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

SEPTEMBER 1 THROUGH SEPTEMBER 30, 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

BXC Staff Attend Webinars

Staff participated in the following online webinars and teleconference:

- September 1: International Atomic Energy Agency (IAEA) webinar, "Person-Specific Organ Dosimetry in Radiation Protection: Do We Have the Necessary Computational Tools for a Paradigm Change".
- September 15: Food and Drug Administration (FDA) 50-State Conference Call/Webinar, "FDA Transition to ORA Learned Learning Management System".
- September 20: IAEA WINIS Webinar Series, **"**Education as a Key to Addressing the Gender Equality Gap in Global Nuclear Security".
- September 20: US Department of Health and Human Services National Practitioner Data Bank, "Clinical Privileges Reporting Scenarios Webinar".

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 September, Facilities in the M-R 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
$799,998.00	$512,055.00	$2,339,903.00	$1,615,847.00	$471.00	69%

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%	88%	0	0	0	0	0	0	0	0	0
G-L	N/A	49%	77%	0	0	0	0	0	0	0	0	0
M-R	N/A	N/A	44%	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	23										64
Terminated Facilities	28	33	21										82
Net Change (Facilities)	-9	-11	2	0	0	0	0	0	0	0	0	0	-18
New Registrations	143	172	138										453
Stored Registrations	42	64	47										153
Disposed registrations	78	93	76										247
Net Change (Machines)	23	15	15	0	0	0	0	0	0	0	0	0	53

- 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 in order to achieve high quality diagnostic x-ray images while simultaneously maintaining/reducing patient radiation exposure to acceptable levels. As part of the Bureau's inspections, image quality and patient radiation exposure metrics are gathered and evaluated as an indicator of facility performance. These measurables are reported to the facility along with the results of similar facilities performing similar x-ray studies.

Image Quality

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

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

In September 2022, IQ evaluations were performed on 103 x-ray units with the following results:

- 84 units (82%) had excellent image quality scores.
- 19 units (18%) had good image quality scores.
- 0 units (0%) had a fair image quality score.
- 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 September 2022, ESE measurements were calculated on 75 x-ray units that performed lumbo-sacral spine x-rays. Zero units (0%) had extremely high ESE measurements.
- In September 2022, ESE measurements were calculated on 16 x-ray units that performed chest x-rays. Zero units (0%) had extremely high ESE measurements.
- In September 2022, ESE measurements were calculated on 12 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 September 2022, ESE measurements were calculated on 186 dental x-ray units that used DR digital imaging. Four units (2%) were measured as having extremely high ESE.
- In September 2022, ESE measurements were calculated on 13 dental x-ray units that used CR (PSP) digital imaging. One unit (8%) was measured as having extremely high ESE.
- In September 2022, ESE measurements were calculated on 3 dental x-ray unit that used D speed film. Zero units (0%) were measured as having extremely high ESE.
- In September 2022, ESE measurements were calculated on 6 dental x-ray unit that used E/F, F, or Insight speed film. One unit (17%) was 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 September 2022, 71 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2023 is 154.

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 September. Statistical information follows in Appendix A of this report.

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	$8,160	$6,780	$26,820	$27,060
Renewal Licenses*	$3,510	$425,520	$2,105,640	$444,960
Totals	$11,670	$432,300	$2,132,460	$472,020

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

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 3 facilities with a stereotactic/needle localization breast biopsy unit during the month of September. A total of 4 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 27 facilities in September. A total of 27 of the 245 facilities scheduled to be inspected under the contract that expires on August 20, 2023. There was 1 facility found to have a non-compliance issue.

Facility Non-compliance Discovered

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

There was one facility with **Level 2** non-compliances.

- Failed to produce documents verifying that radiologic technologist met the continuing experience requirement of having performed 200 mammography examinations in 24 months.

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 September 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
September 2022

Bureau of X-Ray Compliance		
	Month	**YTD**
Compliance Inspections entered into NJEMS	84	266
Dental/CBCT Inspections entered into NJEMS	64	117

Notice of Violations	**Closed**	**Open**	**Pending**	**Total**	**YTD**
	8	0	6	14	56

Administrative Orders	**Closed**	**Open**	**Pending**	**Total**	**YTD**
	0	0	26	26	69

Notice of Prosecutions	Closed	Open	Pending	Total	YTD
	0	0	25	25	68

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
	$10,100.00	$37,900.00	$15,200.00	$19,900.00	$35,100.00

INSPECTOR ACTIVITY REPORT

09/01/2022 THROUGH 09/30/2022

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	68	212		14
11	INVESTIGATION	8			
12	STEREOTACTIC INSPECTION	3	3		
15	QA INSPECTION ROUTINE LEVEL 1	78	98	123	4
22	NON-QA INSPECTION - HOSPITALS	3	14		2
28	DENTAL CBCT INSPECTION	20	95		9
	Total On-Site Inspections:	**180**	**422**	**123**	**29**
6	OFFICE VIOLATION RESPONSE REVIEW	12		13	
7	OFFICE RADIATION SAFETY SURVEY	1		1	
18	OFFICE QA VIOLATION RESPONSE REVIEW	19		23	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	5		5	
	Total Office Inspections:	**37**		**42**	**0**

Number of Enforcement Documents Issued

NOV	14
AO	15
NOP	14
Amount of Penalties	$15,900

09/01/2022 THROUGH 09/30/2022

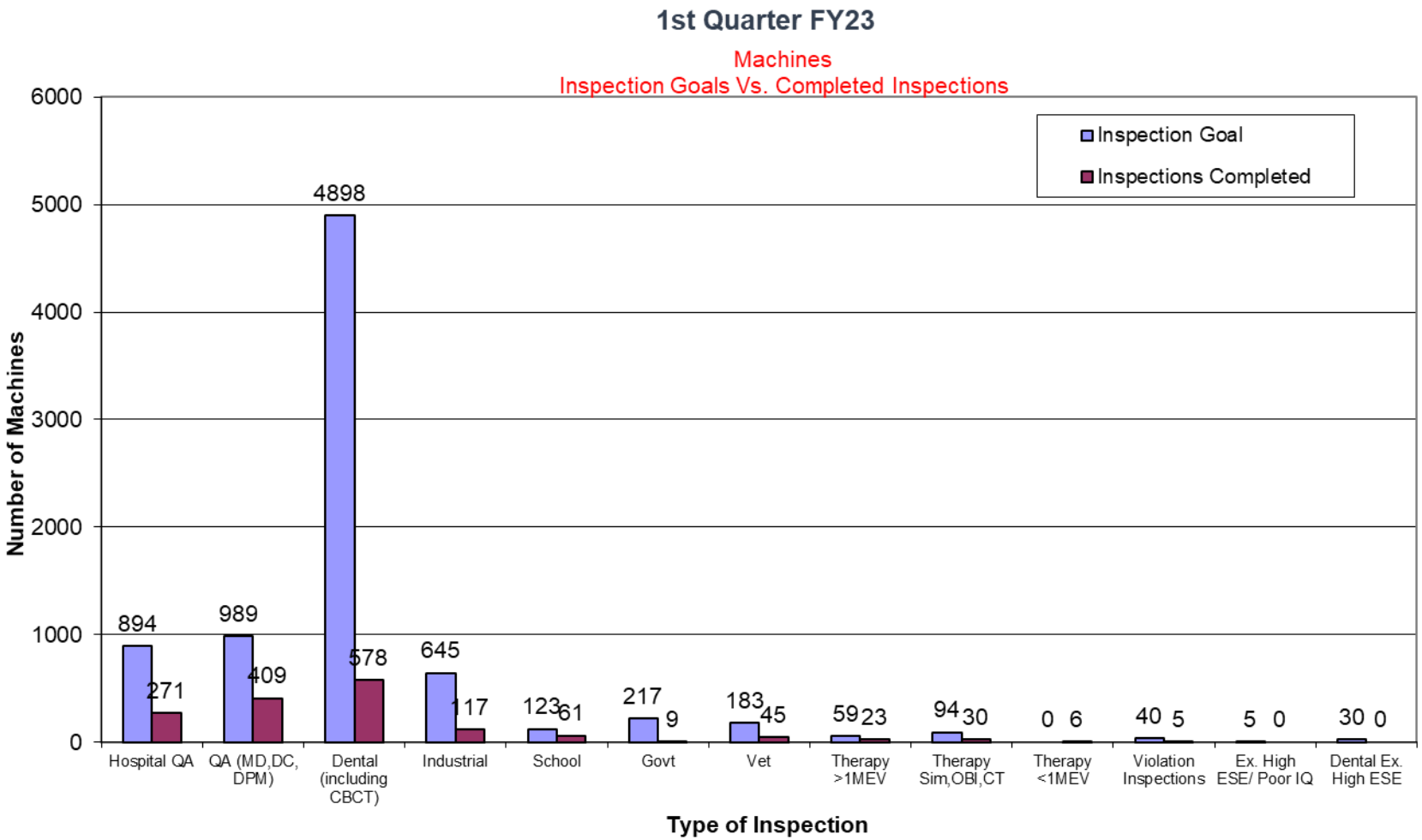
Inspector: ALL
Discipline: ALL

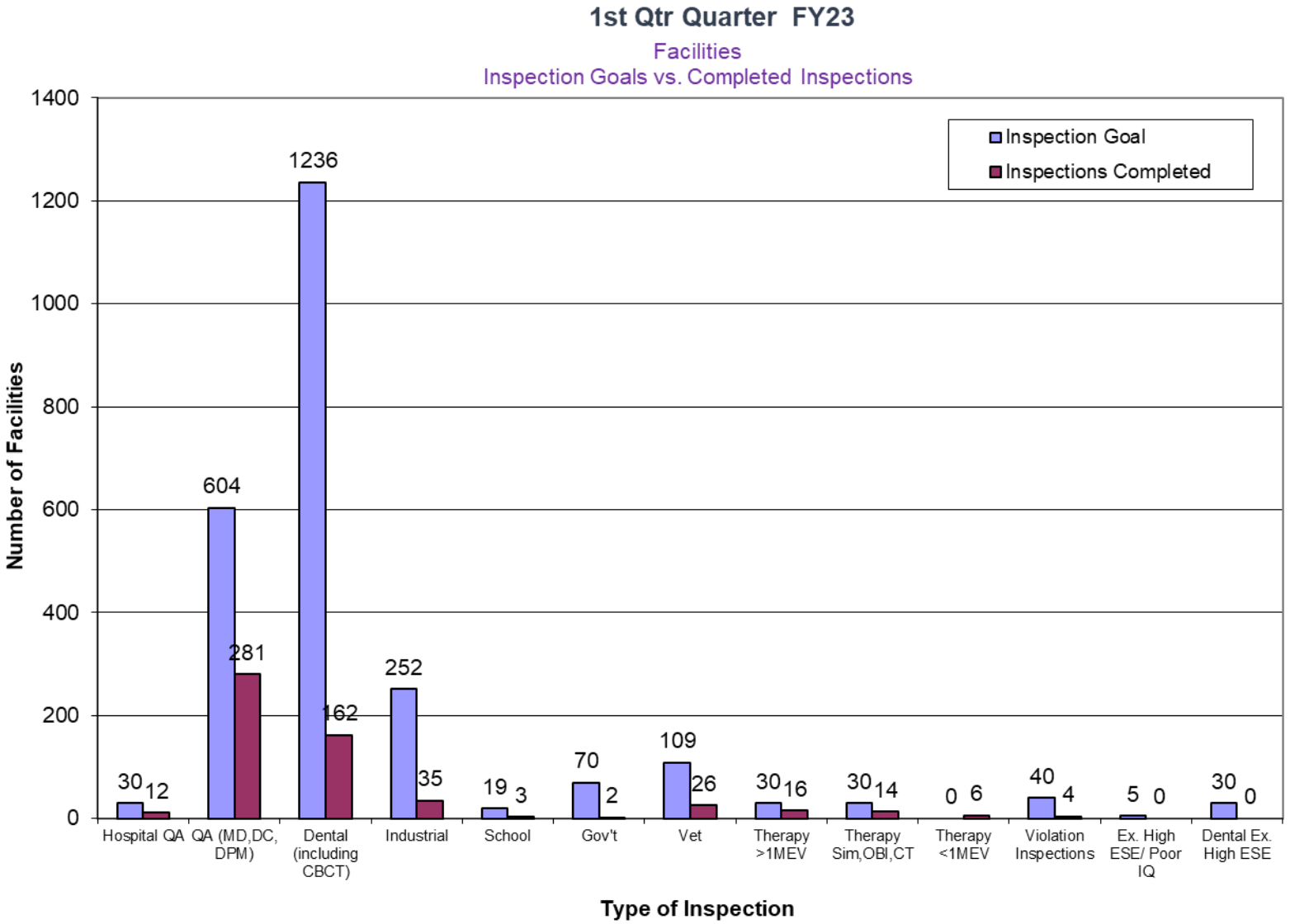
Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Cabinet			
C-002	17.7(e)	Requirements for surveys not met:	**1**
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**6**
CB-003	22.7(a)3	CBCT No MPQCS	**2**
CB-005	22.3(a)	No QA Program for CBCT	**1**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**6**
D-016	16.3(a)7	kVp exceeds manufacturer's specifications (certified unit).	**1**
D-025	16.3(a)16	Timer accuracy exceeds manufacture'rs specifications (certified units).	**1**
Radiographic			
R-021	15.3(d)3	SID indicated to within 2% (fixed SID has permanent marking)	**1**
RA			
RA-200	15.4(e)	Operating federally regulated mammography equipment with no accreditation by the American College of Radiology.	**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			**25**
Violations Cited QA			
Quality Assurance			
QA-009	22.3(a)	Failed to develop and continuously implement QA program.	**2**
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**9**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**4**
QA-027	22.5(g)	Failed to immediately initiate corrective action. Following item in table 1 was out of compliance:	**2**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**2**

09/01/2022 THROUGH 09/30/2022

Inspector: ALL
Discipline: ALL

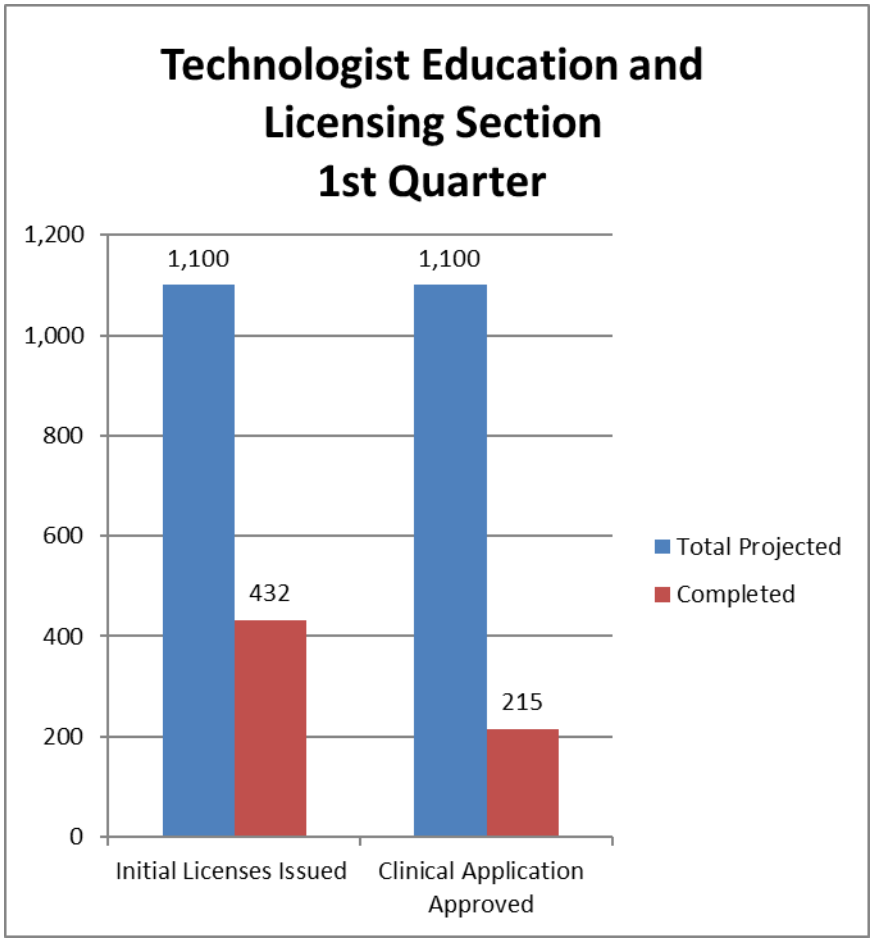
Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited QA			
Quality Assurance			
QA-063	22.7(a)2	QC tests from Table 3 (CT) not performed at the required intervals.	**4**
QA-064	22.7(a)3	No Med Phys QC Survey for CT	**1**
QA-180	22.7(j)3	All images for QC tests for items 6, 7 & 8 maintained for one year	**2**
Total Violations Cited QA			**26**
Total Violations			**51**

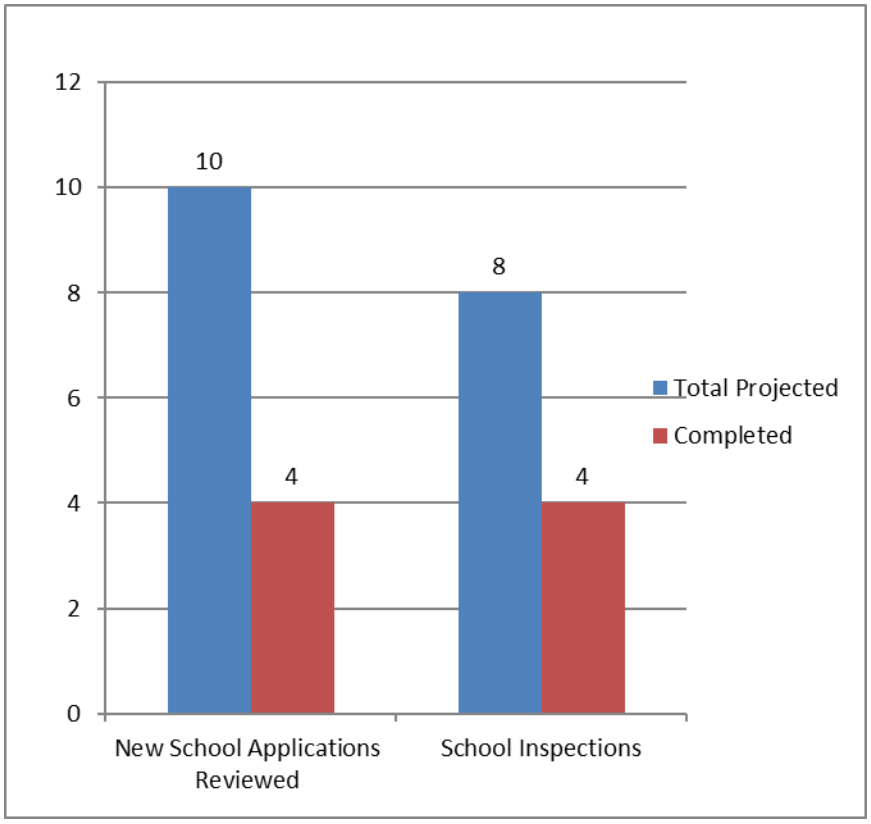

1st Quarter FY23
Machines
Inspection Goals Vs. Completed Inspections
Inspection Goal
Inspections Completed
Number of Machines
6000
5000
4000
3000
2000
1000
0
894
271
989
409
4898
578
645
117
123
61
217
9
183
45
59
23
94
30
0
6
40
5
5
0
30
0
Hospital QA
QA (MD,DC, DPM)
Dental (including CBCT)
Industrial
School
Govt
Vet
Therapy >1MEV
Therapy Sim,OBI,CT
Therapy <1MEV
Violation Inspections
Ex. High ESE/ Poor IQ
Dental Ex. High ESE
Type of Inspection


1st Qtr Quarter FY23
Facilities
Inspection Goals vs. Completed Inspections
Inspection Goal
Inspections Completed
Number of Facilities
1400
1200
1000
800
600
400
200
0
30
12
604
281
1236
162
252
35
19
3
70
2
109
26
30
16
30
14
0
6
40
4
5
0
30
0
Hospital QA
QA (MD,DC, DPM)
Dental (including CBCT)
Industrial
School
Gov't
Vet
Therapy >1MEV
Therapy Sim,OBI,CT
Therapy <1MEV
Violation Inspections
Ex. High ESE/ Poor IQ
Dental Ex. High ESE
Type of Inspection

APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION
MONTH OF SEPTEMBER 2022

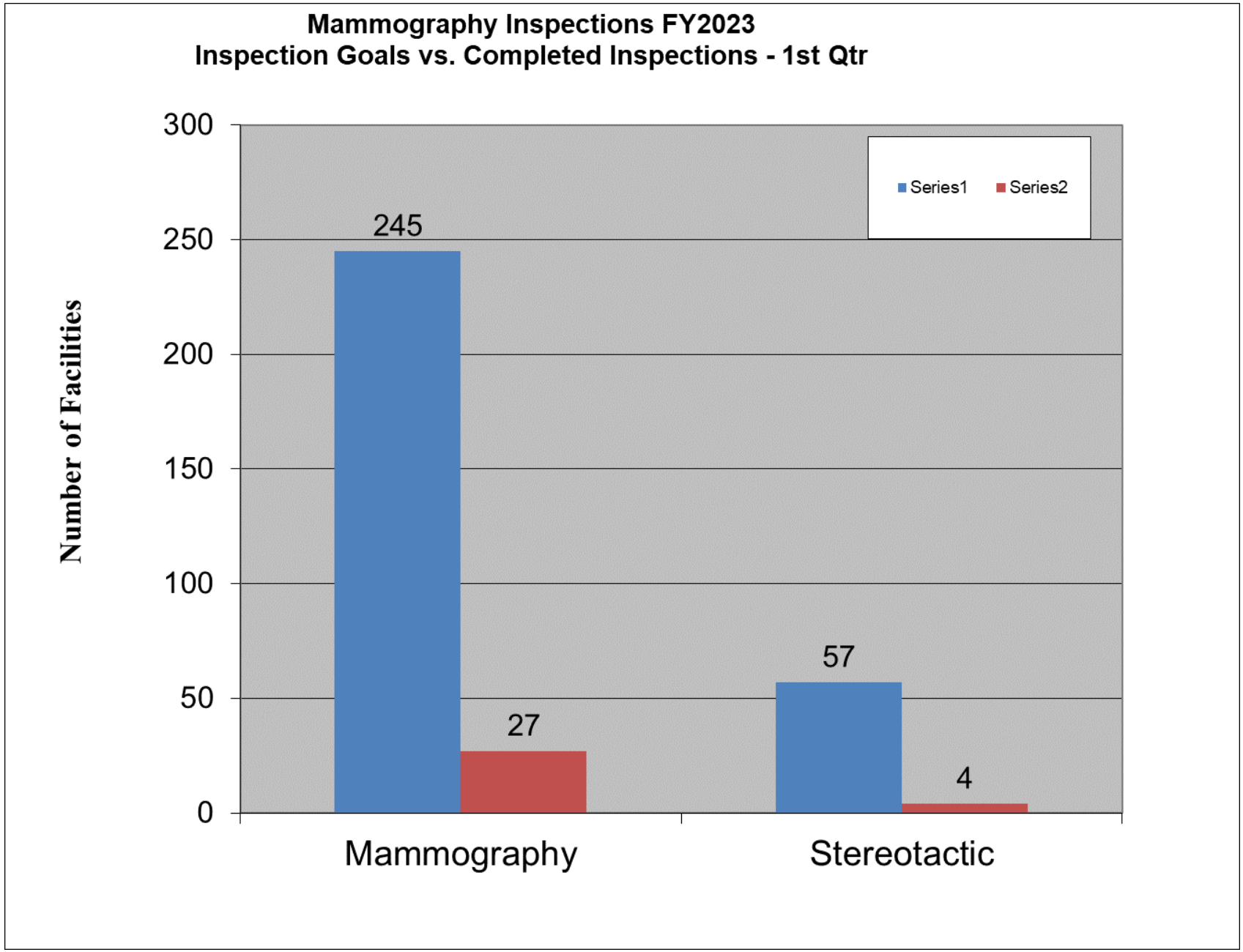
License Category	Diagnostic Rad	Nuc Med	Rad Therapy	Dental Rad	Chest Rad	Podiatric Rad	Orthopedic Rad	Fusion Imaging CT	Monthly Total	FY to Date	FY Projected
Initial Licenses Processed	94	6	10	52	-	-	-	1	163	432	1,100
Licenses Renewed	2,889	268	344	1,285	13	3	1	32	4,835	4,877	N/A
Total Licensed	9,799	992	892	11,897	48	16	5	103	23,752	23,752	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	0	N/A
Investigations Conducted	1	-	2	0	-	-	-	-	3	10	30
Licenses Verified	72	13	5	90	-	-	-	-	180	843	7,000
Expired Licenses	-	-	-	1	-	-	-	-	1	3	N/A
Unlicensed	3	-	-	-	-	-	-	-	3	5	N/A
Enforcement Documents Issued	12	-	-	4	-	-	-	-	16	32	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	$4,350	-	-	$450	-	-	-	-	$4,800	$6,850	N/A
Licenses Sanctioned	-	-	-	1	-	-	-	-	1	1	N/A
Approved Educational Schools	15	2	3	26	-	-	-	-	46	46	N/A
New School Application Evaluated	1	-	-	-	-	-	-	-	1	4	10
School Inspections Conducted	-	-	-	-	-	-	-	-	0	4	8
Total Schools Reviewed	1	-	-	-	-	-	-	-	1	8	18
Curriculum Modifications Evaluated	-	-	-	3	-	-	-	-	3	8	20
Clinical Applications Approved	7	-	-	63	-	-	-	-	70	215	1,100


Technologist Education and Licensing Section
1st Quarter
1,200
1,000
800
600
400
200
0
1,100
1,100
432
215
Initial Licenses Issued
Clinical Application Approved
Total Projected
Completed


12
10
8
6
4
2
0
10
4
8
4
Total Projected
Completed
New School Applications Reviewed
School Inspections

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

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	22	5	0	27	27	
Machines Inspected	0	29	9	0	38	38	**245**
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	0	0	0	0	0	
Registered	0	3	2	0	5	5	
Canceled	0	3	1	0	0	0	
Stereotactic							
Facilities Inspected	0	1	2	0	3	4	**57**
Machines Inspected	0	1	2	0	3	4	
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	0	1	0	1	7	


Mammography Inspections FY2023
Inspection Goals vs. Completed Inspections - 1st Qtr
Number of Facilities
300
250
200
150
100
50
0
Series1
Series2
245
27
57
4
Mammography
Stereotactic

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

September is Emergency Preparedness Month. This year, staff of the BER were able to secure advertising on the PATH train system in New Jersey as well as NJ Transit buses and trains. The Center for Disease Control & Prevention's (CDC) graphics on what to do in a radiation emergency were displayed in the Urban Area Security Initiative (UASI) counties to educate New Jersey residents on actions they can take in a radiation emergency from where to shelter to how to self-decontaminate. The CDC will be reporting on any increase in their website hits from the month-long campaign. A new grant application is being prepared to extend these activities for three more years.

B. RADIOACTIVE MATERIALS PROGRAM

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

Date	Type of Incident	Description	Status
9/2/22	Trash	The BER was notified that a load of waste set off the radiation alarm at an incinerator in Camden. The load was secured at hauler's facility in Camden to allow for decay. It was subsequently returned to the incinerator and was processed without any further alarms.	Closed
9/6/22	Scrap	The BER was notified that a rail car set off the radiation alarm at steel mill in Sayreville. The load was rejected and returned to point of origin in PA.	Closed
9/29/22	Trash	The BER was notified that a load of waste set off the radiation alarm at an incinerator in Camden. The load was secured at hauler's facility in Camden to allow for decay. It was subsequently returned to the incinerator and was processed without any further alarms.	Closed

Contact: Nancy Stanley (609) 984-5452

Training

On September 6th the second of two in-house training sessions (the first was August 30th) was given to the newest staff who are on track to become the RAMRAT team members by the end of the year.

On the evening of September 27th, the first in-person training class developed under the auspices of the BER's UASI/OHSP grant was given to members of the Somerset County HAZMAT team. This session covered basic radiation concepts, radiation source awareness, response tactics to use in the event of a radiological dispersal device (RDD, or "dirty bomb"), and hands-on use of

radiological survey instrumentation. Lessons learned from this session will be incorporated into future classes for additional County HAZMAT teams.

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 9/1/22-9/30/22	**FY-To-Date 7/1/22-9/30/22**
Number of Amendments Processed	16	48
Number of Renewals Processed	9	24
Number of Initial Applications Processed	1	6
Number of Active Licenses	563	563
Number of Terminations	0	1
Number of Reciprocity Requests Received	27	85
Number of Incidents	3	7
Number of Inspections	6	28

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. 75 sources on the databases were verified during September. 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 47 registrations are currently active.

Contact: Sarah Sanderlin (609) 984-5466

D. SUMMARY OF ENFORCEMENT – SEPTEMBER 2022

Bureau of Environmental Radiation – By Month (9/1/2022 -9/30/2022)				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	1	0	1
Radon Section	0	0	4	4
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	1	1

Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	2	1	3
Radon Section	0	0	2	2

Bureau of Environmental Radiation – Fiscal Year to Date 7/1/2022 - 9/30/2022				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	1	2	0	3
Radon Section	0	0	4	4
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	1	0	1
Radon Section	1	0	1	1
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	3	1	4
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	$625.00	$625.00	$6,875.00	$6,875.00
Radon Section	$0.00	$0.00	$300.00	$300.00

Amount Assessed in Penalties = By Month		
	Total Amount Assessed for 9/1/2022 - 9/30/2022	Amount Collected from 9/1/2022 - 9/30/2022
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 23 active specific licenses for water treatment systems and 18 active general license registrations for water treatment systems (13 radium systems and 5 uranium systems).

One inspection of a generally licensed water treatment system was conducted. One specifically licensed treatment system is in the process of terminating. Staff completed review of 2 routine submittals of dosimetry/discharge/resin analysis data per specific license conditions.

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff completed review of 1 technical report. Staff performed an initial inspection of the Phillips 66 TENORM license. Site visits were conducted at Oyster Creek Nuclear Generating Station, Heritage Minerals, 12 Oraton Parkway Exxon and an investigation at Forked River State Marina. Staff worked on the following sites/projects:

- Duck Island Landfill in Hamilton
- EPEC site in Fords
- FMC site in Carteret
- Heritage Minerals site in Manchester
- Howmet site in Dover
- Maywood FUSRAP Site
- Middlesex Municipal Landfill
- National Lead site in Sayreville
- Phelps Dodge Wire and Cable site in Carteret
- Point Pleasant Boro License Termination

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 reviewed. The database contractor continues to develop the database to handle the new regulation requirements. Staff responds to all emails and phone calls in an effort to educate individuals and businesses about the requirements of the new regulations and to address questions and issues that arise regarding implementation. 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. The 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 is complete, and segmentation is in progress. Removal of the lower shroud 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

Hope Creek

On August 15, 2022, Hope Creek began the end-of-cycle (EOC) power coast-down. As a result, Hope Creek began the month of September at approximately 93% power. On September 28th, power had coasted down to approximately 83% when the unit was taken offline as scheduled in order to start Hope Creek's twenty-fourth refueling outage (H1R24).

Contact: Veena Gubbi (609) 984-7457

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout September.

Contact: Jacob Fakory (609) 984-7458

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout September.

Contact: Jacob Fakory (609) 984-7458

BNE Activities at Artificial Island

On September 20, 2022, the NES Supervisor was onsite to discuss operating activities with PSEG and NRC personnel.

Beginning September 27th, members of the NES Staff and the NES Supervisor virtually attended various Hope Creek Outage Control Center (OCC) briefings in order to be aware of the ongoing preparation and execution status of the H1R24 Refueling Outage.

Contact: Jerry Humphreys (609) 984-7469

PSEG Nuclear and BNE Management Meeting

On September 7, 2022, the Director, Division of Climate, Clean Energy & Radiation Protection, the Assistant Director of the Radiation Protection Element, BNE Manager, NEES supervisor and

staff, and the NES supervisor and staff remotely attended a status update meeting with PSEG Nuclear Management. Status update meetings between PSEG Nuclear and the BNE are periodically held in order to provide information between the two organizations pertaining to events, operations, outages, management changes, etc. at the Salem and Hope Creek Nuclear Generating Stations, as well as activities of the BNE pertaining to the stations.

PSEG Nuclear provided a presentation addressing: 1) PSEG Nuclear Organizational changes; 2) Site-wide Industrial Safety; 3) Pandemic Response; 4) Salem and Hope Creek current operating status; 5) Results of Salem Unit 1's twenty-eighth Refueling Outage (Spring 2022); 6) Plans for Hope Creek's twenty-fourth Refueling Outage (September 2022); 7) Fleet Engineering status of the reduction in equipment single point vulnerability program for preventing unnecessary shutdowns; 8) Comparison of Salem and Hope Creek to the nuclear industry in terms of unanticipated plant shutdowns along with a comparison of equipment reliability at PSEG's nuclear stations to the overall nuclear industry; and, 9) New Jersey Wind Port activities and schedules. PSEG provided answers to questions presented by the BNE participants. The Director, Division of Climate, Clean Energy & Radiation Protection thanked PSEG for its ongoing efforts in keeping the BNE continually aware of the activities at Salem and Hope Creek and for taking time from their management schedules to provide the BNE, as a group, with these periodic status meetings.

Contact: Jerry Humphreys (609) 984-7469

NRC Performs Cyber Security Inspection at Salem

On September 19th - 23rd, 2022, the NRC performed a Cyber Security Inspection at Salem in accordance with Inspection Procedure 71130.10, "Cybersecurity". The objectives of this inspection were to provide assurance that Salem's digital computer and communication systems and networks associated with safety, security, or emergency preparedness (SSEP) functions are adequately protected against cyberattacks in accordance 10 CFR 73.54 and the NRC's approved cybersecurity plan (CSP) for Salem and to verify that Salem's CSP changes and reports are in accordance with 10 CFR 50.54(p). Due to the security nature of the inspection, details are not included in this report. Two (2) NES Engineers followed this inspection remotely.

Contact: Veena Gubbi (609) 984-7457 or Jacob Fakory (609) 984-7458

NRC Performs Triennial Heat Sink Performance Inspection at Salem

During the week of September 12, 2022, the NRC performed a Triennial Heat Sink Performance Inspection at Salem Units 1 & 2. The inspection was done in accordance with NRC Inspection Procedure 71111.07, "Heat Sink Performance". The objectives of this inspection are: 1) to verify that any potential heat exchanger deficiencies which could mask degraded performance are identified (applies to all risk significant or safety-related heat exchangers directly or indirectly connected to service water systems or the ultimate heat sink, including heat exchangers in closed cooling water systems); 2) to verify that any potential common cause heat sink performance problems that have the potential to increase risk are identified (e.g., icing and grassing at circulating and service water intake structures or discharge silting); and 3) to verify

that Salem has adequately identified and resolved heat sink performance problems that could result in initiating events or affect multiple heat exchangers in mitigating systems and thereby increase risk (e.g., component cooling water heat exchanger performance affected by corrosion, fouling, or silting). The results of the inspection will be included in NRC Report 2022-003 for Salem, which is the Station's Integrated Inspection Report for the 3rd Quarter of 2022. One (1) NES Engineer was onsite and observed this inspection.

Contact: Jacob Fakory (609) 984-7458

State Radiological Assessment Officer (SRAO) Manual Updated

On September 14th, Revision 34 to the digital SRAO Manual was distributed by the NES Supervisor to all SRAOs. This manual provides the BNE procedures/documents and PSEG/Holtec documents that would be needed to respond to various events at one of the nuclear power plant sites in New Jersey.

Contact: Jerry Humphreys (609) 984-7469

NRC Meeting with the Electric Power Research Institute (EPRI) Steam Generator Task Force

On September 8th two BNE Engineers and the BNE Supervisor remotely participated in an NRC meeting with the EPRI Steam Generator Task Force. The purpose of this meeting was to discuss steam generator issues seen in the industry. Among items discussed were: recently published EPRI reports pertaining to steam generators; status of EPRI sponsored steam generator guidelines; recent steam generator operating experience; testing status of steam generator tube samples; qualification of eddy current array probe testing based on laboratory generated flaws vs. field flaws.

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 Council of State Governments/Eastern Regional Council (CSG/ERC) Northeast High-Level Radioactive Waste Transportation Task Force (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 September 29, 2022, 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. Two proposed agenda formats were discussed based on feedback from the 2022 Annual NTSF 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

New Engineer Joins NES

On September 26th, Mr. Jonathan Zeitz joined NES. Mr. Zeitz comes to NES with an extensive nuclear navy background. He will be the NES engineer responsible for following decommissioning activities at Oyster Creek, as well as the backup for the NES Engineers assigned to Salem and Hope Creek. Welcome to the BNE and the NES, Jonathan.

Contact: Jonathan Zeitz (609) 984-7548

Vermont Yankee Nuclear Decommissioning Citizens Advisory Panel (NDCAP) Holds Public Webcast

On September 19, 2022, the Vermont Yankee NDCAP held a virtual public meeting. NorthStar (owner of Vermont Yankee) provided an overview of the decommissioning projects: reactor vessel segmentation; reactor vessel ring removal; reactor building equipment demolition; control room demolition; interim off gas piping removal and segmentation; waste transport operations; and non-radiological site characterization. A representative from the Vermont Department of Public Service (PSD) provided its role in the decommissioning process: annual reporting requirements; financial updates on nuclear decommissioning trust fund and site restoration trust fund. The representatives from the Agency of Natural Resources (ANR) and Vermont Department of Environmental Conservation (DEC) provided an update on the quarterly groundwater sampling for non-radiological contaminants, environmental monitoring and other DEC programs and permits required for decommissioning**.** Following the presentations, questions and concerns from the panel members were addressed by the presenters. A panel member provided updates on the Federal Nuclear Waste Policy Committee activities. After the panel question and answer session, questions and concerns from the members of the public were heard.

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 September 2022:

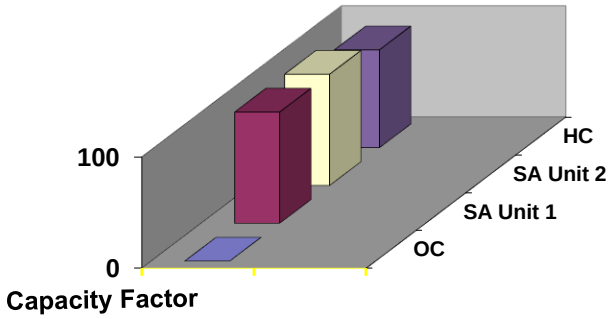
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	1	0

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

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – September 2022

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR SEPTEMBER 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.

	SEPTEMBER 2022		JAN - SEPT 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 87 samples during the month of September 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 SEPTEMBER 2022

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	40
AIR IODINE	18
MILK (Cow)	4
SURFACE WATER	8
AQUATIC BIOTA	2
VEGETABLE	15
TOTAL SAMPLES	87

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

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

During the month of September 2022, four (4) 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

USNRC Inspection of the Radioactive Waste Treatment, and Effluent and Environmental Monitoring Program at the Oyster Creek Decommissioning Site

A staff member observed the annual Decommissioning Radioactive Waste Treatment, and Effluent and Environmental Monitoring Inspection at the Oyster Creek decommissioning nuclear plant in Forked River, New Jersey from September 19-22, 2022.

The inspection was conducted in accordance with the Decommissioning Power Reactor Inspection Program Procedure (Manual Chapter 2561). The purpose of this procedure is to establish the inspection policy and guidance for decommissioning power reactors for the Offices of Nuclear Reactor Regulation (NRR) and Nuclear Safety and Safeguards.
Under this procedure, the inspection focused on guidance found in Inspection Procedure 84750, "Radioactive Waste Treatment and Effluent and Environmental Monitoring". The objectives of the inspection include (1) Assurance that radioactive waste treatment systems are maintained and operated to keep offsite dose as low as reasonably achievable, (2) Ensure that the licensee effectively controls, monitors, and quantifies releases of radioactive materials in liquid, gaseous, and particulate forms to the environment, (3) verify that Radiological Environmental Monitoring Programs are effectively implemented, and (4) Determine whether the licensee is adequately controlling the quantity of primary and secondary coolants to ensure long-term integrity of the reactor and secondary coolant pressure boundaries and minimize out-of-core radiation field buildup.

This inspection involved areas associated with the Radiological Environmental Monitoring Program, Offsite Dose Calculation Manual (ODCM) and the Radiological Groundwater Protection Program (RGPP) of the NRC Inspection Procedure 84750. The NRC Inspection Procedure 84750 can be found at the following NRC website, https://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html
Inspection Reports for the Oyster Creek Nuclear Plant can be found through the NRC Public Library (ADAMS) website at, USNRC Inspection Reports for Oyster Creek

Additional information on the Decommissioning Process can be found at the following NRC website, https://www.nrc.gov/waste/decommissioning/process.html

Contact(s): Paul E. Schwartz (609) 984-7539 or 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 an expected 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 August 2022. Beginning in 2022, gaseous effluent data from Oyster Creek are calculated by the licensee on a quarter-annual basis. The gaseous effluent data for the period from January through August 2022 were not available at the drafting of this report. However, the data shall be included in the BNE's October 2022 monthly report.

The July 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 07-01-22 to 07-31-22

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0	Ci
Iodines	0.00018	Ci
Particulates	0.000009	Ci
Tritium	22.1	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.00073	Ci
Tritium	10.7	Ci

Salem Unit 1 Gaseous Effluents

Effluent		
Fission Gases	0.0156	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	23.8	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.00022	Ci
Tritium	23.7	Ci

Salem Unit 2 Gaseous Effluents

Effluent		
Fission Gases	0.0306	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	17.9	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.00031	Ci
Tritium	20.7	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 08-01-22 to 08-31-22[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 August 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 September:

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

AI1	AI2	AI3	AI4	AI5
.0064	.0065	.0066	.0065	.0066
AI6	AI7	AI8	AI9	AI10
.0067	****	.0054	.0074	.0052

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

OC1	OC2	OC3	OC4
.0038	.0054	.0057	.0048
OC5	OC6	OC7	OC8
.0054	.0055	.0047	.0050
OC9	OC10	OC11	OC12
.0058	.0067	.0056	.0055
OC13	OC14	OC15	OC16
.0050	.0054	.0050	.0054

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

Licensee EP Meeting

On September 12, 2022, NEPS staff held their monthly emergency preparedness meeting with Holtec/CDI, PSEG and NJOEM on Microsoft Teams. Discussion topics included: Oyster Creek decommissioning updates; August 17th quarterly exercise After-Action Report; Hostile-Action Based exercise in the new eight-year cycle; communication pathways and drills; upcoming Regional Radiological Emergency Preparedness Conference; annual EAL/ECG/PAR training; BNE's new staff; need for a dose assessment meeting; 2023 drill and exercise schedule; Evacuation Time Estimate Study submitted to NRC; Medical Services training and evaluations.

Contact: Ann Pfaff (609) 984-7451

Meeting with Delaware Emergency Management Agency

On September 27, 2022, Nuclear Emergency Preparedness staff met with Delaware Emergency Management Agency (DEMA) to discuss RadResponder. The State of Delaware does not currently use RadResponder, the national standard and Whole Community solution for the management of radiological data, and requested a presentation on New Jersey's usage of the tool. The Bureau of Nuclear Engineering has incorporated RadResponder into its response protocols for data collection and as a platform for reviewing and sharing radiological readings from both its network of fixed monitoring stations and field monitoring teams. RadResponder use is incorporated into BNE's Standard Operating Procedures, and staff shared specifics of its capabilities and limitations with DEMA staff. Additionally, the presentation included discussion of both New jersey and Delaware sharing radiation data via the RadResponder network during response to an event at Salem/Hope Creek.

Contact: Ann Pfaff (609) 984-7451

Quarterly Facility Inspections

In the month of September 2022, NEPS staff have continued emergency response facility inspections for the third quarter of 2022 to ensure they are in a state of readiness. Emergency facilities include the Emergency Operations Facility (EOF) in Salem County, Field Command Center (FCC) and Emergency Operations 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. The Emergency Operations Center was inspected in September, including running and updating its dedicated desktop computer and incorporating the latest revisions to the reference manuals.

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