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

FEBRUARY 1 THROUGH FEBRUARY 29, 2020

SECTION I- OFFICE OF THE ASSISTANT DIRECTOR

Original signed by:

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Assistant Director, Pat Mulligan

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

A. OFFICE OF THE BUREAU CHIEF

NJDEP and Black Environmental Solidarity Team (BEST), Black History Month Celebration

On February 12, Bureau staff participated in a Black History Month event focusing on "African Americans and the Vote" sponsored by NJDEP and BEST.

Doris Heffner - Retirement

On February 29, Ms. Doris Heffner, Agency Service Representative 3, retired from State employment after 40 years of service. For the past thirty-one years, Doris has provided administrative support to the Section and Bureau. Doris' dedicated service to the Bureau, the Radiologic Technology Board of Examiners and to the residents of New Jersey will be missed.

Contact: Arthur Robinson (609) 984-5634

B. REGISTRATION SECTION

Machine Source Registration and Renewal Fees

The Registration Section has begun invoicing the registrants for FY2020 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 2020					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
$15,704.00	$54,006.00	$3,037,438.00	$2,990,377.00	$6,076.00	98%

Progress on Collection of FY 2020 Registration Renewal Fees

Renewal Groups	Paid 7/31/19	Paid 8/31/19	Paid 9/30/19	Paid 10/31/19	Paid 11/30/19	Paid 12/31/19	Paid 1/31/20	Paid 2/28/20	Paid 3/31/20	Paid 4/30/20	Paid 5/31/20	Paid 6/30/20
0-F	45%	79%	89%	97%	98%	99%	100%	100%				
G-L	N/A	49%	73%	88%	97%	99%	99%	100%				
M-R	N/A	N/A	45%	75%	89%	94%	97%	99%				
S-Z	N/A	N/A	N/A	49%	74%	89%	94%	97%				

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, 17% percent paid on-line.

Monthly Machine Source Registration Activity FY 2020

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	28	16	19	27	16	14	22	21					163
Terminated Facilities	27	39	28	37	32	25	35	25					248
Net Change (Facilities)	1	-23	-9	-10	-16	-11	-13	-4	0	0	0	0	-85
New Registrations	156	124	147	156	145	122	194	147					1191
Stored Registrations	56	63	46	53	51	32	73	59					433
Disposed registrations	102	90	98	89	98	120	102	66					765
Net Change (Machines)	-2	-29	3	14	-4	-30	19	22	0	0	0	0	-7

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: Ramona Chambus (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 February 2020, IQ evaluations were performed on 87 x-ray units with the following results:

- 57 units (66%) had excellent image quality scores.
- 29 units (33%) had good image quality scores.
- 1 unit (1%) had fair image quality scores.
- 0 units (0%) had poor image quality scores.

Entrance Skin Exposures

Entrance skin exposure (ESE) is a measurement of the radiation exposure a patient receives from a single x-ray at skin surface. There are three main factors that affect ESE: technique factors, film-screen or digital image receptor speed, and film or digital image processing. A key element of our strategy is to ensure that facilities are aware of their ESE and to encourage them to take steps to reduce their ESE if it is high.

When the Bureau conducts inspections to determine compliance with New Jersey Administrative Code 7:28, a measurement of entrance skin exposure (ESE) is taken. A report containing the measurement results is sent to each facility at which an ESE measurement was taken. This report categorizes the facilities measured ESE as low, average, high or extremely high. Facilities with extremely high ESE readings are asked to consult with their physicist and determine the cause of the extremely high ESE, take corrective actions to reduce the x-ray machine ESE, and send a report of their findings and corrective actions to the BXC within thirty days.

Medical Facilities

Prior to the implementation of quality assurance regulations in June 2001, baseline data revealed that twenty-five percent of New Jersey facilities had extremely high ESE. These facilities are delivering unnecessary radiation exposure to its patients. The Bureau has documented a steady decrease in the number of facilities with extremely high patient radiation exposure since the implementation of its quality assurance program.

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

- In February 2020, ESE measurements were calculated on 70 x-ray units that performed lumbo-sacral spine x-rays. One unit (1.4%) had extremely high ESE measurements.

- In February 2020, ESE measurements were calculated on 2 x-ray units that performed chest x-rays. No units (0%) had extremely high ESE measurements.

- In February 2020, ESE measurements were calculated on 15 x-ray units that performed foot x-rays. No 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.

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

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

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

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

- In February 2020, ESE measurements were calculated on 163 dental x-ray units that used DR digital imaging. Thirteen units (8%) were measured as having extremely high ESE.

- In February 2020, ESE measurements were calculated on 8 dental x-ray units that used CR (PSP) digital imaging. Two units (25%) were measured as having extremely high ESE.

- In February 2020, ESE measurements were calculated on 20 dental x-ray units that used D speed film. No units (0%) were measured as having extremely high ESE.

- In February 2020, ESE measurements were calculated on 8 dental x-ray units that used E/F, F or Insight speed film. Three units (38%) were measured as having extremely high ESE.

Dental Amalgam Inspections

Effective November 1, 2009, all dental facilities that generate amalgam waste were required to install amalgam separators (N.J.A.C. 7:14A-1 et seq.). In June 2010, the Bureau met with Division of Water Quality staff to discuss the dental amalgam requirements and to develop an amalgam questionnaire. This questionnaire would be provided to each dental facility when they are scheduled for an x-ray inspection. During each inspection, the inspector verifies the information on the questionnaire and visually inspects that an amalgam separator has been installed. In February 2020, 84 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2020 is 649.

Inspection Activity and Items of Non-compliance

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

Contact: Patricia Malloy (609) 984-5370

D. TECHNOLOGIST EDUCATION AND LICENSING SECTION

The Section continued to process license and examination applications investigate complaints and respond to inquiries during the month of February. Statistical information follows in

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

Radiologic Technology Board of Examiners (Board):

The Board met on February 5, 2020. Minutes of the meeting will be made available on the Bureau website once accepted by the Board at a future meeting. This meeting resulted in ninety-eight activities and letters/reports to be written. A full summary of the meeting is available upon request. The following are highlights of some major issues discussed at this meeting:

1. Reviewed the ethical conduct of three radiologic technologists and one initial license applicant and recommended to the Commission on Radiation Protection (Commission) that a license sanction be issued to three technologists and to approve the applicant's application for an initial license. The Commission, at its February 19, 2020 meeting, reviewed and approved the Board's recommendations.

2. Was provided with 2019 examination results for New Jersey schools of diagnostic radiologic technology, radiation therapy technology, dental radiologic technology and nuclear medicine technology and a comparison with national examination data. New Jersey's mean score and passing percentage were higher than the national figures for all categories except for nuclear medicine, where New Jersey's mean score was slightly below national figure, however, the passing percentage was higher than the national figure.

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 2020 Invoiced & Collected				
Invoice Type	**Monthly Invoiced**	**Monthly Collected**	**Fiscal YTD Invoiced**	**Fiscal YTD Collected**
Examinations	$0	$0	$480	$480
Initial Licenses	$3,940	$3,480	$52,520	$52,940
Renewal Licenses	$850	$3,820	$10,500	$33,820
Totals	$4,790	$7,300	$63,500	$87,240

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 3 facilities with stereotactic/needle localization breast biopsy unit during the month of February. A total of 23 of the 61 planned stereotactic facility inspections have been performed since July 1, 2019.

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 three categories: Level 1, Level 2 and Level 3. 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 and Repeat Level 3 non-compliances are considered serious. The facility must respond with their corrective actions within thirty days. Level 3 non-compliances are considered less serious and the facility is expected to correct the non-compliance in a timely manner. Inspectors will review facility corrective actions at the next annual inspection.

The Mammography Section inspected 17 facilities in February. There were no facilities found to have non-compliance issues. A total of 111 of the 239 facilities scheduled to be inspected under the contract that will expire on August 20, 2020.

Facility Non-compliance Discovered

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

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

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

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

Contact: Mary Kanewski (609) 984-5370

F. BUREAU ENFORCEMENT SERVICES SECTION

Enforcement Actions for February 2020

Bureau Enforcement is responsible for producing and following up on all enforcement actions for violations found during Bureau x-ray inspections. Since the Bureau has not yet been fully integrated into the Departments NJEMS database system, it enters summary inspection information into NJEMS on all inspections conducted by the Bureau to provide more accurate

inspection numbers for the Department's NJEMS reports. See the table below for current month and year to date information.

Inspections and Enforcement Documents Issued
February 2020

Bureau of X-Ray Compliance		
	Month	YTD
Compliance Inspections entered into NJEMS	69	511
Dental/CBCT Inspections entered into NJEMS	60	538

Notice of Violations	Closed	Effective	Pending	Total	YTD
	12	10	1	23	139

Administrative Orders	Closed	Effective	Pending	Total	YTD
	1	2	19	22	236

Notice of Prosecutions	Closed	Effective	Pending	Total	YTD
	0	2	14	16	226

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
	$13,100.00	$109,450.00	$100,300.00	$25,150.00	$125,450.00

Contact: Arthur Robinson (609) 984-5634

APPENDIX A - NJDEP BUREAU OF X-RAY COMPLIANCE
INSPECTOR ACTIVITY REPORT
01/30/2020 THROUGH 02/28/2020

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	90	304		16
9	HAND DELIVERY	29			82
11	INVESTIGATION	20			
12	STEREOTACTIC INSPECTION	3	3		
15	QA INSPECTION ROUTINE LEVEL 1	88	87	56	3
28	DENTAL CBCT INSPECTION	20	101		2
	Total On-Site Inspections:	**250**	**495**	**56**	**103**
6	OFFICE VIOLATION RESPONSE REVIEW	10		10	
18	OFFICE QA VIOLATION RESPONSE REVIEW	21		23	
27	OFFICE COMPLIANCE LETTER (FEES)	4		16	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	8		8	
	Total Office Inspections:	**43**		**57**	**0**

Number of Enforcement Documents Issued

NOV	24
AO	21
NOP	17
Amount of Penalties	$15,200

01/30/2020 THROUGH 02/28/2020

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.	**3**
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**6**
CB-002	22.7(a)1	CBCT No QA Manual	**1**
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	**2**
D-003	16.8(a)2	Survey not available upon relocation or changes to shielding	**3**
D-016	16.3(a)7	kVp exceeds manufacturer's specifications (certified unit).	**6**
D-025	16.3(a)16	Timer accuracy exceeds manufacturer’s specifications (certified units).	**1**
D-027	16.3(a)17	Radiation reproducibility exceeds 5% for certified unit	**1**
G			
G-007	2.5(c)	device not working properly	**2**
Registration			
REG1	3.1 (a) and	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	**6**
Veterinary			
V-001	7.1(a)	veterinary unit no radiation safety survey of the environs	**3**
Total Violations Cited Non-QA			**39**
Violations Cited QA			
Quality Assurance			
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**23**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**6**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**6**
QA-038	22.6(a)3	No Med Phys QC Survey for Fluoro	**2**

01/30/2020 THROUGH 02/28/2020

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited QA			
Quality Assurance			
QA-139	22.10(e)1	Registrant failed to immediately initiate corrective action.	1
QA-172	22.5(j)1	QC Test records maintained for 12 months	3
QA-174	22.5(j)3	All images for QC tests for items 8, 11, 12 & 13 maintained for 1 year	6
QA-175	22.6(i)1	All records for QC tests maintained for one year	1
QA-179	22.7(j)2	All images for QC tests for items 2, 3, 4 & 5 maintained for 30 days	1
Total Violations Cited QA			**49**
Total Violations			**88**

APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION
MONTH OF FEBRUARY 2020

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	11	-	3	49	-	-	-	-	63	860	1,100
Licenses Renewed	9	1	2	29	-	-	-	-	41	341	N/A
Total Licensed	9,307	1,022	867	11,762	55	22	7	77	23,119	N/A	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	2	N/A
Investigations Conducted	2	-	-	1	-	-	-	-	3	27	30
Licenses Verified	121	18	8	361	-	-	-	-	508	4,468	7,000
Expired Licenses	-	-	-	2	-	-	-	-	2	19	N/A
Unlicensed	1	-	-	3	-	-	-	-	4	22	N/A
Enforcement Documents Issued	4	-		20	-	-	-	-	24	164	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	$1,300	-	-	$4,350	-	-	-	-	$5,650	$33,600	N/A
Licenses Sanctioned	2	-	-	1	-	-	-	-	3	6	N/A
Approved Educational Schools	15	2	3	22	-	-	-	-	42	42	N/A
New School Application Evaluated	-	-	-	-	-	-	-	-	0	3	8
Curriculum Modifications Evaluated	-	-	-	1	-	-	-	-	1	17	20
School Inspections Conducted	-	-	-	1	-	-	-	-	1	7	7
Total Schools Reviewed	-	-	-	2	-	-	-	-	2	26	27
Clinical Applications Approved	-	-	-	34	-	-	-	-	34	554	1,100

Appendix A - Bureau of X-ray Compliance
Mammography Section
February 2020

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	13	4	0	17	111	239
Machines Inspected	0	16	7	0	23	150	
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	0	0	0	0	11	
FDA Violations Level 3	0	0	0	0	0	0	
Registered	0	2	0	0	2	21	
Canceled	0	0	0	0	0	25	
Stereotactic							
Facilities Inspected	0	1	2	0	3	23	61
Machines Inspected	0	1	2	0	3	24	
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	2	1	0	3	6	
Canceled	0	2	1	0	3	6	

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

Uncertified Radon Tester

An individual who conducted 94 radon tests without certification was investigated and subsequently arrested on February 27, 2020 at the Sussex County Courthouse by detectives from the New Jersey Division of Criminal Justice.

EPA Conference Call

A conference call was held with the new chief of US EPA's Region 2 Technology, Transportation and Radiation Branch to make introductions and discuss the following topics:

- Overview of EPA's radiation protection program
- Overview of NJDEP's radiation protection program
- Possible areas of coordination

B. RADIOACTIVE MATERIALS PROGRAM

Medical, Industrial, and Reciprocity

In the month of February, the Bureau responded to four (4) incidents:

Date	Type of Incident	Description	Status
2/3/20	Trash	Load of MSW rejected at incinerator and returned to transfer station for decay. Load was subsequently disposed without incident.	Closed
2/7/20	Scrap	A load of curbside recycling set off the radiation alarm at a scrap metal recycling facility. The load was returned to its origin where the truck was isolated and secured. It was subsequently accepted at the recycling facility.	Closed
2/10/20	Scrap	Load of scrap investigated for alleged elevated levels of radiation and found to be at background levels.	Closed
2/13/20	Trash	Load of MSW rejected at PA landfill and returned to a NJ transfer station for sorting and identification. Item was subsequently disposed without incident.	Closed

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 1/1/20-2/29/20	FY-To-Date 7/1/19-2/29/20
Number of Amendments Processed:	17	131
Number of Renewals Processed:	3	18
Number of Initial Applications Processed:	0	9
Number of Active Licenses	585	585
Number of Terminations:	1	10
Number of Reciprocity Requests Received:	45	197
Number of Incidents:	3	15
Number of Inspections:	5	133

Contact: Debbie Wenke (609) 984-5509

General Licensing

Reconciliation of the Generally Licensed and Tritium Databases that were inherited from the NRC in 2009 continues. 184 sources on the databases were verified during February.

Staff continues to maintain entry of quarterly reports from manufacturers and distributors into the generally licensed database. No reports were received reflecting quarterly transactions.

Generally Licensed Device Registration Forms continue to be maintained. A total of 50 registrations are currently active. 4 inspections of registered facilities were performed in February.

Contact: Sarah Adkisson (609) 984-5466

D. SUMMARY OF ENFORCEMENT – February 2020

	Bureau of Environmental Radiation – By Month (2/1/20 – 2/29/20)			
	Administrative Orders			
	Closed	Effective	Pending	Total
Radioactive Materials Section	1	1	1	3
Radon Section	0	0	3	3
	Notice of Prosecutions			
	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	0	0	0
Radon Section	0	0	2	2
	Bureau of Environmental Radiation – Fiscal Year to Date (7/1/19 – 2/29/20)			
	Administrative Orders			
	Closed	Effective	Pending	Total
Radioactive Materials Section	11	4	1	16
Radon Section	0	0	3	3
	Notice of Prosecutions			
	Closed	Effective	Pending	Total
Radioactive Materials Section	1	1	0	2
Radon Section	0	0	1	1
	Notice of Violations			
	Closed	Effective	Pending	Total
Radioactive Materials Section	4	2	0	6
Radon Section	0	0	2	2

Amount Assessed in Penalties = FY

	Total Amount Assessed for FY 20	Amount Collected from Current FY20	Amount Collected from FY19	Total Amount Collected (FY19+FY20)
Radioactive Materials Section	$1,250.00	$1,250.00	$ 6,505	$ 7,755
Radon Section	$0.00	$0.00	$87,000	$87,000

Amount Assessed in Penalties = By Month

	Total Amount Assessed for 2/1/20 – 2/29/20	Amount Collected from 2/1/20 – 2/29/20
Radioactive Materials Section	$0.00	$0.00
Radon Section	$0.00	$0.00

E. RADIOLOGICAL AND ENVIRONMENTAL ASSESSMENT SECTION (REAS)

Water Treatment

There are currently 23 active water treatment systems regulated with specific licenses and 17 active general license registrations (12 radium systems and 5 uranium systems).

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff worked on the following sites/projects:

- National Lead site in Sayreville
- Shieldalloy Metallurgical Corporation in Newfield
- JT Baker in Phillipsburg
- American Dream Meadowlands Project in East Rutherford
- FMC Corporation in Carteret
- Rustoleum in Newark
- EPEC site in Fords
- PSEG Penhorn Substation in Jersey City
- Mack Boring & Parts site in Union
- Phelps Dodge Wire & Cable in Carteret
- Hudson County Chromate Site 168 in Kearny
- Agrico in Carteret

Meetings were conducted with representatives of JT Baker, National Lead, and Phelps Dodge Wire & Cable. Site visits were conducted at Rustoleum and Hudson County Chromate Site 168.

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

Historic Non-Military Radium Project

Staff are planning surveys necessary to address one historic radium company, located at six contiguous properties in Newark.

Contacts: James McCullough (609) 984-5480 or Jenny Goodman (609) 984-5498

F. RADON SECTION

Electrets

Two electrets were sent out to a homeowner as part of the confirmatory testing program. The electrets have not yet been returned. Two other electrets were returned and analyzed, and the homeowner was notified appropriately.

Contact: Charles Renaud (609) 984-5423

Special Projects

The State Indoor Radon Grant (SIRG) for fiscal year 2021 was prepared and submitted for approval.

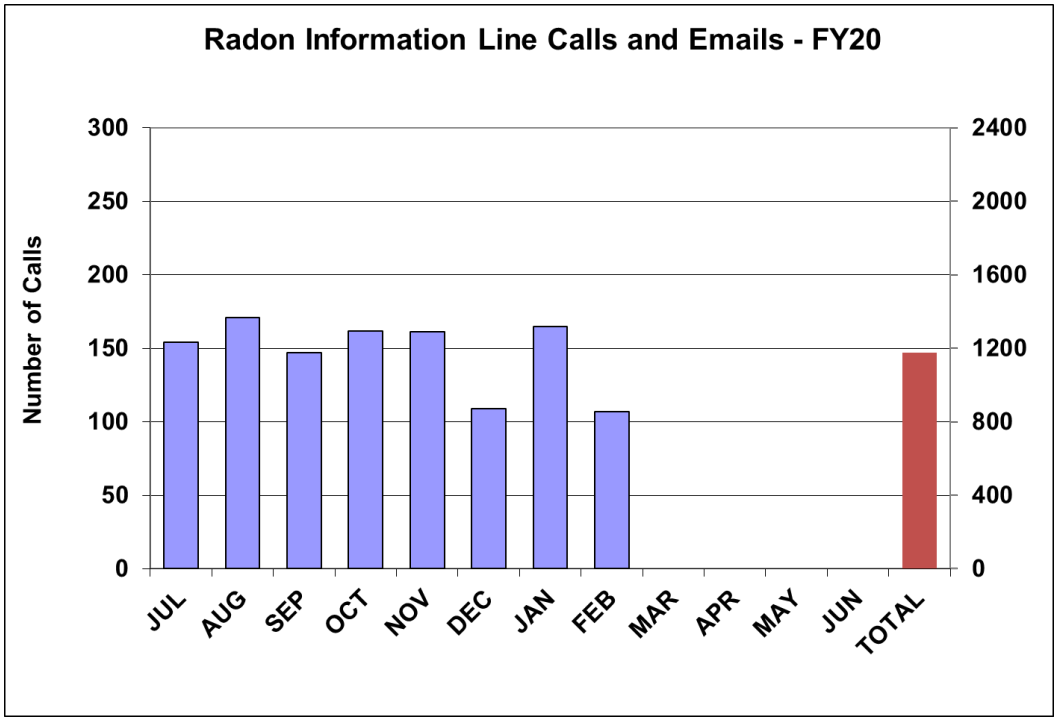
Contact: Charles Renaud (609) 984-5423

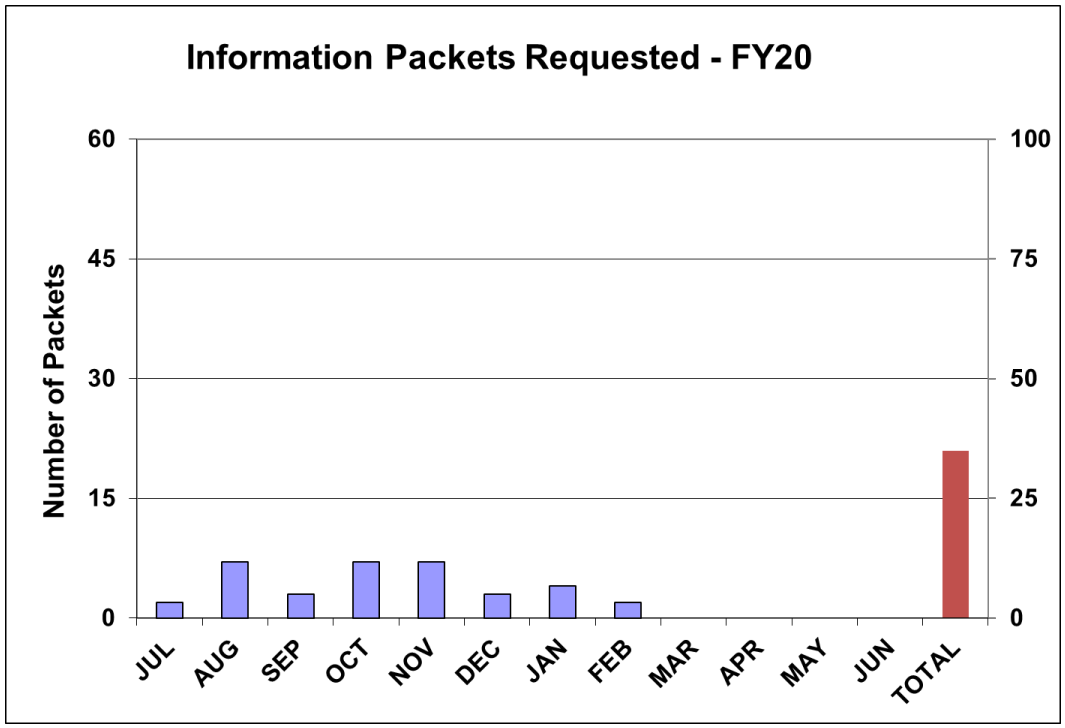
Measurement and Mitigation Radon Certifications

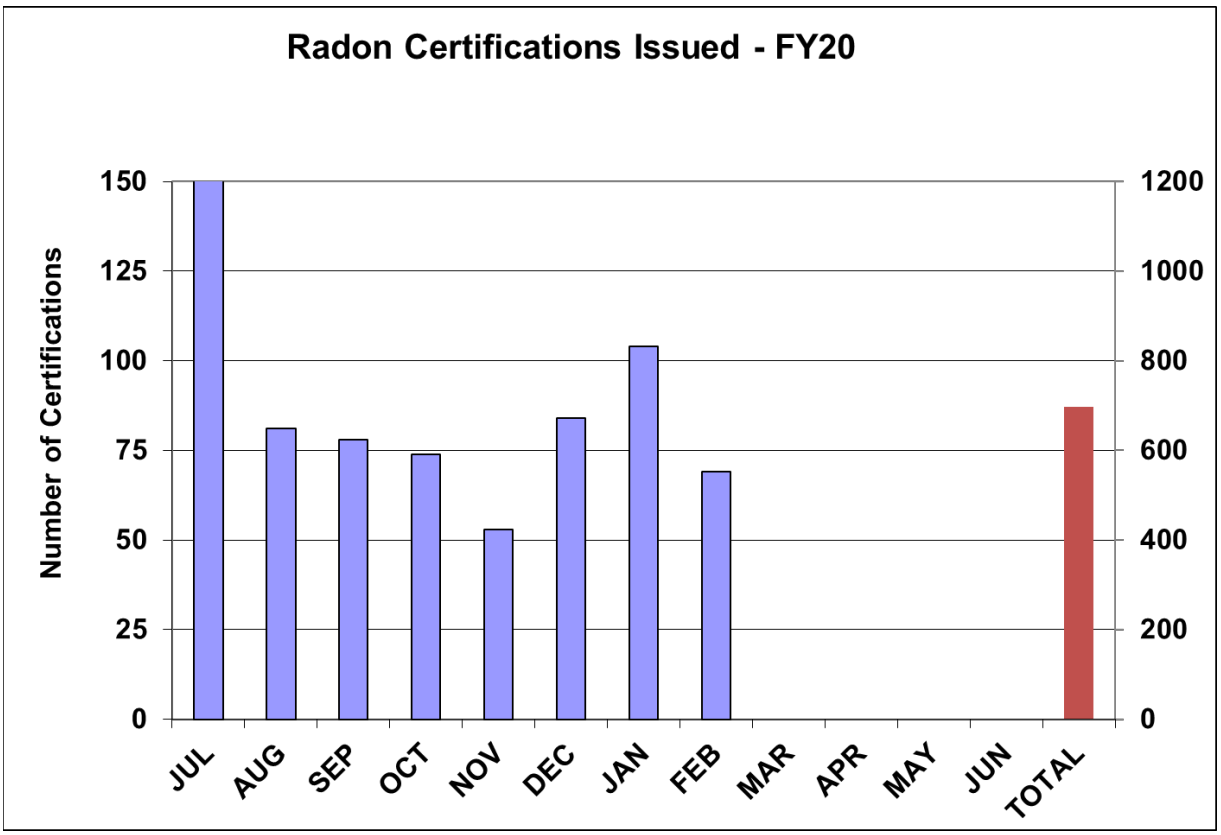
Certification Type	Initial	Renewal
MES		2
MET	7	50
MIS		3
MIT	1	
Provisional to Full	4	
MEB		2
MIB		

Contact: Anita Kopera (609) 984-5543

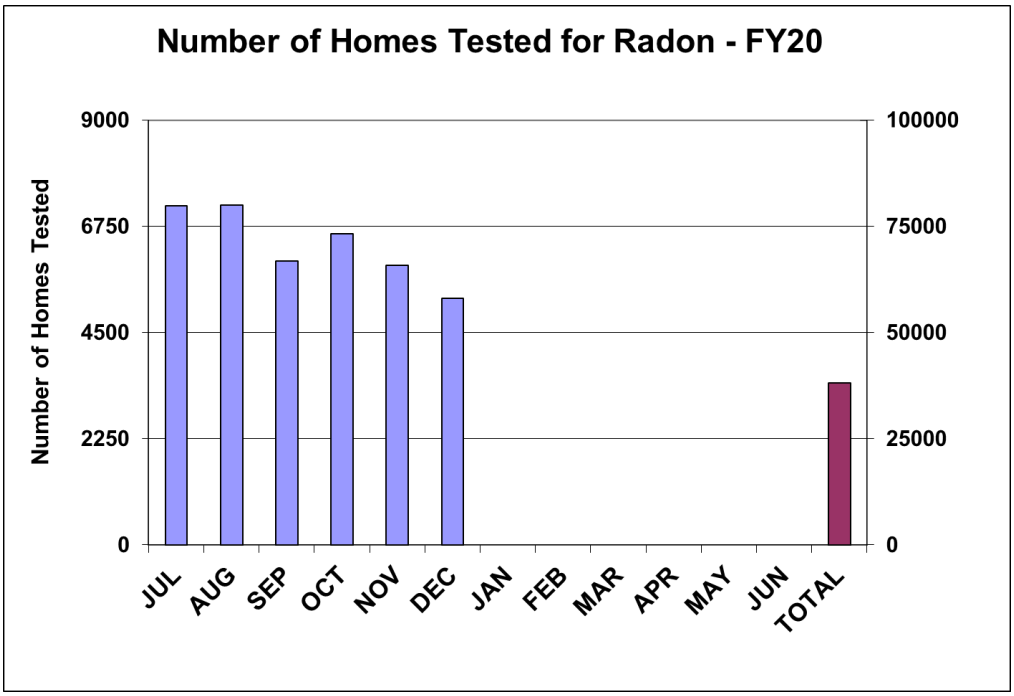
APPENDIX B: BUREAU OF ENVIRONMENTAL RADIATION SUMMARY OF STATISTICS

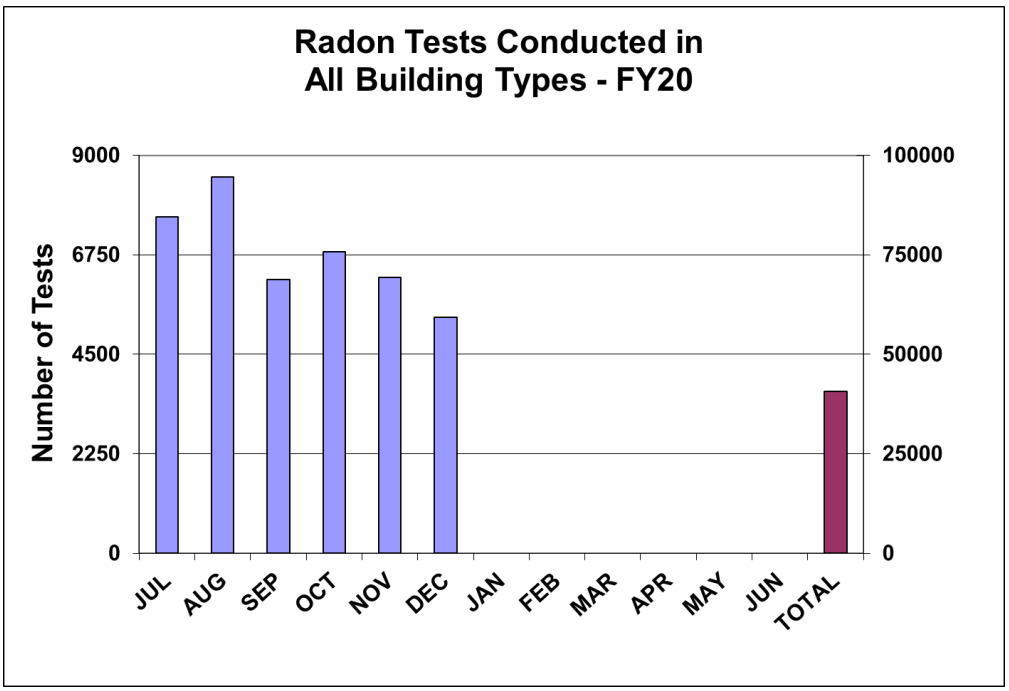


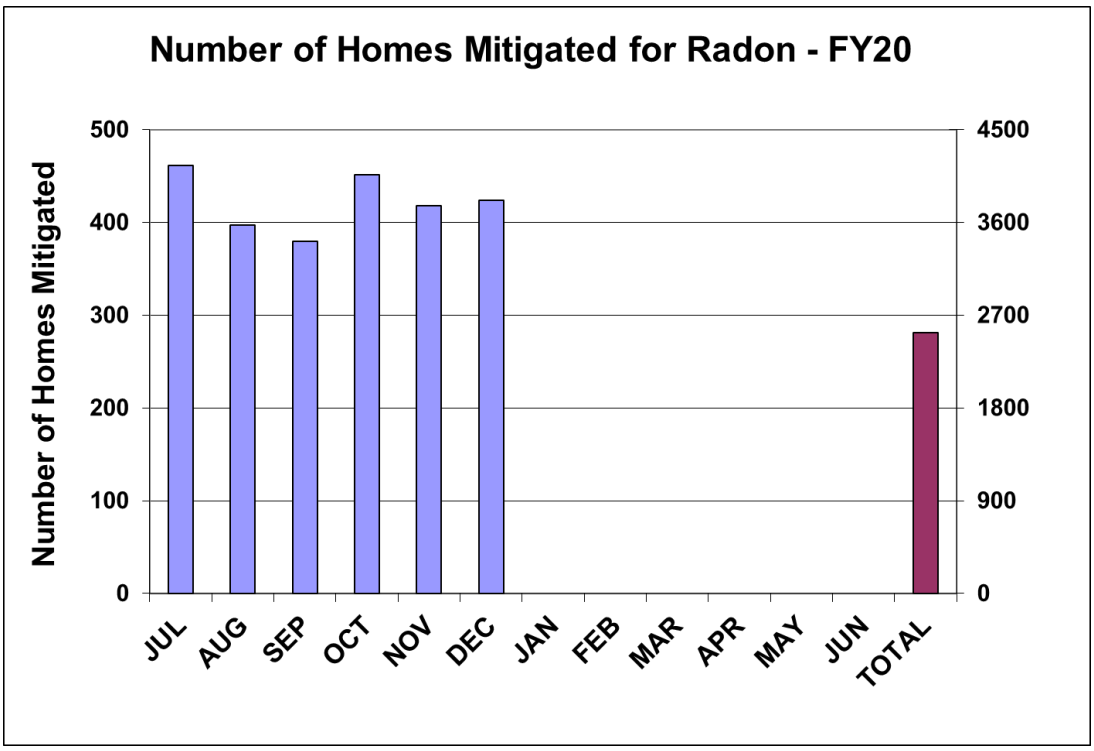


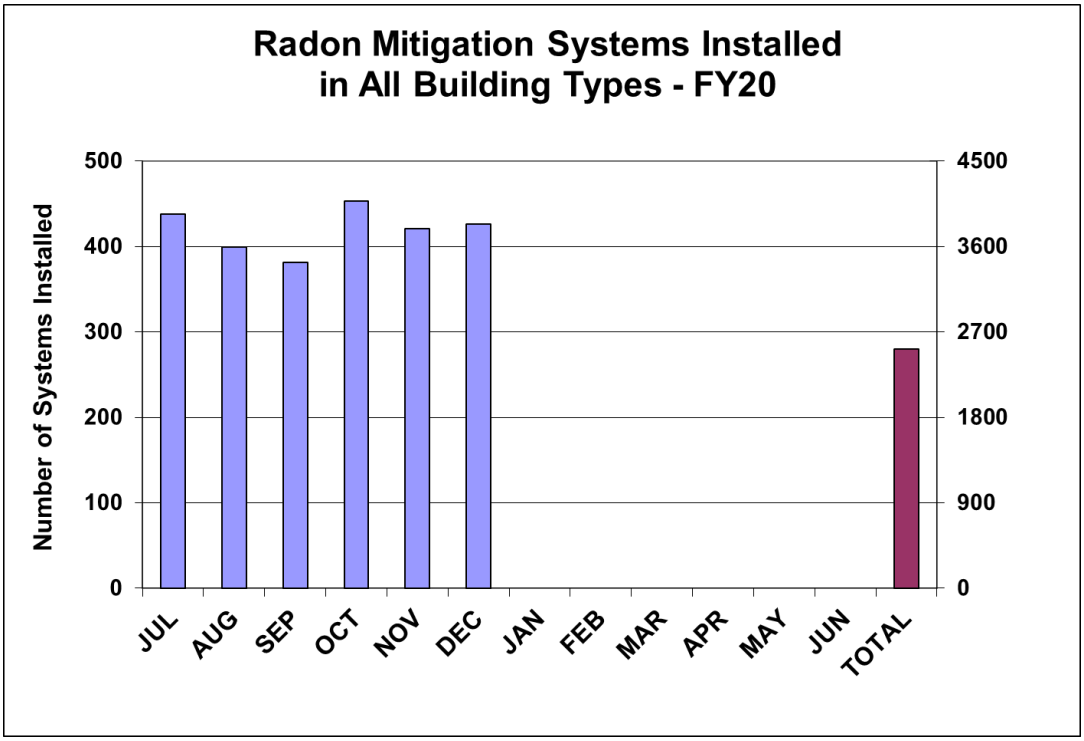

Radon Certifications Issued - FY20
Number of Certifications
150
125
100
75
50
25
0
1200
1000
800
600
400
200
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
TOTAL

Radon testing and mitigation data is submitted to the Radon Section monthly by all certified radon businesses. This data has been collected for all building types since the implementation of the radon certification regulations in 1991. According to N.J.A.C. 7:28-27.28 (a) and (e), Radon test results and mitigation reports for December 2019 are due by February 1, 2020.






Number of Homes Mitigated for Radon - FY20
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 - FY20
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 – Permanently Shutdown

Exelon permanently ceased power operations at Oyster Creek on September 17th, 2018. Oyster Creek immediately began the process of defueling the reactor which was completed on September 25th, 2018. Following defueling completion, Exelon provided certifications to the Nuclear Regulatory Commission (NRC) of permanent cessation of power operations and permanent removal of fuel from the reactor. Oyster Creek is currently in the DECON mode of decommissioning.

On August 31, 2018, Exelon Generation and Holtec International submitted a License Transfer Application (LTA) to the NRC. The NRC completed its review of the LTA and found that Holtec is suitable and qualified to complete the safe decommissioning of Oyster Creek. The NRC approved the LTA on June 20, 2019.

On July 1, 2019, Holtec International and its subsidiaries announced the ownership and acquisition of Oyster Creek. Oyster Creek Environmental Protection (OCEP) is the licensed owner of Oyster Creek. Holtec Decommissioning International (HDI) is the licensed decommissioning operator. HDI has contracted Comprehensive Decommissioning International (CDI) to manage and perform day-to-day decommissioning activities at Oyster Creek.

Oyster Creek Decommissioning Projects:

General Electric Hitachi (GEH) has completed the removal and segmentation of the reactor head heat shield and the reactor vessel head. GEH has also completed segmentation of the drywell head and the drywell concrete shield plugs. GEH is currently working on tooling and training of personnel for the reactor internals segmentation. Segmentation of the reactor vessel internals is scheduled to commence in April.

CDI is currently working on the expansion of the Independent Spent Fuel Storage Installation (ISFSI) pad. The ISFSI pad expansion will accommodate storage of all Spent Fuel and Greater than Class C (GTCC) Waste casks. The ISFSI pad expansion will also provide a new stand-alone Security Building for future ISFSI only operations. Excavation of the cask transfer pit at the ISFSI pad is in progress. Onsite road work in the vicinity of the ISFSI continues. The present CDI schedule indicates that all the ISFSI pad construction and dry runs will be completed during 2020 and all fuel assemblies presently in the spent fuel pool will be moved into dry storage on the ISFSI pad no later than the end of 2021.

Demolition of two outer buildings was completed in February. A third is expected in March. Preparations continued in February for the removal of power transformers from the site in March.

Contact: Veena Gubbi (609) 984-7457

Hope Creek

Hope Creek ran essentially at full power throughout February with the following exceptions: 1) brief power reductions to perform reactor control rod pattern adjustments; and 2) approximately one day with power reduced to ~65% in order to recover from an unexpected loss of a feedwater heater string.

Contact: Jerry Humphreys (609) 984-7469

Salem Unit 1

Salem Unit 1 ran at essentially full power until 2037 on February 25th when the unit was taken offline to address a tube leak in the 14 Steam Generator. The unit remained offline for the remainder of February.

Contact: Elliot Rosenfeld (609) 984-7548

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout February.

Contact: Elliot Rosenfeld (609) 984-7548

NES Engineer Attends Emergency Response Training

On February 5th, one NES engineer attended the Radiological Emergency Response Plan Overview Course (#102) conducted by the New Jersey State Police Office of Emergency Management.

Contact: Jacob Fakory (609) 984-7458

NRC Holds Webinar on Reactor Decommissioning Funding

On February 5th, the NRC held a webinar to discuss the process and progress of the NRC "Reactor Decommissioning Financial Assurance Working Group".

The Working Group was formed in September 2019 and was directed to 1) review the current decommissioning financial processes; 2) identify potential regulatory gaps or policy issues; 3) identify potential NRC program enhancements; 4) identify planning or resource considerations;

and 5) make recommendations. The following NRC organizations are represented on the Working Group: Office of Nuclear Materials Safety and Safeguards (division of Decommissioning, Uranium Recovery and Waste Programs; Division of Rulemaking, Environmental and Financial Support); Office of Nuclear Reactor Regulation (Division of Operating Reactor Licensing); Office of General Counsel; and Division of Nuclear Materials Safety from Regions I, III & IV (Regions with active decommissioning).

The Working Group has reviewed the applicable regulations, NUREGs, Reg Guides, NRC Office Instructions and NRC Inspection Procedures pertaining to financial assurance for decommissioning. The processes for instituting these requirements have also been reviewed.

At the present, the Working Group progress indicates the following:

1. No regulatory gaps or policy issues have been identified
2. Recommendations have been developed to improve the financial assurance licensing and oversight process:
    a) Revise Inspection Procedures to integrate decommissioning activity inspections with the program office and financial analysts activities (i.e., integrate the two activities)
    b) Revise reporting guidance to allow more detail in annual reports for improved oversight of Decommissioning Trust Fund (DTF) expenditures
    c) Revise reporting guidance to allow more detail in the 30-day pre-withdrawal notices for improved oversight of DTF expenditures
    d) Develop guidance for a spot check program for power reactors in decommissioning
    e) Provide updated training for inspectors, program office and financial analysts

The Working Group's final report is due in March 2020 and will become public after that. The Working Group is not tasked to and will not propose any rulemaking.

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 are 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. Below is a table representing the number of shipments completed in February 2020:

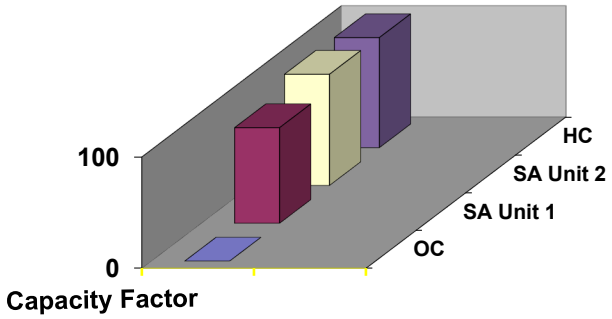
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	0	0

Contact: Jerry Humphreys (609) 984-7469

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – February 2020

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR FEBRUARY 2020

Emergency events (EEs) at nuclear power plants are classified, in increasing order of severity, as an Unusual Event (UE), Alert, Site Area Emergency (SAE), and General Emergency (GE). Non-emergency events (NEEs) are less serious events that require notification of the NRC within one to twenty-four hours. The nuclear power plants operating in New Jersey also notify the BNE of NEEs. The BNE analyzes the NEEs as part of its surveillance of nuclear power plant operation.

	FEBRUARY 2020		JAN - FEB 2020		JAN - FEB 2019	
	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	1
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 BNE conducts a comprehensive Radiological Environmental Monitoring Program (REMP) in the environs surrounding New Jersey's four nuclear generating stations. The program collected 70 samples during the month of February 2020. 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 reviews 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. Results of specific analyses can be obtained by request.

COUNT OF SAMPLES COLLECTED IN FEBRUARY 2020

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	31
AIR CHARCOAL	22
MILK (Cow)	3
SURFACE WATER	8
AQUATIC SEDIMENT	6
TOTAL SAMPLES	70

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

During the month of February 2020, 10 groundwater monitoring well samples were collected and shipped to the BNE's contract laboratory, GEL Laboratories, for radiological analysis.

Contacts: James J. Vouglitois (609) 984-7514 or Karen Tuccillo (609) 984-7443

Annual Re-Qualification Training for Salem and Hope Creek Generating Stations

One representative of the Nuclear Environmental Engineering Section successfully completed the annual re-qualification training required for unescorted access to the Protected Areas of the Salem and Hope Creek Nuclear Generating Stations.

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

Emergency Preparedness Drill at the Hope Creek Nuclear Generating Station

On February 25, 2020, a staff member conducted a Dose Assessment and Field Monitoring Team meeting/training session. The purpose of the meeting was to discuss issues, review Standard Operating Procedures, and demonstrate emergency planning computer programs used by staff in preparation for the Emergency Preparedness Drill for the Hope Creek Nuclear Generating Station on February 26, 2020.

Staff of the Nuclear Environmental Engineering Section participated in the Emergency Preparedness Drill for the Hope Creek Nuclear Generating Station on February 26, 2020. The drill was the Dress Rehearsal for the FEMA graded exercise scheduled for May 19, 2020.

Standard Operating Procedure Review

1. SOP-301, "Offsite Dose Projections for the Early Phase
2. SOP-305, "Protective Action Recommendations for Plume Exposure"
3. SOP-205, "Emergency Operations Facility"

Contacts: Karen Tuccillo (609) 984-7443

Thermoluminescent Dosimetry Program

Due to the expansion of the Oyster Creek Independent Spent Fuel Storage Installation (ISFSI) in support of site decommissioning, staff relocated a Thermoluminescent Dosimetry station along the outside of the new ISFSI footprint on February 4, 2020.

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

Effluent Release Data

The BNE monitors the effluents released from all four (4) 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, the Oyster Creek Nuclear Generating Station (owned and operated by Exelon Nuclear) ceased to generate power leading to a reduction in gaseous effluents. On September 25, 2018, the plant officially entered Decommissioning.

Prior to November 2010, Oyster Creek did not routinely release liquid effluents to the environment. In accordance with a DEP Directive (EA ID #: PEA100001) issued to the Oyster Creek Nuclear Generating Station, and the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11), Exelon was required to cleanup and remove tritium discharges released onsite from underground pipe leaks that occurred during calendar year 2009. In late November 2010, the pumping of groundwater at Oyster Creek was initiated in support of the ongoing tritium

groundwater monitoring project. 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.

On June 20, 2019, the NRC approved the transfer of the OCNGS license from Exelon to Oyster Creek Environmental Protection, as owner, and Holtec Decommissioning International (HDI), as decommissioning operator. The license transfer officially took place on July 1, 2019. HDI continued the sampling and measurement of tritium concentrations in groundwater from MW-73.

On January 9, 2020, in a letter from the State of New Jersey DEP to the Holtec International Decommissioning Plant Manager of Oyster Creek, the Bureau of Nuclear Engineering and Site Remediation Program concurred that the Oyster Creek site had complied with the requirements outlined in the paragraph 41 of the Directive and Notice to Insurers EA ID #: PEA100001, thereby closing the Directive. While the pump and treat remediation of tritium has been completed, Holtec continues groundwater monitoring as part of their Radiological Groundwater Protection Program.

In addition to groundwater monitoring it is necessary for the plant to process and discharge liquid effluents as a necessary activity during decommissioning of the site and eventual license termination. Radioactive liquid effluent discharged as a result of decommissioning activities will be monitored by HDI. All liquid effluent data are reported below. Additional information on the Oyster Creek tritium leak is available at the DEP website, http://www.state.nj.us/dep/rpp/bne/octritium.htm.

The gaseous and liquid effluent data for the Oyster Creek, Salem, and Hope Creek nuclear plants for January 2020 have been included in this report.

PSEG Nuclear
Radioactive Effluent Releases[1]
Nuclear Environmental Engineering Section
For the Period of 01-01-20 to 01-31-20

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0	Ci
Iodines	0.000004	Ci
Particulates	0	Ci
Tritium	8.81	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.168	Ci
Tritium	5.51	Ci

Salem Unit 1 Gaseous Effluent

Effluent		
Fission Gases	0.0148	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	7.12	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.000343	Ci
Tritium	120.0	Ci

Salem Unit 2 Gaseous Effluent

Effluent		
Fission Gases	0.034	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	87.9	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.00014	Ci
Tritium	89.5	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 01-01-20 to 01-31-20

Oyster Creek Gaseous Effluents Elevated Releases			**Oyster Creek Gaseous Effluents Ground Releases**		
Effluent			Effluent		
Fission Gases	0	Ci	Fission Gases	0	Ci
Iodines	0	Ci	Iodines	0	Ci
Particulates	0	Ci	Particulates	0	Ci
Tritium	0.061	Ci	Tritium	0	Ci

Holtec Decommissioning International (HDI)
Radioactive Effluent Releases
Nuclear Environmental Engineering Section
For the Period of 01-01-20 to 01-31-20

Oyster Creek Liquid Effluents

Effluent		
Fission Products	0.00005	Ci
Tritium	0.08	Ci

Oyster Creek Liquid Effluent Groundwater Extraction[2]

Effluent		
Tritium	< MDA[3]	Ci

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

[2] On November 4, 2019, Pumping Well MW-73 failed and was placed out of service. The current plan is to continue monitoring MW-73, and to terminate pumping unless activity is identified that would require restoration of groundwater extraction by returning the pump for MW-73 to service.
[3] The Minimum Detectable Activity (MDA) is the smallest amount of radioactivity in a sample that can be detected with a 5% probability of erroneously detecting radioactivity, when, in fact, none was present, also, a 5% probability of not detecting radioactivity, when in fact it is present. The laboratory's MDA was 1.98E-6 uCi/mL. The USNRC Code of Federal Regulation's 10 Appendix B to Part 20, Table 2, Column 2 tritium (H-3) concentration limit is 1.0E-3 uCi/mL.

D. NUCLEAR EMERGENCY PREPAREDNESS SECTION

Continuous Radiological Environmental Surveillance Telemetry System

Thirty-two Continuous Radiological Environmental Surveillance Telemetry (CREST) sites are located in the environs of Oyster Creek, Salem I, II, and Hope Creek nuclear generating stations. CREST is a part of the Air Pollution/Radiation Data Acquisition and Early Warning System, a remote data acquisition system whose central computer is located in Trenton, New Jersey. Sites are accessed via cellular communication and polled for radiological and meteorological data every minute.

The Air Pollution/Radiation Data Acquisition and Early Warning System is equipped with a threshold alarm of twenty-five (25) microRoentgens per hour. The system notifies staff via text messages and email alerts if the threshold is exceeded, providing 24-hour coverage of potential radiological abnormalities surrounding each nuclear facility.

Contact: Ann Pfaff (609) 984-7451

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

Artificial Island CREST System Ambient Radiation Levels
February 2020 Derived From One Minute Averages
UNITS = mR/Hr

AI1	AI2	AI3	AI4	AI5
.0063	.0064	.0059	.0064	.0067
AI6	AI7	AI8	AI9	AI10
.0065	.0056	.0056	.0073	.0054

Oyster Creek CREST System Ambient Radiation Levels
February 2020 Derived From One Minute Averages
UNITS = mR/Hr

OC1	OC2	OC3	OC4
.0043	.0055	.0041	.0049
OC5	OC6	OC7	OC8
.0055	.0057	.0050	.0051
OC9	OC10	OC11	OC12
.0059	.0054	.0054	.0055
OC13	OC14	OC15	OC16
.0050	.0055	.0052	.0054

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

Radiological Emergency Response Plan Overview Course:

On February 5, 2020, Bureau of Nuclear Engineering staff attended the Radiological Emergency Response Plan (RERP) Overview Course at the Regional Operations Intelligence Center hosted by State Police Office of Emergency Management. Topics of the course included the federal regulatory basis and planning concepts used in radiological emergency preparedness. The course also reviewed key elements of the NJ RERP and Post Shutdown Response Plan for Oyster Creek Nuclear Generating Station.

Contact: Ann Pfaff (609) 984-7451

Licensee Meeting

Representatives of NEPS met with staff from PSEG Nuclear and the NJ State Police Office of Emergency Management on February 10, 2020 for a regularly scheduled licensee meeting. Topics included: welcoming of Laura Forest, SPOEM's new Unit Head, Radiological Emergency Response Planning & Technical Unit; Memorandums of Understanding between the State and licensees; NUREG-0654/FEMA-REP-1 Rev 2 and REP Program Manual, December 2019; preparations for the May 19, 2020 FEMA/NRC evaluated exercise and February 26, 2020 rehearsal exercise at Salem/Hope Creek; Joint Information System Workshop.

Contact: Ann Pfaff (609) 984-7451

National Guard Training

On February 20, 2020, Sahar Azmat, Ruben Papraniku and Dan Salama provided members of the NJ National Guard 21st Civil Support Team with Field Monitoring Team training at BNE. Draft procedures to be tested during the February 26th Hope Creek Rehearsal Exercise were reviewed. Team members also reviewed the ThermoFisher AMS4 continuous air monitors used to directly measure concentrations of radioiodine and particulates in the field, and the DEP's procedures for recording data in the FEMA RadResponder cloud-based data management system.

Contact: Ann Pfaff (609) 984-7451

SPOEM Command Staff Training

Assistant Director Patrick Mulligan and NEPS Supervisor Ann Pfaff participated in State Police Office of Emergency Management Command Staff Training on February 25, 2020 at the Regional Operations Intelligence Center. The training included a tabletop exercise and review of Standard Operating Procedures in preparation for the Hope Creek Rehearsal Exercise on February 26 and FEMA evaluated exercise on May 19, 2020.

Contact: Ann Pfaff (609) 984-7451

Standard Operating Procedure Revisions

NEPS continued its project to implement operational improvements in Standard Operating Procedures. During February, NEPS concentrated on finalizing draft procedures to allow operations previously centered at Forward Command Post trailers in Berkeley Township and Woodstown to be centered at Arctic Parkway, and now referred to as Field Command Center operations. The new procedures also include job aids to help field monitoring teams use RadResponder to enter field data using Ludlum Model 3001 units and to enter dosimetry data using assigned Canberra personal dosimeter units. Initial testing began with the Hope Creek Rehearsal Exercise (see **Hope Creek Rehearsal Exercise** below). Full implementation is expected later in 2020.

Contact: Ann Pfaff (609) 984-7451

Hope Creek Rehearsal Exercise

On February 26, 2020, the Radiation Protection Programs participated in the Hope Creek Rehearsal Exercise with State Police Office of Emergency Management, Salem and Cumberland Counties, Delaware Emergency Management Agency and PSEG Nuclear LLC. The exercise simulated a full-scale deployment in response to a nuclear emergency at the Hope Creek facility. Most importantly for the Bureau of Nuclear Engineering, this major test of capabilities provided the opportunity to evaluate draft procedures for Field Command Center operations at Arctic Parkway, and also incorporated multiple network-based technologies and automated monitoring systems. When fully implemented, these changes will represent a milestone breakthrough that substantially transforms nuclear emergency operations within the Department. The exercise was highly successful, delivering effective operations in a timely manner. The draft procedures will be revised based on participant feedback, and will be implemented in the Hope Creek FEMA-Graded Exercise on May 19, 2020.

Contact: Ann Pfaff (609) 984-7451

Potassium Iodide (KI) Distribution

NEPS has received a shipment of potassium iodide (KI) tablets from the Nuclear Regulatory Commission to replace the expired KI tablets distributed to emergency responders, field teams, and stocked at Emergency Response Facilities. Distribution of new KI tablets and collection of expired tablets has begun and is expected to be fully completed before the Hope Creek FEMA-Graded Exercise on May 19, 2020.

Contact: Ann Pfaff (609) 984-7451