the 33<sup>rd</sup> Annual New Jersey Science Convention held on October 13-14, 2009 in Somerset.

An exhibit booth was staffed by the Radon Section at the 2009 New Jersey School Board Association Workshop and Exhibition held on October 28-30, 2009 in Atlantic City.

A Webinar titled "New Outreach Tools for January and Beyond" was held by EPA on October 20, 2009. Information pertaining to the Radon Poster Contest, as well as activity

tracking and outreach tools available for use during National Radon Action Month was discussed.

Newborn Program - Test kits (30) were distributed to expectant parents participating in lamaze class at St. Barnabas Hospital in Livingston through a partnership with the Essex County Cancer Coalition. A similar program is currently being planned at University Hospital in Newark.

Radon Awareness Program (RAP) - The Essex County Cancer Coalition is planning to partner with the Essex County Health Department in distributing test kits which they have purchased from the RAP Program. It is anticipated that the test kits will be distributed as part of National Radon Action events, and a meeting will be scheduled to plan out these events.

Contact: Linda Jordan (609) 984-5434

#### Measurement and Mitigation Radon Certifications

A total of 48 radon professional applications were approved. They consisted of one measurement specialist, two mitigation specialists and 45 measurement technicians. A total of four professionals were moved from provisional to full certification status. Business application approvals consisted of two measurement businesses and one mitigation business.

Contact: Anita Kopera (609) 984-5543

#### Electrets

Control charts were created using the duplicate information on file since September 2007, when two new readers were purchased. Revisions were made to the explanations regarding the charts and submitted for review.

Due to an EPA review of procedure, the SOP for the electret procedure is being revised and a Quality Assurance Project Plan developed. Work started on this project and a proposed combination document was submitted for review.

Contact: Charles Renaud (609) 984-5423

#### Inspections

One measurement business was inspected during the month. The inspection was performed on October 21, 2009 and the final report will be completed in 4 weeks.

Contact: Charles Renaud (609) 984-5423

**C. D. NONIONIZING RADIATION SECTION**

Radiofrequency and Microwave Heaters, Sealers and Industrial Ovens

One source was registered this month.

Contact: Deborah Riggs Wenke (609) 984-5521

Mercury Vapor Lamps

This month, a letter was received from the National Electrical Manufacturers Association (NEMA), rendering a decision regarding the use of "O" rated mercury vapor or metal halide bulbs at construction sites.

To review, in March of 2009, the Nonionizing Radiation Section called to NEMA's attention the fact that "O" rated non-self-extinguishing ("R") bulbs were being used in open fixtures. These "O" rated bulbs are designed not to be enclosed because they have a quartz shroud or cylinder that surrounds the inner arc tube which is designed to protect the bulb from breakage due to internal lamp failure. However, in the construction industry, a bulb is often broken by a ladder or sharp objects. In the case of an "R" bulb, the broken light bulb may remain on and dangerous UVC will be emitted, which could then burn workers eyes and skin.

In an October 27, 2009 letter, NEMA recommended "the use of fully enclosed luminaries (bulbs or lamps) to eliminate potential problems at construction sites." Therefore, any New Jersey construction site inspected by the Nonionizing Section must have their mercury vapor or metal halide lamps completely enclosed if the bulbs are of the "R" type, as stated in N.J.A.C. 7:28-41, Mercury Vapor Lamps. Subchapter 41 still allows "T" bulbs in open fixtures but NEMA strongly advises enclosing the bulbs. The Nonionizing Section still recommends that site managers and contractors check with their lighting experts before enclosing bulbs to avoid the possibility of lamp overheating.

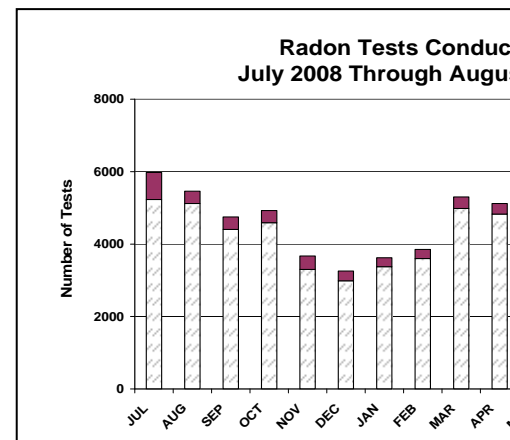
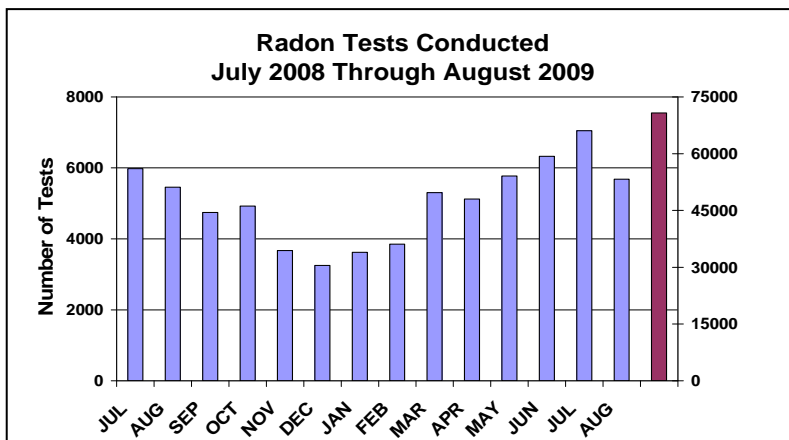
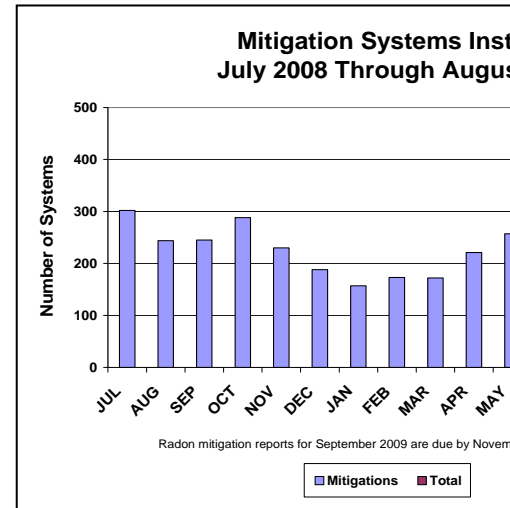
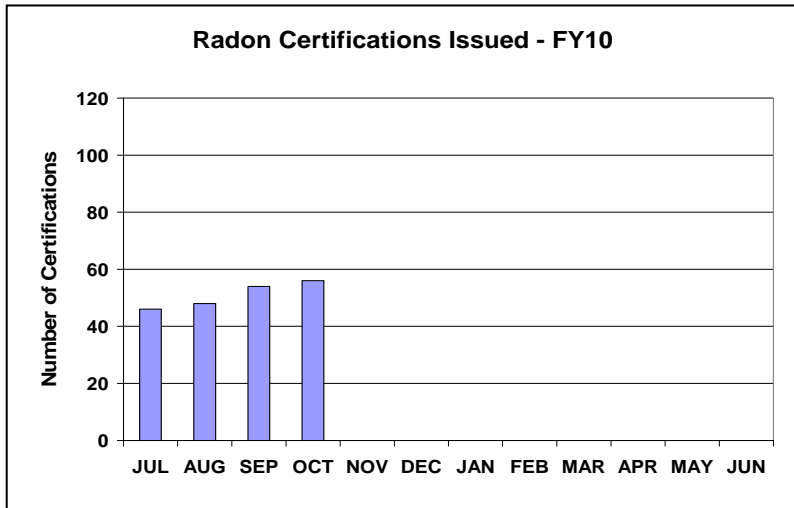
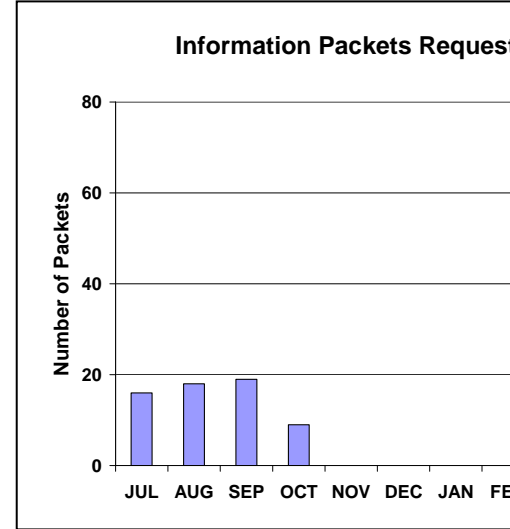
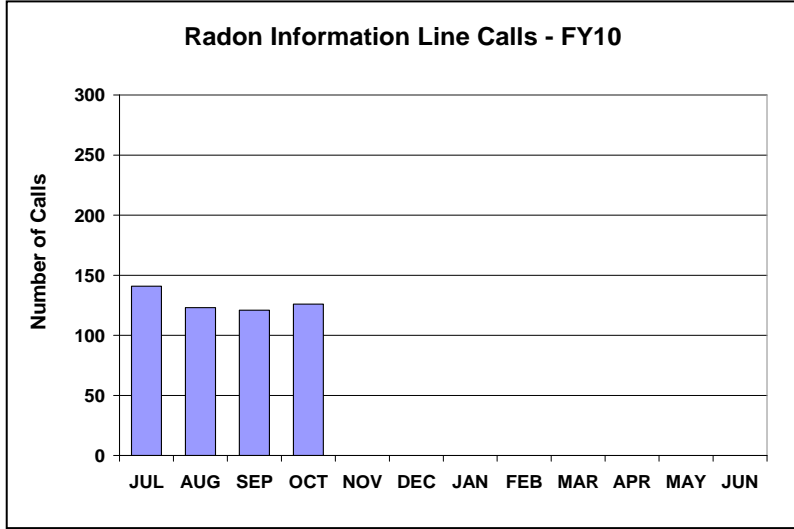
Contact: Deborah Riggs Wenke (609) 984-5521

Nuclear Emergency Response

On October 6th, Ms. Deborah Wenke participated in a nuclear drill at the Oyster Creek Nuclear Generating Station. Ms. Wenke was a controller for a field team.

Contact: Deborah Riggs Wenke (609) 984-5521

# BUREAU OF ENVIRONMENTAL RADIATION SUMMARY OF STATISTICS



**DIVISION OF ENVIRONMENTAL SAFETY AND HEALTH  
RADIATION PROTECTION AND RELEASE PREVENTION ELEMENT  
MONTHLY REPORT  
OCTOBER 01, 2009 TO OCTOBER 31, 2009**

**IV - BUREAU OF NUCLEAR ENGINEERING**

**SIGNIFICANT ACCOMPLISHMENTS/ISSUES**

**NRC Accepts the Hope Creek and Salem License Renewal Applications for Formal Review**

On August 18, 2009, PSEG Nuclear LLC submitted license renewal applications for the Salem and Hope Creek plants to the Nuclear Regulatory Commission (NRC). If approved, the renewed licenses will expire as follows: Salem Unit 1 on August 13, 2036, Salem Unit 2 on April 18, 2040, and Hope Creek on April 11, 2046.

The NRC has completed their acceptance review of these applications and is proceeding with their review of the applications. Notices of acceptance of these applications were published in the Federal Register on October 23, 2009. The deadline for filing a hearing request and petition for intervention for either or both of these applications is December 22, 2009.

In addition, the NRC has published a Notice in the Federal Register that the NRC will be gathering information necessary to prepare a plant-specific supplement to the generic Environmental Impact Statement for nuclear plant license renewal. The NRC will hold a scoping meeting, in two sessions open to the public. These are scheduled on November 5, 2009 from 1 to 4 PM and from 7 to 10 PM at the Salem County Emergency Services Building in Woodstown, New Jersey. The NRC will host informal discussions with interested parties one hour before the start of each session.

The NRC projects that a decision will be reached on renewing these licenses by June 2011 if there is not a public hearing and by February 2012 if there is a public hearing.

The Bureau of Nuclear Engineering is in the process of reviewing both license renewal applications.

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

**OTHER INFORMATION**

**Nuclear Power Plant Operation**

**Oyster Creek**

The plant operated at essentially full power for the month.

Contact: Rich Pinney (609) 984-7558

**Hope Creek**

Hope Creek operated at essentially 100% throughout the month with the following exception. On October 20, power was reduced to 50% in order to remove a circulating water pump from

service due to a potentially malfunctioning pump discharge valve. Power was returned to 100% following the successful removal of the pump from service.

Contact: Jerry Humphreys (609) 984-7469

### **Salem Unit 1**

Salem Unit 1 ran at essentially full power for the entire month.

Contact: Elliot Rosenfeld (609) 984-7548

### **Salem Unit 2**

Salem Unit 2 ran at essentially full power until it shut down for its 17<sup>th</sup> refueling outage on October 13. The outage officially began at 8:00 PM on October 13 and continued during the remainder of the month. It was scheduled to be concluded on November 5, 2009. The outage was about 68 hours behind schedule as of November 2, 2009.

Contact: Elliot Rosenfeld (609) 984-7548

### **White Performance Indicator for Oyster Creek**

Exelon submitted the Oyster Creek performance indicators for the third quarter to the NRC on October 23, 2009. The performance indicator for unplanned scrams is white. This means they had greater than three unplanned scrams per 7000 critical hours.

As required by the NRC's reactor oversight program, the NRC will perform an inspection to assess the root cause analysis of these scrams. The NRC team will consist of one or two inspectors.

Contact: Rich Pinney 609-984-7558

### **NRC Completes Component Design Basis Inspection at Hope Creek**

One BNE engineer observed portions of the and second (October 1 & 2) and third (October 7, 8 & 9) weeks of the three (3) week NRC Component Design Basis Inspection (CDBI) at Hope Creek. This inspection consisted of verifying the design of selected components and determining if maintenance and modification activities of these components have been consistent with the design bases. The NRC inspection report should be publicly available within forty-five days of the inspection exit meeting that was held on October 9, 2009.

Contact: Jerry Humphreys (609) 984-7469

### **Exelon and NRC Meet on Buried Pipe Issues at Oyster Creek**

BNE engineers were present via conference call at a public meeting between Exelon, the owner of Oyster Creek, and the NRC held on October 22, 2009. The purpose of the meeting was for Exelon to brief the NRC on the lessons learned from the recent underground pipe leaks which resulted in water containing tritium leaking to the environment at Oyster Creek. This meeting was not a NRC enforcement action but was held to gather information which could be useful to the industry's buried pipe aging management programs.

Exelon presented a history of the three recent underground aluminum pipe failures including findings from the then recently performed root cause evaluation of the 6-inch condensate transfer line, CH-4, which was discovered to be leaking in August 2009.

Exelon discussed the “tool box” of methods their fleet will use to prevent, via inspections, future failures of underground pipes. The “tools” include guided wave inspections, rerouting existing piping to be above ground or accessible in new underground vaults, possible use of cathodic protection, risked based prioritization for implementing the improvements to underground piping inspections and possibly changing pipe material. The failure mechanism to be prevented was determined to be galvanic corrosion external to the piping.

Exelon emphasized their commitment to protect the environment and plans to spend considerable resources across their fleet to avoid future unplanned releases. Their schedule for implementation at Oyster Creek, which is the lead plant, is to be complete by 2011 with 90% complete by the fall of 2010.

Contact: Ron Zak (609) 984-7458

### **Salem and Hope Creek Site Activities**

A BNE engineer attended Outage Control Center (OCC) meetings for Salem Unit 2’s 17<sup>th</sup> Refueling Outage on October 21. The outage status, outage issues and revisions to outage plans are discussed at these meetings.

Two (2) BNE engineers participated in a PSEG meeting to review proposed revisions to the Hope Creek Emergency Action Levels (EALs) on October 27, 28 and 29 at the Salem/Hope Creek Emergency Operations Facility. These revisions are being made to bring the existing EALs into conformance with the latest industry guidance.

On October 21, two BNE engineers met with corporate PSEG engineering personnel to discuss the PSEG aging management program for buried piping at Salem and Hope Creek. This meeting was held in conjunction with the BNE Engineers’ preparation for their review of the Salem and Hope Creek aging management program as part of the license renewal applications that were submitted to the NRC on August 18, 2009.

The NRC has completed its acceptance review of the license renewal applications and is proceeding with its review. Notices of acceptance of these applications were published in the Federal Register on October 23, 2009. The deadline for filing a hearing request and petition for intervention for either or both of these applications is December 22, 2009.

Contact: Elliot Rosenfeld (609) 984-7548 or Jerry Humphreys (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 October 2009.

Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	1	1

Contact: Rich Pinney (609) 984-7558

**Delaware / New Jersey / Annual State’s Emergency Action Level Review**

On October 1<sup>st</sup>, Public Service and Enterprise Group (PSEG) Nuclear, LLC hosted the Annual States’ (New Jersey and Delaware) Emergency Action Level Review at the Holiday Inn, in Bridgeport, New Jersey. The meeting included representatives from PSEG, the Bureau of Nuclear Engineering (BNE), Delaware Emergency Management Agency (DEMA), and NJ State Police Office of Emergency Management (SPOEM). PSEG presented their Event Classification Guides and discussed changes and revisions since last year’s annual training. Event Classification Guides are used to identify the level of an emergency (Emergency Action Level) during a nuclear event and are practiced during quarterly and annual exercises. Emergency declared events in the nuclear power industry and lessons learned during the past year were reviewed and discussed. The Nuclear Regulatory Commission requires all licensees to provide annual EAL training.

Contact: Nick DePierro (609) 984-7442

**Oyster Creek FEMA Graded Exercise**

On the evening of October 6<sup>th</sup>, 2009, DEP emergency response personnel tested the New Jersey Radiological Emergency Response Plan (RERP) with the State Police Office of Emergency Management (SPOEM), Ocean County, and Exelon in a federally graded exercise at the Oyster Creek Nuclear Generating Station in Lacey Township. DEP staff activated the Emergency Operations Center (EOC) located at State Police Regional Operation and Intelligence Center (ROIC) in West Trenton, the Emergency Operations Facility (EOF) and the Joint Information Center (JIC) located in Toms River, and the Forward Command Post (FCP) located in Berkeley Township. One state and one county field monitoring team also participated.

During the evaluated exercise, engineering and dose assessment was conducted at the EOF in order to formulate protective action recommendations. DEP staff presented accident assessment data and protective action recommendations at the EOC where the Governor’s designee prepared protective action decisions for the public. Accident information and protective action decisions for the public were presented to the press at the JIC. Field monitoring teams characterized the extent of the radioactive plume and provided the FCP with field data. Each facility was evaluated against six evaluation areas outlined in FEMA’s evaluation methodology.

On October 9th, FEMA convened a post-exercise exit meeting to announce their preliminary findings. They announced that DEPs emergency facilities and field teams successfully met all evaluation objectives. A draft exercise report will be available in approximately 60 days. The Federal Emergency Management Agency (FEMA) requires the testing and evaluation of the New Jersey Radiological Emergency Response Plan biennially at each nuclear generating site.

Contact: Nick DePierro (609) 984-7442

### **Facility Inspections**

Woodstown Forward Command Post	10/19/09
Salem Emergency News Center	10/19/09
Salem Emergency Operations Facility	10/27/09
Berkeley Forward Command Post	10/30/09
Toms River Emergency Operations Facility	10/26/09
Toms River Joint Information Center	10/26/09
Emergency Operations Center	10/15/09

Contact: Nick DePierro (609) 984-7442

### **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 92 samples during the month of October 2009. 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 investigates any results exceeding any state or federal radiological discharge limits or any anomalous data. The data are compared to on-site utility discharge point data.

BNE staff reviews all results to ensure that required levels of detection have been met and that state and federal radiological discharge limits have not been exceeded. The program includes a written Annual Environmental Surveillance and Monitoring Report for the environs of the Oyster Creek and Salem/Hope Creek nuclear power plants. The report covers sampling results conducted during the calendar year. The Annual Environmental Surveillance and Monitoring Reports for 2008 (along with previous years) are found on the NJDEP website at <http://www.nj.gov/dep/rpp/bne/index.htm>.

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.

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### **COUNT OF SAMPLES COLLECTED IN OCTOBER 2009**

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<u>SAMPLE MEDIUM</u>	<u>NUMBER OF SAMPLES</u>
AIR FILTER	26
CHARCOAL	26
MILK	3
WELL WATER	6
AQUATIC BIOTA	8
VEGETABLES	13

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SURFACE WATER	6
AQUATIC SEDIMENT	4
TOTAL SAMPLES	92

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

**USNRC Inspection of Radiological Environmental Monitoring Program (REMP) & Radioactive Material Control Program at the Oyster Creek Nuclear Generating Stations**

A USNRC inspection of the Radiological Environmental Monitoring Program (REMP) and Radioactive Material Control Program at Oyster Creek nuclear power plant was conducted from October 19 through 23, 2009. The inspection team was composed of one NRC inspector and two representatives of the New Jersey Bureau of Nuclear Engineering (BNE). The inspection followed NRC Inspection Procedure 71122, "Public Radiation Safety", Attachment 71122-03 – "REMP and Radioactive Material Control Program". The inspection scope included (1) Field observations to verify the location, material condition and functionality of environmental sampling equipment and that proper sampling techniques are employed; (2) Field observations to verify the location and material condition of TLD sites; (3) Verification of sample analysis equipment material condition and functionality, analysis techniques and quality assurance documentation employed by Teledyne Brown Engineering (contract environmental laboratory); (4) Field observations to verify the material condition and functionality of the site meteorological tower and associated equipment as well as complete and accurate meteorological data (wind direction, wind speed, delta temperatures); and (5) Verification that the same data are being accurately displayed in each of the plant control rooms.

In addition to the aforementioned Public Safety cornerstone, the inspection team performed the following functions:

1. Completion of the USNRC Temporary Instruction 2515/173 – Review of the Industry Ground Water Protection Voluntary Initiative
2. USNRC Inspection Procedure 60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

All inspection procedures can be found at the USNRC website's Public Reading Room at <http://www.nrc.gov/reading-rm.html> under "Documents in ADAMS".

Contact: Karen Tuccillo (609) 984-7443

**Quarterly Thermoluminescent Dosimeter (TLD) Exchange**

On October 13<sup>th</sup> and 14<sup>th</sup>, 2009, members of the NEES retrieved 3<sup>rd</sup> quarter 2009 TLD badges and deployed 4<sup>th</sup> quarter 2009 TLD badges in the surrounding environs and Independent Spent Fuel Storage Installations (ISFSI) of the Oyster Creek and Artificial Island nuclear power plant sites, as well as two background radiation sites. NEES staff analyzes the retrieved TLD badges and the resultant data are incorporated into the NEES annual report.

Contact: Tom Kolesnik (609) 984-7575

### **Update on Salem-1 Tritium Leak Remediation**

During the month of October 2009, 24 samples were collected and shipped to the BNE's contract laboratory for radiological analysis. This total also included the PSEG Radiological Groundwater Protection Program (RGPP) semi-annual samples.

Contact: Tom Kolesnik - (609) 984-7575

### **Update on Oyster Creek Tritium Monitoring**

During the month of October 2009, 28 onsite well water samples and 45 surface water samples were collected and shipped to the BNE's contract laboratory for radiological analysis. Additional information regarding the tritium leak at the Oyster Creek nuclear power plant can be found at <http://www.nj.gov/dep/rpp/bne/FinalOCH3.pdf>. In addition, 26 onsite well water monitoring samples were taken as part of the Oyster Creek Radiological Groundwater Protection Program (RGPP) semi-annual sampling.

Contact: Karen Tuccillo (609) 984-7443

### **Emergency Response**

Staff members attended PSEG's annual Emergency Action Level refresher training on October 1, 2009. On October 6, 2009, staff members participated in the annual FEMA graded exercise/drill for the Oyster Creek nuclear power plant.

Contact(s): Karen Tuccillo (609) 984-7443

### **Effluent Release Data**

The BNE monitors the effluents released from all four (4) nuclear generating stations each month. The reported effluents include gaseous, total iodine, total particulate and tritium released to the atmosphere and water.

The Oyster Creek nuclear power plant in Forked River, NJ does not routinely release activity in liquids to the environment. In the event of an unplanned release, the resulting activity will be included in the licensee's Annual Effluent Release Report, available through the USNRC website at <http://www.nrc.gov> or the county public library system. Releases to the atmosphere are from the 112-meter stack or various monitored building vents. At the 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 various monitored building vents.

Effluent data for the Salem and Hope Creek nuclear power plants for September 2009 are included below. August and September 2009 effluent data for the Oyster Creek nuclear power plant were not available at the drafting of this monthly report but will be included in the next BNE monthly report in late November.

**PSEG Nuclear  
Radioactive Effluent Releases  
Nuclear Environmental Engineering Section  
For the Period of 09-01-09 to 09-30-09**

<u>Hope Creek Gaseous Effluents</u>			<u>Hope Creek Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	3.53E-02	Ci	Fission Products	3.08E-04	Ci
Iodines	2.53E-04	Ci	Tritium	7.34E-01	Ci
Particulates	1.96E-04	Ci			
Tritium	0.00E+00	Ci			
<u>Salem Unit I Gaseous Effluents</u>			<u>Salem Unit I Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	1.80E-01	Ci	Fission Products	1.92E-03	Ci
Iodines	0.00E+00	Ci	Tritium	3.41E-01	Ci
Particulates	8.31E-07	Ci			
Tritium	2.73E+01	Ci			
<u>Salem Unit II Gaseous Effluents</u>			<u>Salem Unit II Liquid Effluents</u>		
<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	2.29E-01	Ci	Fission Products	5.68E-04	Ci
Iodines	0.00E+00	Ci	Tritium	1.22E-02	Ci
Particulates	0.00E+00	Ci			
Tritium	2.05E+00	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.

There were no alarms in October.

Contact: Ann Pfaff (609) 984-7451

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

Artificial Island CREST System Ambient Radiation Levels October 2009 Derived From One Minute Averages UNITS = mR/Hr				
AI1	AI2	AI3	AI4	AI5
.0068	.0069	.0070	.0076	.0069
AI6	AI7	AI8	AI9	AI10
****	.0062	.0058	.0077	****

Oyster Creek CREST System Ambient Radiation Levels October 2009 Derived From One Minute Averages UNITS = mR/Hr			
OC1	OC2	OC3	OC4
.0071	.0059	.0060	.0054
OC5	OC6	OC7	OC8
.0060	.0058	.0054	****
OC9	OC10	OC11	OC12
****	.0057	.0057	.0058
OC13	OC14	OC15	OC16
.0055	.0057	.0075	****

\*\*\*\* indicates no data

Contact: Ann Pfaff (609) 984-7451

**CREST Status**

The relocation of monitoring station AI1 was completed in October and the site is now up and polling. PSEG provided a new pole and electrical service while Verizon relocated their telephone equipment to the new site about a hundred yards from the former location. The move provides a more stable and reliable power source to the BNE's radiation monitoring equipment. Monitoring stations AI8 and AI1 were restored by Verizon in October after telephone line failures. OC6 also went down, but AT&T reports their equipment is good.

Contact: Ann Pfaff (609) 984-7451

**Air Pollution/Radiation Data Acquisition and Early Warning System**

During October, the primary computer housing the Air Pollution/Radiation Data Acquisition and Early Warning System was relocated from DEP headquarters to a State Police facility in Robbinsville. This move will provide a more stable and resilient physical location for the system,

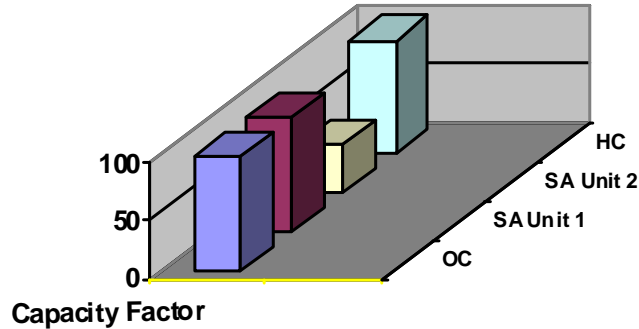
decreasing the risk of the main server going down. The facility has back-up power and is manned 24/7. The secondary system now will reside at DEP headquarters in Trenton. Prior to both servers' relocations, extended testing was completed using the back-up server as the primary to prove no deficiencies existed.

Envitech staff was onsite in Trenton for a week in October to install a bank of modems at both the primary and secondary computers. These modems will allow an alternate means of communication with the field monitoring stations in the event wireless communications are lost. The vendor also provided training on using the new equipment and configuring the system. Additionally, other Envitech staff delivered and tested wireless equipment to be deployed to the radiation monitoring sites. While working at the Bureau of Nuclear Engineering's office for several days at the end of the month, he continued refinements to the software that provides both wireless and dial-up communications to the Reuter-Stokes radiation detectors.

Contact: Ann Pfaff (609) 984-7451

**BUREAU OF NUCLEAR ENGINEERING**

**Plant Operating Performance - October 2009**



**STATISTICAL INFORMATION**

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR  
OCTOBER 2009

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.

	OCT 2009		JAN - OCT 2009		JAN - OCT 2008	
	EE	NEE	EE	NEE	EE	NEE
OYSTER CREEK	0	0	2	5	0	4
SALEM 1	0	0	0	2	0	2
SALEM 2	0	0	0	0	0	3
SALEM SITE	0	0	0	1	0	0
HOPE CREEK	0	0	0	9	1	6

<b>Priority / Demand</b>	<b>DPCC Output</b>	<b>This Month</b>	<b>FY 2010 to date</b>
<u>1. Plan Submission, Renewals and Amendments</u>	Plans Received	0	1
	Plans Initially Approved	0	0
	Plans Denied	0	0
	Plan Renewals Received	4	16
	Plan Renewals Approved	6	22
	Plan Renewals Denied	4	4
	Plan Amendments Received	8	19
	Plan Amendments Approved	8	25
2. Inspections	Annual Audits	14	55
	Technical Review Inspections	13	48
	Compliance Inspections	0	8
	Follow-up Site Visits	1	3
	Follow-up Document Reviews	4	8
	Incident/Complaint Investigations	0	0
3. Information Requests	OPRA	29	89
<u>4. Discharge Confirmation Reports</u>	Submitted	12	57
	Assigned	0	0
	Accepted	0	0
5. Enforcement Actions	AO/NOCAPA	7	10
	Notice of Violation	6	20
	Settlements	0	2
6. Penalties	New Penalty Assessments (Total Dollar Amount)	\$19,750	\$67,500
	Payments Received	\$16,000	\$52,000
	Cancelled	\$0	\$70,250
	Suspended	n.a.	\$209,500
7. Respond to referrals, etc.	Requests received	0	0
	Responses issued	0	0

## Additional Activities

### Training

Section Chief Beth Reddy attended the MindLeaders Leadership seminar, set up to supplement the online training pilot for the Department in which she is participating.

Section Chief Beth Reddy attended internal training on the IT procurement process.

### Other Items

Section Chief Beth Reddy attended a follow-up meeting with members of OIRM on the process of migrating FACITS and two other databases to the latest version of Forms.

### Task Progress

The current backlog of plan renewals past their renewal date is 47, with 7 plans currently denied. This is a decrease of nine from last month, with an increase of four denials.

<b>Priority / Demand</b>	<b>Output</b>	<b>This Month</b>	<b>2<sup>nd</sup> Qtr. To date</b>	<b>FY 2010 to date</b>
1. <u>Assistance to Office of Homeland Security &amp; Preparedness</u>	Inspections/Reviews	0	0	2
	Support (data, training, etc.)	0	0	0
2. <u>Rulemaking</u>	Hold quarterly work group meeting	0	0	0
3. <u>Registrant Fee Collection</u>	Bills issued	0	0	0
	Bills collected	0	0	1
	Fee report published & mailed	-	-	-
4. <u>New Covered Process Application Reviews</u>	<b>Applications received</b>	0	0	2
	Applications reviewed & decision letters issued	0	0	3
5. <u>Procedures &amp; Guidance Docs, Maintenance &amp; Development</u>	New & revised technical guidance docs. prepared & distributed	0	0	0
	New & revised SOPs prepared	0	0	0
	Form letters revised (update NJEMS template documents)	0	0	0
6. <u>Review of submitted IST review reports</u>	<b>New &amp; revised IST review reports received</b>	1	1	8
	IST Reports reviewed and letters issued	17	17	44
7. <u>Risk Management Program audits/inspections</u>	1.a. Unannounced standard inspections of existing RMPs (Program 3 processes) completed	2	2	17
	1.b. Audits of newly registered, new covered processes, or existing facilities completed (scheduled)	0	0	2
	1.c. Unannounced Brief Compliance Inspections	0	0	0
	2. Preliminary determination letters (DCA or DCAA) sent	0	0	1
	3. Signed CA, CAA or RMP-OK letters issued (as of 8/14/08 no longer issuing RMP-OK letters)	0/0/0	0/0/0	0/1/0
8. <u>Enforcement Actions and Case Management</u>	Issue enforcement actions in accordance with NJEMS procedures (issue PEAs)	0	0	14
	Provide case management to settle disputed violations (issue NEAs)	2	2	3
	Issue NOVs for minor violations	0	0	0
9. <u>Risk Management Plan Reviews</u>	RMPlan diskettes received and loaded to FACITS (new, updates, corrections)	4	4	17
	RMPlans reviewed and determination letters sent.	6	6	37
10. <u>Annual / Triennial Reports</u>	Reminder letters issued	10	10	26
	<b>Reports received</b>	11	11	19

<b><u>Priority / Demand</u></b>	<b><u>Output</u></b>	<b>This Month</b>	<b>2<sup>nd</sup> Qtr. To date</b>	<b>FY 2010 to date</b>
Reviews	Reports reviewed and letters or enforcement actions issued	8	8	22

11. Compliance Inspections (not RMP audits)	1.b. Non-registered sites inspected for TCPA compliance	2	2	30
	2. Follow-up inspections for compliance with signed CAs, CAAs, and enforcement actions	2	2	8
	3. Accident investigations	0	0	1
	4. Multimedia/GreenStart referrals	0	0	0
12. Communications and Outreach	Prepare responses to OPRA requests & management referrals	1	1	4
	Conduct presentations, workshops, etc.	2	2	3

### **Penalties and Fees:**

<b>TCPA Penalties</b>	<b>This Month</b>		<b>FY 2010 to date</b>		<b>Notes</b>
Assessed	\$14,400.00	3	\$272,635.34	17	
Collected	\$13,200.00	3	\$51,000.00	6	
Pending Payment	\$7,200.00	1	\$59,267.50	10	(2 from FY09; 5 from before FY09 at collections)
Open (suspended)	\$53,714.11	1	\$397,735.34	20	PEAs with hearing req. (10-FY10, 7-FY09, 2-FY08 & 1-FY06)
Cancelled	\$9,000.00	2	\$9,000.00	2	PEAs rescinded or superceded by NEAs

<b>FY2010 TCPA Ann. Fees</b>	<b>Amount</b>	<b>Registrants</b>	<b>Notes</b>
Total Billed	\$0.00	0	
Collected to date	\$15,157.74	1+	(*One full and one partial fee from FY2009 billing)
Percentage	0%	0%	(doesn't include the ones from FY2009)

### **IST Reports Review Status**

1.		Facilities subject.	91	
2.		BPS facilities.	47	
	A.	BPS facilities subject before 5/08 IST rule.	44	
	B.	New BPS facilities subject after IST rule.	3	
3.	A.	In Compliance letters sent to 2.A. BPS facilities.	41	Complete
	B.	In Compliance letters sent to 2.B. BPS facilities.	1	
	C.	Deregistered facilities sent review discontinued letter.	3	
4.	A.	BPS facilities (2.A.) issued letter requesting additional information.	0	
	B.	BPS facilities (2.B.) issued letter requesting additional information.	2	Spectra and Welco
5.		All other facilities (non-BPS).	44	
6.		Non-BPS reports (initial submittal) issued in	4	Hess, McLane, State Metal, and

		compliance letter.		ConocoPhillips
7.		Non-BPS reports found deficient, information request letters issued.	40	
8.	A.	Non-BPS reports submitted in response to information request (from 7.).	20	
	B.	Non-BPS reports submitted in response to information request, in compliance letter issued.	9	
	C.	Non-BPS reports submitted in response to information request, 2 <sup>nd</sup> additional information request letter issued.	1	
9.	A.	BPS reports submitted in response to information request (from 4.B.)	0	
	B.	BPS reports submitted in response to information request, in compliance letter issued	0	
	C.	BPS reports submitted in response to information request, deficient letter issued	0	

**Plan for completing reviews:**

1. Ammonia refrigeration facilities (14, 13 existing and 1 new facility (Al & Johns recently received): Issue initial review letters by 9/30/09 - Complete (13 IC letters, 1 Inf. Req. Letter)
2. Refineries (4): Issue initial review letters by 10/30/09 – Complete 9/28/09 (2 IC letters, 2 Inf. Req. letters)
3. Other (miscellaneous sector) facilities (7): Issue letter by 10/30/09 – Complete 10/7/09 (1 IC letter, 6 Inf. Req. letters)
4. Review and issue determination letters for water and power generation reports submitted to respond to information requests by 11/30/09. Open

**Activities:**

- 1) October Inspections and Audits:
  - a) Approved Risk Management Program Standard Compliance Inspections (SCI): Basel USA Inc., and W. R. Grace & Co. - Conn.
  - b) Follow-up inspections: Fisher Scientific Co. LLC, and DuPont Chambers Works.
  - c) Spot-check compliance: L’Oreal USA Inc. and Global Management LLC.
  - d) SVA inspections: (none).
- 2) Asit Ray is on extended sick leave until at least November 1, 2009.
- 3) 10/6/09: E.R. Retreat at Rosedale Park; Carl Ochs
- 4) 10/6/09: Paul Komosinsky gave a presentation on 2009 TCPA rule amendments at a NJ TCPA and RMP Compliance Workshop hosted by Risk Management Professionals.
- 5) 10/20/09: TCPA new covered process review requirements were reviewed at the TCPA office with a potential new registrant, West-Ward Pharmaceuticals; Arthur Robinson.

- 6) 10/23/09: delivered reference tables prepared by Sonny Sharma to Imran Hussain of OIRM to begin working on the TCPA Business Objects Universe: Carl Ochs.
- 7) 10/27/09: Meeting to continue discussion on system upgrades to Oracle 11g; Carl Ochs