

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

JUNE 1 THROUGH JUNE 30, 2020

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SECTION I- OFFICE OF THE ASSISTANT DIRECTOR

Original signed by:

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 June 2, Bureau staff participated in CRCPD H-7 Committee on Diagnostic X-ray conference call to discuss current issues and topics of mutual concern to State X-ray compliance personnel.

Bureau Operations and COVID-19

As of March 20, Bureau staff have been working remotely from home. As a result of COVID-19, all field inspections have been cancelled until further notice. However, there is a limited number of staff in the office to continue providing a service to the over 8,700 facilities with x-ray equipment and the over 23,000 radiologic technologists by answering their questions related to compliance issues.

As of June 29, staff has started limited inspections in the field and will continue to work from home.

Bureau Webinar Training Activities

Bureau staff participated in the following Webinars during the month of June: Homeland Defense & Security Information Analysis Center, CBRN Survivability and the International Atomic Energy Agency, Webinar on Protection Strategy.

Radiologist Assistant (RA) Rule Adoption

On June 15, the Radiologist Assistant (RA) Rule Revision, Subchapter 19 et seq., with the requirements for licensure was adopted and published in the New Jersey Register. However, the Bureau will not accept any applications because the New Jersey Board of Medical Examiners has not promulgated their rules for the Scope of Practice for RA to practice in New Jersey.

All Bureau Staff Virtual Meeting

On June 24, the Bureau conducted its very first virtual All Bureau Staff meeting to discuss issues related to Bureau operations.

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
\$10,313.00	\$16,562.00	\$3,072,387.00	\$3,043,589.00	\$6,352.00	99%

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%	100%	100%	100%	100%
G-L	N/A	49%	73%	88%	97%	99%	99%	100%	100%	100%	100%	100%
M-R	N/A	N/A	45%	75%	89%	94%	97%	99%	100%	100%	100%	100%
S-Z	N/A	N/A	N/A	49%	74%	89%	94%	97%	98%	98%	98%	99%

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	10	8	12	9	202
Terminated Facilities	27	39	28	37	32	25	35	25	27	12	7	11	305
Net Change (Facilities)	1	-23	-9	-10	-16	-11	-13	-4	-17	-4	5	-2	-103
New Registrations	156	124	147	156	145	122	194	147	158	83	63	120	1615
Stored Registrations	56	63	46	53	51	32	73	59	47	23	13	15	531
Disposed registrations	102	90	98	89	98	120	102	66	74	40	36	49	964
Net Change (Machines)	-2	-29	3	14	-4	-30	19	22	37	20	14	56	120

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 Phone: (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 June 2020, IQ evaluations were performed on zero x-ray units with the following results:

- 0 units (0%) had excellent image quality scores.
- 0 units (0%) had good image quality scores.
- 0 units (0%) had fair image quality scores.
- 0 units (0%) had poor image quality scores.

Entrance Skin Exposures

Entrance skin exposure (ESE) is a measurement of the radiation exposure a patient receives from a single x-ray at skin surface. There are three main factors that affect ESE: technique factors,

film-screen or digital image receptor speed, and film or digital image processing. A key element of our strategy is to ensure that facilities are aware of their ESE and to encourage them to take steps to reduce their ESE if it is high.

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

Medical Facilities

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

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

- In June 2020, ESE measurements were calculated on zero x-ray units that performed lumbo-sacral spine x-rays. No units (0%) had extremely high ESE measurements.
- In June 2020, ESE measurements were calculated on zero x-ray units that performed chest x-rays. No units (0%) had extremely high ESE measurements.
- In June 2020, ESE measurements were calculated on zero 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 May 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 than 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 to 100	101 to 285	286 to 350	≥351
E/F,F,Insight	0 to 50	51 to 150	151 to 205	≥206

- In June 2020, ESE measurements were calculated on two dental x-ray units that used DR digital imaging. No units (0%) were measured as having extremely high ESE.
- In June 2020, ESE measurements were calculated on zero dental x-ray units that used CR (PSP) digital imaging. No units (0%) were measured as having extremely high ESE.
- In June 2020, ESE measurements were calculated on one dental x-ray units that used D speed film. No units (0%) were measured as having extremely high ESE.
- In June 2020, ESE measurements were calculated on zero dental x-ray units that used E/F, F or Insight speed film. No 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 June 2020, two amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2020 is 708.

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

Technologist Education and Licensing Section (Fees)

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

Technologist Education & Licensing Section FY 2020 Invoiced & Collected				
Invoice Type	Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected
Examinations	\$0	\$0	\$800	\$800
Initial Licenses	\$4,440	\$1,880	\$62,780	\$61,200
Renewal Licenses*	\$360	\$1,530	\$12,210	\$40,920*
Totals	\$4,800	\$3,410	\$75,790	\$102,920

*Fiscal Collected YTD includes 300 renewal payments collected from FY19 invoicing.

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected zero facilities with stereotactic/needle localization breast biopsy unit during the month of June. A total of 25 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 2 facilities in June. There were no facilities found to have non-compliance issues. A total of 121 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 June 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
June 2020

Bureau of X-Ray Compliance

	Month	YTD
Compliance Inspections entered into NJEMS	0	591
Dental/CBCT Inspections entered into NJEMS	0	584

Notice of Violations	Closed	Effective	Pending	Total	YTD
	0	0	0	0	158

Administrative Orders	Closed	Effective	Pending	Total	YTD
	0	0	0	0	278

Notice of Prosecutions	Closed	Effective	Pending	Total	YTD
	0	0	0	0	260

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
	\$0.00	\$155,600.00	\$139,760.00	\$25,150.00	\$164,910.00

Contact : Ramona Chambus (609) 984-5370

06/01/2020 THROUGH 06/30/2020

Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	<u>Facilities Inspected</u>	<u>Machines Inspected</u>	<u>Machines Audited</u>	<u>Machines Uninspected</u>
1	ROUTINE INSPECTION	2	3		
Total On-Site Inspections:		<u>2</u>	<u>3</u>	<u>0</u>	<u>0</u>
6	OFFICE VIOLATION RESPONSE REVIEW	2		2	
18	OFFICE QA VIOLATION RESPONSE REVIEW	7		8	
27	OFFICE COMPLIANCE LETTER (FEES)	1		2	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	2		3	
Total Office Inspections:		<u>12</u>		<u>15</u>	<u>0</u>

Number of Enforcement Documents Issued

NOV

AO

NOP

Amount of Penalties

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Total Violations			

**APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION
MONTH OF JUNE 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	22	2	2	13	-	-	-	1	40	999	1,100
Licenses Renewed	9	1	1	16	-	-	-	-	27	416	N/A
Total Licensed	9,403	1,031	877	11,871	55	22	7	78	23,344	N/A	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	4	N/A
Investigations Conducted	-	-	-	1	-	-	-	-	1	32	30
Licenses Verified	-	-	-	210	-	-	-	-	210	5,201	7,000
Expired Licenses	-	-	-	-	-	-	-	-	0	21	N/A
Unlicensed	-	-	-	-	-	-	-	-	0	46	N/A
Enforcement Documents Issued	-	-	-	-	-	-	-	-	0	189	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	-	-	-	-	-	-	-	-	0	\$40,000	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	6	N/A
Approved Educational Schools	15	2	3	23	-	-	-	-	43	43	N/A
New School Application Evaluated	-	-	-	-	-	-	-	-	0	3	8
Curriculum Modifications Evaluated	-	-	-	-	-	-	-	-	0	22	20
School Inspections Conducted	-	-	-	-	-	-	-	-	0	7	7
Total Schools Reviewed	-	-	-	-	-	-	-	-	0	32	27
Clinical Applications Approved	-	-	-	92	-	-	-	-	92	803	1,100

**Appendix A - Bureau of X-ray Compliance
Mammography Section
June 2020**

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	2	0	0	2	121	239
Machines Inspected	0	3	0	0	3	163	
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	3	0	0	3	35	
Canceled	0	0	0	0	0	37	
Stereotactic							
Facilities Inspected	0	0	0	0	0	25	61
Machines Inspected	0	0	0	0	0	26	
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	1	0	2	10	
Canceled	0	1	0	0	1	11	

SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

The Bureau of Environmental Radiation staff has been advocating for a radon in water drinking water standard for the past 20 years. Commissioner McCabe was briefed and instructed staff, along with the Division of Geoscience and Water Supply, to have a stakeholder meeting to get feedback on promulgating a radon in water maximum contaminant limit (MCL). Staff from both Divisions met in June and developed an option plan on ways to regulate radon in water, ranging from simply publishing an MCL to requiring water treatment specialists to become certified to treat for all contaminants in water. A final draft will be presented to the Assistant Commissioners and then scheduling of the stakeholder meeting can take place.

Based on a General Accounting Office Audit of the National Materials Program (NMP), it was recommended that both the Organization of Agreement States (OAS) and the Nuclear Regulatory Commission (NRC) appoint Co-Champions to ensure that Agreement State and NRC staff work cooperatively to ensure the safe use of radioactive materials in the United States. On June 17, 2020 the first in a series of “Champion’s Chat” took place. This first forum was lauded by all involved as a great way to communicate common issues and priorities of the NMP. Another Champion’s Chat will take place in August.

B. RADIOACTIVE MATERIALS PROGRAM

Medical, Industrial, and Reciprocity

During the month of June 2020, the Radioactive Materials Program responded to one (1) radiation incident:

Date	Type of Incident	Description	Status
6/3/20	Scrap	A load of recycling scrap was rejected at a NJ facility and was returned to its origin at a New York City Department of Sanitation facility.	Closed

Contact: Nancy Stanley (609) 984-5452

Training

On June 3rd, BER staff gave a refresher training to the Bureau of Emergency Response, Northern Region during their daily Teams meeting. The refresher covered the RadResponder online radiological data management system.

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 6/1/20-6/30/20	FY-To-Date 7/1/19-6/30/20
Number of Amendments Processed:	4	186
Number of Renewals Processed:	3	23
Number of Initial Applications Processed:	0	10
Number of Active Licenses	593	593
Number of Terminations:	2	20
Number of Reciprocity Requests Received:	38	314
Number of Incidents:	1	18
Number of Inspections:	4	178

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. Twenty-eight (28) sources on the databases were verified during June. 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.

Contact: Sarah Adkisson (609) 984-5466

D. SUMMARY OF ENFORCEMENT – June 2020

Bureau of Environmental Radiation – By Month (6/1/2020 - 6/30/2020)				
			Administrative Orders	
	Closed	Effective	Pending	Total
Radioactive				
Materials Section	0	0	1	1
Radon Section	0	0	3	3
			Notice of Prosecution	
	Closed	Effective	Pending	Total
Radioactive				
Materials Section	0	0	1	1
Radon Section	0	0	1	1
			Notice of Violations	
	Closed	Effective	Pending	Total
Radioactive				
Materials Section	0	0	0	0
Radon Section	0	0	2	2
Bureau of Environmental Radiation – Fiscal Year to Date (7/1/2019 - 6/30/2020)				

			Administrative Orders	
	Closed	Effective	Pending	Total
Radioactive Materials Section	16	3	1	20
Radon Section	0	0	3	3
			Notice of Prosecution	
	Closed	Effective	Pending	Total
Radioactive Materials Section	4	0	1	5
Radon Section	0	0	1	1
			Notice of Violations	
	Closed	Effective	Pending	Total
Radioactive Materials Section	7	4	0	11
Radon Section	0	0	2	2
Amount Assessed in Penalties = FY				
	Total Amount Assessed for FY20	Amount Collected from Current FY20	Amount Collected from FY19	Total Amount Collected (FY19+FY20)
Radioactive Materials Section	\$3,750.00	\$3,750.00	\$6,505.00	\$10,255.00
Radon Section	\$ 0.00	\$ 0.00	\$87,000.00	\$87,000.00
Amount Assessed in Penalties = By Month				
	Total Amount Assessed for 6/1/2020 - 6/30/2020		Amount Collected from 6/1/2020 - 6/30/2020	
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
- EPEC site in Fords
- City of Bordentown Lagoon Release
- Rustoleum in Newark
- Howmet site in Dover

- Pantasote site in Passaic
- Picatinny Arsenal Area 1222 (Open Detonation Pit)
- Maywood FUSRAP Site
- Hudson County Chromate Site 41

Teleconference meetings were conducted with representatives of Howmet, Pantasote, Picatinny Arsenal, and Hudson County Chromate Site 41.

Staff attended the NRC RAMP (Radiation Protection Code Analysis & Maintenance Program) Summer 2020 International Webinar.

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

Eight electrets were sent out to three homeowners as part of the post mitigation testing program. Two devices have not yet been returned. The electrets were analyzed and two of the homeowners were notified.

Contact: Charles Renaud (609) 984-5423

Training Course

Staff participated in a Rutgers multi-day seminar titled “Principles of Vapor Mitigation Design & Installation”. Due to the COVID pandemic the seminar was moved from the classroom to an online only forum. The seminar was presented by industry professionals and provided valuable insight into the intricacies of mitigation systems.

Contact: Brian Giancola (609) 984-5434

Website updates

In order to keep the public informed with the most up-to-date information on COVID-19’s impact on radon, staff have been consistently updating the section’s website at www.njradon.org. The purpose is to provide notification of any possible hurdles that could arise with radon testing, mitigation, or certification procedures as a result of the pandemic.

Contact: Brian Giancola (609) 984-5434

Radon Rule

The third draft of the radon rule was submitted to the DEP Office of Legal Affairs and the Office of the Attorney General, Division of Law, for review and comment on June 3, 2020. Comments were received from the Office of Legal Affairs on June 17, 2020. The draft rule continues to be revised base upon comments.

Work continues on the development of the draft economic impact statement based upon feedback from the Office of Legal Affairs.

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

Measurement and Mitigation Radon Certifications

Certification Type	Initial	Renewal
MES		4
MET	4	63
MIS		
MIT		2
Provisional to Full		6
MEB		
MIB		

Contact: Maxine Williams (609) 984-5628

SECTION IV – BUREAU OF NUCLEAR ENGINEERING (BNE)

A. OFFICE OF THE BUREAU CHIEF

Significant Events

Due to the COVID-19 pandemic, all NES staff have been working from home since March 16th.

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

Removal and segmentation of the reactor vessel head heat shield, reactor vessel head, drywell head and the drywell concrete shield plugs have been completed. Training of personnel, installation of tooling and filling of the reactor cavity have been completed in preparation for the segmentation of the reactor vessel internals. Segmentation of the reactor vessel internals has commenced. The steam dryer segmentation is complete. Preparation for segmentation of the steam separator is in progress and segmentation is scheduled to proceed through July.

CDI has withdrawn the construction permit application from Lacey Township for the expansion of the Independent Spent Fuel Storage Installation (ISFSI) concrete pad. CDI is preparing a new engineering analysis for placing all the necessary casks on the present pad. Excavation of the cask transfer pit is complete. The present CDI schedule indicates that 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.

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. A maintenance building and a previously abandoned water tank are next to be demolished and removed.

Social distancing (six-foot separation, masks, gloves, increased cleaning, working from home when possible, etc.) is being observed in accordance with Governor Murphy's executive orders and the Centers for Disease Control and Prevention guidelines.

Contact: Veena Gubbi (609) 984-7457

Hope Creek

Hope Creek ran at essentially full power throughout June, with the exceptions of a planned down-power on June 6th to approximately 70% power in order to perform main turbine valve testing, reactor control rod sequence exchange, and various reduced power maintenance activities. Hope Creek returned to 100% power on June 7th where it operated with the exception of brief periods during which power was reduced to approximately 95% for reactor control rod adjustments.

Contact: Jerry Humphreys (609) 984-7469

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout June.

Contact: Elliot Rosenfeld (609) 984-7548

Salem Unit 2

Salem Unit 2 began the month at 98.6% power as a result of a feedwater heater being out of service due to a manway leak. The unit reached 100% power on June 9th after the heater was returned to service. Salem 2 ran at essentially full power for the remainder of June.

Contact: Elliot Rosenfeld (609) 984-7548

NES Maintains Contact with PSEG, Holtec, NRC and NJ State Management While Working Remotely

As a result of the COVID-19 pandemic, NES staff have been working remotely from home. NES staff have been actively in telephone and email contact with the PSEG management (Salem & Hope Creek) and Holtec management (Oyster Creek) to discuss activities at the individual stations.

The NES staff has also been in contact with the NRC Resident inspectors in order to determine if the NRC has any concerns about the stations. The NRC inspectors are primarily working remotely, although they do make periodic visits to the sites. If any events or concerns would occur, the NES staff would be available to visit the stations while maintaining COVID-19 protocol.

NES has established a process with station management to maintain site access qualification at the stations. Access to operating information via remote access has also been maintained.

The NES staff meets twice a day via Microsoft Team video chat in order to ensure that the staff is fully informed of station status and work assignments for the section.

The NES staff has also attended, via video, the weekly updates from the DEP Commissioner.

Contact: Jerry Humphreys (609) 984-7469

NRC Performs Radiological Hazard Assessment and Exposure Controls Inspection at Hope Creek

On June 1st thru the 4th, an NRC inspector from Region I completed a Radiological Hazard Assessment and Exposure Controls Inspection at Hope Creek in accordance with NRC Inspection Procedure 71124.01, “Radiological Hazard Assessment and Exposure Controls”. The objectives of the inspection were to review and assess Hope Creek’s performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure controls; verify that Hope Creek is properly identifying and reporting Performance Indicators (PIs) for the Occupational Radiation Safety Cornerstone of the Reactor Oversight Process (ROP); and, to conduct a routine review of problem identification and resolution activities. Due to COVID-19 concerns, the inspection was performed remotely. Daily teleconferences were held between the NRC inspector, PSEG staff and NES staff. The results of the inspection will be included in the NRC Second Quarter 2020 Integrated Inspection Report for Hope Creek (2020-002). One NES engineer was involved in the teleconferences and was able to review selected documents pertaining to the inspection.

Contact: Jacob Fakory (609) 984-7458

NES Staff Attends NRC Teleconferences/Webinars while Working Remotely

A. NRC Annual Performance Assessment at Salem Units 1 and 2 and Hope Creek Nuclear Generating Stations

The NRC completed its 2019 performance assessment of Salem Nuclear Generating Station, Units 1 & 2 (Salem) and Hope Creek Nuclear Generating Station and provided its assessment in letters to PSEG dated March 3rd. The NRC determined the performance at Salem and Hope Creek was within the Licensee Response Column of the Reactor Oversight Process (RPO) because all inspection findings had very low safety significance

(i.e., Green), and all Performance Indicators (PI) were within the expected range (i.e., Green). This is the category that requires the least amount of NRC oversight.

On June 10th, the NRC hosted a public webinar to present its assessment of the safety performance of Salem and Hope Creek for 2019.

- The Resident Inspectors spent approximately 7000 hours of inspection time at Salem 1 & 2 (total) and 6400 hours at Hope Creek. This inspection time included maintenance activities, surveillance tests, preparations for adverse weather, operator performance in the Simulator, Emergency Preparedness drills, etc. Also included were Region I Team Inspections that were directed to specific areas, e.g., Fire Protection, Biennial Problem Identification and Resolution, Inservice Inspection during Refueling Outages, Access Authorization, Security, etc.
- From these inspections, Salem 1 & 2 had seven findings (total) as did Hope Creek, all of which were of very low safety significance (i.e., Green). All PIs were Green.
- Although not part of the 2019 assessment, the NRC reviewed its COVID-19 actions. All Inspectors are performing their activities remotely from home although the Resident Inspectors do travel to the site at least every three days. PSEG's requests for temporary flexibility in certain medical examination requirements for operators, security personnel, etc. in order to prevent the spread of COVID-19 have also been approved. Approval of these type requests have also been granted to a variety of nuclear units around the nation.
- There were approximately thirty individuals dialing into the webinar, including two NES engineers and the NES Supervisor. There were no comments or questions from attendees during the question/comment session.

Contact: Jerry Humphreys (609) 984-7469

B. Security Oversight for Nuclear Power Plants in Relation to the COVID-19 Public Health Emergency (PHE)

On June 16th, the NRC held a public teleconference the purpose of which was to discuss the considerations surrounding security oversight for nuclear power plants in relation to the COVID-19 PHE. The NRC stated that it had issued exemptions for training and qualifications of security personnel due to the COVID-19 PHE. In addition, on-site baseline security inspections (except Force-on-Force) resumed in June. Force-on-Force Week A inspections are scheduled to resume in July. Force-on-Force Week B inspections are being evaluated to begin in the Fall based on a 6 to 8 week look ahead.

The nuclear industry representatives reviewed the industry's COVID-19 response. The industry has a concern for the Force-on-Force Week B inspections due to health and safety concerns of personnel because of undue risk to COVID-19 to Security personnel due to inability to maintain social distancing. The industry proposed prudent criteria for

resumption of Week B. The industry stated that there is reasonable assurance of security effectiveness without Week B inspections because 90% of all NRC baseline security inspections would still be performed.

Three (3) NES Engineers attended this teleconference.

Contact: Elliot Rosenfeld (609) 984-7548

C. Meeting with Potentially Affected Stakeholders to Discuss Potential Emergency Preparedness Biennial Exercise Exemptions due to impacts from the COVID-19 Public Health Emergency (PHE)

On June 23rd, the NRC held a public teleconference to discuss with the Nuclear Energy Institute (NEI) and other nuclear industry representatives, the regulatory relief pathways for NRC licensees to obtain potential Emergency Preparedness biennial exercise exemptions during the COVID-19 PHE. The purpose of the meeting was for the NRC to 1) describe the applicable relief pathways; 2) discuss the process by which licensees may submit requests for regulatory relief; 3) hear from licensees on the types of regulatory relief they expect they might need; and, 4) answer questions from the public on the relief request process. This meeting was similar to other NRC meetings concerning other types of exemptions available for licenses (in-service inspections, refueling, security, etc.)

The nuclear industry representatives discussed the difficulty in maintaining social distancing during emergency preparedness exercises due to the limited space in emergency facilities. The need to perform the exercises should be balanced against the need to protect the public during the PHE. The industry pointed out that all nuclear sites are in the 90th percentile for the emergency exercise performance indicators in the NRC Reactor Oversight Process (ROP). The industry was also concerned on the effect that postponing the exercises would have on the future schedule of exercises and the other upcoming operations at reactor sites (e.g., manning for refueling outages, etc.). The industry suggested that some exercises should be given waivers for performance. The Federal Emergency Management Agency (FEMA) and the Conference of Radiation Control Program Directors (CRCPD) representatives stated that their organizations would be amenable to exemptions or waivers.

At the end of the meeting, the public was given the opportunity to speak.

Three (3) NES engineers and the NES Supervisor participated in the teleconference.

Contact: Jerry Humphreys (609) 984-7469

D. NRC Draft Environmental Impact Statement (EIS) Report for Holtec's Proposed Consolidated Interim Storage Facility (CISF) in New Mexico

The NRC issued the Draft EIS report for Holtec's proposed CISF in New Mexico on March 10th. On June 23rd, the NRC held a public meeting via teleconference to present

the results of the NRC's review of the draft EIS. The purpose of the meeting was to present NRC's CISF review process and receive the public's comments on the draft report. During the meeting, the NRC explained that its review process for granting a license to build and operate the CISF includes both a safety review and an environmental review. Holtec proposes to store 500 canisters containing spent nuclear fuel and high-level radioactive waste during Phase 1. When completed, the project will be comprised of 20 phases, holding up to 173,000 metric tons of waste. The canisters would be transported mainly by rail from operating, decommissioning, and decommissioned commercial nuclear power plants around the country.

All comments to the NRC are due by September 22nd. The NRC staff will review the public comments and prepare the final EIS report, which is scheduled to be published in March 2021. A second public meeting is scheduled via teleconference on July 9, with in-person meetings expected in August pending the COVID-19 health crisis

One (1) NES engineer and NES Supervisor attended the teleconference.

Contact: Veena Gubbi (609) 984-7457

E. Proposed Rulemaking for Emergency Preparedness for Small Modular Reactors (SMRs) and Other New Technologies (ONTs)

On May 12th, the NRC published its proposed rulemaking for emergency preparedness for SMRs and ONTs in the Federal Register. The NRC will be accepting comments on the proposed rulemaking until July 27th.

On June 24th, the NRC held a webinar to provide an opportunity for external stakeholders and the NRC staff to exchange information on the proposed SMR & ONT emergency preparedness rulemaking to facilitate the development of public comments. This meeting provided an opportunity for the NRC staff to answer questions from the public about the proposed rule and guidance document.

Three (3) NES engineers and the NES Supervisor attended the webinar.

Contact: Veena Gubbi (609) 984-7457

F. Public Meeting to Hear Public Watchdogs Concerns for Southern California Edison's (SCE) San Onofre Nuclear Generating Station (SONGS) Independent Spent Storage Installation (ISFSI) Operation

On June 24th, the NRC held a public webinar for Public Watchdogs and SCE to address the Petition Review Board (PRB) on the petition to suspend decommissioning operations at SONGS due to the operation of the ISFSI in an unanalyzed condition. The original petition from the Public Watchdogs was submitted to the NRC on February 4th. The NRC rejected the petition on February 26th. The Public Watchdogs had requested to have a public meeting. Therefore, the purpose of the June 24th meeting was to allow the

members of the Public Watchdogs to address their concerns to the Public Review Board to revoke Southern California's rights to store all the nuclear fuel at the SONGS site. The NRC will review all the additional information provided from the Public Watchdogs during the meeting. The results from the Public Review Board review will be issued in an upcoming letter.

Contact: Veena Gubbi (609) 984-7457

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.

A. NES Supervisor Attends the Midwestern Radioactive Materials Transportation Committee (MRMTC) Regional Tribal Briefing Teleconference

The Midwestern Radioactive Materials Transportation Committee (MRMTC) is the midwestern counterpart to the Northeast High-Level Radioactive Waste Transportation Task Force (NE Task Force). Both the MRMTC and the NE Task Force are members of the NTSF. The NES Supervisor is the co-chair of the NE Task Force.

On June 2nd, the MRMTC hosted a teleconference the purpose of which was to provide a background on midwestern Tribes and the tribal/state/federal government-to-government relationships as well as to provide guidance for effective coordination among the governmental agencies. Representatives from the Federal Bureau of Indian Affairs, Prairie Island Indian Community and the MRMTC Regional Tribal Engagement Work Group participated in a round-table discussion. The most important take-away is that communication is key in dealing with the Tribes. Each Tribe has a unique form of government resulting in unique methods of handling of interactions with non-tribal governmental agencies. These, along with the needs of the Tribes, need to be understood and respected. Communication can be established through industry organizations, e.g., NTSF, the Federal and State governments, e.g., the Bureau of Indian Affairs and/or State Tribal Liaisons. Communication should be established early and continued throughout any project, e.g., transportation of radioactive materials across Tribal lands. Following the round-table discussions, the meeting was opened for comments and questions.

Contact: Jerry Humphreys (609) 984-7469

B. NES Staff Attends NTSF Webinars Resulting from 2020 Annual Meeting Cancellation

Each year the NTSF holds a national meeting bringing together the four regional state groups, the tribal group and participants from the DOE, NRC and the nuclear industry. The 2020 meeting was scheduled for May 18 – 21 in Scottsdale, AZ. Due to the COVID-19 pandemic, this year's meeting was cancelled.

Therefore, the NTSF opted to present webinars for selected sessions that would have occurred at the annual meeting. Two (2) webinars were presented in May with the remaining three (3) being presented in June.

- The third webinar of the series, "NRC - Packaging Procedures and Shipping Notifications Overview," was held on June 3rd. This session provided an overview of NRC regulations and procedures related to radioactive materials packaging approval, shipping notifications, and route approvals. The NRC speakers highlighted the NRC and Department of Transportation joint responsibilities for the control of radioactive material transportation. They also discussed Code of Federal Regulations (CFR) Part 71 and explained the NRC licensee requirements for spent fuel transportations.

Three (3) NES engineers and the NES Supervisor attended the webinar.

Contact: Veena Gubbi (609) 984-7457

- The fourth webinar of the series, "What to Inspect When You're Expecting Spent Nuclear Fuel Shipments- Regulations and Technology" was held on June 9th. This session provided information on the NRC's assessment of its current inspection program and thoughts on how it might be updated in the future. The second part of the program explored technologies currently being developed to help conduct inspections and mitigate potential damage of SNF storage casks. These technologies could be useful in conducting pre-transportation inspections of the storage casks.

Three (3) NES engineers and the NES Supervisor attended the webinar.

Contact: Veena Gubbi (609) 984-7457

- The fifth webinar of the series, "Unlocking DOT Funds for Radioactive Waste Shipments" was held on June 29th. Representatives from the Pipeline Hazardous Materials Safety Administration (PHMSA) and the Federal Motor Carriers Safety Administration (FMCSA) provided information on funding opportunities and steps to apply for funding for Tribes and States to prepare for potential spent fuel and highly radioactive shipments.

Contact: Veena Gubbi (609) 984-7457

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

On May 28th, the SONGS Decommissioning CEP held a Skype 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.

The CEP presenters provided an update on CEP’s tasks and future meetings. Representatives from SCE provided information on the ongoing decommissioning activities at SONGS. SCE has completed placing 64 of the 73 spent fuel casks into the dry cask storage system and is planning to move all fuel from the spent fuel pool to the dry cask storage system by the middle of 2020. Reactor vessel segmentation will be completed by 2024. The CEP chair explained the outlier events and response strategies process. The CEP chair and a few industry experts provided an update on current industry concerns (stress corrosion cracking, dry cask sabotage, ISFSI only security plan, sea level rise and emergency planning). Representative from a state university provided information on radiation and contamination. A SCE engineer provided information on the spent fuel design and operating experiences at SONGS. Following the presentations, questions and concerns from the public were addressed by both the CEP and SCE.

One NES engineer watched the recording of the CEP meeting on June 2nd.

Contact: Veena Gubbi (609) 984-7457

Radioactive Materials Shipment Notifications

The Bureau of Nuclear Engineering is responsible for tracking certain radioactive materials that are transported in New Jersey. Advance notification for these radioactive materials is in three categories: 1) Spent Fuel and Nuclear Waste; 2) Highway Route Control Quantity Shipments; and 3) Radionuclides of Concern. Each category must meet certain packaging and notification requirements established by the federal government. Below is a table representing the number of shipments completed in June 2020:

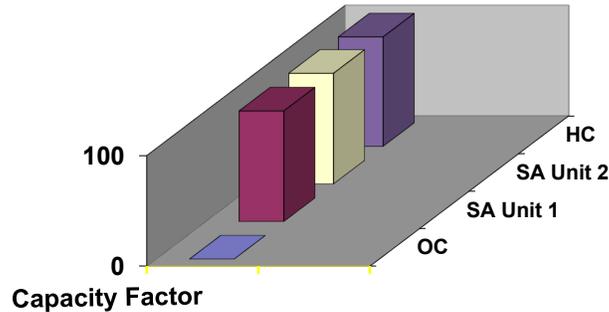
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	3	0

Contact: Jerry Humphreys (609) 984-7469

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – June 2020

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR JUNE 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.

	JUNE 2020		JAN - JUNE 2020		JAN – JUNE 2019	
	EE	NEE	EE	NEE	EE	NEE
OYSTER CREEK	0	0	0	0	0	1
SALEM 1	0	0	0	1	0	0
SALEM 2	0	0	0	0	0	1
SALEM SITE	0	0	0	1	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 67 samples during the month of June 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 JUNE 2020

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	28
AIR IODINE	10
MILK (Cow)	1
SURFACE WATER	7
AQUATIC BIOTA	5
AQUATIC SEDIMENT	4
VEGETABLE	12
TOTAL SAMPLES	67

Documents Reviewed

“PSEG Nuclear 2019 Remedial Action Progress Report – Salem Generating Station”, April 2020

United States Regulatory Commission (USNRC), “Proposed Rule for Emergency Preparedness for Small Modular Reactors and Other New Technologies: Draft Regulatory Basis for Comment”, <https://www.federalregister.gov/documents/2020/05/12/2020-09666/emergency-preparedness-for-small-modular-reactors-and-other-new-technologies>

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

During the month of June 2020, five (5) 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

Sole Source Gap Waiver for Radiological Environmental Lab Services

A one-year sole source gap waiver was approved by the State of New Jersey, Department of the Treasury (Treasury) on June 5, 2020, that allows the BNE to continue services with GEL Laboratories, LLC, while staff work with Treasury to rebid and award a new term contract, open competitively, that maximizes competition. Only GEL possesses all the NJDEP/Office of Quality Assurance certifications required for performing sample analyses under the BNE's Radiological Environmental Lab Services contract.

Contact: Karen Tuccillo (609) 984-7443

Webinars/Meetings

Staff members listened to a webinar conducted by the USNRC on "Potentially Affected Stakeholders to Discuss Potential Emergency Preparedness Biennial Exercise Exemptions Due to Impact from the Covid-19 Public Health Emergency" on June 23, 2020. The purpose of the meeting was to discuss with potentially affected stakeholder's emergency preparedness biennial exercise exemptions affected by Covid-19 as it relates to PPE and Social Distancing and the integration with State and Local officials. Additional information can be found at the following websites:

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20174A468>

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20174A283>

On June 24, 2020, several staff members attended an international webinar on a "Case Study of the Three Mile Island (TMI) NPP Accident Considering New Emergency Planning and Response (EPR) Guidance". The webinar, sponsored by the International Atomic Energy Agency (IAEA), examined the accident at TMI in the context of EPR-On-Site emergency planning action items from 2013, including response to this emergency based on Safety Standards and other IAEA guidance in EPR. Guidance includes (1) Identification and classification of the emergency and assessment of its progression, (2) Onsite emergency response actions, and (3) Interface between the onsite response organization and offsite response organizations. The EPR Onsite Emergency Plan updated guidance is in publication and expected to be released soon. Supplemental Information can be found at: G.R. Corey, "A Brief Review of the Accident at Three Mile Island", IAEA, <https://www.iaea.org/sites/default/files/publications/magazines/bulletin/bull21-5/21502795459.pdf>

On June 24, 2020, several staff members attended an NRC-sponsored webinar on the "Proposed Rule for Emergency Planning for Small Modular Reactors (SRM) and Other Nuclear Technologies (ONT)". The purpose of the meeting was to provide an opportunity for external

stakeholders and the NRC staff to exchange information on the proposed Emergency Preparedness for SRMs and ONTs. In addition, the webinar provided an opportunity for the NRC staff to answer questions from the public about the proposed rule and guidance document. Additional information on this webinar can be found at the following websites:
<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20163A700>.
<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20154K432>

On June 25, 2020, staff members participated in the “USNRC and Radiation Protection Code Analysis and Maintenance Program (RAMP) Summer 2020 International Webinar”. RAMP is a program for training, developing, maintaining, and distributing the USNRC’s radiation protection, dose assessment and emergency response computer codes, including RASCAL and Turbo FRMAC used in plume phase and ingestion exercises respectively. Additional information on the webinar can be found at <https://ramp.nrc-gateway.gov/content/ramp-summer-2020-international-webinar>

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

Effluent Release Data

The BNE monitors the effluents released from all four (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 May 2020 gaseous and liquid effluent data for the Oyster Creek, Salem and Hope Creek nuclear plants have been included in this report.

**PSEG Nuclear
Radioactive Effluent Releases¹
Nuclear Environmental Engineering Section
For the Period of 05-01-20 to 05-31-20**

**Hope Creek
Gaseous
Effluents**

<u>Effluent</u>		
Fission Gases	0	Ci
Iodines	0.000148	Ci
Particulates	0	Ci
Tritium	10.3	Ci

**Hope Creek
Liquid Effluents**

<u>Effluent</u>		
Fission Products	0	Ci
Tritium	0.199	Ci

**Salem Unit 1
Gaseous Effluent**

<u>Effluent</u>		
Fission Gases	0	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	3.03	Ci

**Salem Unit 1
Liquid Effluents**

<u>Effluent</u>		
Fission Products	0.0004	Ci
Tritium	21.4	Ci

**Salem Unit 2
Gaseous Effluent**

<u>Effluent</u>		
Fission Gases	0.0094	Ci
Iodines	0	Ci
Particulates	0.000001	Ci
Tritium	0.0161	Ci

**Salem Unit 2
Liquid Effluents**

<u>Effluent</u>		
Fission Products	0.00084	Ci
Tritium	55.2	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 05-01-20 to 05-31-20**

**Oyster Creek
Gaseous Effluents
Elevated Releases**

**Oyster Creek
Gaseous Effluents
Ground Releases**

<u>Effluent</u>			<u>Effluent</u>		
Fission Gases	0	Ci	Fission Gases	0	Ci
Iodines	0	Ci	Iodines	0	Ci
Particulates	0.000001	Ci	Particulates	0	Ci
Tritium	0.195	Ci	Tritium	0	Ci

**Holtec Decommissioning International (HDI)
Radioactive Effluent Releases
Nuclear Environmental Engineering Section
For the Period of 05-01-20 to 05-31-20**

Oyster Creek Liquid Effluents

<u>Effluent</u>		
Fission Products	0.0001	Ci
Tritium	0.085	Ci

Oyster Creek Liquid Effluent Groundwater Extraction²

<u>Effluent</u>		
Tritium	Not in Service	Ci

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

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

² On November 4, 2019, Pumping Well MW-73 failed and was placed out of service (Idle). The current plan is to discontinue 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.

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 June:

Artificial Island CREST System Ambient Radiation Levels June 2020 Derived From One Minute Averages UNITS = mR/Hr				
AI1	AI2	AI3	AI4	AI5
.0063	.0064	.0057	.0063	.0065
AI6	AI7	AI8	AI9	AI10
.0064	.0055	.0054	.0073	.0052

Oyster Creek CREST System Ambient Radiation Levels June 2020 Derived From One Minute Averages UNITS = mR/Hr			
OC1	OC2	OC3	OC4
****	.0055	.0035	.0048
OC5	OC6	OC7	OC8
.0053	.0056	.0047	.0050
OC9	OC10	OC11	OC12
.0058	.0054	.0053	.0054
OC13	OC14	OC15	OC16
.0049	.0054	.0050	.0053

**** indicates insufficient valid data

Contact: Ann Pfaff (609) 984-7451

State of Readiness Work

NEPS staff have diligently worked to ensure NEPS is in a continued State-of-Readiness under current social distancing and work-from-home conditions. NEPS operating in a State-of-Readiness means that the section is ready to respond to a nuclear emergency under current conditions. To ensure a continued State-of-Readiness, NEPS staff have at least one staff person come into the office one to two days per weeks in order to complete a checklist of items

pertaining to the proper maintenance and operation of emergency response vehicles, radiation detection instruments, and facility communication equipment.

Contact: Ann Pfaff (609) 984-7451

Licensee EP Meeting

On June 8, 2020, NEPS hosted their monthly Emergency Preparedness meeting with State Police Office of Emergency Management, Salem and Cumberland Counties Offices of Emergency Management, Delaware Emergency Management Agency and PSEG Nuclear via Microsoft Teams. Discussion topics included the re-scheduling of the May 19, 2020 FEMA Graded Exercise. The stakeholders agreed upon an exercise at Salem to be held April 28, 2021 and will reach out to FEMA and NRC for concurrence on the date.

Contact: Ann Pfaff (609) 984-7451

Public Hearing Preparations

NEPS Staff has been preparing for upcoming Annual Public Hearings regarding the Radiological Emergency Response Plan. NEPS staff have secured Court Reporters and made Public Notice for a Microsoft Teams-based public hearing in the New Jersey Register and several local newspapers. NEPS staff have also worked with BNE staff to understand what to expect in a Teams-based public hearing and to attempt to keep the meeting format as close as possible to the usual in-person public hearings. The meeting covering Ocean County will be held Tuesday, July 7 and a combined meeting for Salem and Cumberland Counties on Wednesday, July 8, 2020 both beginning at 6:00PM.

Contact: Ann Pfaff (609) 984-7451

NRC Meeting: Potential Emergency Preparedness Exercise Exemptions Due to Impacts from the COVID-19 Public Health Emergency

NEPS staff have been keeping up-to-date on all NRC updates pertaining to Emergency Planning. NEPS staff attended an NRC meeting on June 23, 2020 to discuss Potential Emergency Preparedness Exercise Exemptions Due to Impacts from the COVID-19 Public Health Emergency. NRC accepted comments regarding stakeholders' concerns pertaining to inspection scheduling, NRC graded exercises, and the granting of extensions and exemptions in those areas.

Contact: Ann Pfaff (609) 984-7451

Draft EP Rule for Small Modular Reactors (SMR) and Other New Technology (ONT)

NEPS staff attended an NRC meeting on June 24, 2020 to discuss newly proposed rules for Emergency Planning for Small Modular Reactors (SMR) & Other New Technologies (ONT). NEPS staff reviewed the proposed EP Rule for SMRs and ONTs and are submitting their own comments to the Assistant Director for review.

Contact: Ann Pfaff (609) 984-7451

HDAIC Training Webinars

NEPS Staff have been taking advantage of from-home learning and training opportunities offered by the Homeland Defense & Security Information Analysis Center (HDAIC). NEPS staff attended training on June 9, 2020 on CBRN Survivability, which focused on the US Army's plans on surviving a CBRN attack. NEPS staff attended training on June 24, 2020 on Nuclear Power for the Modern Grid, which focused on how nuclear power fits into the modern power grid, with a distinct focus on Small Modular Reactors (SMR) and Other New Technologies (ONT) – a timely look at emerging technologies that are currently under review by the NRC for new emergency planning rules.

Contact: Ann Pfaff (609) 984-7451

AQES Remote Learning Event: Reducing Emissions from Transportation

On June 16, 2020 NEPS staff took part in an AQES Remote Learning Event to discuss the successes in reducing emissions from transportation – currently the largest producer of emissions in NJ – and address the challenges ahead to help move further towards reducing emissions from transportation.

Contact: Ann Pfaff (609) 984-7451