DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF CLIMATE, CLEAN ENERGY & RADIATION PROTECTION
RADIATION PROTECTION ELEMENT
MONTHLY REPORT

FEBRUARY 1 THROUGH FEBRUARY 28, 2022

SECTION I- OFFICE OF THE ASSISTANT DIRECTOR

Original signed by:
Patrick Mulligan
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Assistant Director, Pat Mulligan

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

A. OFFICE OF THE BUREAU CHIEF

CRCPD H-7 Committee on Diagnostic X-ray, Monthly Technical Trends and Topics

On February 1, Bureau staff participated in CRCPD H-7 Committee on Diagnostic X-ray conference call to discuss current issues and topics of mutual concern to State X-ray compliance personnel.

HDAIC Webinar: Introduction to the Interagency Modeling and Atmospheric Assessment Center

On February 16, bureau staff participated in the HDAIC Webinar: Introduction to the Interagency Modeling and Atmospheric Assessment Center.

Cannabis Regulatory Commission Meeting on Ascend Wellness Holdings' request for DEP Input

On February 16, the Cannabis Regulatory Commission requested a meeting concerning Ascend Wellness Holdings' questions on DEP Radiation Protection Regulations.

Promotional Announcement for BXC Machine Source Section

On February 28, Rachel McVeigh, Radiation Physicist 2 was promoted to Radiation Physicist 3 in charge of the Machine Source Section. Rachel has been an inspector with the Bureau since November 2014. Also, she is a certified FDA mammography inspector. Congratulations Rachel on your supervisory position of the Machine Source Section.

Contact: Arthur Robinson (609) 984-5634

B. REGISTRATION SECTION

Machine Source Registration and Renewal Fees

The Registration Section has begun invoicing the registrants for FY2022 registration renewals. In addition, new equipment is invoiced administrative and prorated registration fees when they are installed. The table below represents monthly and year to date activities.

Machine Source Fees Invoiced and Collected for FY 2022					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
$20,430.00	$56,791.00	$3,090,646.00	$3,024,746.00	$3,598.00	98%

Progress on Collection of FY 2022 Registration Renewal Fees

Renewal Groups	Paid 7/31/21	Paid 8/31/21	Paid 9/30/21	Paid 10/31/21	Paid 11/30/21	Paid 12/31/21	Paid 1/31/22	Paid 2/28/22	Paid 3/31/22	Paid 4/30/22	Paid 5/31/22	Paid 6/30/22
0-F	49%	77%	87%	96%	98%	99%	99%	99%	0	0	0	0
G-L	N/A	51%	76%	88%	96%	98%	99%	99%	0	0	0	0
M-R	N/A	N/A	50%	74%	87%	95%	97%	98%	0	0	0	0
S-Z	N/A	N/A	N/A	34%	73%	86%	94%	97%	0	0	0	0

- The Bureau of X-ray Compliance issued administrative orders to registrants who have failed to pay their annual registration fees.

- Of the total number of invoices paid to date, 25% percent paid on-line.

Monthly Machine Source Registration Activity FY 2022

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	13	14	16	23	16	20	22	18	0	0	0	0	142
Terminated Facilities	25	18	26	39	29	38	23	33	0	0	0	0	231
Net Change (Facilities)	-12	-4	-10	-16	-13	-18	-1	-15	0	0	0	0	-89
New Registrations	164	188	144	163	171	157	176	202	0	0	0	0	1365
Stored Registrations	62	34	37	53	59	79	47	59	0	0	0	0	430
Disposed registrations	84	88	82	95	85	85	79	90	0	0	0	0	688
Net Change (Machines)	18	66	25	15	27	-7	50	53	0	0	0	0	247

The Registration Section staff continues to collect registrant e-mail addresses and enter them into the database in preparation for sending future notices and invoices electronically.

Contact: Lisa Brodbeck (609) 984-5370

C. MACHINE SOURCE SECTION

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 that includes the periodic performance of quality control tests and in-depth annual equipment performance testing of its x-ray equipment by Department certified medical physicists. The goal of the quality assurance

program is for facilities to ensure optimal operation of the x-ray equipment 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 February 2022, IQ evaluations were performed on 30 x-ray units with the following results:

- 23 units (77%) had excellent image quality scores.
- 7 units (23%) had good image quality scores.
- 0 units (0%) had fair image quality scores.
- 0 units (0%) 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 or digital image receptor speed, and film or digital image 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 June 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.

Radiographic ESE Ranges in Milliroentgens (mR)				
Exam	**Low**	**Average**	**High**	**Extremely High**
Chest	< 5	5 to 20	21 to 30	> 31
LS Spine	< 100	100 to 450	451 to 600	> 601
Foot	< 5	5 to 30	31 to 40	> 41

- In February 2022, ESE measurements were calculated on twenty-four x-ray units that performed lumbo-sacral spine x-rays. Zero units (0%) had extremely high ESE measurements.

- In February 2022, ESE measurements were calculated on three x-ray units that performed chest x-rays. Zero units (0%) had extremely high ESE measurements.

- In February 2022, ESE measurements were calculated on three x-ray units that performed foot x-rays. Zero units (0%) had extremely high ESE measurements.

Dental Facilities

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

An analysis of the historical data from May to December 2015, the Bureau inspected two thousand eight hundred and twenty-one (2,821) intra oral dental units. Eighty one percent (81%) of all dental facilities evaluated in 2015 were using digital imaging systems. This percentage breaks down to seventy three percent (73%) used DR and eight percent (8%) used CR (PSP). Only nineteen percent (19%) of all dental facilities evaluated in 2015 were using film-based imaging. This percentage breaks down to twelve (12%) used D speed film and seven percent (7%) used E/F or F speed film.

An inexpensive way to reduce radiation is to change to a faster speed film. Our research determined that E/F or F speed film costs only a few cents more per film then D speed. No changes in equipment or processing are necessary to use a faster speed film.

When the Bureau conducts inspections to determine compliance with New Jersey Administrative Code 7:28, a measurement of entrance skin exposure (ESE) is taken. The Bureau collected baseline ESE data on dental x-ray machines for the years 2008 and 2009. This data was evaluated to establish the ranges for four ESE categories similar to those in the medical quality assurance program (low, average, high and extremely high). 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 digital or 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.

Dental ESE Ranges Measured in Milliroentgens (mR)				
Image Receptor	**Low**	**Average**	**High**	**Extremely High**
Digital (DR)	0 to 20	21 to 110	111 to 160	≥161
CR (PSP)	0 to 35	36 to 170	171 to 215	≥216
Film Speed				
D	0 to100	101 to 285	286 to 350	≥351
E/F, F, Insight	0 to 50	51 to 150	151 to 205	≥206

- In February 2022, ESE measurements were calculated on one hundred and twenty-one dental x-ray units that used DR digital imaging. Eleven units (9%) were measured as having extremely high ESE.

- In February 2022, ESE measurements were calculated on twelve dental x-ray units that used CR (PSP) digital imaging. Three units (25%) were measured as having extremely high ESE.

- In February 2022, ESE measurements were calculated on six dental x-ray units that used D speed film. Zero units (0%) were measured as having extremely high ESE.

- In February 2022, ESE measurements were calculated on zero dental x-ray units that used E/F, F, or Insight speed film. Zero units (0%) were measured as having extremely high ESE.

Dental Amalgam Inspections

Effective November 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 June 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 February 2022, 54 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2022 is 415.

Inspection Activity and Items of Non-compliance

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

Contact: Rachel McVeigh (609) 984-5370

D. TECHNOLOGIST EDUCATION AND LICENSING SECTION

The Section continued to process license and examination applications investigate complaints and respond to inquiries during the month of February. Statistical information follows in Appendix A of this report. In addition to its regular business functions, the following highlights are reported:

Technologist Education and Licensing Section (Fees)

The Section continues to invoice individuals for initial licenses and examinations as applications are received or license renewal requests are made. The table below represents monthly and fiscal year-to-date billing and revenue activities.

Technologist Education & Licensing Section FY 2022 Invoiced & Collected				
Invoice Type	**Monthly Invoiced**	**Monthly Collected**	**Fiscal YTD Invoiced**	**Fiscal YTD Collected**
Examinations	$0	$0	$160	$160
Initial Licenses	$4,920	$3,060	$53,580	$49,860
Renewal Licenses	$810	$2,070	$10,710	$34,650
Totals	$5,730	$5,130	$64,450	$84,670

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 12 facilities with a stereotactic/needle localization breast biopsy unit during the month of February. A total of 35 of the 57 planned stereotactic facility inspections have been performed since July 1, 2021.

Mammography Facilities Inspected

Mammography facilities are inspected by the Bureau's FDA 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 two categories: Level 1 and Level 2. Level 1 and Repeat Level 2 non-compliances are the most serious and 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 non-compliances are considered serious, and the facility has thirty days from the date of the inspection to respond to the FDA detailing the corrective actions they have taken.

The Mammography Section inspected 33 facilities in February. A total of 160 of the 233 facilities scheduled to be inspected under the contract that expires on August 20, 2022. There were six facilities found to have non-compliance issues.

Facility Non-compliance Discovered

There were no facilities with **Level 1 and Level 2 Repeat** non-compliances.

There were six facilities with **Level 2** non-compliances:

- The period between the previous and current surveys exceeded 14 months.
- Failed to produce documents verifying that the interpreting physician met the continuing experience requirement of having interpreted or multiread 960 mammograms in 24 months.
- The manufacturer required QC tests were either not performed or acceptable results were not obtained.
- The medical physicist survey was incomplete because no recommendations for failed items were given.
- Failed to produce documents verifying if the radiologic technologist met the continuing education of having taught or completed at least 15 continuing education units in mammography in 36 months. (2 facilities)

A table of inspection details can be found in Appendix A.

Contact: Mary Kanewski (609) 984-5370

F. BUREAU ENFORCEMENT SERVICES SECTION

Enforcement Actions for February 2022

Bureau Enforcement is responsible for producing and following up on all enforcement actions for violations found during Bureau x-ray inspections. Since the Bureau has not yet been fully

integrated into the Departments NJEMS database system, it enters summary inspection information into NJEMS on all inspections conducted by the Bureau to provide more accurate inspection numbers for the Department's NJEMS reports. See the table below for current month and year to date information.

Inspections and Enforcement Documents Issued
February 2022

Bureau of X-Ray Compliance

	Month	**YTD**
Compliance Inspections entered into NJEMS	18	170
Dental/CBCT Inspections entered into NJEMS	25	346

Notice of Violations	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	6	0	7	13	88

Administrative Orders	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	1	0	9	10	102

Notice of Prosecutions	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	0	0	10	10	97

Amount Assessed in Penalties	**Amount Assessed for Month**	**Total amount assessed for FY**	**Amount Collected from current FY**	**Amount Collected from previous FY**	**Total amount collected**
	$9,700.00	$47,900.00	$40,050.00	$19,450.00	$59,500.00

Contact: Ramona Chambus (609) 984-5370

APPENDIX A - NJDEP BUREAU OF X-RAY COMPLIANCE
INSPECTOR ACTIVITY REPORT
02/01/2022 THROUGH 02/28/2022

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	29	94		
9	HAND DELIVERY	32			75
11	INVESTIGATION	23			
12	STEREOTACTIC INSPECTION	12	13		
15	QA INSPECTION ROUTINE LEVEL 1	27	32	38	2
28	DENTAL CBCT INSPECTION	18	82		5
29	DENTAL CBCT VIOLATION INSPECTION	1	1		
	Total On-Site Inspections:	**142**	**222**	**38**	**82**
6	OFFICE VIOLATION RESPONSE REVIEW	9		11	
7	OFFICE RADIATION SAFETY SURVEY	1		2	
18	OFFICE QA VIOLATION RESPONSE REVIEW	13		19	
23	OFFICE TECH CERT INSPECTION	2		2	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	4		4	
	Total Office Inspections:	**29**		**38**	**0**

Number of Enforcement Documents Issued

NOV	13
AO	15
NOP	15
Amount of Penalties	$14,050

02/01/2022 THROUGH 02/28/2022

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**8**
CB-002	22.7(a)1	CBCT No QA Manual	**1**
CB-003	22.7(a)3	CBCT No MPQCS	**7**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**2**
G			
G-007	2.5(c)	device not working properly	**3**
Radiographic			
R-132	15.4(j)4	For mammography units, the registrant shall have test procedures performed annually.	**1**
Registration			
REG1	3.1 (a) and (b)	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	**4**
TC			
TC-001	19.3(c)	x-rayed humans without a valid NJ license	**2**
Total Violations Cited Non-QA			**28**
Violations Cited QA			
Quality Assurance			
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**10**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**3**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**1**
QA-172	22.5(j)1	QC Test records maintained for 12 months	**1**
QA-174	22.5(j)3	All images for QC tests for items 8, 11, 12 & 13 maintained for 1 year	**5**
Total Violations Cited QA			**20**
Total Violations			**48**

APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION

MONTH OF FEBRUARY 2022

License Category	Diagnostic Rad	Nuc Med	Rad Therapy	Dental Rad	Chest Rad	Podiatric Rad	Orthopedic Rad	Fusion Imaging CT	Monthly Total	FY to Date	FY Projected
Initial Licenses Processed	14	2	3	27	-	-	-	2	48	818	1,100
Licenses Renewed	5	-	1	17	-	-	-	-	23	400	N/A
Total Licensed	9,335	954	847	11,437	48	16	5	91	22,733	22,733	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	1	N/A
Investigations Conducted	3	-	-	-	-	-	-	-	3	21	30
Licenses Verified	81	21	-	195	-	-	-	-	297	4,000	7,000
Expired Licenses	-	-	-	2	-	-	-	-	2	3	N/A
Unlicensed	-	-	-	1	-	-	-	-	1	8	N/A
Enforcement Documents Issued	-	-	-	12	-	-	-	-	0	48	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	-	-	-	$2,600	-	-	-	-	$2,600	$12,350	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	3	N/A
Approved Educational Schools	15	2	3	25	-	-	-	-	45	45	N/A
New School Application Evaluated	-	-	-	1	-	-	-	-	1	11	8
School Inspections Conducted	-	-	-	-	-	-	-	-	0	0	4
Total Schools Reviewed	-	-	-	1	-	-	-	-	1	11	12
Curriculum Modifications Evaluated	-	-	1	-	-	-	-	-	1	13	20
Clinical Applications Approved	-	-	-	61	-	-	-	-	61	1,037	1,100

Appendix A - Bureau of X-ray Compliance
Mammography Section
February 2022

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	25	8	0	33	160	**233**
Machines Inspected	0	33	15	0	48	266	
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	5	1	0	6	19	
Registered	0	1	4	0	5	19	
Canceled	0	4	6	0	10	35	
Stereotactic							
Facilities Inspected	0	4	8	0	12	35	**57**
Machines Inspected	0	4	9	0	13	36	
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	
Registered	0	0	1	0	1	6	
Canceled	0	0	2	0	2	4	

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

Due to a reduction in Covid-19 cases, staff have returned back to the office after working primarily from home for approximately two years. Most inspections are now being conducted in person. Some staff are beginning to travel offsite to training classes. It is anticipated that some of the lessons learned from the pandemic will enhance work performance and be incorporated into the workplace culture such as conducting meetings in Teams and obtaining information from some licensees in a virtual format.

B. RADIOACTIVE MATERIALS PROGRAM

During the month of February 2022, the Radioactive Materials Program responded to three (3) radiation incidents:

Date	Type of Incident	Description	Status
2/7/22	Trash	A load of MSW was rejected at a NJ incinerator facility. DOT SP 11406 was issued for the load to return to its origin at a northern NJ hospital where it will decay in place in its compactor dumpster.	Pending
2/23/22	Contaminated waste	A load of regulated waste set off the alarm at a NJ incinerator facility. The Port Authority and Customs were contacted for guidance. A consensus was reached that the waste should be secured and rescanned the next day. The following day revealed the load to be at background and it was disposed of without incident.	Closed
2/19/22	Trash	A load of municipal waste set off the alarm at a NJ waste facility. The load was rejected and was secured at the hauler's location to allow for decay-in-storage. The load was subsequently returned to the incinerator and processed without incident.	Closed

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 1/1/22-1/31/22	**FY-To-Date 7/1/22-1/31/22**
Number of Amendments Processed	37	181
Number of Renewals Processed	10	40
Number of Initial Applications Processed	2	10
Number of Active Licenses	557	557
Number of Terminations	1	5

Number of Reciprocity Requests Received	19	204
Number of Incidents	3	19
Number of Inspections	10	92

Contact: Debbie Wenke (609) 984-5509 or Jack Tway (609) 984-5514

General Licensing

Reconciliation of the Generally Licensed and Tritium Databases that were inherited from the NRC in 2009 continues. One source on the databases was verified during February. Staff continues to maintain entry of quarterly reports from manufacturers and distributors into the generally licensed database. No reports were received reflecting quarterly transactions. Generally Licensed Device Registration Forms continue to be maintained. A total of 49 registrations are currently active.

Contact: Sarah Sanderlin (609) 984-5466

D. SUMMARY OF ENFORCEMENT – FEBRUARY 2022

Bureau of Environmental Radiation – By Month (2/1/2022 - 2/28/2022)				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	2	1	2	5
Radon Section	0	0	5	5
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	2	0	2
Radon Section	0	0	2	2
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	1	1	2
Radon Section	0	0	2	2

Bureau of Environmental Radiation – Fiscal Year to Date 7/1/2021 - 2/28/2022				
Administrative Orders				
	Closed	Effective	Pending	Total

Radioactive Materials Section	7	1	2	10
Radon Section	0	0	5	5
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	2	3	0	5
Radon Section	0	0	2	2
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	6	5	1	12
Radon Section	0	0	2	2

Amount Assessed in Penalties = FY				
	Total Amount Assessed for FY22	Amount Collected from Current FY22	Amount Collected from FY21	Total Amount Collected (FY21+FY22)
Radioactive Materials Section	$6,250.00	$5,625.00	$0.00	$5,625
Radon Section	$0.00	$0.00	$400.00	$400.00

Amount Assessed in Penalties = By Month		
	Total Amount Assessed for 2/1/2022 - 2/28/2022	Amount Collected from 2/1/2022 - 2/28/2022
Radioactive Materials Section	$2,500.00	$1,250.00
Radon Section	$0.00	$0.00

Contact: Jack Tway (609) 984-5462 or Anita Kopera (609) 984-5543

E. RADIOLOGICAL AND ENVIRONMENTAL ASSESSMENT SECTION (REAS)

Water Treatment

There are currently 23 active specific licenses for water treatment systems. An inspection was conducted at 1 water treatment system.

There are currently 18 active general license registrations for water treatment systems (13 radium systems and 5 uranium systems).

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff completed review of 6 technical reports/referrals. Site visits were conducted at Heritage Minerals, Shieldalloy, and City of Vineland. Staff worked on the following sites/projects:

- City of Bordentown Discharge Lagoons
- EPEC Site in Fords
- Heritage Minerals site in Manchester
- Howmet site in Dover
- Maywood FUSRAP Site
- Middlesex Municipal Landfill Site
- Middlesex Sampling Plant Site
- National Lead site in Sayreville
- PSE&G Generating Station in Mercer
- Pantasote site in Passaic
- Shieldalloy Metallurgical Corporation site in Newfield

Contacts: James McCullough (609) 984-5480 or Joseph Power (609) 777-4252

F. RADON SECTION

Radon Rule

The rule adoption document is at the Governor's office for review. Work continues on preparation for the rule implementation, including database upgrades and all new documents and procedures.

Contact: Anita Kopera (609) 984-5543 or Charles Renaud (609) 984-5423

Electrets

The electret readers have been calibrated, the paperwork for proficiency testing was prepared and the testing will soon be taking place at Bowser Morner. When proficiency testing is completed, post-mitigation testing and confirmatory testing will begin again.

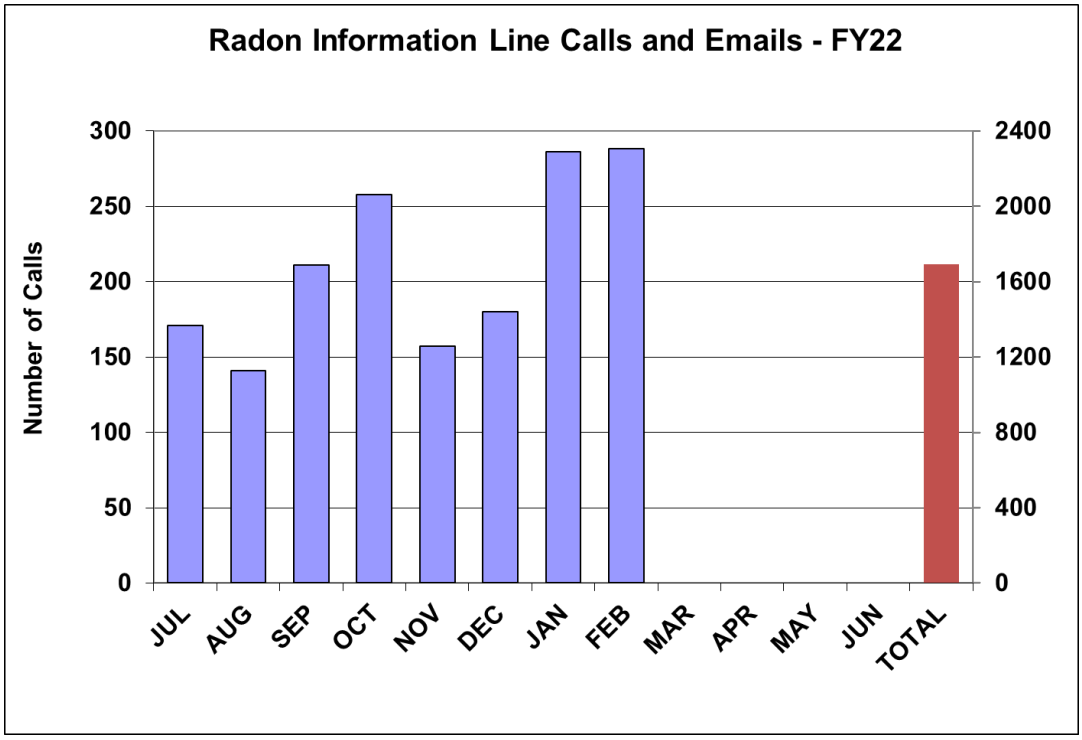
Contact: Charles Renaud (609) 984-5423

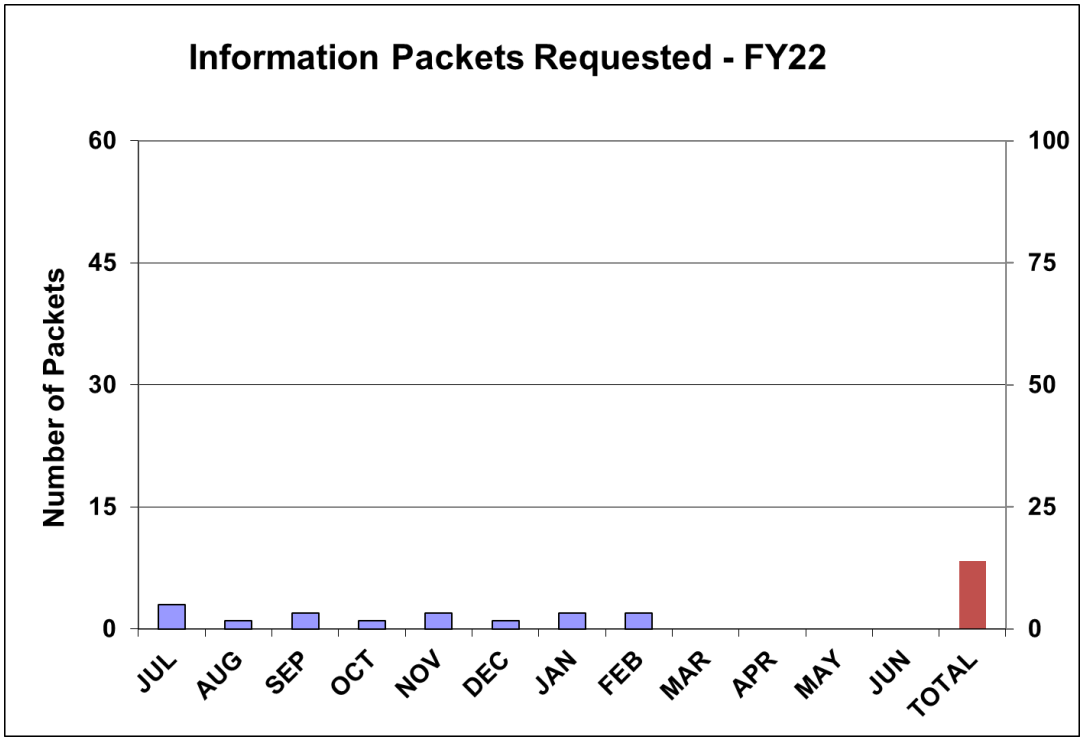
Measurement and Mitigation Radon Certifications

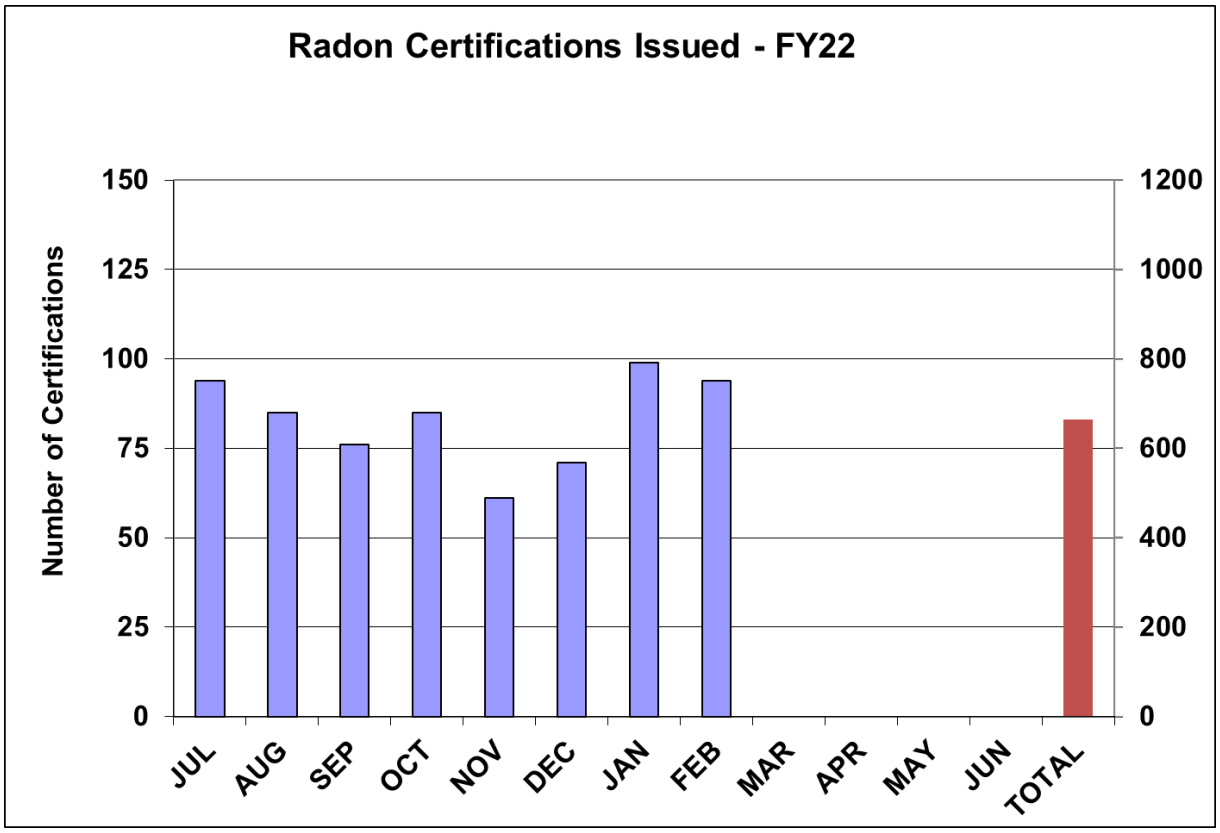
Certification Type	Initial	Renewal
MES		3
MET	16	67
MIS		2
MIT		2
MEB		2
MIB		2

Contact: Maxine Williams (609) 984-5628

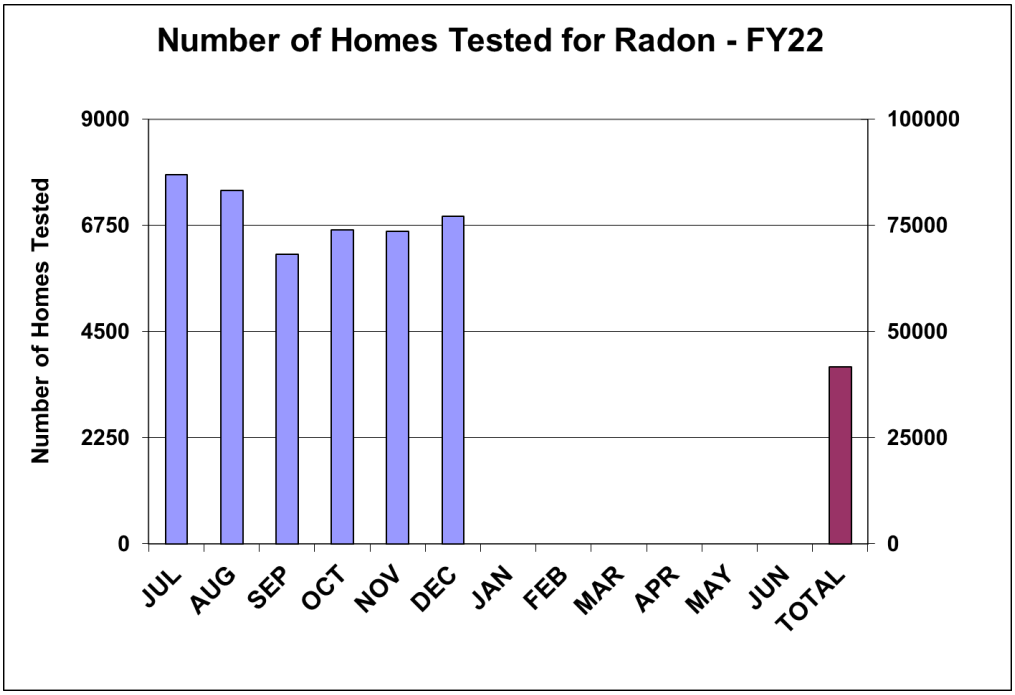
APPENDIX B: BUREAU OF ENVIRONMENTAL RADIATION SUMMARY OF STATISTICS

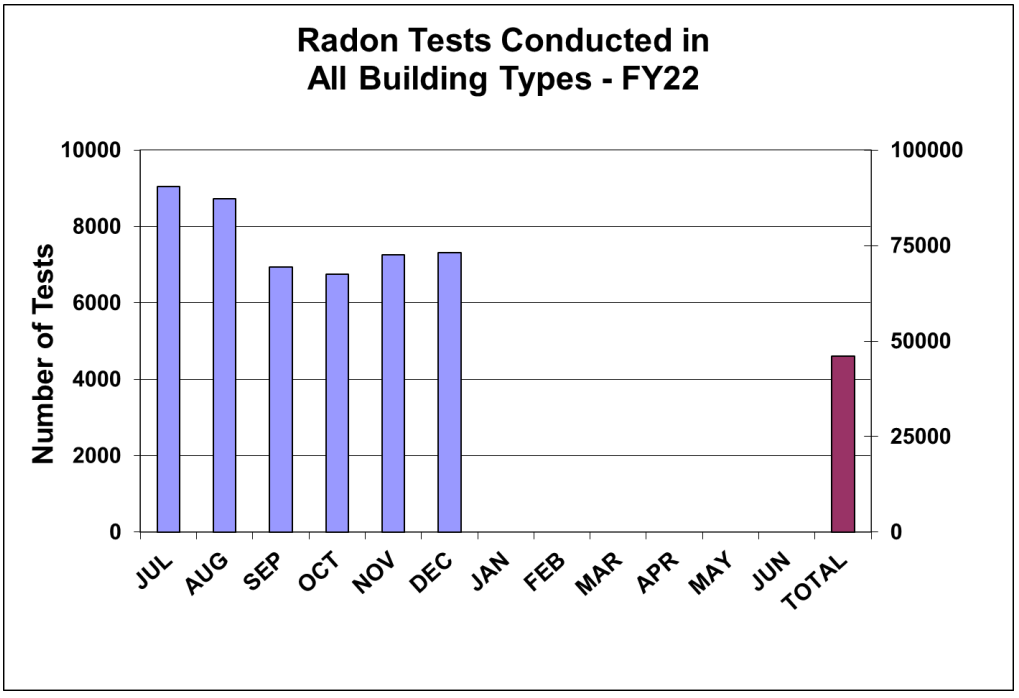


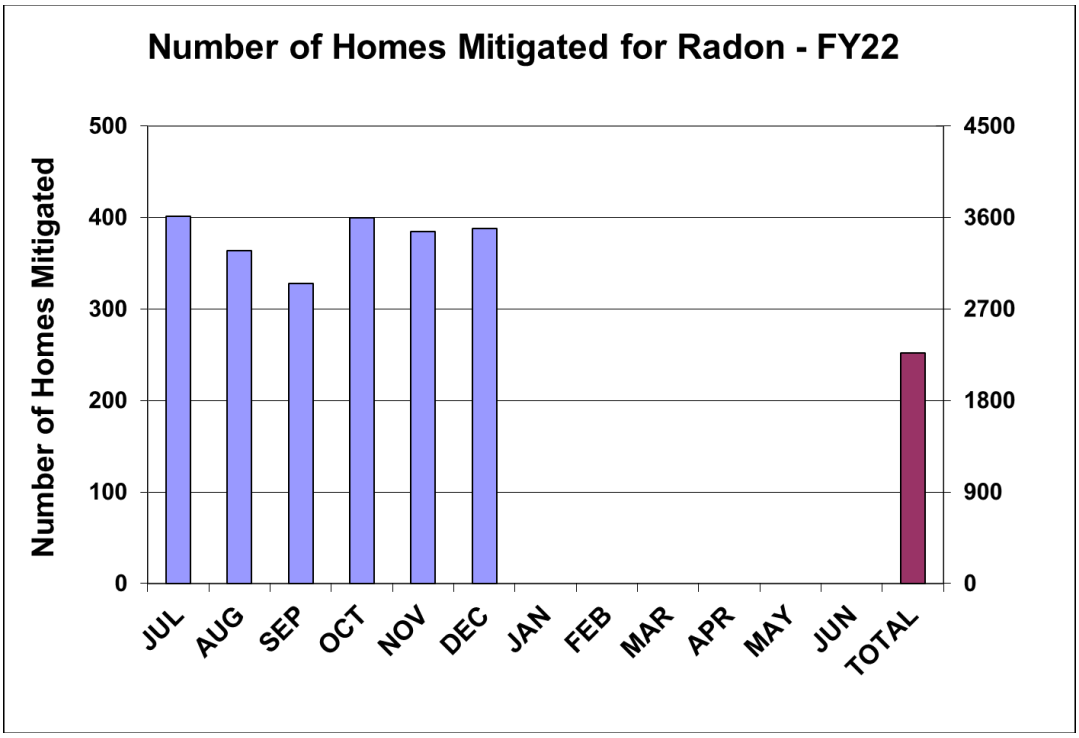


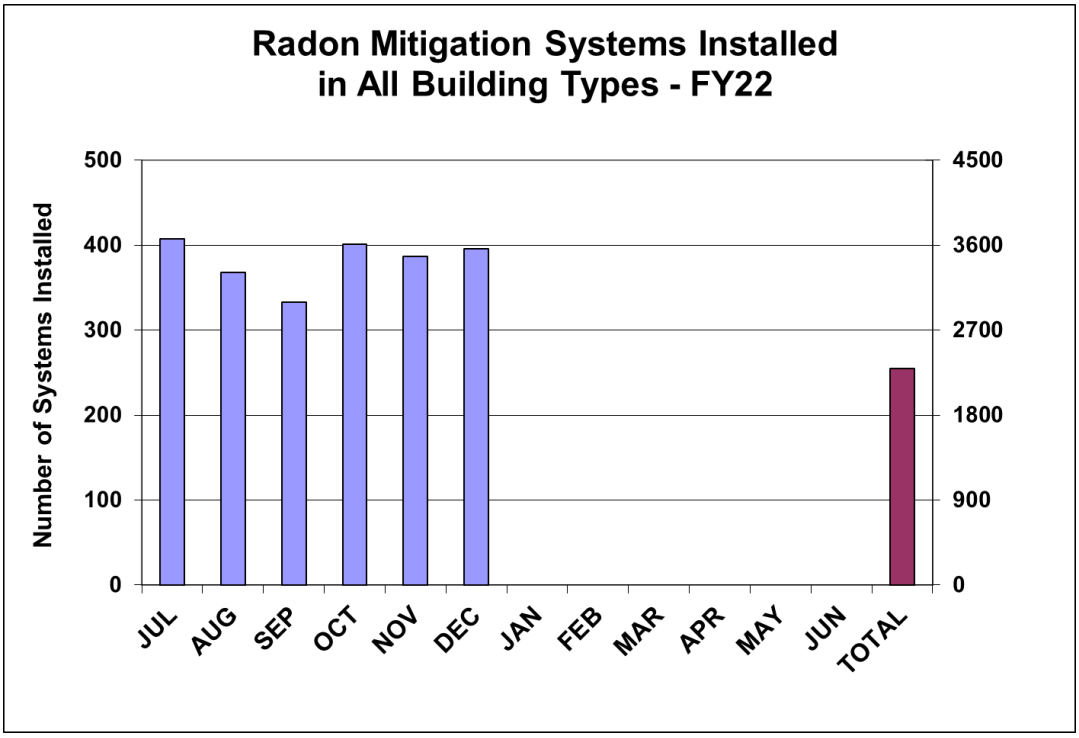

Radon Certifications Issued - FY22
Number of Certifications
150
125
100
75
50
25
0
1200
1000
800
600
400
200
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
TOTAL

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 December 2021 are due by February 1, 2022.






Number of Homes Mitigated for Radon - FY22
Number of Homes Mitigated
500
400
300
200
100
0
4500
3600
2700
1800
900
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
TOTAL


Radon Mitigation Systems Installed
in All Building Types - FY22
Number of Systems Installed
500
400
300
200
100
0
4500
3600
2700
1800
900
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
TOTAL

SECTION IV – BUREAU OF NUCLEAR ENGINEERING (BNE)

A. OFFICE OF THE BUREAU CHIEF

Significant Events

None

B. NUCLEAR ENGINEERING SECTION

Oyster Creek Decommissioning Projects:

Removal and segmentation of the reactor vessel head heat shield, reactor vessel head, drywell head and the drywell concrete shield plugs have been completed. Segmentation of the reactor vessel internals has commenced. Segmentation of the reactor steam dryer and steam separator is complete. Packaging of the steam separator into different containers is complete. Phase 1 of the reactor vessel internals is complete. Segmentation of the top guide tubes is complete. Segmentation of the reactor head into smaller pieces is in progress. Removal of the reactor vessel internal piping is complete. Segmentation of the upper shroud is complete. Cleanup of the Spent Fuel Pool in preparation for removal of the spent fuel racks is in progress. Removal of the control rod guide tubes and lower core plate for segmentation is underway. Preparation for removal of the spent fuel racks is in progress.

After CDI withdrew the construction permit application from Lacey Township for the expansion of the Independent Spent Fuel Storage Installation (ISFSI) concrete pad, the dry runs to demonstrate the spent fuel loading/transfer operations of the dry storage system were completed in December 2020. On December 14, 2020, Oyster Creek began its final spent fuel dry cask storage campaign. The campaign consisted of loading spent nuclear fuel from the Oyster Creek spent fuel pool into multi-purpose canisters, installing the canisters into dry cask storage casks, and transporting the casks to the ISFSI. On May 21, 2021, the last dry spent fuel storage cask was placed on the ISFSI pad, which safely completed Oyster Creek's final spent fuel campaign. Oyster Creek loaded and placed a total of 33 casks on the ISFSI pad in 21 weeks, thus setting a world record by completing the fastest transfer of all spent nuclear fuel from a plant's spent fuel pool to its dry storage facility. All of Oyster Creek's spent fuel assemblies are now safely stored in robust dry storage casks at the ISFSI awaiting transport to either an interim storage or permanent disposal location.

As a result of having transferred all the spent nuclear fuel from the spent fuel pool to the ISFSI, Oyster Creek, on August 12th, moved its security classification from a nuclear security facility to an ISFSI only/industrial security facility. Since Oyster Creek is now an ISFSI only facility, entry and exit to the ISFSI will remain under NRC security regulations. Access to the general site will be done via Holtec industrial security requirements

Oyster Creek has completed moving the fourth and final Greater-Than-Class-C (GTCC) storage cask to the ISFSI. Oyster Creek's GTCC campaign is now complete. GTCC radioactive waste is waste generated at nuclear reactors which has concentrations of certain radionuclides above

the Class C limits as stated in 10 CFR 61.55. In accordance with the regulations, GTCC waste is considered a form of low-level radioactive waste that is not suitable for near-surface disposal. Therefore, it must be packaged, stored, and disposed of in a manner similar to spent nuclear fuel.

Three outer buildings (not located in the radiological controlled area) have been demolished and removed from the site. Eight power transformers have been removed from the site. All reactor control rod hydraulic control units (HCU) and associated components have been dismantled. The original site water tank and a demineralized water storage tank have been dismantled and shipped offsite. A lube oil tank has also been removed and transported offsite. Demolition of the old north guard house, the abandoned torus water storage tank, the new maintenance building, the radwaste surge tank, the augmented off gas building, nitrogen tank, condensate storage tank, chlorination tank, radwaste sample tanks, site heating boiler and security buildings is complete. Core boring in preparation for demolition is in progress at the new radwaste building.

Contact: Veena Gubbi (609) 984-7457

BNE Activities at Oyster Creek

None

Hope Creek

Hope Creek ran at essentially full power throughout February.

Contact: Veena Gubbi (609) 984-7457

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout February.

Contact: Jacob Fakory (609) 984-7458

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout February.

Contact: Jacob Fakory (609) 984-7458

BNE Activities at Artificial Island

On February 2nd, BNE and DEP employees participated in a virtual meeting with PSEG Nuclear management. Among the items discussed were the: PSEG and BNE organizational changes since the last meeting; PSEG industrial safety and pandemic response; operating history of the three units; results of the 25th refueling outage at Salem 2; scope of the upcoming 28th refueling

outage at Salem 1 and the upcoming 24th refueling outage at Hope Creek; PSEG efforts to reduce single point vulnerabilities for equipment; comparison of unplanned shutdowns of the three units with those of plants in other fleets across the nation; and, equipment reliability.

PSEG also provided a brief overview of the operation of a main steam safety relief valve (MSRV) and the possible operational concerns that can be indicated by temperature changes associated with a MSRV.

Contact: Jerry Humphreys (609) 984-7469

On February 10th, one (1) NES Engineer and the NES Supervisor were onsite to discuss operating activities with PSEG personnel. In addition, the NES supervisor provided the NES Engineer a brief tour of the PSEG Learning Development Center (LDC), the Nuclear Operations Support Facility (NOSF) and Hope Creek proper. The engineer was recently appointed as the NES representative for Hope Creek.

Contact: Jerry Humphreys (609) 984-7469

NES Staff Attends Quarterly Status Meeting with HDI

On February 14th, the Director of Climate, Clean Energy & Radiation Protection, Assistant Director of the Radiation Protection Element, Bureau of Nuclear Engineering Manager, Nuclear Engineering Section Supervisor, and one Nuclear Engineering Section Engineer participated in a "Teams" meeting with representatives of Holtec's Decommissioning Management Team to discuss ongoing decommissioning activities at Oyster Creek. Holtec provided an overall summary of the ongoing decommissioning activities which included spent fuel pool rack removal, reactor vessel internal segmentation, site characterization, structural demolition, and wastewater processing. Holtec stated that it continues to brief the local community through scheduled stakeholder meetings. According to Holtec, decommissioning activities are on track per the decommissioning schedule and in some cases are well ahead of schedule. The decommissioning fund continues to be adequate for completing the Oyster Creek decommissioning.

Contact: Veena Gubbi (609) 984-7457

NRC Performs Radioactive Gaseous and Liquid Effluent Treatment Inspection at Hope Creek

On February 22nd - 25th, the NRC performed the second week of the Radioactive Gaseous and Liquid Effluent Treatment Inspection at Hope Creek. This inspection was conducted in accordance with NRC Inspection Procedure (IP) 71124, Attachment 06 - "Radioactive Gaseous and Liquid Effluent Treatment". The inspection objectives were to verify that: 1) the gaseous and liquid effluent processing systems are maintained so that radiological discharges are properly mitigated, monitored, and evaluated with regard to public exposure; 2) abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors are out-of-service, are controlled in accordance with applicable regulatory requirements and Hope Creek

procedures; 3) Hope Creek's quality control program ensures radioactive effluent sampling and analysis requirements are satisfied so that discharges of radioactive materials are adequately quantified and evaluated from all established release points and any unmonitored and uncontrolled discharge path; 4) adequacy of public dose calculations and projections resulting from radioactive effluent discharges; and, 5) problem identification and resolution activities are performed per IP 71152, "Problem Identification and Resolution."

The first week of the inspection was remotely performed from January 24th - 27th.

Contact: Jacob Fakory (609) 984-7458

NRC Performs Fire Protection Inspection at Hope Creek

The NRC performed the first week of a two-week NRC Triennial Fire Protection inspection at Hope Creek from February 14th-18th. The inspection was conducted in accordance with the NRC Inspection Procedure 71111.21N.05, "Fire Protection Team Inspection". The purpose of the inspection is to evaluate the design, operational status, and material condition of the Fire Protection Program, including assumptions made in plant and area specific fire protection analyses. This is accomplished by verifying that Hope Creek's program includes: adequate controls for combustibles and ignition sources inside the plant; adequate fire detection and suppression capability; passive fire protection features in good material condition; adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features; adequate protection to ensure the post-fire capability to safely shut down the plant, including implementation of NRC/industry fire-induced circuit failure analysis guidance; feasible and reliable manual actions when appropriate to achieve safe shutdown; adequate review and documentation of fire protection program changes. The results of this inspection will be documented in NRC Report 2022-010 for Hope Creek. The report will be available to the public within forty-five (45) days following the NRC Team exit which is currently scheduled for March 3rd.

The second week of the inspection will be performed from February 28th- March 3rd.

Contact: Veena Gubbi (609) 984-7457

NES Staff Attends NRC Teleconferences/Webinars

On February 2nd, the NRC held a public meeting to provide an overview on NRC's regulatory readiness review for commercial transportation of spent nuclear fuel. The review focused on NRC's regulatory framework and coordination with other agencies. The purpose of this meeting was to discuss the NRC staff's report on its review of the NRC's regulatory readiness for oversight of commercial transportation of SNF and the regulatory oversight roles of the NRC, DOT, and DHS. After the NRC presentation, representatives from the FRA, DOT and DHS provided an overview on their agency's regulatory oversight roles and responsibilities.

Contact: Veena Gubbi (609) 984-7457 or Jerry Humphreys (609) 984-7469

NES Staff Attends Department of Energy (DOE) National Transportation Stakeholders Forum (NTSF) Teleconferences/Webinars

The DOE NTSF is the mechanism through which DOE communicates at a national level with states and tribes about the DOE's shipments of radioactive waste and materials. The purpose of the NTSF is to bring transparency, openness, and accountability to DOE's transportation activities through collaboration with state and tribal governments. The NTSF informs states and tribes about ongoing, upcoming, or tentatively planned DOE shipments or shipping campaigns that may have an impact on their jurisdictions. It also allows the DOE to obtain input from states and tribes about concerns, needs, or logistics that are relevant to shipment planning and execution. Additionally, the NTSF can identify emerging issues for DOE and its transportation stakeholders that may affect shipment planning, preparedness, and execution, including intergovernmental consultation and cooperation.

The Council of State Governments/Eastern Regional Council (CSG/ERC) Northeast High-Level Radioactive Waste Transportation Task Force (NE Task Force) assists the ten northeastern states in planning and preparing for the transportation of spent nuclear fuel and high-level radioactive materials with the goal of the safe, secure and uneventful transportation of such materials. The task force also facilitates communication and discussion of information, comments, and policies among the northeastern states and between those states and relevant offices and programs of the DOE and other federal entities (e.g., NRC, DOT, FRA, etc.). The NE Task Force is a member of the NTSF. An NES engineer and the NES Supervisor are governor-appointed members of the NE Task Force. The NES Supervisor is a co-chair for the NE Task Force.

NTSF Planning Committee Meeting

On February 10th, the NTSF Planning Committee held a virtual meeting. The Northeast (NE) Task Force will be the host of the 2022 Annual NTSF Meeting scheduled to be held in Philadelphia in June 2022. Agenda for the 2022 meeting was discussed by the representative from the NE Task Force. Topics for the breakout sessions and plenary sessions were also discussed. Preliminary discussions for the 2023 annual meeting were started. The Midwestern Radioactive Materials Transportation Committee (MRMTC) will host the 2023 meeting. Reports on the activities of the NTSF Rail/Routing ad hoc committee and the proposed re-establishment of the Spent Fuel Transportation Materials ad hoc committee were presented.

Contact: Veena Gubbi (609) 984-7457 or Jerry Humphreys (609) 984-7469

NE Task Force Meeting to discuss DOE's Consent Based Citing

On December 1st, 2021, the DOE published a request for information (RFI) in the Federal Register asking for comments on using a consent-based siting process to identify federal interim storage facilities for spent nuclear fuel. On February 3rd, the Northeast Task Force held a virtual meeting to discuss its approach to preparing such comments. The Task Force agreed that comments would be solicited from its members and combined into one document representing the comments of the Task Force as a whole.

One (1) NES Engineer and the NES Supervisor attended the meeting and have provided comments to the Task Force. The Task Force combined comments will be submitted via the Federal Register instructions no later than March 4th.

Contact: Veena Gubbi (609) 984-7457 or Jerry Humphreys (609) 984-7469

Pilgrim Nuclear Power Station Nuclear Decommissioning Citizens Advisory Panel (NDCAP) Holds Public Meeting

On January 31st, the Pilgrim NDCAP held a virtual public meeting. The NDCAP advises the Massachusetts Governor and educates citizens across the state on activities related to the shut down and decommissioning of the Pilgrim Nuclear Power Station. The NDCAP holds public meetings at least four times per year.

Representative from a US Senator's office expressed their concerns with Holtec discharging water into the Cape Cod Bay and urging Holtec to consider other options for disposal of contaminated water at Pilgrim site. A representative of Holtec, provided an update on the current decommissioning activities (fuel move campaign; building demolition; reactor segmentation; historical effluent discharge, current effluent discharge schedule and site characterization study) at the Pilgrim site. A representative of the Commonwealth's Interagency Working Group (IWG) provided an update on the IWG activities and an update on the decommissioning activities. The IWG representative also stated that no effluent discharges are scheduled for 2022. Following the presentations, questions and concerns from the panel members were addressed by the presenters. After the panel question and answer session, questions and concerns from the members of the public were addressed.

Contact: Veena Gubbi (609) 984-7457

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 is in three categories: 1) Spent Fuel and Nuclear Waste; 2) Highway Route Control Quantity Shipments; and 3) Radionuclides of Concern. Each category must meet certain packaging and notification requirements established by the federal government. Following is a table representing the number of shipments completed in February 2022:

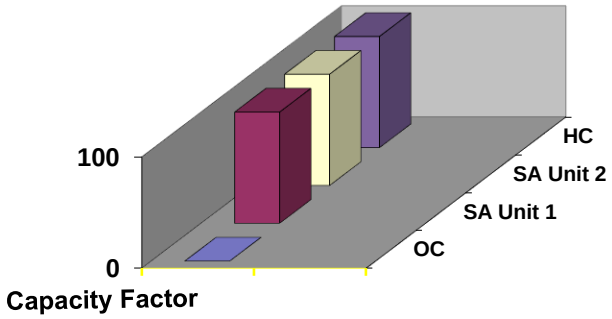
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	2	2

Contact: Veena Gubbi (609) 984-7457 or Jerry Humphreys (609) 984-7469

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – 1

Note: On September 17th, 2018, Oyster Creek permanently ceased operation.



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR FEBRUARY 2022

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 twenty-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.

	FEBRUARY 2022		JAN - DEC 2022		JAN - DEC 2021	
	EE	NEE	EE	NEE	EE	NEE
OYSTER CREEK	0	0	0	0	0	0
SALEM 1	0	0	0	0	0	0
SALEM 2	0	0	0	0	0	0
SALEM SITE	0	0	0	0	0	0
HOPE CREEK	0	0	0	0	0	0

C. NUCLEAR ENVIRONMENTAL ENGINEERING SECTION

Radiological Environmental Monitoring Program

The Bureau of Nuclear Engineering (BNE) conducts a comprehensive Radiological Environmental Monitoring Program (REMP) in the environs surrounding New Jersey's four nuclear generating stations. The program collected 68 samples during the month of February 2022. 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 review 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 annual data tables. The data tables, covering sampling results conducted during the prior calendar year in the environs of the Oyster Creek and Salem/Hope Creek nuclear power plants, can be found on the NJDEP website at http://www.nj.gov/dep/rpp/bne/esmr.htm, along with data tables from previous years.

Questions regarding specific test results or the annual environmental report can be directed to Karen Tuccillo at (609) 984-7443. Results of specific analyses can be obtained by request.

COUNT OF SAMPLES COLLECTED IN FEBRUARY 2022

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	41
AIR IODINE	18
AIR COMPOSITE	1
MILK (Cow)	3
SURFACE WATER	5
TOTAL SAMPLES	68

Documents Reviewed

Environmental Laboratory Quarterly Quality Assurance Report for Environmental Analyses Fourth Quarter 2021 (October through December) – GEL Laboratories LLC.

Update on Salem Units 1 & 2 and Hope Creek Tritium Monitoring

During the month of February 2022, seventeen (17) groundwater monitoring well samples were collected and shipped to the BNE's contract laboratory, GEL Laboratories, for radiological analysis.

Contacts: Jay Vouglitois (609) 984-7514 or Karen Tuccillo (609) 984-7443

Decommissioning of the Oyster Creek Nuclear Plant Site

On February 8, 2022, staff members from the Bureau of Nuclear Engineering (BNE) and the Bureau of Environmental Radiation (BER) participated in a virtual meeting hosted by the site owner, Holtec, regarding an update of the Industrial Site Recovery Act (ISRA) project at the Oyster Creek site. Holtec staff provided an update on non-radiological and radiological issues, including decommissioning status, characterization planning, and license termination. The BER is the lead agency regarding the NJDEP's decommissioning activities at the Oyster Creek site.

Contacts: Karen Tuccillo (609) 984-7443

Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)

A staff member provided comments on the latest revision (Revision 2) to the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) manual. MARSSIM is a joint venture of the Department of Defense, Environmental Protection Agency, and the Nuclear Regulatory Commission and provides a nationally consistent consensus approach to conducting radiation surveys and investigations at sites with the potential for residual radioactive material. The comment period ended on February 11, 2022.

The Federal Register notice can be found at the following website, Federal Register :: Multi-Agency Radiation Survey and Site Investigation Manual, Revision 2; Reopening of the Comment Period

Comments can be found on the Regulations.Gov website at, https://www.regulations.gov/docket/EPA-HQ-OAR-2021-0276/comments

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

Effluent Release Data

The BNE monitors the effluents released from all four 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. 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).

On September 17, 2018, Oyster Creek ceased to generate power leading to a reduction in gaseous effluents. On September 25, 2018, the plant officially entered decommissioning.

In prior monthly reports, the BNE reported tritium results for a remedial pumping well that was part of the Oyster Creek liquid effluent groundwater extraction. In accordance with a NJDEP Directive and Notice to Insurers issued to Oyster Creek, former Oyster Creek owner Exelon Generation Corporation was required to clean up and remove tritium discharges released onsite from underground pipe leaks that occurred during 2009. With DEP approval, Exelon sampled

groundwater from a dedicated pumping well (MW-73), measuring the concentration of tritium in the extracted groundwater, and discharging it into the plant's intake structure. In a letter from the NJDEP to the HDI (current owner of Oyster Creek) Plant Manager of Oyster Creek on January 9, 2020, the DEP concurred that the Oyster Creek site had complied with the requirements outlined in paragraph 41 of the Directive and Notice to Insurers, thereby closing it out. Pumping Well MW-73 was placed out of service (Idle) and monitoring of this well was discontinued. Pumping has been terminated unless tritium activity is identified that would require restoration of groundwater extraction by returning MW-73 to service. Therefore, tritium results for pumping well MW-73 will no longer be reported by the BNE. While the pump and treat remediation of tritium has been completed, HDI continues onsite groundwater monitoring as part of their Radiological Groundwater Protection Program. Additional information on the Oyster Creek tritium leak is available at the DEP website, http://www.state.nj.us/dep/rpp/bne/octritium.htm.

In addition to groundwater monitoring, it is necessary for Oyster Creek to process and discharge liquid effluents as a necessary activity during decommissioning of the site and eventual license termination. Radioactive liquid effluent discharged due to decommissioning activities will be monitored by HDI.

The January 2022 gaseous and liquid effluent release data for the Salem and Hope Creek nuclear plants have been included in this report. In addition, the liquid effluent release data for the Oyster Creek site are contained herein. As of the drafting of this report, the gaseous tritium from the Oyster Creek site were not available. The data will be included in the March 2022 report which will be available in April 2022.

PSEG Nuclear
Radioactive Effluent Releases[1]
Nuclear Environmental Engineering Section
For the Period of 01-01-22 to 01-31-22

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0	Ci
Iodines	0.00055	Ci
Particulates	0.00002	Ci
Tritium	30.7	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.00257	Ci
Tritium	8.72	Ci

Salem Unit 1 Gaseous Effluents

Effluent		
Fission Gases	0.0232	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	0.144	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.00002	Ci
Tritium	20.3	Ci

Salem Unit 2 Gaseous Effluents

Effluent		
Fission Gases	0.0255	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	0.016	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.00008	Ci
Tritium	20.3	Ci

[1] Effluent releases are preliminary totals. The official radioactive effluent releases from each facility are contained in the licensee's "Annual Radioactive Effluent Release Report" and can be found on the USNRC website at, https://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-info.html. These reports are submitted annually by the licensee to the NRC by May 1st of the following calendar year.

Holtec Decommissioning International (HDI)
Radioactive Effluent Releases[2]
Nuclear Environmental Engineering Section
For the Period of 01-01-22 to 01-31-22

Oyster Creek Gaseous Effluents Elevated Releases			**Oyster Creek Gaseous Effluents Ground Releases**		
Effluent			Effluent		
Fission Gases	0	Ci	Fission Gases	0	Ci
Iodines	0	Ci	Iodines	0	Ci
Particulates	0	Ci	Particulates	0	Ci
Tritium	Not Available	Ci	Tritium	0	Ci

Holtec Decommissioning International (HDI)
Radioactive Effluent Releases
Nuclear Environmental Engineering Section
For the Period of 01-01-22 to 01-31-22

Oyster Creek Liquid Effluents

Effluent		
Fission Products	0.0000	Ci
Tritium	0.140	Ci

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

[2] Effluent releases are preliminary totals. The official radioactive effluent releases from each facility are contained in the licensee's "Annual Radioactive Effluent Release Report" and can be found on the USNRC website at, https://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-info.html. These reports are submitted annually by the licensee to the NRC by May 1st of the following calendar year.

D. NUCLEAR EMERGENCY PREPAREDNESS SECTION

Continuous Radiological Environmental Surveillance Telemetry System

Thirty-three 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 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 February:

Artificial Island CREST System Ambient Radiation Levels
February 2022 Derived From One Minute Averages
UNITS = mR/Hr

AI1	AI2	AI3	AI4	AI5
.0062	.0063	.0057	.0061	.0065
AI6	AI7	AI8	AI9	AI10
.0064	.0054	.0054	.0072	.0052

Oyster Creek CREST System Ambient Radiation Levels
February 2022 Derived From One Minute Averages
UNITS = mR/Hr

OC1	OC2	OC3	OC4
.0039	.0054	.0059	.0047
OC5	OC6	OC7	OC8
.0053	.0055	.0048	.0050
OC9	OC10	OC11	OC12
.0057	.0054	.0053	.0053
OC13	OC14	OC15	OC16
.0048	.0054	.0051	.0053

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

Meeting with PSEG Nuclear LLC Management

On February 2, 2022, Bureau of Nuclear Engineering staff met with PSEG Nuclear LLC management for their periodic update meeting. PSEG provided briefings on plant status for Salem and Hope Creek, refueling outages, New Jersey Wind Port Project, organizational changes, and pandemic response during the virtual meeting. The meetings are held on a periodic basis, sometimes quarterly or semi-annually, depending on the topics to be discussed. This allows BNE and its management chain to maintain good working relationships and interface with all levels of PSEG Nuclear management regarding operation of Salem 1 & 2 and Hope Creek Nuclear Generating Stations.

Contact: Ann Pfaff (609) 984-7451

Licensee EP Meeting

On February 14, 2022, NEPS staff held a virtual State and Licensee emergency preparedness meeting with PSEG and NJOEM. Discussion topics included: 2022 Exercise Schedule; logistics for the upcoming rehearsal exercise; emergency responder notification system; PSEG updates on the ongoing Wind Port installation; FEMA Radiological Emergency Preparedness (REP) Response Plan Workshop.

Contact: Ann Pfaff (609) 984-7451

Exercise Planning Conference for 2022 Federally Evaluated Exercise at Salem/Hope Creek

On February 14, 2022, Assistant Director Pat Mulligan and Manager Ann Pfaff attended the third meeting of the Exercise Planning Committee (EPC) for the Salem/Hope Creek federally evaluated exercise scheduled on May 10, 2022. FEMA Regions 2 and 3, State Police OEM, Delaware Emergency Management Agency, Salem and Cumberland Counties and PSEG were represented as the scope and extent of the exercise were discussed. Exercise timelines and submissions to FEMA were identified, as well as out-of-sequence demonstrations and extent of exercise participation. Potential impacts of COVID-19 were considered and will be based on conditions as of March 1st. The next EPC will be held in March, while development of the scenario and associated parameters continues with the State and licensee.

Contact: Ann Pfaff (609) 984-7451

FEMA REPP Learning Session

On February 9th and 16th, NEPS staff attended the FEMA REPP virtual presentations as part of the Radiological Emergency Preparedness Program (REPP) Learning Series hosted by the Federal Emergency Management Agency (FEMA). The presentations were the fourth and fifth of the series and covered policy updates regarding FEMA REP-21 and REP-22 and FEMA's GIS Initiative. Attendees had the opportunity to contribute comments, ask questions, voice concerns, and make recommendations regarding the topics presented. More information and related materials to this learning series can be found on the REPP Recovery Initiative Preparedness Toolkit community.

Contact: Ann Pfaff (609) 984-7451

Exercise Preparations

During February 2022, NEPS staff spent considerable time planning and preparing for the upcoming full scale rehearsal exercise on March 29 and the federally evaluated exercise on May 10, 2022. A review of all early phase SOPs was conducted, and revisions made to reflect new federal guidance and well as changes in BNE protocols. SOPs will be submitted to FEMA in advance of the exercise. Training sessions for all participants were planned and scheduled. Field monitoring teams have not participated in an exercise since February 2022, so instruments, procedures and new training equipment will be reviewed with team members in advance of March 29. Responders in all other facilities also will meet for review, refreshers and briefing by their respective leads.

Contact: Ann Pfaff (609) 984-7451

Scenario Working Group Meeting

On February 15th and 23rd, 2022, Assistant Director Pat Mulligan and Manager Ann Pfaff attended meetings of the Scenario Working Group to prepare for the March and May Hope Creek nuclear emergency response exercises. Representatives of New Jersey Office of Emergency Management (NJOEM), Delaware Emergency Management Agency (DEMA) and PSEG Nuclear discussed their organizations needs and preferences for timing and duration of release, wind speed and direction and offsite dose projections to satisfy FEMA, NRC and all offsite response organizations. The scenario synopses and associated Virtual Plumes simulation files will be developed by PSEG and shared with the NJOEM, BNE and DEMA for testing and evaluation in advance of both exercises.

Contact: Ann Pfaff (609) 984-7451

Quarterly Facility Inspections

In the month of February 2022, NEPS staff have begun inspections for the first quarter of 2022 to ensure they are in a state of readiness. Emergency facilities include the Emergency Operating Facility (EOF) in Salem County, and the Field Command Center (FCC) and Emergency Operating Center (EOC), both in Ewing, NJ. In the event of an emergency at any of the nuclear power plants, responders are dispatched to these facilities to monitor the event and work collaboratively to provide a Protective Active Recommendation (PAR) to the Governor if necessary.

Contact: Ann Pfaff (609) 984-7451