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

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

Commission on Radiation Protection Exemption- Carestream, CS2400P, Handheld Dental Unit

On March 4, the Bureau prepared and issued a document based on the Commission on Radiation Protection (Commission) recommendations and Department approval of an exemption to Carestream Dental, LLC for the CS2400P handheld dental unit, which is used on humans for Dental Intra-oral radiography.

HDAIC Webinar: Preparedness Lessons Learned from the 2021 Texas Power Failure

On March 16, bureau staff participated in the HDAIC Webinar: Preparedness Lessons Learned from the 2021 Texas Power Failure.

Annual New Jersey Society of Radiologic Technologists Meeting

On March 23, staff from the Technologist Education and Licensing Section attended the Annual New Jersey Society of Radiologic Technologists meeting to provide an update on the educational and licensure requirements of N.J.S.A. 26:2D-24 and N.J.A.C. 7:28-19 and 24. Also, to discuss the DEP's accomplishments in decreasing patient exposure and improving image quality during x-ray procedures.

NJ BXC - UNFORS X2 Radiation Meter Training

On March 23, Bureau inspectors received training followed by staff questions from the UNFORS Raysafe vendor on the use and operations of their new UNFORS X2 radiation meter.

B. REGISTRATION SECTION

Machine Source Registration and Renewal Fees

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

Machine Source Fees Invoiced and Collected for FY 2022					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
$18,025.00	$36,600.00	$3,103,601.00	$3,065,296.00	$3,887.00	99%

Progress on Collection of FY 2022 Registration Renewal Fees

Renewal Groups	Paid 7/31/21	Paid 8/31/21	Paid 9/30/21	Paid 10/31/21	Paid 11/30/21	Paid 12/31/21	Paid 1/31/22	Paid 2/28/22	Paid 3/31/22	Paid 4/30/22	Paid 5/31/22	Paid 6/30/22
0-F	49%	77%	87%	96%	98%	99%	99%	99%	100%	0	0	0
G-L	N/A	51%	76%	88%	96%	98%	99%	99%	100%	0	0	0
M-R	N/A	N/A	50%	74%	87%	95%	97%	98%	99%	0	0	0
S-Z	N/A	N/A	N/A	34%	73%	86%	94%	97%	99%	0	0	0

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

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

Monthly Machine Source Registration Activity FY 2022

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	13	14	16	23	16	20	22	18	36	0	0	0	178
Terminated Facilities	25	18	26	39	29	38	23	33	45	0	0	0	276
Net Change (Facilities)	-12	-4	-10	-16	-13	-18	-1	-15	-9	0	0	0	-98
New Registrations	164	188	144	163	171	157	176	202	184	0	0	0	1549
Stored Registrations	62	34	37	53	59	79	47	59	100	0	0	0	530
Disposed registrations	84	88	82	95	85	85	79	90	113	0	0	0	801
Net Change (Machines)	18	66	25	15	27	-7	50	53	-29	0	0	0	218

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 March 2022, IQ evaluations were performed on 25 x-ray units with the following results:

- 19 units (76%) had excellent image quality scores.
- 5 units (20%) had good image quality scores.
- 1 unit (4%) 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 March 2022, ESE measurements were calculated on nineteen x-ray units that performed lumbo-sacral spine x-rays. Zero units (0%) had extremely high ESE measurements.

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

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

Dental Facilities

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

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

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

When the Bureau conducts inspections to determine compliance with New Jersey Administrative Code 7:28, a measurement of entrance skin exposure (ESE) is taken. The Bureau collected baseline ESE data on dental x-ray machines for the years 2008 and 2009. This data was evaluated to establish the ranges for four ESE categories similar to those in the medical quality assurance program (low, average, high and extremely high). A report is generated and sent to each facility at which an ESE measurement was taken. This report gives the ESE and identifies which category the ESE falls into. The report explains ESE and its determining factors. Facilities with extremely high ESE readings are asked to consult with their digital or film representative or physicist and determine the cause of the extremely high ESE, make changes to reduce ESE, and send a report of their findings and corrective actions to the BXC within thirty days. The table below depicts the current ESE ranges for the various imaging systems used.

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

- In March 2022, ESE measurements were calculated on one hundred and ninety-two dental x-ray units that used DR digital imaging. Sixteen units (8%) were measured as having extremely high ESE.

- In March 2022, ESE measurements were calculated on nine dental x-ray units that used CR (PSP) digital imaging. One unit (11%) was measured as having extremely high ESE.

- In March 2022, ESE measurements were calculated on eleven dental x-ray units that used D speed film. One unit (9%) was measured as having extremely high ESE.

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

Dental Amalgam Inspections

Effective November 1, 2009, all dental facilities that generate amalgam waste were required to install amalgam separators (N.J.A.C. 7:14A-1 et seq.). In June 2010, the Bureau met with Division of Water Quality staff to discuss the dental amalgam requirements and to develop an amalgam questionnaire. This questionnaire would be provided to each dental facility when they are scheduled for an x-ray inspection.

During each inspection, the inspector verifies the information on the questionnaire and visually inspects that an amalgam separator has been installed. In March 2022, 66 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2022 is 481.

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 March. Statistical information follows in Appendix A of this report. In addition to its regular business functions, the following highlights are reported:

New Jersey Society of Radiologic Technologists (NJSRT) Annual Meeting – Presentation

On March 23, 2022, Cassidy Patterson, Environmental Specialist and Al Orlandi spoke at the NJSRT's annual meeting. The presentation entitled "What's up with DEP and Licensure Program" was well received. Approximately, 70 licensed radiologic technologists, educators, and students were in attendance. The presentation is available upon request.

Unlicensed Radiologic Technologist Investigation and Enforcement

On March 25, 2022, the Department issued an Administrative Order and Notice of Prosecution for $9,100.00 to an unlicensed radiologic technologist who not only performed radiographic procedure at several locations without a license but also held himself out as being licensed to his employers when he was not. The issue will be forwarded to the N.J. Department of Law and Public Safety's Division of Criminal Justice for consideration. This concludes a five-month investigation conducted by the Section.

Technologist Education and Licensing Section (Fees)

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

Technologist Education & Licensing Section FY 2022 Invoiced & Collected				
Invoice Type	**Monthly Invoiced**	**Monthly Collected**	**Fiscal YTD Invoiced**	**Fiscal YTD Collected**
Examinations	$0	$0	$320	$320
Initial Licenses	$7,860	$5,100	$60,600	$57,000
Renewal Licenses	$810	$3,240	$11,520	$37,890
Totals	$8,670	$8,340	$72,440	$95,210

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 2 facilities with a stereotactic/needle localization breast biopsy unit during the month of March. A total of 37 of the 57 planned stereotactic facility inspections have been performed since July 1, 2021.

Mammography Facilities Inspected

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

The Mammography Section inspected 15 facilities in March. A total of 175 of the 233 facilities scheduled to be inspected under the contract that expires on August 20, 2022. There were three facilities found to have non-compliance issues.

Facility Non-compliance Discovered

There was one facility with **Level 1** non-compliance.

- The system to communicate results is not adequate because there is no system in place to provide timely lay summaries.

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

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

- Two out of seven of the random reports reviewed did not contain an acceptable assessment category.

- The system to ensure that clinical images continue to comply with the standards for clinical image quality established by the facility's accreditation body is not adequate because there is no documentation of review since the last inspection.

- The facility has not specified adequate written procedures for collecting and resolving consumer complaints or did not follow them when required.

- Phantom QC records were missing for at least two weeks but less than four weeks.

- Contrast to noise ratio QC testing is not adequate because QC testing was not done at the required frequency.

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 March 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					
March 2022					
Bureau of X-Ray Compliance					
			Month	YTD	
	Compliance Inspections entered into NJEMS		56	226	
	Dental/CBCT Inspections entered into NJEMS		66	412	
Notice of Violations	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	3	4	8	15	103
Administrative Orders	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	2	0	25	27	129
Notice of Prosecutions	**Closed**	**Effective**	**Pending**	**Total**	**YTD**
	2	0	24	26	123
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**
	$21,500.00	$69,400.00	$48,000.00	$19,450.00	$67,450.00

Contact: Ramona Chambus (609) 984-5370

INSPECTOR ACTIVITY REPORT

03/01/2022 THROUGH 03/31/2022

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	110	273		29
2	VIOLATION INSPECTION ON SITE	1	1		
9	HAND DELIVERY	61			62
11	INVESTIGATION	16			
12	STEREOTACTIC INSPECTION	2	2		
15	QA INSPECTION ROUTINE LEVEL 1	25	24	49	3
22	NON-QA INSPECTION - HOSPITALS	1	4		25
26	DENTAL ESE INSPECTION	1	1		
28	DENTAL CBCT INSPECTION	20	97		5
	Total On-Site Inspections:	**237**	**402**	**49**	**124**
6	OFFICE VIOLATION RESPONSE REVIEW	2		3	
18	OFFICE QA VIOLATION RESPONSE REVIEW	7		17	
23	OFFICE TECH CERT INSPECTION	1		1	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	4		4	
	Total Office Inspections:	**14**		**25**	**0**

Number of Enforcement Documents Issued

NOV	15
AO	21
NOP	20
Amount of Penalties	$10,000

03/01/2022 THROUGH 03/31/2022

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Analytical			
A-002	21.6(a)1	Testing safety devices every six months.	**8**
A-005	21.6(a)3	Finger or wrist personnel monitoring equipment not provided.	**5**
A-006	8.1	Personnel monitoring records not available.	**1**
A-012	21.3(a)1	A clearly visible label with the words "CAUTION: THIS EQUIPMENT PRODUCES X-RAYS" is not attached near any switch which energizes	**1**
A-013	21.3(a)2	A clearly visible label with the words "CAUTION: HIGH INTENSITY X-RAY BEAM" not located in a conspicuous location near the x-ray tube housing	**1**
Cabinet			
C-006	17.7(c)	Requirements for film badges not met.	**2**
C-032	17.6(c) calibrated and operable ionizing radiation survey instrumentation must be used.	No radiographic operation shall be conducted unless calibrated and operable ionizing radiation-survey instrumentation as described in N.J.A.C. 7:28-17.4(e) is available and used at each site where radiographic exposures are made.	**2**
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**6**
CB-003	22.7(a)3	CBCT No MPQCS	**5**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**3**
D-025	16.3(a)16	Timer accuracy exceeds manufacturer’s specifications (certified units).	**1**
G			
G-007	2.5(c)	device not working properly	**1**
Industrial Radiography			
IR-012	17.4(e)1	radiation survey instrument not calibrated at 3-month intervals	**1**
IR-040	17.4(k)	Current logs for machine, operator and dates of use	**2**
IR-049	17.5(d)	no written operating and emergency procedures	**1**

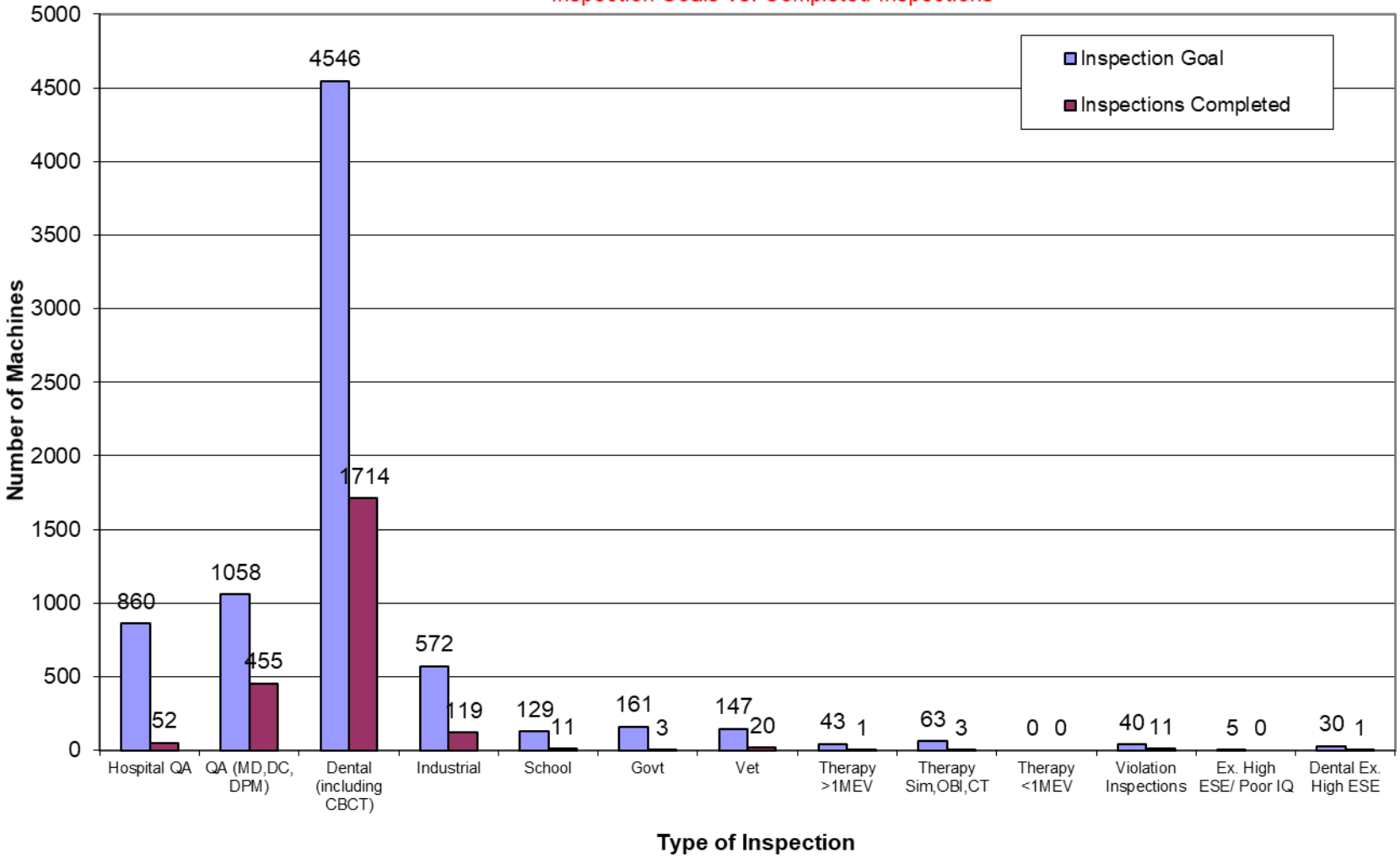
03/01/2022 THROUGH 03/31/2022

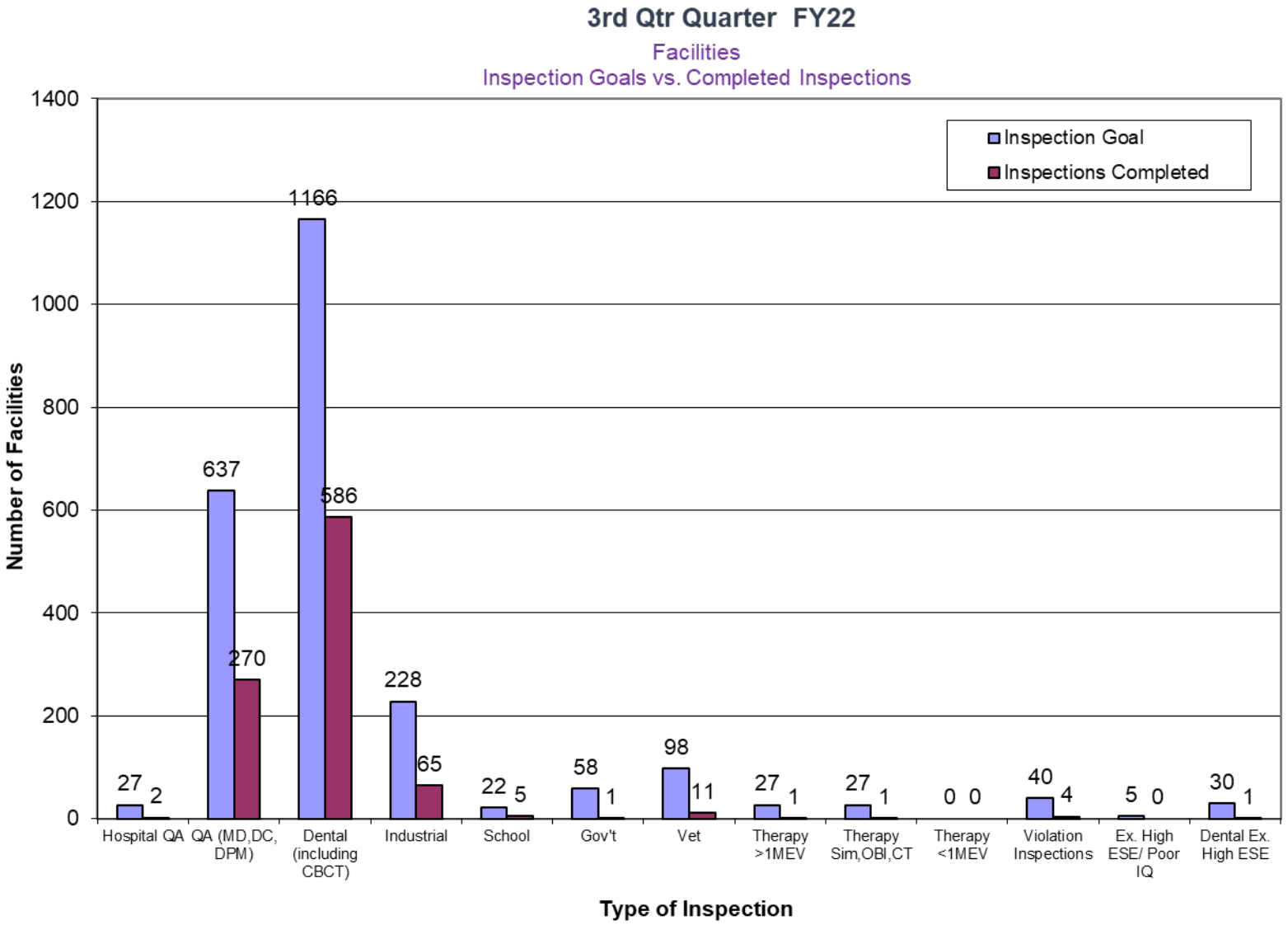
Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Industrial Radiography			
IR-051	17.5(e)	no film badge, pocket dosimetry and/or pocket chamber	**2**
Radiographic			
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.	**2**
TC			
TC-001	19.3(c)	x-rayed humans without a valid NJ license	**1**
Total Violations Cited Non-QA			**46**
Violations Cited QA			
Quality Assurance			
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**16**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**3**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**1**
QA-038	22.6(a)3	No Med Phys QC Survey for Fluoro	**1**
QA-063	22.7(a)2	QC tests from Table 3 (CT) not performed at the required intervals.	**1**
QA-069	22.7(e)	Failed to immediately initiate steps to repair CT equipment.	**1**
QA-124	22.9(f)1	Registrant failed to immediately initiate corrective action.	**1**
QA-174	22.5(j)3	All images for QC tests for items 8, 11, 12 & 13 maintained for 1 year	**3**
Total Violations Cited QA			**27**
Total Violations			**73**

3rd Quarter FY22

Machines
Inspection Goals Vs. Completed Inspections

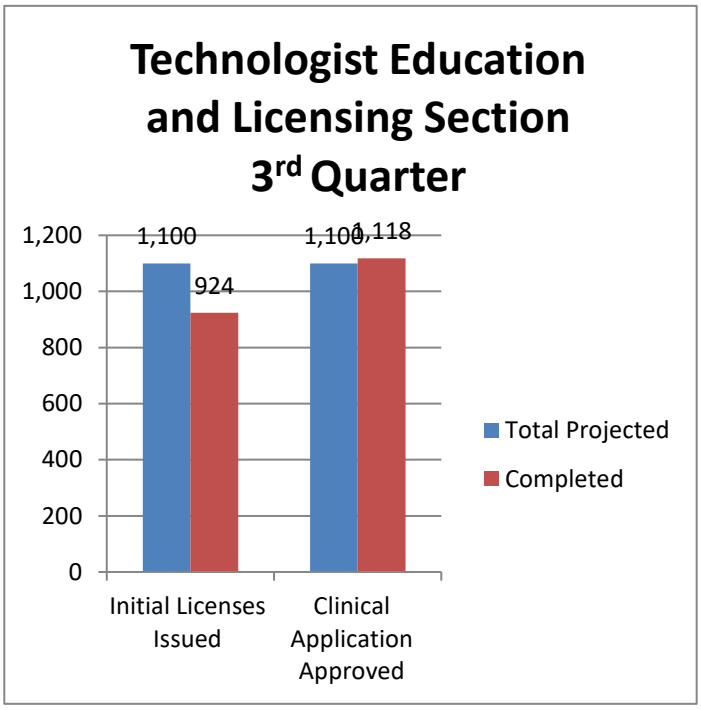


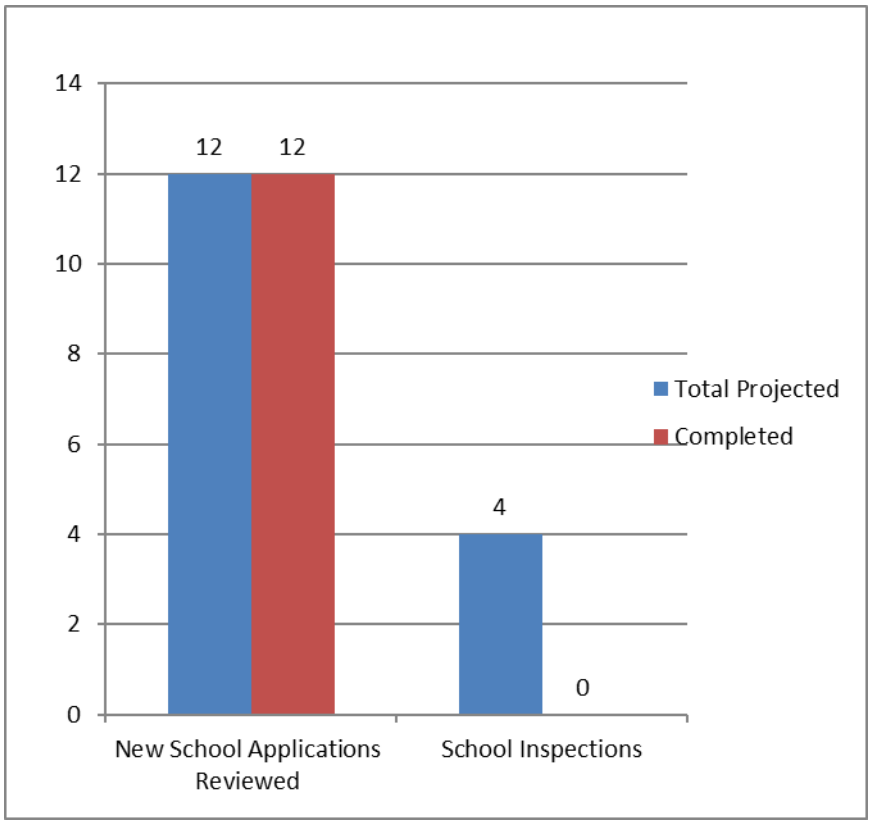

3rd Qtr Quarter FY22
Facilities
Inspection Goals vs. Completed Inspections
Inspection Goal
Inspections Completed
Number of Facilities
1400
1200
1000
800
600
400
200
0
27
2
637
270
1166
586
228
65
22
5
58
1
98
11
27
1
27
1
0
0
40
4
5
0
30
1
Hospital QA
QA (MD,DC, DPM)
Dental (including CBCT)
Industrial
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 MARCH 2022

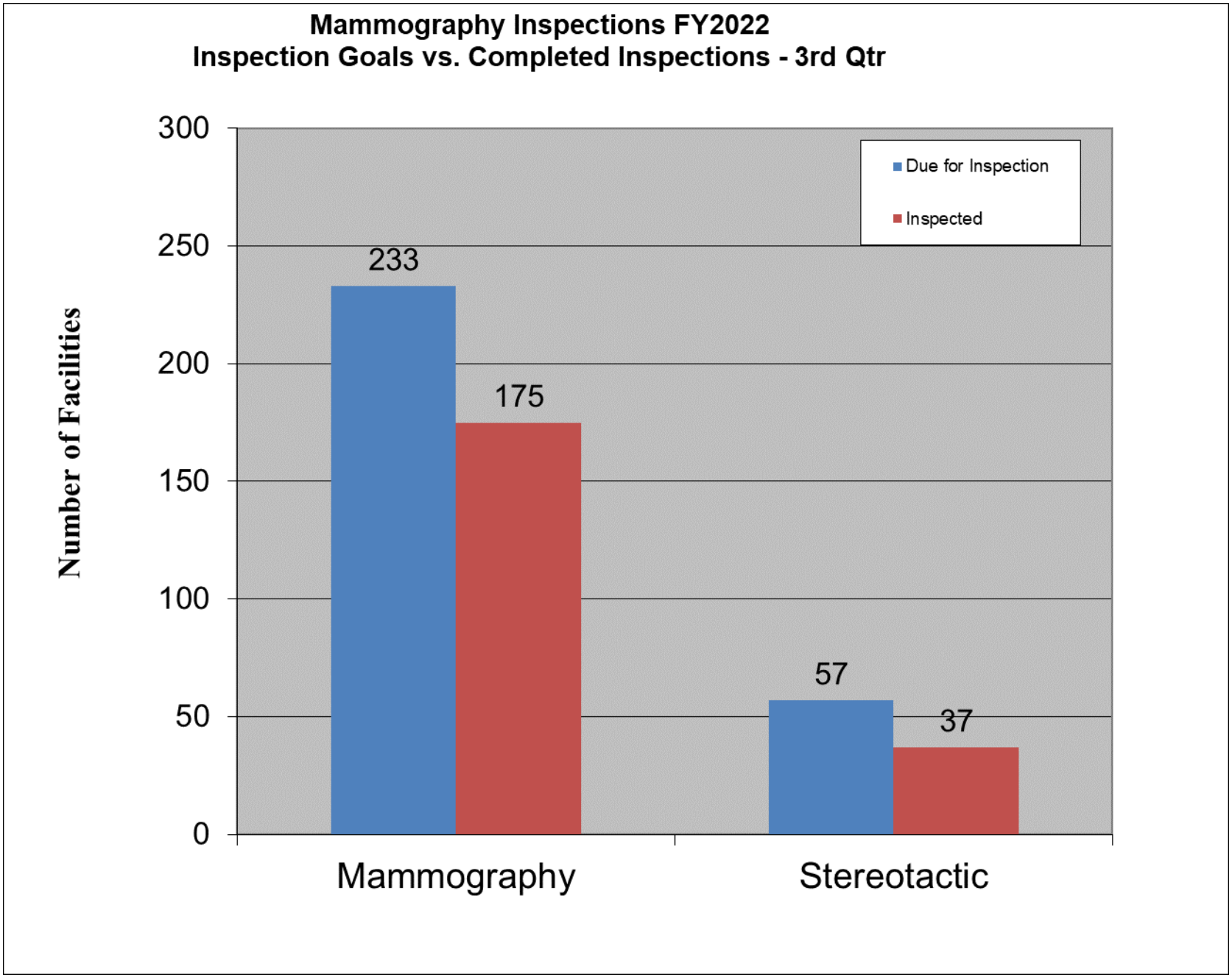
License Category	Diagnostic Rad	Nuc Med	Rad Therapy	Dental Rad	Chest Rad	Podiatric Rad	Orthopedic Rad	Fusion Imaging CT	Monthly Total	FY to Date	FY Projected
Initial Licenses Processed	31	6	3	64	-	-	-	2	106	924	1,100
Licenses Renewed	13	-	1	25	-	-	-	-	39	439	N/A
Total Licensed	9,382	958	850	11,529	48	16	5	93	22,881	22,881	N/A
Exams Scheduled	-	-	-	-	1	-	-	-	1	2	N/A
Investigations Conducted	1	-	-	3	-	-	-	-	4	25	30
Licenses Verified	41	20	-	162	-	-	-	-	223	4,223	7,000
Expired Licenses	-	-	-	-	-	-	-	-	0	3	N/A
Unlicensed	1	-	-	3	-	-	-	-	4	12	N/A
Enforcement Documents Issued	2	-	-	12	-	-	-	-	14	62	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	$9,100	-	-	$2,600	-	-	-	-	$11,700	$24,050	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	3	N/A
Approved Educational Schools	15	2	3	26	-	-	-	-	46	46	N/A
New School Application Evaluated	-	-	-	1	-	-	-	-	1	12	8
School Inspections Conducted	-	-	-	-	-	-	-	-	0	0	4
Total Schools Reviewed	-	-	-	1	-	-	-	-	1	12	12
Curriculum Modifications Evaluated	-	-	-	3	-	-	-	-	3	16	20
Clinical Applications Approved	-	-	-	81	-	-	-	-	81	1,118	1,100


Technologist Education and Licensing Section 3rd Quarter
1,200
1,000
800
600
400
200
0
1,100
924
1,100
1,118
Initial Licenses Issued
Clinical Application Approved
Total Projected
Completed


14
12
10
8
6
4
2
0
12
12
4
0
Total Projected
Completed
New School Applications Reviewed
School Inspections

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

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	13	2	0	15	175	
Machines Inspected	0	17	3	0	20	286	**233**
FDA Violations Level 1	0	1	0	0	1	1	
FDA Violations Level 2	0	2	0	0	2	15	
Registered	0	6	1	0	7	26	
Canceled	0	3	1	0	4	39	
Stereotactic							
Facilities Inspected	0	1	1	0	2	37	**57**
Machines Inspected	0	1	1	0	2	38	
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	1	0	0	1	7	
Canceled	0	2	0	0	2	6	


Mammography Inspections FY2022
Inspection Goals vs. Completed Inspections - 3rd Qtr
Number of Facilities
300
250
200
150
100
50
0
Due for Inspection
Inspected
233
175
57
37
Mammography
Stereotactic

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

Since our first meeting with the Society of Physics Students (SPS) at Northeastern University, members of the BER have met with SPS students from Seton Hall, Rowan, Stockton, Stevens Institute of Technology, Ramapo, and Georgian Court to discuss careers in Health Physics. This month, approval was granted for a paid summer internship at the BER. The student will work on some projects and will be able to shadow members of the Radiation Protection Program so that they get a broad understanding of health physics. The internship has been posted as an official coop position at Northeastern University.

B. RADIOACTIVE MATERIALS PROGRAM

During the month of March 2022, the Radioactive Materials Program responded to one (1) radiation incident:

Date	Type of Incident	Description	Status
3/4/22	Other	A shipment of paint removal debris from Maryland set off the radiation alarm at an environmental firm in Kearny. The shipment was rejected and was returned to its origin Maryland without incident.	Closed

Contact: Nancy Stanley (609) 984-5452

Training

The first of several online courses being developed with grant funding provided by the NJ Office of Homeland Security and Preparedness (OHSP) went live. The course, titled "Radiation Sources for First Responders" provides an overview of the types of radioactive sources that a responder may come across during an incident. This, and subsequent courses, will be available on the NJ Learn e-learning management system for sworn and certified first responders (police, fire, EMS) throughout New Jersey.

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 3/1/22-3/31/22	**FY-To-Date 7/1/22-3/31/22**
Number of Amendments Processed	25	206
Number of Renewals Processed	7	47
Number of Initial Applications Processed	1	11
Number of Active Licenses	558	558
Number of Terminations	0	5

Number of Reciprocity Requests Received	22	226
Number of Incidents	1	20
Number of Inspections	8	100

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. No sources on the databases were verified during March. Staff continues to maintain entry of quarterly reports from manufacturers and distributors into the generally licensed database. No reports were received reflecting quarterly transactions. Generally Licensed Device Registration Forms continue to be maintained. A total of 49 registrations are currently active.

Contact: Sarah Sanderlin (609) 984-5466

D. SUMMARY OF ENFORCEMENT – MARCH 2022

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

Bureau of Environmental Radiation – Fiscal Year to Date 7/1/2021 - 3/31/2022				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	8	0	3	11
Radon Section	0	0	5	5

Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	4	1	0	5
Radon Section	0	0	2	2
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	8	3	1	12
Radon Section	0	0	2	2
Amount Assessed in Penalties = FY				
	Total Amount Assessed for FY22	Amount Collected from Current FY22	Amount Collected from FY21	Total Amount Collected (FY21+FY22)
Radioactive Materials Section	$6,250.00	$6,875.00	$0.00	$6,875
Radon Section	$0.00	$0.00	$400.00	$400.00
Amount Assessed in Penalties = By Month				
	Total Amount Assessed for 3/1/2022 - 3/31/2022		Amount Collected from 3/1/2022 - 3/31/2022	
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)

Water Treatment

There are currently 23 active specific licenses for water treatment systems. An inspection was conducted at 1 water treatment system. There are currently 18 active general license registrations for water treatment systems (13 radium systems and 5 uranium systems).

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff completed review of 7 technical reports/referrals. One site visit was conducted at National Lead in Sayreville and two site visits were conducted at Former PSE&G Generating Station in Mercer. Staff worked on the following sites/projects:

- City of Bordentown Discharge Lagoons
- FMC Site in Carteret
- Heritage Minerals site in Manchester
- Howmet site in Dover

- Maywood FUSRAP site
- Middlesex Industrial Center
- National Lead site in Sayreville
- Passaic County Technical Institute in Wayne
- Former PSE&G Generating Station in Mercer
- Pantasote site in Passaic
- Shieldalloy Metallurgical Corporation site in Newfield

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

F. RADON SECTION

Radon Rule

The rule adoption document has been approved by the Governor's office and it is currently at the Office of Administrative Law. Work continues on preparation for the rule implementation, including database upgrades and all new documents and procedures.

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

Electrets

Proficiency testing is being conducted at Bowser Morner. When proficiency testing is completed, post-mitigation testing and confirmatory testing will begin again.

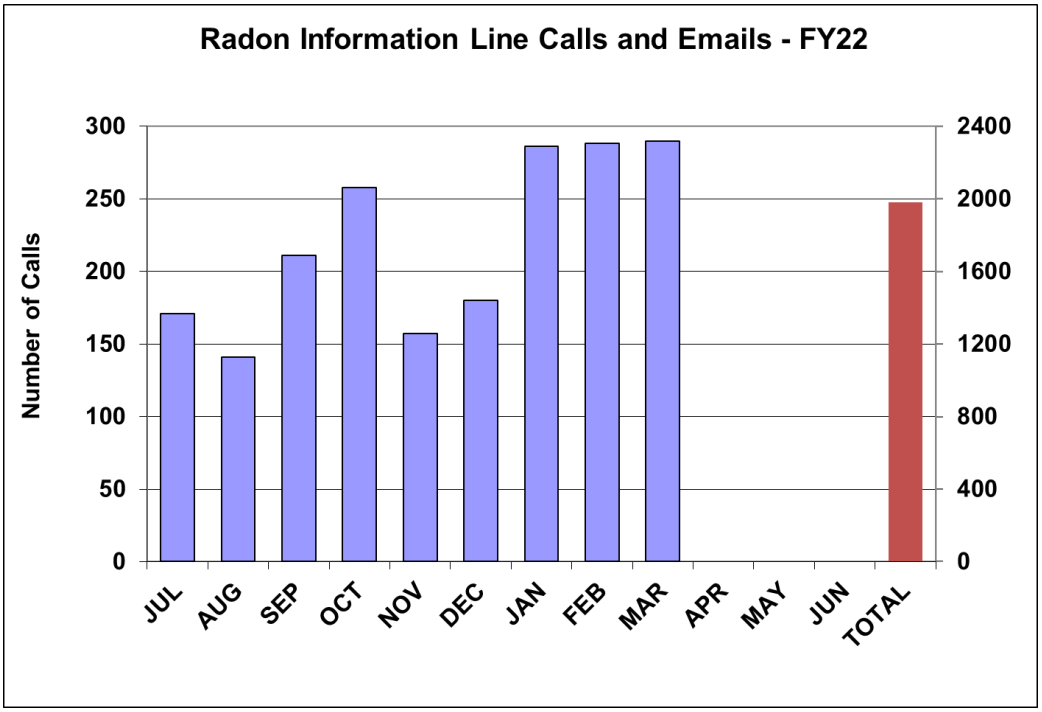
Contact: Charles Renaud (609) 984-5423

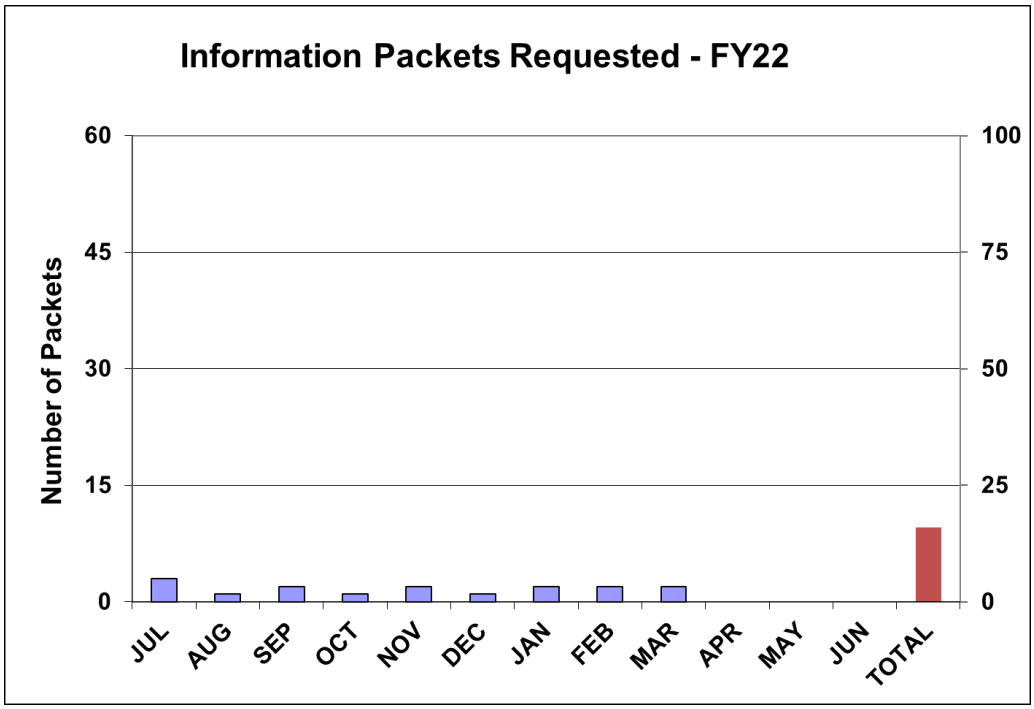
Measurement and Mitigation Radon Certifications

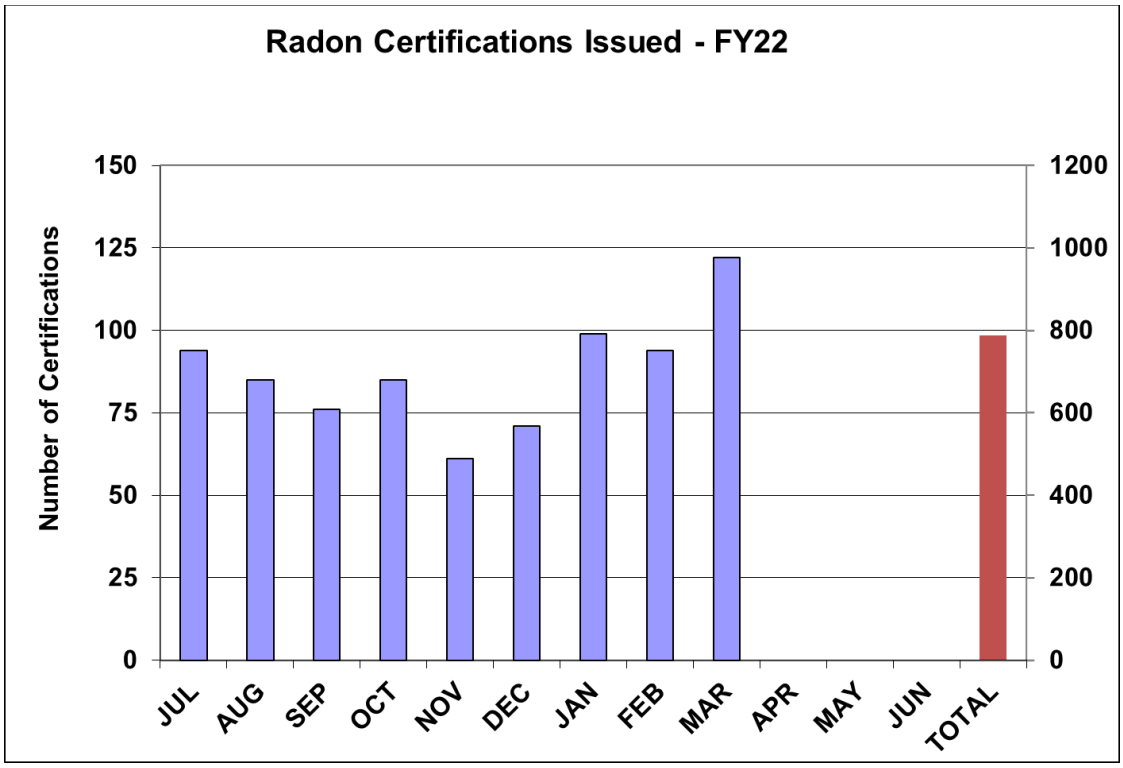
Certification Type	Initial	Renewal
MES		5
MET	18	94
MIS		5
MIT		
MEB		
MIB		

Contact: Maxine Williams (609) 984-5628

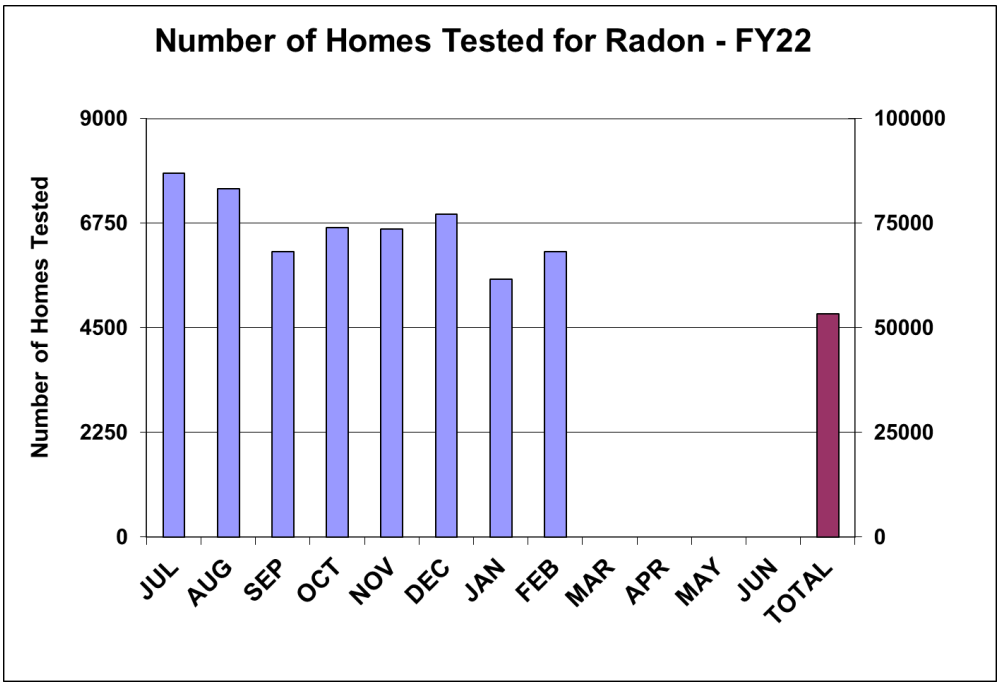
APPENDIX B: BUREAU OF ENVIRONMENTAL RADIATION SUMMARY OF STATISTICS

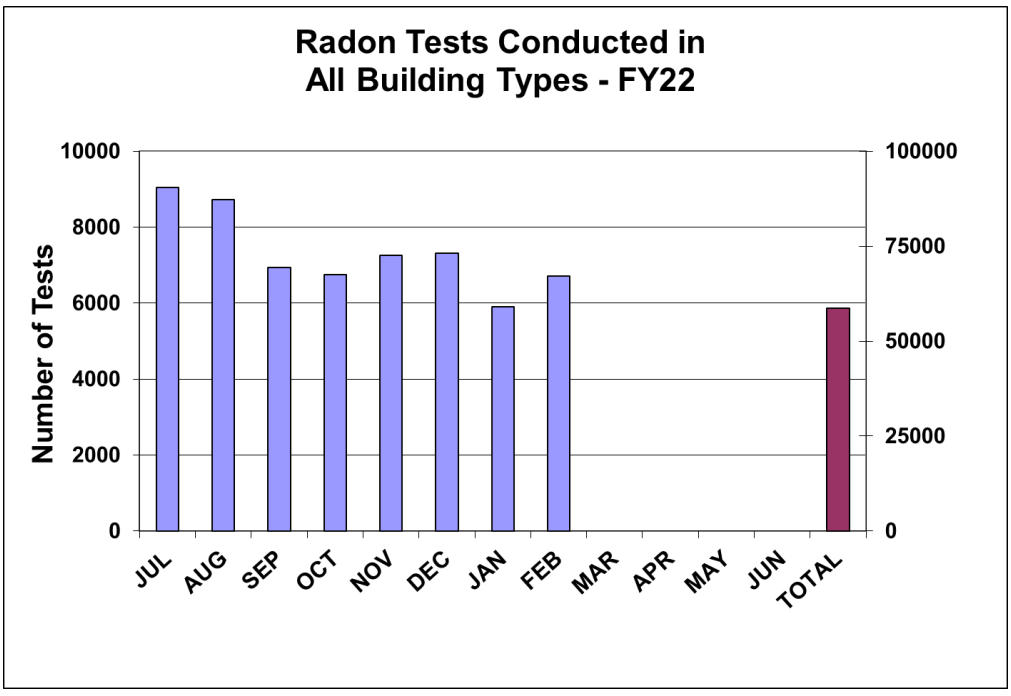


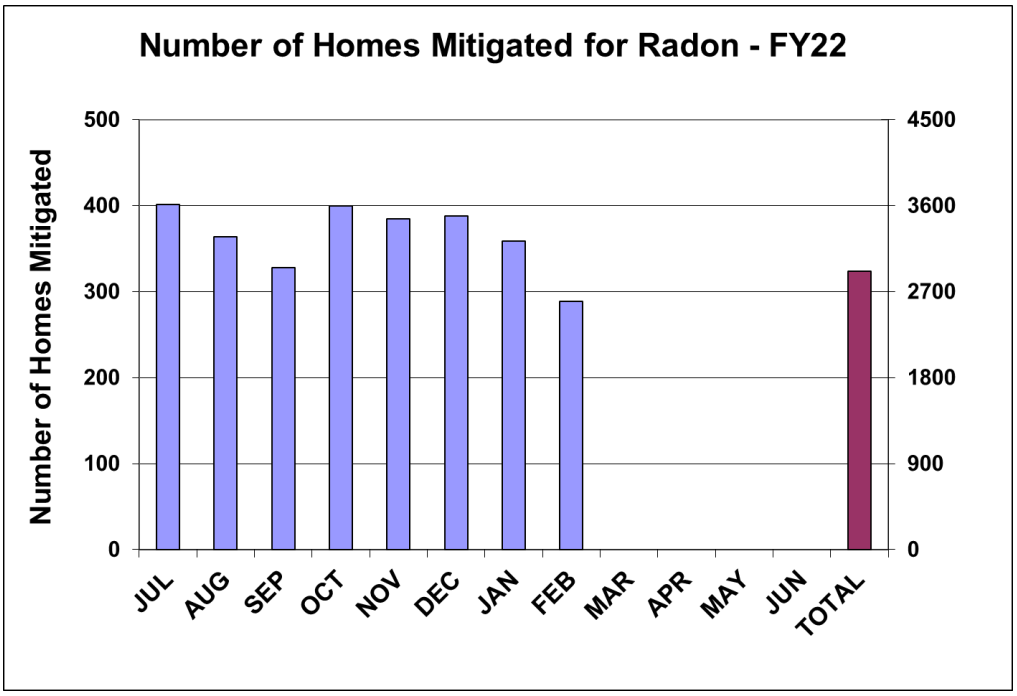


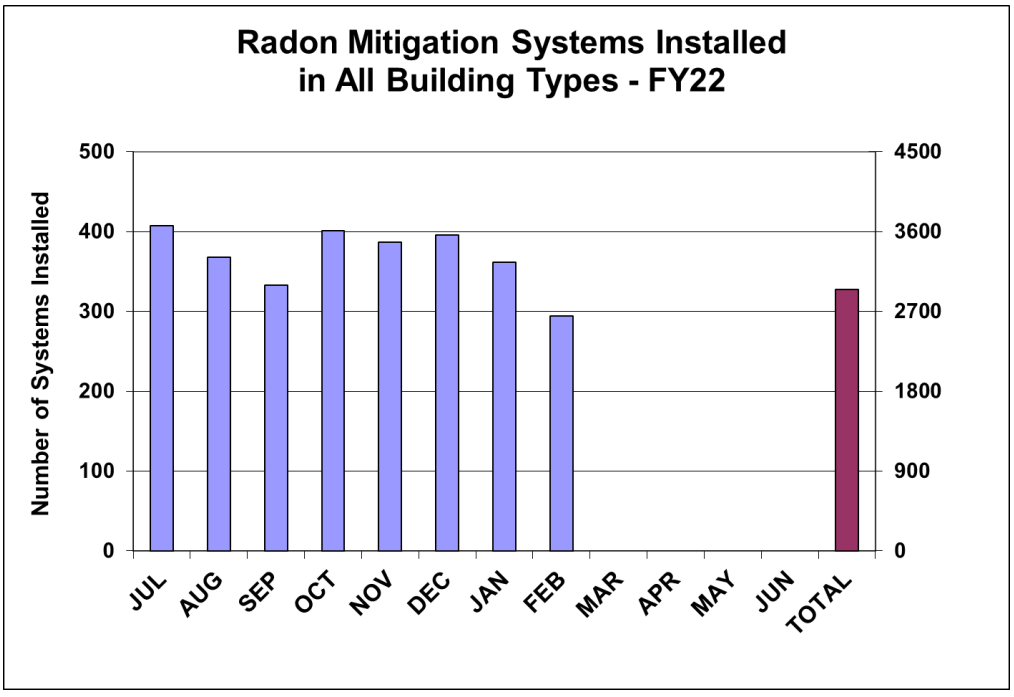

Radon Certifications Issued - FY22
Number of Certifications
150
125
100
75
50
25
0
1200
1000
800
600
400
200
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
TOTAL

Radon testing and mitigation data is submitted to the Radon Section monthly by all certified radon businesses. This data has been collected for all building types since the implementation of the radon certification regulations in 1991. According to N.J.A.C. 7:28-27.28 (a) and (e), Radon test results and mitigation reports for February 2022 are due by April 1, 2022.






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


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

SECTION IV – BUREAU OF NUCLEAR ENGINEERING (BNE)

A. OFFICE OF THE BUREAU CHIEF

Significant Events

None

B. NUCLEAR ENGINEERING SECTION

Oyster Creek Decommissioning Projects:

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

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

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

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

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

Three outer buildings (not located in the radiological controlled area) have been demolished and removed from the site. Eight power transformers have been removed from the site. All reactor control rod hydraulic control units (HCU) and associated components have been dismantled. The original site water tank and a demineralized water storage tank have been dismantled and shipped offsite. A lube oil tank has also been removed and transported offsite.

Demolition of the old north guard house, the abandoned torus water storage tank, the new maintenance building, the radwaste surge tank, the augmented off gas building, nitrogen tank, condensate storage tank, chlorination tank, radwaste sample tanks, site heating boiler and security buildings is complete. Core boring in preparation for demolition is in progress at the new radwaste building.

Contact: Veena Gubbi (609) 984-7457

BNE Activities at Oyster Creek

One (1) NES Engineer was onsite on March 8th to discuss decommissioning activities with HDI personnel.

One (1) NES Engineer was onsite on March 16th to observe the NUHOMS cask inspection which was done in accordance with Oyster Creek's Aging Management Program.

Contact: Veena Gubbi (609) 984-7457

Hope Creek

Hope Creek ran at essentially full power throughout March, with the following exceptions: Power was reduced to approximately 82% on March 17th to support the removal from service of a reactor feed pump for repair. Power was returned to 100% on March 18th. Power was reduced to 90% on March 19th to perform a rod pattern adjustment and to repair an oil leak on a main turbine valve. Power was returned to 100% on March 20th. Power was reduced to 95% on March 29th for a rod pattern adjustment and returned to 100% later that day.

Contact: Veena Gubbi (609) 984-7457

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout March.

Contact: Jacob Fakory (609) 984-7458

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout March.

Contact: Jacob Fakory (609) 984-7458

BNE Activities at Artificial Island

On March 8th, the NES Supervisor was onsite to discuss operating activities with PSEG personnel.

Contact: Jerry Humphreys (609) 984-7469

NRC Performs Fire Protection Inspection at Hope Creek

The NRC performed the second week of a two-week NRC Triennial Fire Protection inspection at Hope Creek from February 28th – March 3rd. The inspection was conducted in accordance with the NRC Inspection Procedure 71111.21N.05, "Fire Protection Team Inspection". The purpose of the inspection is to evaluate the design, operational status, and material condition of the Fire Protection Program, including assumptions made in plant and area specific fire protection analyses. This is accomplished by verifying that Hope Creek's program includes: adequate controls for combustibles and ignition sources inside the plant; adequate fire detection and suppression capability; passive fire protection features in good material condition; adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features; adequate protection to ensure the post-fire capability to safely shut down the plant, including implementation of NRC/industry fire-induced circuit failure analysis guidance; feasible and reliable manual actions when appropriate to achieve safe shutdown; adequate review and documentation of fire protection program changes. The results of this inspection will be documented in NRC Report 2022-010 for Hope Creek. The report will be available to the public within forty-five (45) days following the NRC Team exit which was held on March 3rd.

Contact: Veena Gubbi (609) 984-7457

NES Staff Attends NRC Teleconferences/Webinars

NRC Teleconference on Risk Informed Modification of Inservice Inspection Program

On March 4th, the NRC held a public meeting to provide the staff's perspectives on risk-informed modification of Inservice Inspection (ISI) Programs. The NRC staff provided its perspectives on the modifications of ISI programs. After the NRC presentation, industry comments were addressed by the NRC staff.

Contact: Veena Gubbi (609) 984-7457

NRC Holds the Regulatory Information Conference (RIC)

The NRC held its annual Regulatory Information Conference (RIC) the week of March 8th-10th.

The RIC is the largest public meeting that the NRC hosts bringing together participants representing stakeholders from other governmental agencies, industry, international organizations, and the general public.

The conference's thirty (30) technical sessions covered a broad range of topics, including: artificial intelligence; licensing and oversight lessons from the pandemic; advanced reactors; small modular reactors; dry storage; accident tolerant reactor fuel; decommissioning and water management; and risk-informed decision making.

Contact: Jerry Humphreys (609) 984-7469

NRC Teleconference to Discuss the Proposed Rulemaking on "Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning"

On March 21st, the NRC held a public meeting to discuss the proposed rulemaking on "Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning". The proposed rule was published in the Federal Register on March 3rd. The purpose of the meeting was for the NRC staff to engage with the public regarding the issues discussed in the proposed rule and to facilitate stakeholders providing formal comments.

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 (e.g., NRC, DOT, FRA, etc.). The NE Task Force is a member of the NTSF. An NES engineer and the NES Supervisor are governor-appointed members of the NE Task Force. The NES Supervisor is a co-chair for the NE Task Force.

NTSF Planning Committee Meeting

On March 16th, the NTSF Planning Committee held a virtual meeting. The Northeast (NE) Task Force will be the host of the 2022 Annual NTSF Meeting scheduled to be held in Philadelphia in June 2022. Agenda deadline, registration, and moderators/coordinators for the 2022 meeting were discussed by the representative from the NE Task Force. Preliminary discussions for the 2023 annual meeting continued with a review of proposed cities for the 2023 meeting location. The Midwestern Radioactive Materials Transportation Committee (MRMTC) will host the 2023 meeting.

Contact: Jerry Humphreys (609) 984-7469

NTSF Agenda Committee Meeting

On March 24th, the NTSF Agenda Committee held a virtual meeting. This meeting was held as a result of discussions held at the March 16th meeting pertaining to the agenda of the 2022 Annual Meeting. Finalizing of the agenda, sessions and speakers for the annual meeting were 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 February 10th, the SONGS CEP held a virtual meeting. A representative from Southern California Edison provided an overview on the decommissioning and demolition activities at the site. A representative from the Department of Energy (DOE) provided an overview of the DOE's notice of request for information on using a consent-based siting process to identify a federal interim spent nuclear fuel storage facility. After DOE's presentation, questions from the CEP panel members were addressed by the DOE representative. Representatives from the Action for Spent Fuel Solutions Now (ASFSN) coalition offered a local perspective and stated that they fully support the consent-based siting process to locate a federal interim storage facility. A representative from the Nuclear Energy Institute (NEI) provided a national viewpoint on consent based siting and next steps required for this process to succeed. A spent fuel expert provided his insights on international consent-based siting process.

Following the presentations, questions from the panel members were addressed by DOE, ASFSN and NEI staff. After the panel discussion, questions from the public were addressed by the various organization representatives.

Contact: Veena Gubbi (609) 984-7457

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

On February 28th, the Vermont Yankee NDCAP held a virtual public meeting. This meeting was a special meeting which focused on DOE's consent-based siting process for a consolidated interim spent nuclear fuel storage facility. Representatives from the DOE provided an overview on the consent-based siting process and DOE's request for information from the public via the Federal Register. After the presentation, questions from panel members were addressed by the DOE staff. A representative from the Social and Environmental Research Institute explained the challenges and opportunities of consent-based siting process.

Contact: Veena Gubbi (609) 984-7457

NES Reviews NRC's Regulatory Documents

On March 3rd, the NRC published the "Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning" proposed rule in the Federal Register. The NRC is requesting stakeholders to provide formal comments to the proposed rule. The NES section is in the process of reviewing the proposed rule.

Contact: Jerry Humphreys (609) 984-7469

Radioactive Materials Shipment Notifications

The Bureau of Nuclear Engineering is responsible for tracking certain radioactive materials that are transported in New Jersey. Advance notification for these radioactive materials 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 March 2022:

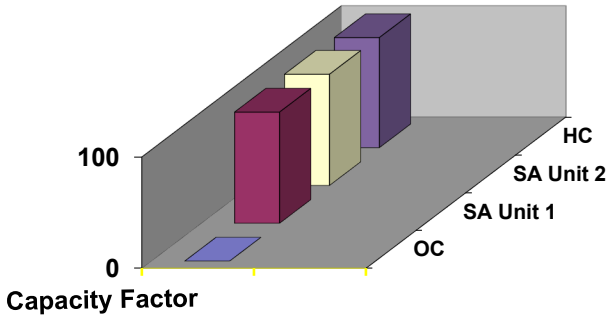
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	3	1

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

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – 1

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR MARCH 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.

	MARCH 2022		JAN - MAR 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 56 samples during the month of March 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 MARCH 2022

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	28
AIR IODINE	12
MILK (Cow)	4
SURFACE WATER	8
SOIL	4
TOTAL SAMPLES	56

REMP Sampling Equipment Maintenance

Staff coordinated the replacement of a BNE air sampler electrical conduit located in the environs of the Salem / Hope Creek nuclear facility. Technicians found the conduit severed from the existing junction box; thus, the BNE air sampler was not functioning. The unit was returned to power on March 28, 2022.

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

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

During the month of March 2022, five (5) 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

Technical Document Review – Decommissioning Plan

Staff reviewed the United States Nuclear Regulatory Commission (USNRC), Office of Nuclear Reactor Regulation, NRC-2015-0070; RIN 3150-AJ59, "Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning", February 2022.

Additional information on the rule and the public submittal process of formal comments on the rule can be found at the following website, https://www.nrc.gov/waste/decommissioning/reg-guides-comm/regulations/reg-improv-trans-to-decom.html

Contacts: Karen Tuccillo (609) 984-7443

Emergency Preparedness

Staff members attended emergency planning training on March 23, 2022, in preparation for the FEMA dress rehearsal exercise on March 29, 2022. Three staff members participated in the dress rehearsal exercise at the Hope Creek nuclear station at several locations: the Regional Operations Intelligence Center in West Trenton, NJ; the Emergency Operation Facility in Salem City, NJ; and on one of the BNE field monitoring teams.

Contacts: Karen Tuccillo (609) 984-7443

United States Nuclear Regulatory Commission (NRC) Virtual Regulatory Information Conference (RIC)

Staff members took part in the virtual 2022 NRC Annual RIC from March 8, 2022, through March 10, 2022. The RIC includes national and international participants from other government agencies, industry, international organizations, and the public. RIC participants share and discuss information on significant and timely nuclear regulatory activities and emergent issues. Complete information including the program agenda, participants, digital exhibits, and other items can be found at the following website, https://www.nrc.gov/public-involve/conference-symposia/ric/index.html

Contacts: Karen Tuccillo (609) 984-7443

Future Technologies Virtual Meeting / Seminar

A staff member attended a virtual seminar on Future-Proofing Engineering Systems on March 11, 2022. The seminar explores the possibilities for futureproofing engineering systems in the built environment. The focus of the seminar is with future projects involving the nuclear sector, more specifically projects involving the Small Modular Reactor (SMR) technologies. Additional information on the seminar can be found at the following website, https://www.ucl.ac.uk/bartlett/construction/seminar-series-future-proofing-engineering-systems-theory-meets-practice

Contact: Compton Alleyne (609) 984-7455

Joint Information System and Joint Information Center Methodology & Strategy

A staff member attended a virtual seminar on Joint Information System and Joint Information Center Methodology Strategy on March 3, 2022. The seminar is part of the Crisis Communication for Radiation Emergencies Series, presented by Summitet.com. The objectives were to define and describe the Information Management Cycle, the Joint Information System, and the Joint Information Center.

Contact: Karen Tuccillo (609) 984-7443

Radiation Fundamentals and Communication Training

A staff member attended a virtual seminar on Radiation Fundamentals on March 24, 2022. The seminar is part of a four-part series that includes (1) Radiation Fundamentals, (2) Risk Considerations for First Responders During a Radiological Incident, (3) Sorting Out the Alphas, Betas, and Gammas of Radiation Communications, and (4) Radiation Perception in the Public Consciousness. The sessions are supported by the Department of Energy / National Nuclear Security Administration, https://www.energy.gov/nnsa/national-nuclear-security-administration

Contact: Compton Alleyne (609) 984-7455

Effluent Release Data

The BNE monitors the effluents released from all four nuclear generating stations each month. The reported effluents include fission and activation products, total iodine, total particulate, and tritium released to the atmosphere and water. At the Oyster Creek, Hope Creek and Salem nuclear power plants, releases to the air and water are monitored each month and compared to historic releases. Releases to the atmosphere are from the 112-meter stack (Oyster Creek) or various monitored building vents (Oyster Creek, Hope Creek, and Salem).

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

In prior monthly reports, the BNE reported tritium results for a remedial pumping well that was part of the Oyster Creek liquid effluent groundwater extraction. In accordance with a NJDEP Directive and Notice to Insurers issued to Oyster Creek, former Oyster Creek owner Exelon Generation Corporation was required to clean up and remove tritium discharges released onsite from underground pipe leaks that occurred during 2009. With DEP approval, Exelon sampled groundwater from a dedicated pumping well (MW-73), measuring the concentration of tritium in the extracted groundwater, and discharging it into the plant's intake structure. In a letter from the NJDEP to the HDI (current owner of Oyster Creek) Plant Manager of Oyster Creek on January 9, 2020, the DEP concurred that the Oyster Creek site had complied with the

requirements outlined in paragraph 41 of the Directive and Notice to Insurers, thereby closing it out. Pumping Well MW-73 was placed out of service (Idle) and monitoring of this well was discontinued. Pumping has been terminated unless tritium activity is identified that would require restoration of groundwater extraction by returning MW-73 to service. Therefore, tritium results for pumping well MW-73 will no longer be reported by the BNE. While the pump and treat remediation of tritium has been completed, HDI continues onsite groundwater monitoring as part of their Radiological Groundwater Protection Program. Additional information on the Oyster Creek tritium leak is available at the DEP website, http://www.state.nj.us/dep/rpp/bne/octritium.htm.

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

The February 2022 gaseous and liquid effluent release data for the Salem and Hope Creek nuclear plants have been included in this report. In addition, the February 2022 liquid effluent data from Oyster Creek are also included. Beginning in 2022, gaseous effluent data from Oyster Creek shall be reported on a quarter-annual basis. The gaseous effluent data for the period from January through March 2022 shall be included in the April 2022 monthly report available in early May 2022.

PSEG Nuclear
Radioactive Effluent Releases[1]
Nuclear Environmental Engineering Section
For the Period of 02-01-22 to 02-28-22

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0.0142	Ci
Iodines	0.00188	Ci
Particulates	0.00003	Ci
Tritium	35.7	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.00308	Ci
Tritium	9.71	Ci

Salem Unit 1 Gaseous Effluents

Effluent		
Fission Gases	0.0215	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	28.7	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.00001	Ci
Tritium	13.7	Ci

Salem Unit 2 Gaseous Effluents

Effluent		
Fission Gases	0.0323	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	18.5	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.00083	Ci
Tritium	25.4	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
Nuclear Environmental Engineering Section
For the Period of 02-01-22 to 02-28-22

Oyster Creek Liquid Effluents

Effluent		
Fission Products	0.0000	Ci
Tritium	0.134	Ci

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 March:

Artificial Island CREST System Ambient Radiation Levels March 2022 Derived From One Minute Averages UNITS = mR/Hr				
AI1	AI2	AI3	AI4	AI5
.0062	.0063	.0058	.0062	.0065
AI6	AI7	AI8	AI9	AI10
.0064	.0055	.0054	.0072	.0052

Oyster Creek CREST System Ambient Radiation Levels March 2022 Derived From One Minute Averages UNITS = mR/Hr			
OC1	OC2	OC3	OC4
.0039	.0055	.0059	.0048
OC5	OC6	OC7	OC8
.0053	.0056	.0048	.0050
OC9	OC10	OC11	OC12
.0058	.0057	.0054	.0054
OC13	OC14	OC15	OC16
.0048	.0054	.0051	.0053

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

Licensee EP Meeting

On March 14, 2022, NEPS staff held a virtual State and Licensee emergency preparedness meeting with Holtec/CDI, PSEG and NJOEM. Discussion topics included: decommissioning activities at Oyster Creek; 2022 Exercise Schedule; logistics for the upcoming rehearsal exercise; Initial Contact Message Form transmission; Joint Information System project; Virtual Plumes scenario files for upcoming exercises; PSEG updates on the Wind Port project.

Contact: Ann Pfaff (609) 984-7451

NRC RIC

From March 8-10th, 2022, the Nuclear Regulatory Commission (NRC) hosted the Annual Regulatory Information Conference (RIC). Hosted on a virtual platform for the second year due to the COVID public health emergency, attendance was open to government stakeholders for no cost and no travel. NEPS staff took advantage of the opportunity and joined sessions discussing decommissioning, small modular reactors, Fukushima, dry cask storage, accident tolerant fuel and risk informed decision making.

Contact: Ann Pfaff (609) 984-7451

National Guard Training

On March 3, 2022, NEPS staff provided field monitoring team training for the 21st Civil Support Team (CST). The training focused on field team operations as the National Guard will form one of the three field monitoring teams for the upcoming exercises. The training included review of Standard Operating Procedures, use of new Teletrix equipment for radiation detection during exercises and implementation of CBRNResponder app for uploading field readings. 21st CST members also reviewed use of the BNE's Nuclear Emergency Response vehicles and the radiation detection equipment installed to take real-time measurements.

Contact: Ann Pfaff (609) 984-7451

Data Coordinator Training

On March 15, 2022, NEPS staff provided training for Assistant Data Coordinators participating in the March 29th, 2022, full-scale nuclear emergency response exercise. The training reviewed the Federal Radiological Monitoring Assessment Center (FRMAC) Acceptance Criteria for data assessment. It also covered use of RadResponder to retrieve and review the data uploaded by Field Monitoring Team members and processes for accepting, rejecting and editing the entries. Several new Assistant Data Coordinators attended the training, as well as experienced staff familiar with their role and its responsibilities.

Contact: Ann Pfaff (609) 984-7451

Field Monitoring Team Training

On March 16, 2022, NEPS provided field monitoring team training for staff participating in the March 29th full scale response exercise for Hope Creek Nuclear Generating Station. The training focused on field team operations as this is the first time that field monitoring teams will participate in a response exercise since February 26, 2020, due to the COVID public health emergency. The training included review of Standard Operating Procedures, use of new Teletrix equipment for radiation detection during exercises and implementation of CBRNResponder app for uploading field readings. It also reviewed use of the BNE's Nuclear Emergency Response vehicles, and the radiation detection equipment installed to take real-time measurements.

Contact: Ann Pfaff (609) 984-7451

Controller Training

On March 16, 2022, NEPS staff provided training for Controllers supporting the March 29th Nuclear Emergency Response Exercise for Hope Creek Generating Station. The training reviewed use of the new Teletrix equipment for radiation detection during exercises and implementation of CBRNResponder app for uploading radiation readings collected by field monitoring teams. It also included a review of updates to Standard Operating Procedures, associated forms and pertinent logistics for the exercise.

Contact: Ann Pfaff (609) 984-7451

Field Command Center Training

On March 17, 2022, NEPS provided training for the Field Command Center staff in preparation for the March 29th full scale Hope Creek Nuclear Emergency Response Exercise. The training focused on operations, use of electronic tools, communications and data sharing. It included a review of Standard Operating Procedures, use of new Teletrix equipment for radiation detection during exercises and implementation of CBRNResponder app for uploading field readings. The Field Command Center has not participated in a full-scale response exercise since February 26, 2020, due to the COVID public health emergency. Several new staff from the Radiation Protection Element attended the training to become familiar with exercise expectations.

Contact: Ann Pfaff (609) 984-7451

Training for Emergency Operations Facility / Emergency Operations Center / Joint Information Center Staff

On March 23, 2022, NEPS provided training for staff supporting the Emergency Operations Facility, Emergency Operations Center and Joint Information Center in preparation for the upcoming March 29th Hope Creek Nuclear Generating Station Rehearsal Exercise.
The training focused on changes to procedures, use of electronic tools, data sharing, communications and exercise logistics. This is the first full-scale in-person nuclear emergency response exercise since February 26, 2020, due to the COVID public health emergency. On May

10, 2022, FEMA will evaluate the offsite-response organizations ability to protect the public while NRC evaluates the licensee's performance in a full-scale evening exercise.

Contact: Ann Pfaff (609) 984-7451

Joint Information Center Walkdown

In preparation for the March 29th Hope Creek Nuclear Emergency Response Exercise, BNE Manager joined NJ OEM and PSEG Nuclear LLC staff in a walkdown of the Joint Information Center (JIC) located at the State Police's Regional Operations Intelligence Center (ROIC). Public Information Officers representing NJ OEM, BNE and PSEG will join together to provide real-time information to be conveyed to the public during the exercise. Supported by a Homeland Security Information Network (HSIN) secure virtual platform, each organization will share timely updates with each other and prepare information for the Governor and/or designated spokespeople to convey to the public. The State of Delaware also will support the virtual HSIN platform, although not send a representative to the ROIC. In the past, representatives from each organization would gather at the Emergency News Center (ENC) located at Salem County's Office of Emergency Management. Given the current paradigms of social media and rapid sharing of information, providing in-person briefings to the media at the ENC location is no longer realistic. The new model locating the JIC at the ROIC will better position all organizations to work together and provide timely information to representatives communicating to the public during a nuclear emergency.

Contact: Ann Pfaff (609) 984-7451

Quarterly Facility Inspections

In the month of March 2022, NEPS staff have continued inspections for the first quarter of 2022 to ensure they are in a state of readiness and in preparation for the March 29th exercise. Emergency facilities include the Emergency Operating Facility (EOF) in Salem County, Field Command Center (FCC) and Emergency Operating Center (EOC) both in Ewing, NJ. In the event of an emergency at any of the nuclear power plants, responders are dispatched to these facilities to monitor the event and work collaboratively to provide a Protective Active Recommendation (PAR) to the Governor if necessary.

Contact: Ann Pfaff (609) 984-7451

Nuclear Emergency Response Exercise for Hope Creek

On March 29, 2022, Radiation Protection Element staff joined the New Jersey State Police Office of Emergency Management (NJ OEM), Salem and Cumberland Counties, Delaware Emergency Management Agency (DEMA) and PSEG Nuclear LLC in a full-scale nuclear emergency response exercise. Observed by the Institute of Nuclear Power Operations (INPO), the exercise is a rehearsal in preparation for the federally evaluated evening exercise scheduled for May 10, 2022. Simulating an accident at Hope Creek Nuclear Generating Station, staff from the Bureaus of Nuclear Engineering (BNE), X-ray Compliance, Environmental Radiation, Geographic

Information Systems and Communications & Response Services, as well as National Guard 21st Civil Support Team, staffed the Emergency Operations Facility in Salem, Field Command Center in Ewing and State Emergency Operations Center and Joint Information Center both at the Regional Operations Intelligence Center in West Trenton. The successful exercise was the first full-scale in-person nuclear emergency response exercise since February 2020 due to the COVID public health emergency.

Contact: Ann Pfaff (609) 984-7451