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

AUGUST 1 THROUGH AUGUST 31, 2022

SECTION I- OFFICE OF THE ASSISTANT DIRECTOR

Original signed by:

Patrick Mulligan

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 August 2, 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.

HDIAC Webinar: New Energy Sources; Clean and Economic Hydrogen Production from Subsurface

On August 10, Bureau staff participated in the HDIAC Webinar: New Energy Sources; Clean and Economic Hydrogen Production from Subsurface.

CRCPD H-11 Committee on Mammography, Monthly Technical Trends and Topics

On August 23, Bureau staff participated in the inaugural CRCPD H-11 Committee on Mammography conference call to discuss current issues and topics of mutual concern to State mammography compliance personnel.

New FDA Mammography Quality Standards Act (MQSA) Contract

On August 31, a new fully executed FDA Mammography Quality Standards Act (MQSA) contract was signed**.** The new five-and-a-half-year contract will be in effect from August 2022 through February 2028. The total number of annual MQSA inspections in the new contract is 245.

Contact: Arthur Robinson (609) 984-5634

B. REGISTRATION SECTION

Machine Source Registration and Renewal Fees

The Registration Section has begun invoicing the registrants for FY2023 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. In August, Facilities in the G-L group were invoiced their FY2023 annual registration fees.

Machine Source Fees Invoiced and Collected for FY 2023					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
$564,859.00	$561,802.00	$1,542,720.00	$1,036,773.00	$463.00	67%

Progress on Collection of FY 2023 Registration Renewal Fees

Renewal Groups	Paid 7/31/22	Paid 8/31/22	Paid 9/30/22	Paid 10/31/22	Paid 11/30/22	Paid 12/31/22	Paid 1/31/23	Paid 2/28/23	Paid 3/31/23	Paid 4/30/23	Paid 5/31/23	Paid 6/30/23
0-F	46%	77%	0	0	0	0	0	0	0	0	0	0
G-L	N/A	49%	0	0	0	0	0	0	0	0	0	0
M-R	N/A	N/A	0	0	0	0	0	0	0	0	0	0
S-Z	N/A	N/A	N/A	0	0	0	0	0	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, 27% percent paid on-line.

Monthly Machine Source Registration Activity FY 2023

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	19	22											41
Terminated Facilities	28	33											61
Net Change (Facilities)	-9	-11	0	0	0	0	0	0	0	0	0	0	-20
New Registrations	143	172											315
Stored Registrations	42	64											106
Disposed registrations	78	93											171
Net Change (Machines)	23	15	0	0	0	0	0	0	0	0	0	0	38

- 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 August 2022, IQ evaluations were performed on 144 x-ray units with the following results:

- 104 units (72%) had excellent image quality scores.
- 37 units (26%) had good image quality scores.
- 1 unit (1%) had a fair image quality score.
- 2 units (1%) had poor image quality scores.

Entrance Skin Exposures

Entrance skin exposure (ESE) is a measurement of the radiation exposure a patient receives from a single x-ray at skin surface. There are three main factors that affect ESE: technique factors, film-screen 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 August 2022, ESE measurements were calculated on 108 x-ray units that performed lumbo-sacral spine x-rays. One unit (1%) had extremely high ESE measurements.

- In August 2022, ESE measurements were calculated on 11 x-ray units that performed chest x-rays. Zero units (0%) had extremely high ESE measurements.

- In August 2022, ESE measurements were calculated on 25 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 like 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 August 2022, ESE measurements were calculated on 155 dental x-ray units that used DR digital imaging. Thirteen units (8%) were measured as having extremely high ESE.

- In August 2022, ESE measurements were calculated on 13 dental x-ray units that used CR (PSP) digital imaging. Two units (15%) were measured as having extremely high ESE.

- In August 2022, ESE measurements were calculated on 1 dental x-ray unit that used D speed film. Zero units (0%) were measured as having extremely high ESE.

- In August 2022, ESE measurements were calculated on 1 dental x-ray unit 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 August 2022, 42 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2023 is 83.

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 August. 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 2023 Invoiced & Collected				
Invoice Type	**Monthly Invoiced**	**Monthly Collected**	**Fiscal YTD Invoiced**	**Fiscal YTD Collected**
Examinations	$0	$0	$0	$0
Initial Licenses	$9,900	$9,300	$18,660	$18,480
Renewal Licenses*	$3,150	$5,760	$2,102,130	$7,650
Totals	$13,050	$15,060	$2,120,790	$26,130

*On July 27th, radiologic technologists were invoiced for their 2023-2024 license renewal. Invoices will be mailed in September 2022.

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 1 facility with a stereotactic/needle localization breast biopsy unit during the month of August. A total of 1 of the 57 planned stereotactic facility inspections have been performed since July 1, 2022.

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 no facilities in August. A total of 231 of the 233 facilities scheduled to be inspected under the contract that expired on August 20, 2022. The Section has received its new contract from the FDA (effective August 31, 2022) for the inspection of 245 facilities in FY2023.

Facility Non-compliance Discovered

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

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

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 August 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
August 2022

Bureau of X-Ray Compliance		
	Month	YTD
Compliance Inspections entered into NJEMS	118	182
Dental/CBCT Inspections entered into NJEMS	28	53

Notice of Violations	Closed	Open	Pending	Total	YTD
	14	3	10	27	42

Administrative Orders	Closed	Open	Pending	Total	YTD
	0	2	24	26	43

Notice of Prosecutions	Closed	Open	Pending	Total	YTD
	0	2	24	26	43

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
	$16,700.00	$27,800.00	$1,600.00	$14,950.00	$16,550.00

Contact: Ramona Chambus (609) 984-5370

INSPECTOR ACTIVITY REPORT

08/01/2022 THROUGH 08/31/2022

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	72	347		53
2	VIOLATION INSPECTION ON SITE	1	1		
11	INVESTIGATION	16			
12	STEREOTACTIC INSPECTION	1	1		
15	QA INSPECTION ROUTINE LEVEL 1	147	141	123	20
17	QA VIOLATION INSPECTION ON SITE	1	1		
22	NON-QA INSPECTION - HOSPITALS	2	5		3
28	DENTAL CBCT INSPECTION	8	44		3
	Total On-Site Inspections:	**248**	**540**	**123**	**79**
6	OFFICE VIOLATION RESPONSE REVIEW	14		23	
18	OFFICE QA VIOLATION RESPONSE REVIEW	13		13	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	9		10	
	Total Office Inspections:	**36**		**46**	**0**

Number of Enforcement Documents Issued

NOV	26
AO	27
NOP	24
Amount of Penalties	$19,100

08/01/2022 THROUGH 08/31/2022

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Cabinet			
C-006	17.7(c)	Requirements for film badges not met.	**2**
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**3**
CB-002	22.7(a)1	CBCT No QA Manual	**1**
CB-003	22.7(a)3	CBCT No MPQCS	**1**
CB-005	22.3(a)	No QA Program for CBCT	**2**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**3**
D-016	16.3(a)7	kVp exceeds manufacturer's specifications (certified unit).	**1**
D-023	16.3(a)14	Timer reproducibility exceeds 5% for certified unit	**1**
D-027	16.3(a)17	Radiation reproducibility exceeds 5% for certified unit	**1**
G			
G-007	2.5(c)	device not working properly	**1**
Radiographic			
R-049	15.3(g)4	kVp accuracy meets manufacture specs or 10% of indicated. Measured	**1**
R-326	15.10(b)1	Initial survey completed and submitted within 60 days	**1**
Registration			
REG1	3.1 (a) and (b)	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	**5**
Total Violations Cited Non-QA			**23**
Violations Cited QA			
Quality Assurance			
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**29**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**9**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**16**

08/01/2022 THROUGH 08/31/2022

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited QA			
Quality Assurance			
QA-038	22.6(a)3	No Med Phys QC Survey for Fluoro	**5**
QA-050	22.6(f)	Failed to immediately initiate steps to bring fluoroscopic equipment into	**1**
QA-063	22.7(a)2	QC tests from Table 3 (CT) not performed at the required intervals.	**1**
QA-097	22.8(f)1	Registrant failed to immediately initiate corrective action recommended	**2**
QA-124	22.9(f)1	Registrant failed to immediately initiate corrective action.	**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	**4**
Total Violations Cited QA			**69**
Total Violations			**92**

APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION
MONTH OF AUGUST 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	98	6	4	61	-	-	-	0	169	307	1,100
Licenses Renewed	22	3	1	26	-	-	-	-	52	65	N/A
Total Licensed	9,728	988	877	11,842	48	16	5	102	23,606	23,606	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	0	N/A
Investigations Conducted	1	-	-	1	-	-	-	-	2	5	30
Licenses Verified	156	13	5	158	-	-	-	-	332	654	7,000
Expired Licenses	-	-	-	1	-	-	-	-	1	1	N/A
Unlicensed	1	-	-	-	-	-	-	-	1	2	N/A
Enforcement Documents Issued	4	-	-	4	-	-	-	-	8	12	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	$1,300	-	-	$450	-	-	-	-	$1,750	$2,050	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	0	N/A
Approved Educational Schools	15	2	3	26	-	-	-	-	46	46	N/A
New School Application Evaluated	-	-	-	1	-	-	-	-	1	3	10
School Inspections Conducted	-	-	-	2	-	-	-	-	2	3	8
Total Schools Reviewed	-	-	-	3	-	-	-	-	3	6	18
Curriculum Modifications Evaluated	-	-	-	-	-	-	-	-	0	5	20
Clinical Applications Approved	5	-	-	63	-	-	-	-	68	144	1,100

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

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	0	0	0	0	0	
Machines Inspected	0	0	0	0	0	0	**245**
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	0	0	0	0	0	
Registered	0	1	0	0	1	1	
Canceled	0	1	0	0	0	0	
Stereotactic							
Facilities Inspected	0	0	1	0	1	1	**57**
Machines Inspected	0	0	1	0	1	1	
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	0	0	0	7	
Canceled	0	1	1	0	2	8	

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

The radon section continues to prepare for implementation of the newly adopted radon certification regulations. The section is developing a Frequently Asked Questions document to help provide clarity to many common questions received from the regulated community.

B. RADIOACTIVE MATERIALS PROGRAM

During the month of August 2022, the Radioactive Materials Program responded to two (2) radiation incidents:

Date	Type of Incident	Description	Status
8/10/22	Trash	BER was notified by the PADEP that a roll off container containing non-friable asbestos roofing material from a marina set off the radiation alarm at a landfill in PA. Personnel at the landfill identified Ra-226. The load was rejected and returned to the marina. Incident under investigation.	Pending
8/16/22	Scrap	BER was notified that a railcar load of scrap metal from a scrap dealer in PA was rejected at a steel mill in Sayreville. The load was returned to its origin in PA. PADEP was informed, as well as radiation control officials in New York state and Ohio, since the load would be traveling through those states during its return journey.	Closed

Contact: Nancy Stanley (609) 984-5452

Training

Nancy Stanley and Karen Flanigan of the BER attended FEMA's PER-388, Radiological Operations Support Specialist (ROSS) training. This week-long course is the first step to becoming a candidate for the position of a ROSS. This is a National Incident Management System (NIMS) Typed position. Candidates who complete the process will then be qualified, certified, and credentialed and will be able to provide subject matter expertise during a radiological incident to a variety of entities such as on-scene responders, public information officers, command staff at an EOC, incident safety managers, and as scientific advisors to elected officials.

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 7/1/22-7/31/22	FY-To-Date 7/1/22-7/31/22
Number of Amendments Processed	20	32
Number of Renewals Processed	7	15
Number of Initial Applications Processed	2	5
Number of Active Licenses	561	562
Number of Terminations	1	1
Number of Reciprocity Requests Received	32	58
Number of Incidents	2	4
Number of Inspections	6	22

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. Fifty-four (54) sources on the databases were verified during August. Staff continues to maintain entry of quarterly reports from manufacturers and distributors into the generally licensed database. Nine reports were received reflecting quarterly transactions. Generally Licensed Device Registration Forms continue to be maintained. A total of forty-seven (47) registrations are currently active.

Contact: Sarah Sanderlin (609) 984-5466

D. SUMMARY OF ENFORCEMENT – AUGUST 2022

Bureau of Environmental Radiation – By Month (8/1/2022 -8/31/2022)				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	2	2
Radon Section	0	0	4	4
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	1	1
Radon Section	0	0	1	1
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	2	3	5

Radon Section	0	0	2	2
Bureau of Environmental Radiation – Fiscal Year to Date 7/1/2022 - 8/31/2022				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	1	2	3
Radon Section	0	0	4	4
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	1	1
Radon Section	1	0	1	1
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	2	3	5
Radon Section	0	0	2	2
Amount Assessed in Penalties = FY				
	Total Amount Assessed for FY23	Amount Collected from Current FY23	Amount Collected from FY22	Total Amount Collected (FY22+FY23)
Radioactive Materials Section	$0.00	$0.00	$6,250.00	$6,875.00
Radon Section	$0.00	$0.00	$300.00	$300.00
Amount Assessed in Penalties = By Month				
	Total Amount Assessed for 8/1/2022 - 8/31/2022		Amount Collected from 8/1/2022 - 8/31/2022	
Radioactive Materials Section	$0.00		$0.00	
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)

There are currently twenty-three (23) active specific licenses for water treatment systems and eighteen (18) active general license registrations for water treatment systems (13 radium systems and 5 uranium systems). Staff completed review of 1 routine submittal of dosimetry/discharge/resin analysis data per specific license conditions. Two routine inspections of specifically licensed water treatment systems were conducted.

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff completed review of 8 technical reports/referrals. Staff performed a site visit at Howmet in Dover. Staff worked on the following sites/projects:

- City of Vineland Water Utility
- Heritage Minerals in Manchester
- Howmet in Dover
- Kintock in Newark
- Maywood FUSRAP Site
- Middlesex Municipal Landfill
- MEL Site in Kingwood
- National Lead site in Sayreville Oraton Parkway Exxon Site in East Orange
- Passaic County Technical Institute in Wayne
- Shieldalloy in Newfield
- Welsbach in Camden

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

F. RADON SECTION

Radon Rule

Applications for initial certified under the new regulations are being logged and the review process will begin shortly. The database contractor continues to develop the database to handle the new regulation requirements. Staff responds to all emails and phone calls to educate individuals and businesses about the requirements of the new regulations and to address questions and issues that arise regarding implementation. In addition, a list of frequently asked questions and a list of approved training courses are being prepared to assist professionals and businesses.

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

SECTION IV – BUREAU OF NUCLEAR ENGINEERING (BNE)

A. OFFICE OF THE BUREAU CHIEF

Significant Events

None

B. NUCLEAR ENGINEERING SECTION

Oyster Creek – Decommissioning

Oyster Creek is currently in the DECON mode of decommissioning.

Reactor Vessel: Removal and segmentation of the heat shield and head are complete.

Segmentation of the internals is in progress and is approximately 85% complete. Major items completed: segmentation of the steam dryer, steam separator, top guide tubes, and upper shroud; removal of the internal piping and control rod guide tubes. Segmentation of the control rod guide tubes is in progress. Cleaning of the lower core plate is complete. Removal of the lower core plate for segmentation is in progress.

Drywell: Removal and segmentation of the concrete shield plugs and head have been completed.

Spent Fuel Pool: All spent fuel assemblies have been removed from the spent fuel pool and transferred to the Independent Spent Fuel Storage Installation (ISFSI). Cleanup of the pool is complete and all spent fuel racks have been removed.

Spent Fuel Dry Cask Storage: There are a total of 33 spent fuel dry storage casks on the ISFSI pad. No additional casks will be required. The casks at the ISFSI are awaiting transport to either an interim storage or permanent disposal location when such location becomes available.

Greater-Than-Class-C (GTCC) Radioactive Waste: There are a total of four GTCC storage casks on the ISFSI. 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.

Structures and Miscellaneous Equipment: At least thirty-six of forty-five structures have been demolished and shipped offsite. The original site water tank, a demineralized water storage tank, and a lube oil tank have been dismantled and shipped 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.

Eight power transformers have been removed from the site. All reactor control rod hydraulic control units and associated components have been dismantled. The operations training simulator has been dismantled and removed. Decontamination of the new radwaste building/equipment is in progress. Decontaminated equipment is being packaged and shipped offsite to be buried at low-level radioactive burial sites. Core boring in preparation for demolition of the new radwaste building is in progress

Contact: Veena Gubbi (609) 984-7457

BNE Activities at Oyster Creek

None during August.

Hope Creek

Hope Creek ran at essentially full power through August 14th, with the following exceptions: from August 3rd through August 11th, power was reduced to a range of approximately 94% - 99% due to atmospheric conditions affecting the efficiency of the cooling tower. On August 15th, Hope Creek began the end-of-cycle (EOC) power coast-down. The coast-down will continue until the beginning of Hope Creek's twenty-fourth fueling outage (H1R24) scheduled to start September 28, 2022.

Contact: Veena Gubbi (609) 984-7457

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout August.

Contact: Jacob Fakory (609) 984-7458

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout August.

Contact: Jacob Fakory (609) 984-7458

BNE Activities at Artificial Island

None during August.

NES Staff Attends Quarterly Status Meeting with Holtec

On August 8th, the Assistant Director of the Radiation Protection Element, the BNE Manager, the BNE NES Supervisor, and one NES 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, wastewater processing and licensing activities. Holtec stated that it continues to brief the local community through scheduled meeting.

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

NRC Holds Exit Meeting for the Design Bases Assurance Inspection (DBAI) of Power-Operated Valves (POVs) at Hope Creek

During the weeks of July 11th and 25th, the NRC performed a DBAI at Hope Creek in accordance with Inspection Procedure 71111.21N, "Design-Basis Capability of Power Operated Valves under 10CFR 50.55A Requirements". The exit meeting was held on August 3rd. The results of the inspection will be documented in NRC Report 2022-012 for Hope Creek which will be available to the public within forty-five (45) days following the NRC exit meeting.

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

NRC Performs Cyber Security Inspection at Hope Creek

On August 29th to September 2nd, the NRC performed a Cyber Security Inspection at Hope Creek in accordance with Inspection Procedure 71130.10, "Cybersecurity". Due to the security nature of the inspection, details are not included in this report.

Contact: Veena Gubbi (609) 984-7457

Salem 1 & 2 Radioactive Gaseous and Liquid Effluent Treatment Inspection

On August 22nd thru 26th, the NRC performed a Radioactive Gaseous and Liquid Effluent Treatment Inspection at Salem 1 & 2. 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 Salem procedures; 3) Salem'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."

This was a hybrid inspection consisting of both onsite and remote inspection activities.

Contact: Jacob Fakory (609) 984-7458

NES Staff Attends NRC Teleconferences/Webinars

NRC Meeting to Discuss Licensing Schedule and Technical Aspects of the Electric Power Research Institute's (EPRI's) use of its Proposed Alternative Licensing Strategy (ALS)

On August 30th, the NRC held a Pre-Submittal Meeting with EPRI to discuss the use of the ALS to address Loss-of-Coolant Accident (LOCA) induced Fuel Fragmentation, Relocation and Dispersal (FFRD). The meeting consisted of two sessions that included speakers from external stakeholders. The initial part of the meeting was open to all public members while the second part was a closed meeting due to proprietary information being discussed. Representatives of EPRI provided to the NRC a generic method to address PWR LOCA induced FFRD in an expeditious manner. EPRI also provided the ALS approach for addressing FFRD in high burnup PWR fuel. Westinghouse and Framatome representatives provided their perspective on supporting the EPRI effort.

Following the presentation, the EPRI and industry speakers addressed questions/concerns from the NRC staff.

Contact: 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 (Nuclear Regulatory Commission, Department of Transportation, Federal Railroad Administration, 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.

On August 24th, the NTSF Planning Committee held a virtual meeting. Planning for the 2023 Annual NTSF Meeting to be held in St. Louis has been started and will continue monthly. Meeting session lengths were discussed as a lessons-learned from the 2022 annual meeting. In addition to the 2023 discussions, status reports were presented for the Ad Hoc Working Groups (Rail/Routing, Spent Fuel Transportation Materials and 180(c)). Upcoming NTSF webinars and schedules were also discussed.

Contact: Jerry Humphreys (609) 984-7469

Community Engagement Panel (CEP) at Southern California Edison's (SCE) San Onofre Nuclear Generating Station (SONGS) Holds Public Meeting

The SONGS CEP serves as a conduit for public information and encourages community involvement and communication with the SONGS co-owners on matters related to SONGS decommissioning. The CEP holds public meetings at least four times per year.

On August 19th, the SONGS CEP held a virtual meeting. A representative from the Action for Spent Fuel Solutions Now (ASFSN) coalition briefed the CEP on DOE's request for information for consent-based citing for an interim storage facility. The ASFSN representative also described proposed legislation in Congress that would authorize work on a new federal spent fuel repository using a consent-based process. A representative from SONGS Decommissioning Solutions (SDS) provided an overview on the decommissioning progress; dismantlement plan and timeline; railyard progress; reactor head shipment to Utah; reactor vessel internal segmentation for both Units 2 & 3; dismantling of Units 2 & 3's turbine buildings; waste management, packaging, and transportation; environmental stewardship and mitigation measures. Following the presentations, questions from the panel members were addressed. After the panel discussion, questions from the public were addressed by the various organization representatives.

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 August 2022:

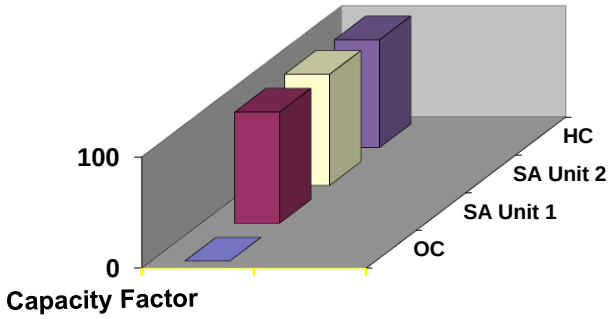
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	1	0

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

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – August 2022

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR AUGUST 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.

	AUGUST 2022		JAN - AUG 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 83 samples during the month of August 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 AUGUST 2022

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	29
AIR IODINE	12
AIR PARTICULATE COMPOSITE	13
MILK (Cow)	3
SURFACE WATER	7
AQUATIC BIOTA	2
AQUATIC SEDIMENT	5
VEGETABLE	12
TOTAL SAMPLES	83

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

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

NEES staff reviewed PSEG's Site-wide Tritium Management Program Quarterly Data Report for the second quarter of 2022. Trending graphs and tables were prepared for tritium results from seventy-nine (79) monitoring wells, monthly Seismic Gap drain tritium and gamma results for Salem Units 1 & 2, and weekly Spent Fuel Pool tritium results for Salem Units 1 & 2.

During the month of August 2022, 21 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

Radioanalytical Laboratory Services

A Direct Purchase Authorization (DPA) was awarded to General Laboratories, LLC (GEL) for radioanalytical laboratory services so that the BNE can continue analyses of environmental samples. In addition to being advertised on the DEP's website on July 14, 2022, four (4) labs were directly notified of the solicitation. Two (2) of the four (4) labs responded that they were not submitting a proposal. A third lab confirmed receipt of the notification but did not submit a proposal. GEL was the sole responsive bidder for the Non-Water and Water Sample Analysis Bid for the Radiation Protection solicitation. The GEL DPA will expire in 18 months, after which a new DPA will be advertised on the DEP's website.

Contact: Karen Tuccillo (609) 984-7443

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 and reported in the licensee's "Annual Radiological Effluent Release Report". This report can be found on the USNRC website at: https://www.nrc.gov/reactors/operating/ops-experience/tritium/plant-info.html.

There were no controlled liquid effluent releases from Oyster Creek during the month of July 2022. Beginning in 2022, gaseous effluent data from Oyster Creek are reported by the licensee on a quarter-annual basis. The gaseous effluent data for the period from January through June 2022 were not available at the drafting of this report. However, the data shall be included in the BNE's September 2022 monthly report.

The June 2022 gaseous and liquid effluent release data for the Salem and Hope Creek nuclear plants have been included in this report. The BNE will now report PSEG Nuclear effluent release data with a two (2) month delay to allow the licensee to verify and validate effluent data from all three (3) nuclear plants (Hope Creek, Salem Unit 1, and Salem Unit 2).

PSEG Nuclear
Radioactive Effluent Releases[1]
Nuclear Environmental Engineering Section
For the Period of 06-01-22 to 06-30-22

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0	Ci
Iodines	0.00020	Ci
Particulates	0.000013	Ci
Tritium	18.6	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.000404	Ci
Tritium	12.5	Ci

Salem Unit 1 Gaseous Effluents

Effluent		
Fission Gases	0.0118	Ci
Iodines	0	Ci
Particulates	0.000004	Ci
Tritium	20.6	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.000076	Ci
Tritium	10.3	Ci

Salem Unit 2 Gaseous Effluents

Effluent		
Fission Gases	0.0318	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	13.2	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.000255	Ci
Tritium	22.4	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 07-01-22 to 07-31-22[3]

Oyster Creek Liquid Effluents

Effluent		
Fission Products	No Release	Ci
Tritium	No Release	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.
[3] There were no scheduled controlled liquid discharges during the month of July 2022

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 August:

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

AI1	AI2	AI3	AI4	AI5
.0064	.0066	.0075	.0065	.0066
AI6	AI7	AI8	AI9	AI10
.0068	.0057	.0055	.0075	.0052

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

OC1	OC2	OC3	OC4
.0038	.0053	.0057	.0048
OC5	OC6	OC7	OC8
.0053	.0055	.0046	.0050
OC9	OC10	OC11	OC12
.0057	.0093	.0057	.0055
OC13	OC14	OC15	OC16
.0053	.0053	.0050	.0054

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

Salem Quarterly Exercise

On August 17, 2022, Bureau of Nuclear Engineering staff participated in Salem Unit 2's quarterly nuclear emergency response exercise. Together with State Police Office of Emergency Management, Delaware Emergency Management Agency and PSEG Nuclear staff, participants responded to a simulated loss of offsite power event at the nuclear plant. The Emergency Operations Facility, State Emergency Operations Center and Joint Information Center were staffed for the response, while a simulated Field Command Center and two simulated field monitoring teams provided offsite monitoring data. The scenario was unusual in that it did not escalate to a General Emergency and no offsite release of radiation occurred. This prompted players to spend drill time considering potential consequences and resolutions while waiting for an expected escalation that did not occur. FEMA and NRC encourage realistic scenarios that deviate from predicated sequences, so this provided some novel exercise discussions that were welcomed by players.

Contact: Ann Pfaff (609) 984-7451

Quarterly Facility Inspections

In the month of August 2022, NEPS staff have continued emergency response facility inspections for the third quarter of 2022 to ensure they are in a state of readiness and in preparation for the August 17th exercise. Emergency facilities include the Emergency Operating Facility (EOF) in Salem County, Field Command Center (FCC) and Emergency Operating Center (EOC) in Ewing and West Trenton, NJ, respectively. 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

NRC Meeting

On August 24, 2022, the BNE Manager attended a virtual Government-to-Government meeting hosted by the Nuclear Regulatory Commission (NRC) discussing Staff's recommendation to the Commission for a proposed regulatory framework for fusion facilities. The Nuclear Energy Innovation and Modernization Act directed the NRC to develop the regulatory infrastructure to support the development and commercialization of advanced nuclear reactors, which, by definition, includes fusion reactors. In SRM-SECY-20-0032, the Commission directed the staff to provide options for Commission consideration in 2022 on licensing and regulating fusion energy systems. The meeting provided the staff's preliminary assessments and activities to inform and develop the possible regulatory approaches for fusion facilities.

Contact: Ann Pfaff (609) 984-7451

NRC Meeting

On August 24, 2022, the BNE Manager attended a Nuclear Regulatory Commission (NRC) public meeting discussing source terms and radiological consequence analyses associated with evaluating design basis accidents at nuclear power reactors. NRC staff presented and discussed the SAND2011-0128 Report on Source Term, prepared by Sandia National Laboratory. Its objective was to define a representative source term to the containment for evaluation of defense-in-depth capabilities. Source term is considered in dose assessment modeling as part of the BNE's response to a nuclear power plant event. Understanding their composition and behavior is critical to BNE's dose assessors and nuclear engineers.

Contact: Ann Pfaff (609) 984-7451