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

JUNE 1 THROUGH JULY 31, 2020

SECTION I- OFFICE OF THE ASSISTANT DIRECTOR

FY 2020 Bureau of X-Ray Compliance Accomplishments

A. Machine Source and MS Registration Section

The Bureau inspected 1,764 facilities and evaluated compliance of 4,450 x-ray machines. Work plan targets were 2,299 facilities and 6,618 machines. These inspections resulted in the issuance of 648 violations of radiation protection codes of which 285 (44%) were violations of quality assurance regulations and 363 (56%) were violations of other radiation protection regulations.

In addition, the Bureau continued inspections of dental radiography schools and dental cone beam computed tomography (CBCT) facilities. A total of 152 CBCT facilities were inspected and 105 CBCT violations issued. The majority of CBCT violations were for failure to conduct various quality control tests, 54 (51 %) and failure to have an annual medical physicist's survey performed, 45 (43 %).

In 2020, the Machine Source Registration total number of invoices paid on-line was 17 % over the previous fiscal year of 16 %. This was a 1% increase over the previous fiscal year. This was attributed to the Bureau's actions to get registrants to pay their renewal machine source registration fees on time through hand deliveries by inspectors.

B. Technologist Education and Licensing Section

In FY 2020, the section processed and issued 999 initial licenses and renewed 416 licenses. The section coordinated four quarterly meetings of the Radiologic Technology Board of Examiners. Thirty-two compliant inspections were conducted, and 46 unlicensed technologists were found operating X-ray equipment. This resulted in 189 enforcement documents being issued. A total of 3 new school applications were reviewed and 7 existing schools were inspected.

The Section initiated 32 investigations and verified 5,201 licenses. Only 30 investigations were projected. A total of 46 enforcement violations were found for employing unlicensed operators of X-ray equipment and unlicensed nuclear medicine technologists. There was a total of six technologists licensed sanctioned. Twenty-one technologists were utilizing an expired license while practicing.

In FY 2020, 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.

C. Mammography Section

The Bureau's current contract with the FDA will end on August 20, 2020. To date the Bureau has completed 136 inspections of fully certified New Jersey mammography facilities. New Jersey mammography facilities continue to exceed national compliance rates reported by the Food and

Drug Administration. In FY 2020, the national compliance rate was 85.1% compared to New Jersey's 89.8%.

D. Enforcement Services Section

In 2020, the Bureau completed: 591 compliance inspections, 584 dental inspections, and issued 158 Notice of Violations, 278 Administrative Orders and 260 Notice of Prosecutions for a total of 1,871 enforcement activities. In 2020, the Bureau assessed $155,600.00 in penalties and collected $139,760.00 for the current fiscal year. Also, the Bureau collected $25,150.00 from the previous fiscal year. The total amount collected was $164,910.00. The percentage collected was 90 per cent for the current fiscal year.

FY 2020 Bureau of Environmental Radiation Accomplishments

A. Radon Section

Radon Database

Staff has been working with the contractor from SystemetriX on several radon database projects including automation of merging multiple address records into a single record per address, development of a radon potential map program to automate map generation, linking testing and mitigation data with the correct radon tier assignment, and development of statistical reports for testing and mitigation data, certified individuals and businesses, and fees.

For the past 10 years, merging addresses has been completed via a manual method. SystemetriX is programming the database to allow automatic merging of existing data as well as incoming data, with minimal manual assistance. Likewise, the preparation of the radon potential map was a labor-intensive process. SystemetriX will completely automate the development of the map so that it can be generated with one click. The preparation of statistical reports will enable all staff to access this information, not just those with the proper training and software. These projects are expected to be completed within the next two to four months.

Radon Awareness Program

The Radon Awareness Program (RAP) grant is available to all New Jersey municipalities, counties, and schools. The purpose of RAP is to raise radon awareness and promote the testing of New Jersey residences. For this program, the Radon Section will reimburse up to $2,000 for the purchase of radon test kits. These test kits can then be distributed to its residents along with other promotional materials free of charge.

RAP has seen an increase in activity for this fiscal year. Staff revised the Radon Action Partnership Packet that was then sent out to all NJ municipalities. The requirements have been updated in order to streamline the process and increase testing compliance rates. The NJDEP's Facebook and twitter accounts were utilized to promote the program by encouraging residents to contact their locally elected official and urge program participation. All available grant money has been requested and

so far, 33 out of 37 participants have received their reimbursement for a total of $54,730.60 distributed. There are also 17 additional candidates on a waitlist to join the program.

Governor's Task Force on Cancer Control & Prevention

Radon staff has joined the Governor's Task Force on Cancer Control & Prevention. The group consists of members in both the private and public health care sectors. The overarching goals are to focus on lung cancer prevention, early detection, treatment, and survivorship. Staff joined with the objective to include more radon relevant information and infographics in the new comprehensive cancer plan that is currently under development. A draft of the radon portion for the new plan has been submitted to the task force. New potential content includes multiple Healthy New Jersey long term goals, an updated New Jersey radon potential map, and other infographics and information relevant to radon.

CDC National Radon Database

The 2018 data set for all radon tests conducted in New Jersey was successfully submitted to the CDC. With the assistance of the DEP IT staff and DOH staff, data sets have been submitted over the last 3 years for radon tests conducted in New Jersey from 2009 – 2018. The national database is being developed after more than ten years of effort by EPA and CDC workgroups comprised of multiple states including New Jersey. Radon data submissions are accepted by CDC once a year and the data must meet specific criteria in order to be accepted into the CDC database.

B. Radiological and Environmental Assessment Section (REAS)

The REAS section is responsible for the technical review and oversight of complex decommissioning radioactive materials licensees and contaminated sites being addressed under the Industrial Site Recovery Act (ISRA) and referred for review by either NJDEP Site Remediation Program staff or directly from Licensed Site Remediation Professionals.

National Lead / Sayreville Economic and Redevelopment Agency - Remediation Progress

This 312-acre former National Lead site processed ore to extract Titanium, generating TENORM waste. In FY2020 REAS staff reviewed 25 Final Status Survey Reports, releasing parcels of land area totaling 42 acres of land area. In addition, a Final Report on Residual Material Mixing & Reuse, which included 90 individual Final Status Survey Units, was approved releasing approximately 296,000 cubic yards of mixed soils for reuse and backfill within restricted-use survey units slated for future commercial development.

Shieldalloy Metallurgical Corporation (SMC) - Decommissioning Plan Successes

Shieldalloy Metallurgical Corporation (SMC) in Newfield, Gloucester County is Superfund Site (metals) and has a radioactive materials license from the NJDEP's Bureau of Environmental Regulation (BER). Previous production activities (since the 1950's) licensed by the US Nuclear Regulatory Commission resulted in huge stockpiles of low-level radioactive slags and baghouse dust (from air pollution control equipment) on site as well as some off-site impacts to sediments

of the Hudson Branch. NJDEP BER assumed regulatory authority over the site in 2009 and reengaged the site regarding decommissioning in accordance with NJDEP Remediation Standards for Radioactive Materials.

Fiscal Year 2020 saw significant accomplishments in the licensee's continued implementation of the Decommissioning Plan. This included completion of sediments excavations in the Hudson Branch, construction of the on-site rail spur for shipping waste, and approval of the first final status survey report authorizing release for limited-restricted release of a small 1-acre portion of the site. Waste shipments began in October 2019 with shipments of Hudson Branch sediments, baghouse dust, and other low-level wastes. During FY2020 the site had shipped 435 railcars containing a total of 45,541 tons of waste. The Decommissioning Plan has transportation and disposal continuing through the end of 2021.

DuPont Carteret Site Released for Restricted Use

Staff of the Bureau of Environmental Radiation approved the Radiological Final Status Survey Reports release for restricted use of two parcels covering approximately 35 acres in the Borough of Carteret, Middlesex County. The approval relates only to radiological contaminants (primarily Ra-226), whose remedy included extensive characterization sampling, development of site-specific soil standards, and radiological screening of approximately 400,000-cubic yard (CY) of construction and demolition debris for onsite beneficial reuse. No areas on the Dupont parcels required excavation for radiological contaminants. The Dupont parcels were part of a 66-acre phosphate-based fertilizer manufacturing facility formerly located along the Arthur Kill. A portion of the property will used to expand the Borough of Carteret's Waterfront Park & Marina, located immediately adjacent to the South, to include a ferry terminal for service to Manhattan.

Non-Military Radium sites

Several years ago, the Nuclear Regulatory Commission provided each state with a list of possible radium sites based on their research. Many of the sites that the NRC identified for New Jersey were known and were either remediated or at some stage of remediation. However, several sites identified in the NRC report required additional research to determine whether residual contamination was present. REAS staff identified two properties with contamination which were referred to the US Environmental Protection Agency (EPA) for remedial action. During FY2020 one of the properties was remediated and released for unrestricted use following technical review by REAS. Planning has been initiated on the second property by EPA.

C. Medical and Industrial Sections of the Agreement State Program

Rule Adoption

The IMPEP Team's Compatibility review requires all NRC rules and amendments be adopted within 3 years by an Agreement State. Based on the review, an amendment to the Packaging and Transportation of Radioactive Materials Subchapter was required to maintain compatibility. The program obtained the required approvals from both the Commission on Radiation Protection and the DEP Commissioner. This rule amendment was adopted June 15, 2020.

FY 2020 Bureau of Nuclear Engineering Accomplishments

A. Nuclear Engineering Section

NRC Inspections at New Jersey Nuclear Power Stations

In accordance with the Memorandum of Understanding (MOU) between the BNE and the NRC, the NES Staff is provided the opportunity to observe the inspection activities and processes of the NRC during its inspections at the nuclear power stations in New Jersey. Normally this is done as an onsite activity. In March 2020, the NRC and the BNE developed protocols allowing their respective staffs to perform/observe inspections remotely, in order to maintain inspection activities during the national public health emergency. Fourteen (14) NRC inspections were observed during FY2020.

Department of Energy (DOE) National Transportation Stakeholders Forum (NTSF) and the Council of State Governments/Eastern Regional Conference (CSG/ERC) Northeast High-Level Radioactive Waste Transportation Task Force (NE Task Force)

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 is composed of DOE representatives and four (4) state regional groups (SRG) (Northeast, Midwest, Southern and Western) and the Tribal Radioactive Materials Transportation Committee (TRMTC).

A NES Staff Engineer and the NES Supervisor are Governor appointed members of the CSG/ERC Northeast SRG (i.e., NE Task Force). The NES Supervisor is a co-chair of the NE Task Force. The CSG/ERC NE Task Force assists the northeastern states in planning and preparing for the transportation of spent nuclear fuel and high-level radioactive materials with the goal of the safe, secure and uneventful transportation of such materials.

During FY2020, the NES members of the NE Task Force supported the Task Force and the NTSF by attending seven (7) various meetings/webinars. Some meetings were attended remotely.

B. Nuclear Environmental Engineering Section (NEES)

Decommissioning Activities at the Oyster Creek Nuclear Generating Station (OCNGS)

A staff member observed the annual Decommissioning Radioactive Waste Treatment, and Effluent and Environmental Monitoring Inspection at the Oyster Creek Nuclear Generating Station from August 19, 2019 through August 22, 2019. Prior to decommissioning, this inspection was performed biennially. The change in frequency to annual is due to the rapid changes during the demolition and decontamination of a site in decommissioning as it relates to (1) changes/removal of effluent pathways as equipment is shut-down and removed, (2) changes in onsite and offsite

environmental sampling as it relates to the removal of liquid sources such as the spent fuel pool water, piping and storage tanks, and (3) groundwater monitoring and potential water intrusion in various buildings. The objectives of the inspection include (1) assurance that radioactive waste treatment systems are maintained and operated to keep offsite dose as low as reasonably achievable, (2) ensure that the licensee effectively controls, monitors, and quantifies releases of radioactive materials in liquid, gaseous, and particulate forms to the environment, and (3) ensure that Radiological Environmental Monitoring Programs are effectively implemented.

Staff members provided comments on Holtec's revisions to the Oyster Creek Offsite Dose Calculation Manual (ODCM). The ODCM details the licensee's controls, compensatory actions, and surveillance requirements for the liquid and gaseous effluent monitoring instrumentation. Additionally, it describes the licensee's Radiological Environmental Monitoring Program (REMP). The review included changes as Oyster Creek transitions from an operating to decommissioning plant. These changes included the (1) removal of abandoned effluent pathways, (2) changes in offsite environmental and groundwater monitoring, and (3) changes to the radionuclide mix associated with a decommissioning commercial facility.

PSEG Delaware River Dredging Project

NEES staff coordinated the collection and radiological analysis of sediment samples associated with a dredging permit application being prepared by PSEG. The utility is planning to dredge an access channel between the existing main navigation channel in the Delaware River, and their property located just north of the Hope Creek Nuclear Generating Station. The project involves the dredging of approximately 2.39 million cubic yards of sediment from an area comprising 91.9 acres. Pending the results of chemical and radiological analyses of sediment samples from the area to be dredged, the sediment will be deposited in an existing upland confined disposal facility located nearby.

Impingement of Endangered Atlantic Sturgeon at Salem Nuclear Generating Station

NEES staff consulted with the National Marine Fisheries Service (NMFS) and PSEG Nuclear regarding the circumstances surrounding the recent increase in the impingement of Atlantic sturgeon on the intake screens at PSEG's Salem Nuclear Generating Station (Salem). This species is listed as Endangered under the Federal Endangered Species Act, and the impingement of these fish at Salem is regulated by NMFS. A Biological Opinion and Incidental Take Statement issued by NMFS limits the numbers of Atlantic sturgeon, and other endangered species, that may be impinged or killed at Salem. PSEG Nuclear recently exceeded the limit for the number of Atlantic sturgeon that may be killed as a result of impingement (18). As of May 13, NMFS reports that as many as 44 fish have died on the intake screens. PSEG, NMFS and the Nuclear Regulatory Commission are in the process of evaluating possible causes for the recent increase in the occurrence of these fish at Salem, as well as possible methods to mitigate the impact.

C. Nuclear Emergency Preparedness Section

Teletrix Simulator Probe-Paks Upgrade

The Bureau of Nuclear Engineering (BNE) upgraded its radiation detection simulation equipment used for training nuclear emergency responders. The current training instruments have been used for several decades to resemble real handheld radiation meters used by the BNE. Since new Ludlum 3001 meters were purchased in 2018, the simulator instruments also needed to be upgraded. NEPS has received the new simulator instruments and is in the process of working with Teletrix Corporation to set-up the equipment for use with our field team exercise kits. The upgraded simulation radiation detectors will provide significant improvements in training and exercise capabilities for the Bureau of Nuclear Engineering.

New Monitoring Station at Oyster Creek Independent Spent Fuel Storage Installation

On March 2, 2020, a new monitoring station was installed and began collecting data at the Oyster Creek Independent Spent Fuel Storage Installation (ISFSI). This is the fourth station adjacent to the ISFSI pad providing real-time radiation and meteorological data. Additionally, one of the original three monitoring stations was relocated 1000 yards to accommodate associated decommissioning activities around the existing ISFSI pad.

Cradlepoint Router Upgrade

During September 2019, the upgrade to Cradlepoint IBR1700 routers at all 32 of the Continuous Radiological Environmental Surveillance Telemetry (CREST) System monitoring stations was completed. The Cradlepoint IBR1700 routers were obtained under a grant from New Jersey Office of Homeland Security & Preparedness to provide AT&T FirstNet service for the nuclear emergency response system. The routers are 4G capable and replace the 3G routers that will no longer be supported at the end of the year. In addition to providing priority and preemption for data transmission, the project savings are in excess of $50,000 to the program.

Nuclear Emergency Preparedness State of Readiness

NEPS staff have diligently ensured 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.

Acquisition of SAIC Personal Dosimeters

Seventy-five (75) SAIC PD3i Personal Dosimeters were acquired from NJ State Police Office of Emergency Management (SPOEM) in March 2020. NEPS provides Canberra Personal Dosimeters to Nuclear Emergency Responders on its response roster. Several Canberra units are no longer passing calibration and require repair by the manufacturer. The out-of-service Canberra units are contributing to a restricted stock of personal dosimeters. NEPS investigated multiple options to increase the stock of dosimeters and determined the best course of action is to incorporate the

SAIC Personal Dosimeters provided by the SPOEM rather than buying new Canberra units, saving the Bureau more than $25,000.00.

D. Nuclear Emergency Response Training, Drills and Exercises

Oyster Creek State-Graded Tabletop Exercise

NEPS participated in the Oyster Creek State-Graded Tabletop Exercise on October 30, 2019 along with Holtec/CDI, Ocean County Sherriff's Office, the NJ State Police Office of Emergency Management, and multiple state, county and local agencies. The Tabletop Exercise demonstrated preparedness and response capabilities for dealing with a seismic initiated emergency at the permanently defueled nuclear generating station. While Oyster Creek Nuclear Generating Station no longer falls under FEMA's review, annual exercises are required by the Post-Shutdown Response Plan and are State evaluated. The highest possible classification is an Alert at the defueled plant.

PSEG Emergency Action Level Training

On December 5, 2019, nuclear emergency response staff attended training by PSEG Nuclear on the methods used to classify emergencies at Salem and Hope Creek. Topics included the types of emergencies, strategies for evaluation, and the outcomes that would arise. Attendees were also provided with an overview of the latest revisions to Emergency Action Levels based on the Nuclear Energy Institute's industry-wide guidance in NEI 99-01 Rev 6, "Development of Emergency Action Levels for Non-Passive Reactors". Representatives of partner agencies provided short presentations on recent developments related to nuclear emergency preparedness under their jurisdictions. Following formal classroom activities, participants were offered the opportunity to tour the Hope Creek Control Room Simulator and emergency Operations Facility. The Simulator is identical to the actual reactor control room and allows real-time training via computer-generated events.

Regional Radiological Emergency Preparedness Conference

On September 25 and 26, 2019, the Regional Radiological Emergency Preparedness Conference was held at the Regional Operations Intelligence Center, State Police Headquarters. Hosted by State Police Office of Emergency Management and supported by the Bureau of Nuclear Engineering, this annual conference brings together Federal, State and local agencies and licensees with responsibilities for radiological emergency preparedness for nuclear power plants in Nuclear Regulatory Commission Region 1. Sessions included discussions on decommissioning, evacuation time estimates, join information systems and agency updates. Government attendees include staff from Federal Emergency Management Agency Regions I, II, III and headquarters, Nuclear Regulatory Commission Region 1 and headquarters, State representatives from Connecticut, Delaware, Maryland, New York, Pennsylvania, Rhode Island and West Virginia, as well as New Jersey. Licensees include PSEG, Exelon, First Energy, Dominion and Entergy. Exercise scheduling and the Eight Year Cycle requirements also was discussed during the two-day conference.

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 exercise was in preparation for the Hope Creek FEMA-Graded Exercise scheduled for May 19, 2020, but subsequently postponed until April 28, 2021 due to the national public health emergency.

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

CRCPD H-7 Committee on Diagnostic X-ray, Monthly Technical Trends and Topics

On July 7, 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 Webinar Training Activity

On July 23, Bureau staff participated in the following Webinar, National Institute of Health: National Cancer Institute and National Institute of Allergy and Infectious Diseases- "Low Dose Radiation Therapy for COVID-19: Benefits or Risks?".

B. REGISTRATION SECTION

Machine Source Registration and Renewal Fees

The Registration Section has begun invoicing the registrants for FY2021 registration renewals. In addition, new equipment is invoiced administrative and prorated registration fees when they are installed. The table below represents monthly and year to date activities. In July, facilities in the 0-F group were invoiced their FY 2021 annual registration fees.

Machine Source Fees Invoiced and Collected for FY 2021					
Monthly Invoiced	Monthly Collected	Fiscal YTD Invoiced	Fiscal YTD Collected	Fiscal YTD Adjustments	Percent Collected
$965,475.00	$315,068.00	$965,475.00	$315,068.00	$0.00	33%

Progress on Collection of FY 2021 Registration Renewal Fees

Renewal Groups	Paid 7/31/20	Paid 8/31/20	Paid 9/30/20	Paid 10/31/20	Paid 11/30/20	Paid 12/31/20	Paid 1/31/21	Paid 2/28/21	Paid 3/31/21	Paid 4/30/21	Paid 5/31/21	Paid 6/30/21
0-F	37%	0	0	0	0	0	0	0	0	0	0	0
G-L	N/A	0	0	0	0	0	0	0	0	0	0	0
M-R	N/A	N/A	0	0	0	0	0	0	0	0	0	0
S-Z	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0

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

Of the total number of invoices paid to date, 24% percent paid on-line.

Monthly Machine Source Registration Activity FY 2021

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	YTD
New Facilities	13	0	0	0	0	0	0	0	0	0	0	0	13
Terminated Facilities	29	0	0	0	0	0	0	0	0	0	0	0	29
Net Change (Facilities)	-16	0	0	0	0	0	0	0	0	0	0	0	-16
New Registrations	128	0	0	0	0	0	0	0	0	0	0	0	128
Stored Registrations	43	0	0	0	0	0	0	0	0	0	0	0	43
Disposed registrations	94	0	0	0	0	0	0	0	0	0	0	0	94
Net Change (Machines)	-9	0	0	0	0	0	0	0	0	0	0	0	-9

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 July 2020, IQ evaluations were performed on three x-ray units with the following results:

- 2 units (67%) had excellent image quality scores.
- 1 unit (33%) 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 July 2020, ESE measurements were calculated on three x-ray units that performed lumbo-sacral spine x-rays. No units (0%) had extremely high ESE measurements.

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

In July 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 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 July 2020, ESE measurements were calculated on 60 dental x-ray units that used DR digital imaging. Eight units (13%) were measured as having extremely high ESE.

In July 2020, ESE measurements were calculated on 5 dental x-ray units that used CR (PSP) digital imaging. No units (0%) were measured as having extremely high ESE.

In July 2020, ESE measurements were calculated on 7 dental x-ray units that used D speed film. One unit (14%) were measured as having extremely high ESE.

In July 2020, ESE measurements were calculated on 8 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 July 2020, 21 amalgam questionnaires were collected. The total dental amalgam questionnaires collected for FY2021 is 21.

Inspection Activity and Items of Non-compliance

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

FY 2020 Inspection Results

The Bureau inspected 1,764 facilities and evaluated compliance of 4,450 x-ray machines. Work plan targets were 2,299 facilities and 6,618 machines. These inspections resulted in the issuance of 648 violations of radiation protection codes of which 285 (44%) were violations of quality assurance regulations and 363 (56%) were violations of other radiation protection regulations.

The majority of quality assurance violations were for failure to conduct various quality control tests, 191 (67 %) and failure to have an annual medical physicist's survey performed, 61 (21 %). The majority of violations in all other categories were for failure for equipment performance issues, 77 (21 %); failure to perform and/or submit radiation safety surveys, 49 (13 %); permitting the operation of x-ray equipment without a license, 35 (10 %); failure to register x-ray equipment with the Department, 30 (8 %); failure to monitor employees radiation exposure, 23

(6 %); failure to test interlocks, spot checks and safety devices, 21 (6%); and failure to pay registration fees, 15 (4%).

In addition, the Bureau continued inspections of dental radiography schools and dental cone beam computed tomography (CBCT) facilities. A total of 152 CBCT facilities were inspected and 105 CBCT violations issued. The majority of CBCT violations were for failure to conduct various quality control tests, 54 (51 %) and failure to have an annual medical physicist's survey performed, 45 (43 %).

Two charts summarizing Bureau Inspection Goals vs. Inspections Completed for FY20 and a six-page Inspector Activity Report of inspections performed, enforcement documents issued, and a description of the non-compliances found follows in Appendix B 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 July.

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 2021 Invoiced & Collected				
Invoice Type	**Monthly Invoiced**	**Monthly Collected**	**Fiscal YTD Invoiced**	**Fiscal YTD Collected**
Examinations	$0	$0	$0	$0
Initial Licenses	$4,980	$3,760	$4,980	$3,760
Renewal Licenses*	$2,104,110	$1,350	$2,104,110	$1,350
Totals	$2,109,090	$5,110	$2,109,090	$5,110

*On July 30th, radiologic technologists were invoiced for their 2021-2022 license renewal. Invoices will be mailed in October 2020.

FY 2020 TEALS Inspection Results

In FY 2020, the section processed and issued 999 initial licenses and renewed 416 licenses. Thirty-two compliant inspections were conducted, and 46 unlicensed technologists were found operating X-ray equipment. This resulted in 189 enforcement documents being issued. A total of

3 new school applications were reviewed and 7 existing schools were inspected. The Section transformed its inspection practices and is using the Bureau's Machine Source Inspectors to perform most of these inspections as part of their X-ray equipment inspections. Going forward the section now has an inspector resource to cover dental radiography school inspections.

The Section initiated 32 investigations and verified 5,201 licenses. Only 30 investigations were projected. A total of 46 enforcement violations were found for employing unlicensed operators of X-ray equipment and unlicensed nuclear medicine technologists. There was a total of six technologists licensed sanctioned. Twenty-one technologists were utilizing an expired license while practicing.

In FY 2020, 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.

Contact: Al Orlandi (609) 984-5890

E. MAMMOGRAPHY SECTION

Stereotactic Facilities Inspected

The Mammography Section inspected 4 facilities with stereotactic/needle localization breast biopsy unit during the month of July. A total of 4 of the 61 planned stereotactic facility inspections have been performed since July 1, 2020.

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 15 facilities in July. There were 2 facilities found to have non-compliance issues. A total of 136 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 two facilities with **Level 2** non-compliances.

The compression device QC tests were not done at the required frequency.

Review workstation (monitor) QC testing was not done at the required frequency.

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

Summary of FY2020 Inspection Results

The Bureau's current contract with the FDA will end on August 20, 2020. To date the Bureau has completed 136 inspections of fully certified New Jersey mammography facilities. New Jersey mammography facilities continue to exceed national compliance rates reported by the Food and Drug Administration. In FY 2020, the national compliance rate was 85.1% compared to New Jersey's 89.8%.

Violation Type*	Number of Facilities with Violations	NJ Violation Rate (%)	National Rates (%)
Level 1	0	0.0	0.6
Level 2	14	10.2	12.8
Level 3*	0	0.0	0.0
	14	10.2	13
No Violations	123	89.8	86.6
Totals	137	100.00	100

*Level 1 is the most egregious violations (see mammography section report for further description of FDA violation levels)

Additionally, this fiscal year the inspected 25 of the 61 facilities that have stereotactic/needle localization units.

History of Certified Mammography Facilities in New Jersey

Nationally the number of certified mammography facilities has decreased since the adoption of the Mammography Quality Standards Act in 1995. New Jersey certified mammography facilities has decreased from 275 (1999) to 239 (2020).

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 July 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
July 2020

Bureau of X-Ray Compliance		
	Month	YTD
Compliance Inspections entered into NJEMS	0	0
Dental/CBCT Inspections entered into NJEMS	8	8

Notice of Violations	Closed	Effective	Pending	Total	YTD
	1	1	1	3	3

Administrative Orders	Closed	Effective	Pending	Total	YTD
	0	0	1	1	1

Notice of Prosecutions	Closed	Effective	Pending	Total	YTD
	0	0	1	1	1

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	$0.00	$0.00	$5,430.00	$5,430.00

Contact: Ramona Chambus (609) 984-5370

INSPECTOR ACTIVITY REPORT

07/01/2020 THROUGH 07/31/2020

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	21	60		1
12	STEREOTACTIC INSPECTION	4	4		
15	QA INSPECTION ROUTINE LEVEL 1	3	3		
28	DENTAL CBCT INSPECTION	1	5		
	Total On-Site Inspections:	**29**	**72**	**0**	**1**
6	OFFICE VIOLATION RESPONSE REVIEW	3		3	
18	OFFICE QA VIOLATION RESPONSE REVIEW	3		6	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	3		3	
	Total Office Inspections:	**9**		**12**	**0**

Number of Enforcement Documents Issued

NOV	3
AO	3
NOP	2
Amount of Penalties	$1,700

07/01/2020 THROUGH 07/31/2020

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**2**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**2**
D-025	16.3(a)16	Timer accuracy exceeds manufacturer’s specifications (certified units).	**1**
Registration			
REG1	3.1 (a) and	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	**2**
Total Violations Cited Non-QA			**7**
Violations Cited QA			
Quality Assurance			
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**2**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**1**
Total Violations Cited QA			**3**
Total Violations			**10**

INSPECTOR ACTIVITY REPORT

07/01/2019 THROUGH 06/30/2020

Inspector: ALL
Discipline: ALL

Number of Inspections Performed

Inspection Type	Inspection Description	Facilities Inspected	Machines Inspected	Machines Audited	Machines Uninspected
1	ROUTINE INSPECTION	814	2328		215
2	VIOLATION INSPECTION ON SITE	6	6		8
8	NO SHOW	2			2
9	HAND DELIVERY	84			220
11	INVESTIGATION	91			1
12	STEREOTACTIC INSPECTION	25	27		1
15	QA INSPECTION ROUTINE LEVEL 1	569	617	611	35
17	QA VIOLATION INSPECTION ON SITE	6	3	3	
22	NON-QA INSPECTION - HOSPITALS	14	55		12
28	DENTAL CBCT INSPECTION	152	800		16
29	DENTAL CBCT VIOLATION INSPECTION	1			1
	Total On-Site Inspections:	**1764**	**3836**	**614**	**511**
6	OFFICE VIOLATION RESPONSE REVIEW	139		166	
7	OFFICE RADIATION SAFETY SURVEY	1		1	
18	OFFICE QA VIOLATION RESPONSE REVIEW	184		222	
23	OFFICE TECH CERT INSPECTION	35		35	
24	OFFICE INITIATED ENFORCEMENT ACTION	15		47	
27	OFFICE COMPLIANCE LETTER (FEES)	11		34	
30	DENTAL CBCT OFFICE REVIEW INSPECTION	54		62	
	Total Office Inspections:	**439**		**567**	**0**

07/01/2019 THROUGH 06/30/2020

Inspector: ALL
Discipline: ALL

Number of Enforcement Documents Issued

NOV	158
AO	232
NOP	211
Amount of Penalties	$147,850

07/01/2019 THROUGH 06/30/2020

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Analytical			
A-001	8.1(g)	personnel monitoring records or true copy of same not available upon request.	**2**
A-002	21.6(a)1	Testing safety devices every six months.	**18**
A-005	21.6(a)3	Finger or wrist personnel monitoring equipment not provided.	**10**
A-011	21.6(a)1	Analytical x-ray equipment operated when safety devices are not functioning	**1**
A-014	21.3(a)3	A clearly visible warning light with fail-safe characteristics the "X-RAY ON" is not energize an x-ray tube	**1**
Cabinet			
C-002	17.7(e)	Requirements for surveys not met:	**1**
C-006	17.7(c)	Requirements for film badges not met.	**11**
C-007	17.7(b)	Requirements for operating/emergency procedure manuals not met:	**1**
C-014	17.7(f)5	Requirements for safety interlock tests not met.	**1**
CB			
CB-001	22.3(i)	No Alternate QA program for CBCT	**54**
CB-002	22.7(a)1	CBCT No QA Manual	**1**
CB-003	22.7(a)3	CBCT No MPQCS	**45**
CB-005	22.3(a)	No QA Program for CBCT	**5**
Dental			
D-002	16.8(a)1	Survey of environs not available or not performed	**25**
D-003	16.8(a)2	Survey not available upon relocation or changes to shielding	**7**
D-015	16.3(a)6	Insufficient filtration. Measured HVL ____ mm Al at ____ kVp	**1**
D-016	16.3(a)7	kVp exceeds manufacturer's specifications (certified unit).	**26**
D-018	16.3(a)9	Timer failed to terminate exposure after a preset time	**1**
D-023	16.3(a)14	Timer reproducibility exceeds 5% for certified unit	**1**
D-024	16.3(a)15	Timer reproducibility exceeds 7% for noncertified unit	**2**
D-025	16.3(a)16	Timer accuracy exceeds manufacturer’s specifications (certified units).	**19**

07/01/2019 THROUGH 06/30/2020

Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Dental			
D-027	16.3(a)17	Radiation reproducibility exceeds 5% for certified unit	**7**
D-028	16.3(a)18	Radiation reproducibility exceeds 7% for noncertified unit	**2**
D-032	16.3(a)21	Tube head does not remain stationary in the exposure position	**3**
D-038	16.5(a)	Requirements for cephalometric unit not met.	**1**
FEE			
FEE-001	3.12(g)	Failed to pay registration fees within 60 days of invoice date.	**15**
G			
G-007	2.5(c)	device not working properly	**15**
Industrial Radiography			
IR-012	17.4(e)1	radiation survey instrument not calibrated at 3 mo intervals	**2**
Particle Accelerator Non-Medical			
P-049	20.7(h)	Failed to maintain at least 2 rad. survey instruments suitable for measuring all levels of radiation.	**1**
P-056	20.7(i)4	Failed to maintain the results of each calibration of the survey instrument for five years.	**1**
Radiographic			
R-043	15.3(g)1	Timer accuracy meets manuf specs or 10% of indicated. Measured _____ % at _____	**1**
R-326	15.10(b)1	Initial survey completed and submitted within 60 days	**5**
R-327	15.10(b)2	Survey completed and submitted within 60 days	**1**
Registration			
REG1	3.1 (a) and	Failed to register the ionizing radiation producing machine within 30 days of acquisition.	**30**
Therapy Below 1 Mev			

07/01/2019 THROUGH 06/30/2020

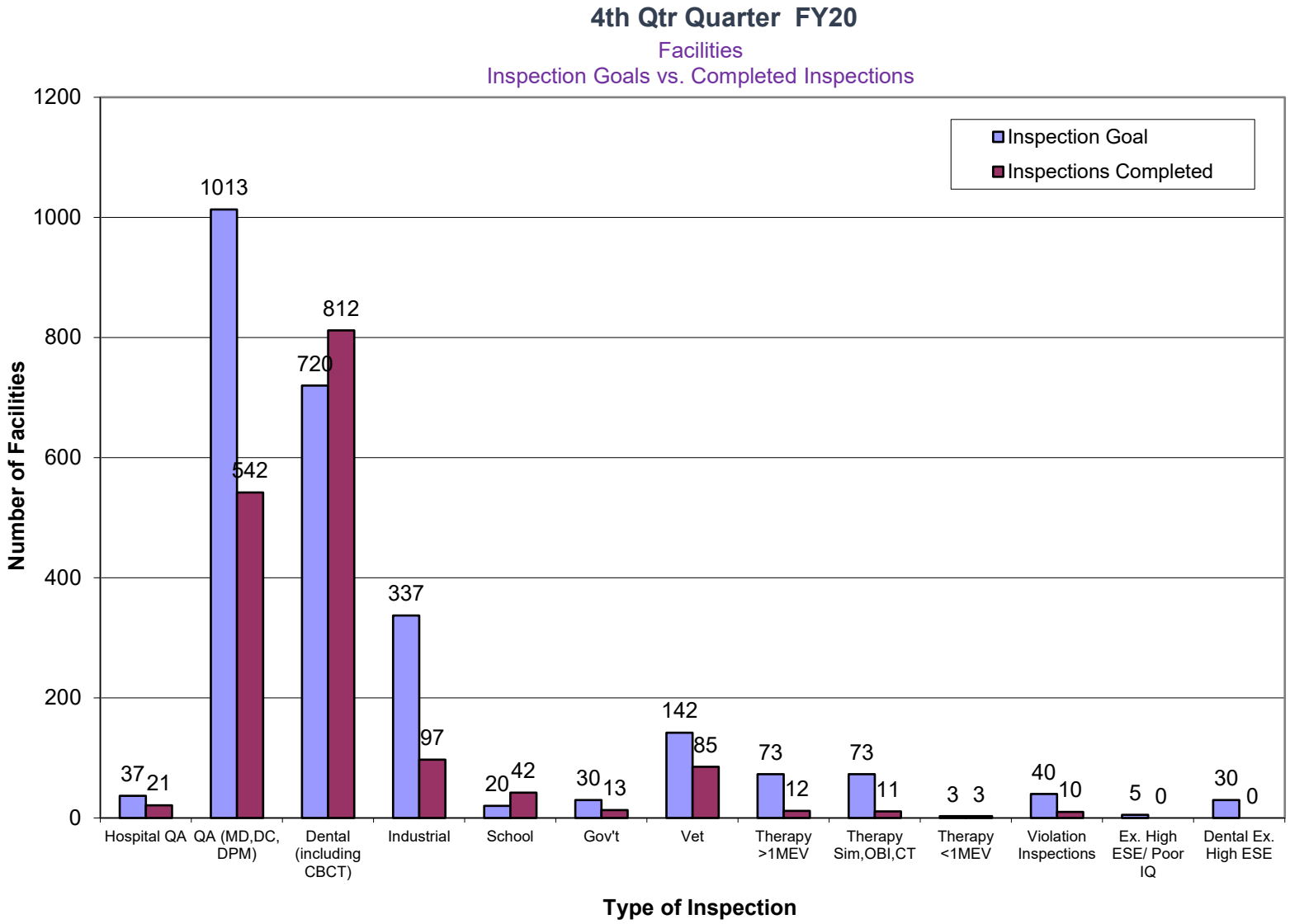
Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited Non-QA			
Therapy Below 1 Mev			
TB-008	14.3(d) 1, 2	Pursuant to N.J.A.C. 7:28-14.3(d) for therapeutic x-ray systems, spot checks shall be performed on therapeutic x-ray systems with energies greater than 0.018 MeV and less than one MeV and shall meet the following requirements: 1. The qualified radiological physicist will determine those parameters to be spot-checked and the procedure to be used when performing those spot checks. The spot check procedure shall be in writing and specify the frequency at which tests, or measurements are to be performed, not to exceed one month, and the acceptable tolerance for each parameter measured in the spot-check. A qualified radiological physicist need not actually perform the spot-check measurement. If a qualified radiological physicist does not perform the spot-check measurement, the results of the spot-check measurement shall be reviewed by a qualified radiological physicist within 15 days; 2. The measurements taken during spot checks shall demonstrate the degree of consistency of the operating characteristics which can affect	**1**
TB-012	14.3(c)1	system calibrations not performed as required	**1**
TC			
TC-001	19.3(c)	x-rayed humans without a valid NJ license	**35**
Veterinary			
V-001	7.1(a)	veterinary unit no radiation safety survey of the environs	**9**
Total Violations Cited Non-QA			**363**
Violations Cited QA			
Quality Assurance			
QA-009	22.3(a)	Failed to develop and continuously implement QA program.	**1**
QA-011	22.5(a)2	QC tests from Table 1 (Radiographic) not performed at the required intervals.	**126**
QA-012	22.5(a)3	Medical Physicist's QC Survey not performed at required interval or all tests not performed.	**50**
QA-037	22.6(a)2	QC tests from Table 2 (Fluoroscopic) not performed at the required intervals.	**49**
QA-038	22.6(a)3	No Med Phys QC Survey for Fluoro	**10**

07/01/2019 THROUGH 06/30/2020

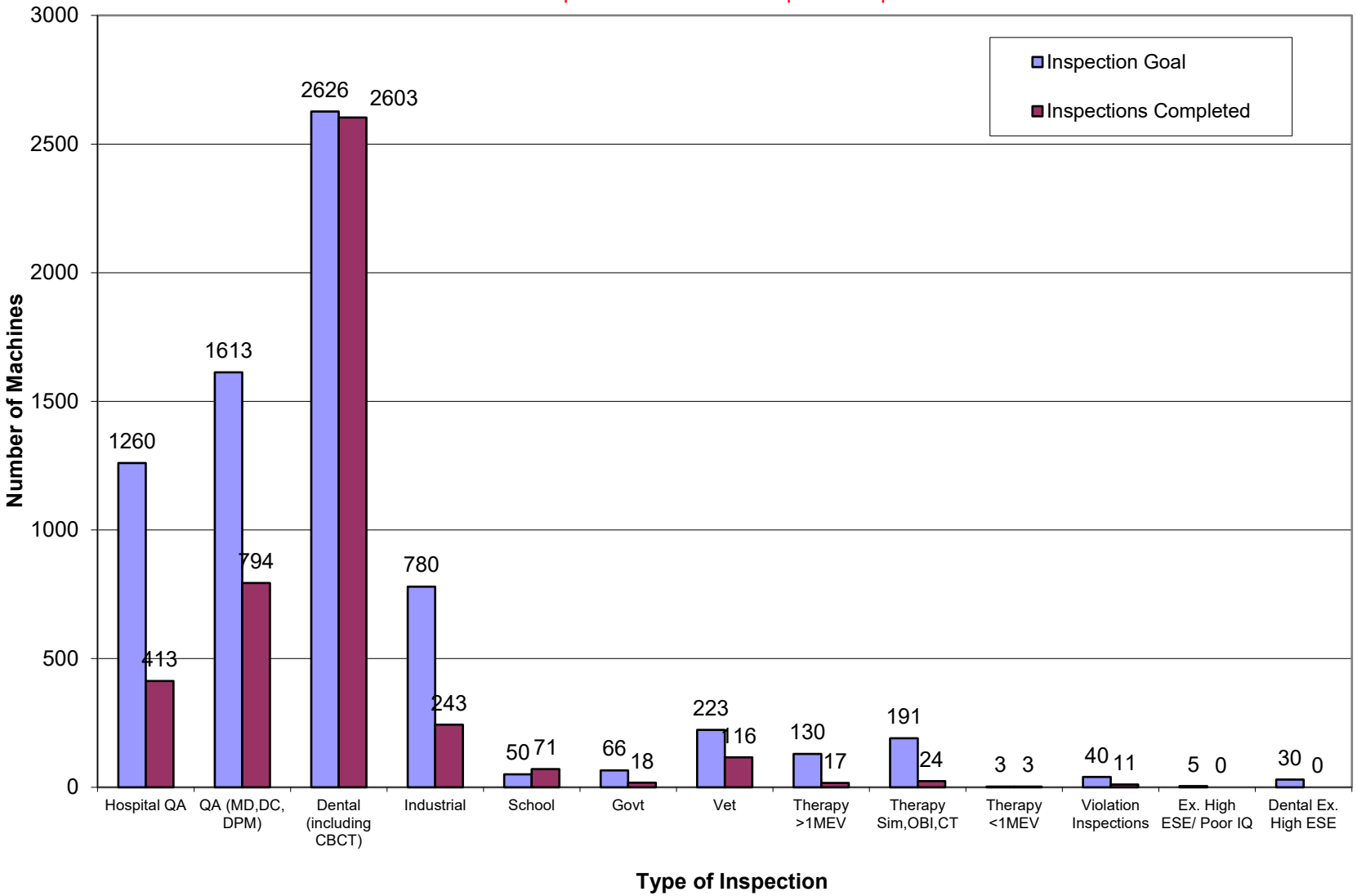
Inspector: ALL
Discipline: ALL

Violation Code	Glossary Information	Description Non-Compliance	Number of Violations By Code
Violations Cited QA			
Quality Assurance			
QA-039	22.6(a)4	No Corrective Action Plan for Fluoro	**1**
QA-063	22.7(a)2	QC tests from Table 3 (CT) not performed at the required intervals.	**16**
QA-064	22.7(a)3	No Med Phys QC Survey for CT	**1**
QA-097	22.8(f)1	Registrant failed to immediately initiate corrective action recommended I	**3**
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-173	22.5(j)2	All images for QC tests for items 2 & 3 maintained for 30 days	**1**
QA-174	22.5(j)3	All images for QC tests for items 8, 11, 12 & 13 maintained for 1 year	**17**
QA-175	22.6(i)1	All records for QC tests maintained for one year	**2**
QA-179	22.7(j)2	All images for QC tests for items 2, 3, 4 & 5 maintained for 30 days	**1**
QA-180	22.7(j)3	All images for QC tests for items 6, 7 & 8 maintained for one year	**3**
Total Violations Cited QA			**285**
Total Violations			**648**


4th Qtr Quarter FY20
Facilities
Inspection Goals vs. Completed Inspections
Inspection Goal
Inspections Completed
Number of Facilities
1200
1000
800
600
400
200
0
37
21
1013
542
720
812
337
97
20
42
30
13
142
85
73
12
73
11
3
3
40
10
5
0
30
0
Hospital QA
QA (MD,DC, DPM)
Dental (including CBCT)
Industrial
School
Gov't
Vet
Therapy >1MEV
Therapy Sim,OBI,CT
Therapy <1MEV
Violation Inspections
Ex. High ESE/ Poor IQ
Dental Ex. High ESE
Type of Inspection

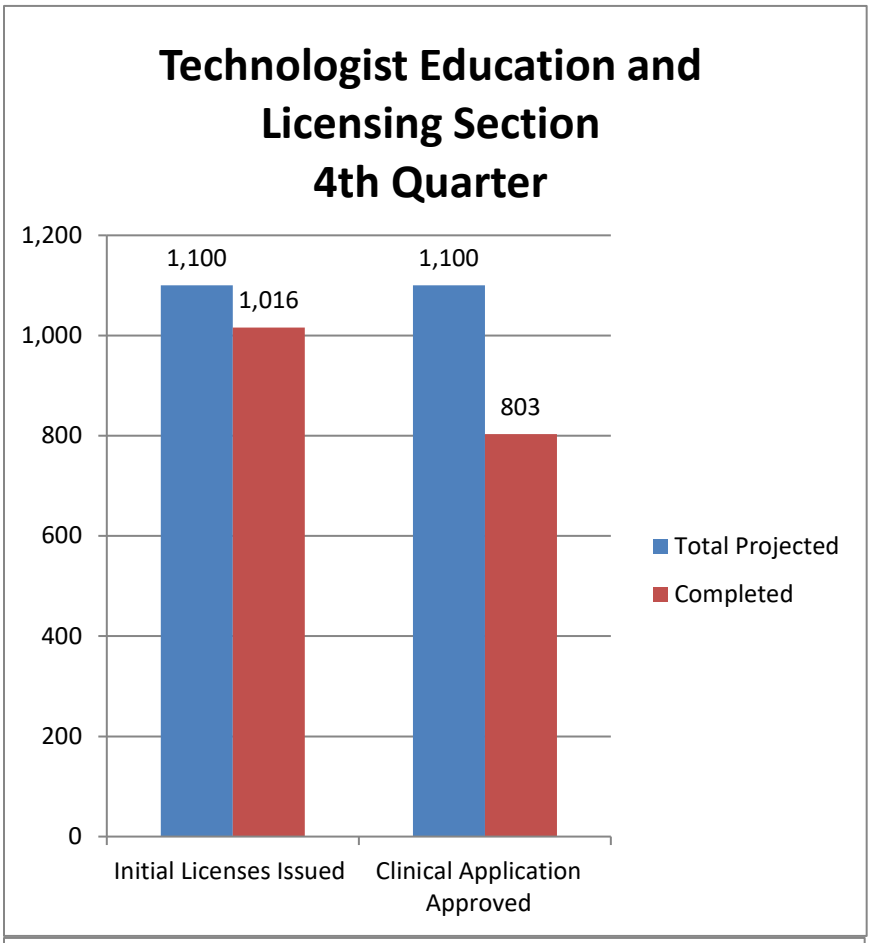
4th Quarter FY20

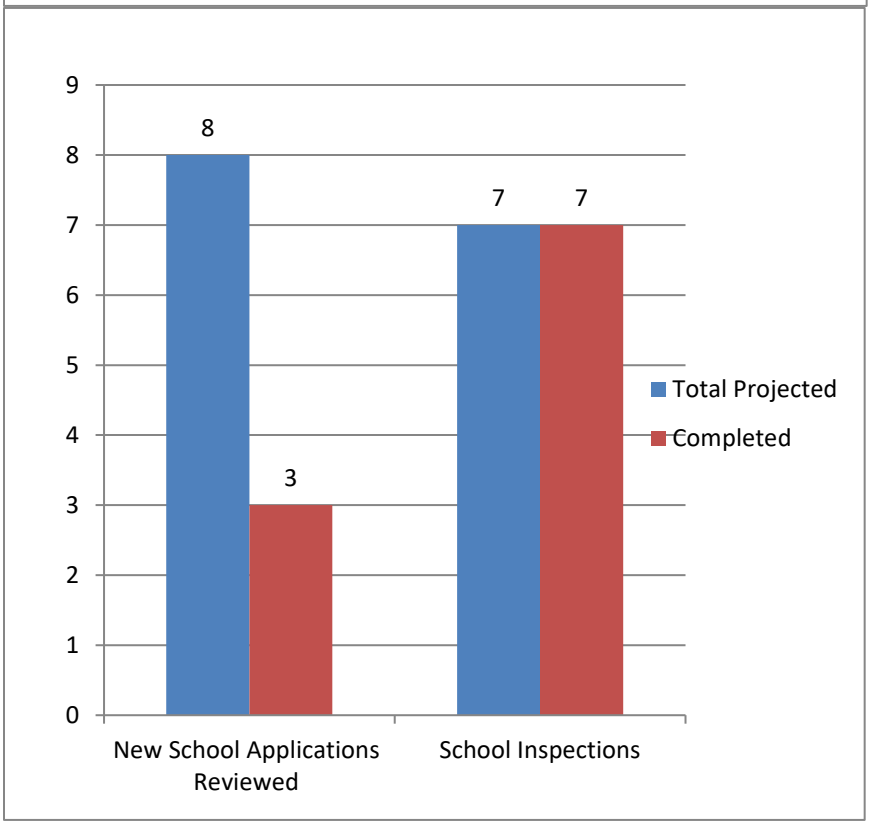
Machines
Inspection Goals Vs. Completed Inspections



APPENDIX A - TECHNOLOGIST EDUCATION AND LICENSING SECTION
MONTH OF JULY 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	61	3	1	27	-	-	-	1	93	93	1,100
Licenses Renewed	5	1	-	4	-	-	-	-	10	10	N/A
Total Licensed	9,457	1,036	879	11,907	55	22	7	80	23,443	N/A	N/A
Exams Scheduled	-	-	-	-	-	-	-	-	0	0	N/A
Investigations Conducted	-	-	-	1	-	-	-	-	1	1	30
Licenses Verified	28	-	-	332	-	-	-	-	360	360	7,000
Expired Licenses	-	-	-	-	-	-	-	-	0	0	N/A
Unlicensed	-	-	-	-	-	-	-	-	0	0	N/A
Enforcement Documents Issued	-	-	-	-	-	-	-	-	0	0	N/A
NEAs Issued	-	-	-	-	-	-	-	-	0	0	N/A
Offer of Settlement	-	-	-	-	-	-	-	-	$0	$0	N/A
Licenses Sanctioned	-	-	-	-	-	-	-	-	0	0	N/A
Approved Educational Schools	15	2	3	23	-	-	-	-	43	43	N/A
New School Application Evaluated	-	-	-	-	-	-	-	-	0	0	8
Curriculum Modifications Evaluated	-	-	-	-	-	-	-	-	0	0	20
School Inspections Conducted	-	-	-	-	-	-	-	-	0	0	7
Total Schools Reviewed	-	-	-	-	-	-	-	-	0	0	27
Clinical Applications Approved	-	-	-	128	-	-	-	-	128	128	1,100


Technologist Education and Licensing Section 4th Quarter
1,200
1,000
800
600
400
200
0
1,100
1,016
1,100
803
Initial Licenses Issued
Clinical Application Approved
Total Projected
Completed

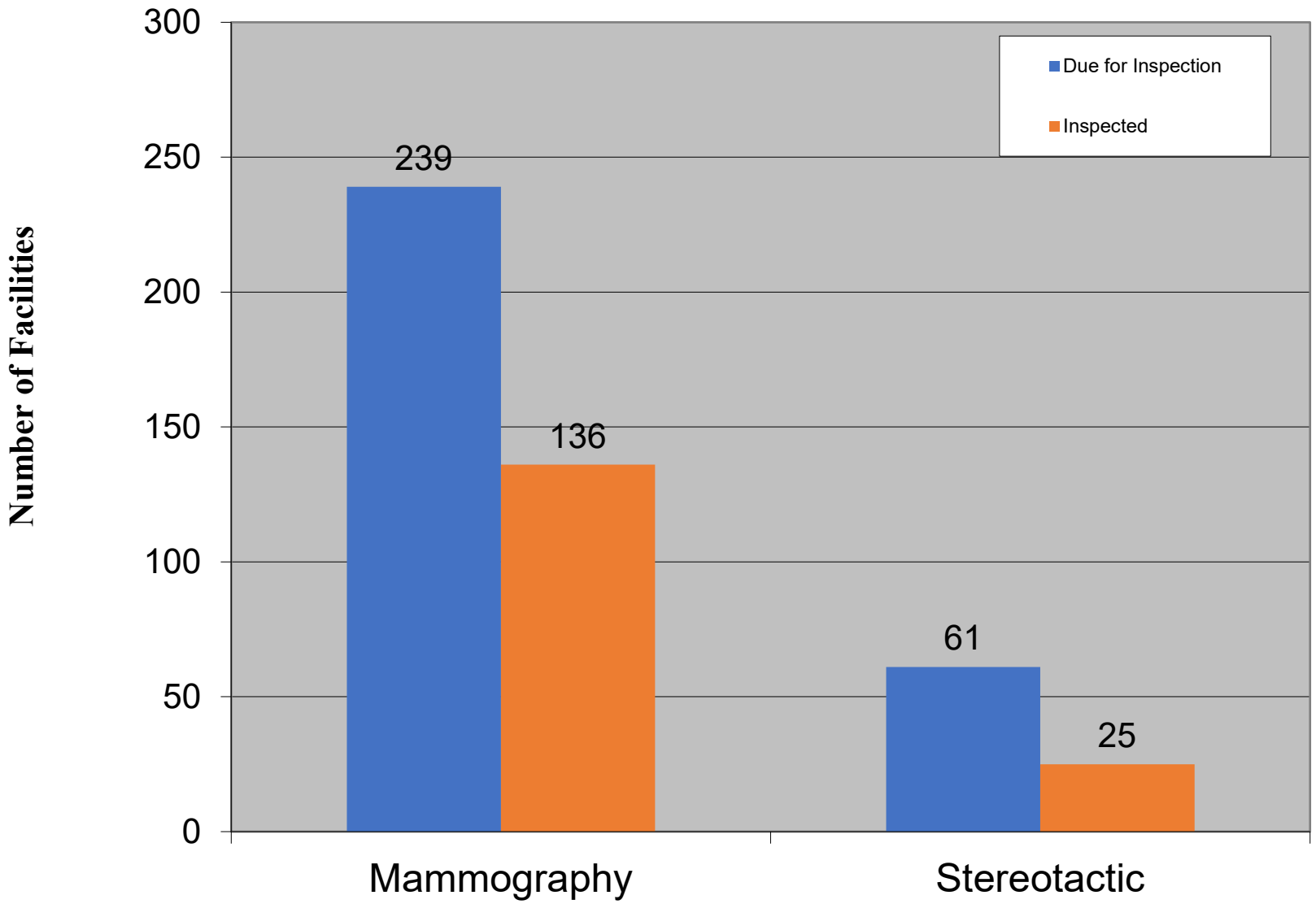

9
8
7
6
5
4
3
2
1
0
8
3
7
7
New School Applications Reviewed
School Inspections
Total Projected
Completed

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

Type of Facility	INDUSTRY	PHYSICIAN	HOSPITAL	GOVERNMENT	TOTAL MONTH	FY TO DATE	TOTAL DUE THIS FY
MQSA							
Facilities Inspected	0	9	6	0	15	136	**239**
Machines Inspected	0	12	11	0	23	186	
FDA Violations Level 1	0	0	0	0	0	0	
FDA Violations Level 2	0	1	1	0	2	13	
FDA Violations Level 3	0	0	0	0	0	0	
Registrations	0	0	0	0	0	35	
Canceled	0	0	1	0	1	38	
Stereotactic							
Facilities Inspected	0	0	0	0	0	0	**61**
Machines Inspected	0	3	1	0	4	4	
Notice of Violation	0	0	0	0	0	0	
Administrative Order	0	0	0	0	0	0	
Notice of Prosecution	0	0	0	0	0	0	
Registrations	0	0	0	0	0	0	
Stored	0	0	0	0	0	0	
Canceled	0	1	0	2	3	3	

FDA Contract Aug 2019 through Aug 2020

Mammography Inspections FY2020
Inspection Goals vs. Completed Inspections - 4th Qtr



SECTION III - BUREAU OF ENVIRONMENTAL RADIATION (BER)

A. OFFICE OF THE BUREAU CHIEF

July marks the last full month that Jenny Goodman will support the Organization of Agreements States (OAS) as Director of Rulemaking. Her four-year term (extended for one year) ends in August. During her tenure, OAS comments were developed for numerous US Nuclear Regulatory Commission (NRC) rules, licensing guidance documents, and agreement state procedures. The Director of Rulemaking is also Co-Chair of the Standing Committee on Compatibility and new for the past 2 years, a member of the Common Prioritization of Rulemaking (CPR) for the NRC.

The OAS Executive Board continues to make progress on Agreement States being regarded as equal regulatory partners rather subordinate to the NRC, as in the past. The General Accounting Office recommended changes to that end, including the appointment of National Materials Program Co-Champions. If the Director of Rulemaking or any OAS member would like the NRC to either amend or propose new rules, the path exists through the Co-Champions to elicit this request through the CPR, thus avoiding a petition for rulemaking.

Several BER staff members were or are on OAS working groups and will continue to participate fully in document reviews and working group assignments.

B. RADIOACTIVE MATERIALS PROGRAM

Medical, Industrial, and Reciprocity

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

Date	Type of Incident	Description	Status
7/17/20	Other	BER staff were referred a call by Brookhaven National Laboratory's Radiological Assistance Program. A NJ resident had called them concerning what they believed to be elevated levels of radiation in the vicinity of their residence (using their own equipment). BER staff performed its own set of thorough measurements and concluded that radiation levels were comparable to natural background levels in the area. The resident was appreciative of and satisfied with the results of the BER survey.	Closed

Contact: Nancy Stanley (609) 984-5452

C. ROUTINE ACTIVITIES

	This Month 7/1/20-7/31/20	FY-To-Date 7/1/20-7/31/20
Number of Amendments Processed:	12	12
Number of Renewals Processed:	4	4
Number of Initial Applications Processed:	1	1
Number of Active Licenses:	576	576
Number of Terminations:	2	2
Number of Reciprocity Requests Received:	26	26
Number of Incidents:	1	19
Number of Inspections:	5	5

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. 1 source on the databases were verified during July.

Staff continues to maintain entry of quarterly reports from manufacturers and distributors into the generally licensed database. 14 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 – July 2020

Bureau of Environmental Radiation – By Month (7/1/2020 - 7/31/2020)				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	3	3
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	1	1
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	2	2

Bureau of Environmental Radiation – Fiscal Year to Date 7/1/2020 - 7/31/2020				
Administrative Orders				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	3	3
Notice of Prosecution				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	1	1
Notice of Violations				
	Closed	Effective	Pending	Total
Radioactive Materials Section	0	0	0	0
Radon Section	0	0	2	2
Amount Assessed in Penalties = FY				
	Total Amount Assessed for FY21	Amount Collected from Current FY21	Amount Collected from FY20	Total Amount Collected (FY20+FY21)
Radioactive Materials Section	$0.00	$0.00	$3,750	$3,750
Radon Section	$0.00	$0.00	$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). Staff reviewed 14 submissions of dosimetry and/or discharge data required by specific license condition requirements.

Contact: Joseph Power (609) 777-4252

Decommissioning and Contaminated Site Reviews

Staff reviewed worked on the following sites/projects:

- National Lead site in Sayreville
- EPEC site in Fords
- Pantasote site in Passaic
- Maywood FUSRAP Site

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

F. RADON SECTION

Radon Website Overhaul

Staff reviewed radon website links in preparation for upgrading the website to the new format that will be implemented throughout the DEP. The process involved inspecting the 500 links, documents, and pages that are a part of the radon website and determining if they need to be updated, are current, or archivable. The updated website will be streamlined in order for the public to be able to easily and intuitively find information.

Contact: Brian Giancola (609) 984-5434

Website updates

In order to keep the public informed with the most up to date information on any impact on radon due to the national public health emergency, 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 due to the shutdown of businesses as a result of the national public health emergency.

Contact: Brian Giancola (609) 984-5434

Electrets

Two electrets were sent out to one homeowner as part of the post mitigation testing program. The devices have not yet been returned.

Contact: Charles Renaud (609) 984-5423

Measurement and Mitigation Radon Certifications

Certification Type	Initial	Renewal
MES		2
MET	5	84
MIS	1	2
MIT		1
Provisional to Full	7	
MEB		
MIB		

Contact: Maxine Williams (609) 984-5628

SECTION IV – BUREAU OF NUCLEAR ENGINEERING (BNE)

A. OFFICE OF THE BUREAU CHIEF

Significant Events

None

B. NUCLEAR ENGINEERING SECTION

Oyster Creek Decommissioning Projects

Removal and segmentation of the reactor vessel head heat shield, reactor vessel head, drywell head and the drywell concrete shield plugs have been completed. 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. Segmentation of the steam separator is in progress and is scheduled to be completed in August.

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 July, with the exception of brief periods when power was reduced by approximately 2% due to a reduction in main condenser back pressure resulting from outside environmental conditions affecting cooling tower efficiency.

During July, Hope Creek began its Independent Spent Fuel Storage Installation (ISFSI) 2020 campaign. This campaign consists of loading spent fuel from the Hope Creek spent fuel pool

into five (5) Multi-Purpose Canisters (MPC's), preparing the MPC's for storage in the HI-STORM containers and transferring the MPC/HI-STORM assemblies from Hope Creek to the ISFSI. With the completion of the transfer of the five (5) MPC/HI-STORM assemblies in August, there will be sixty-nine (69) MPC/HI-STORM assemblies stored at the ISFSI.

Contact: Jerry Humphreys (609) 984-7469

Salem Unit 1

Salem Unit 1 ran at essentially full power throughout July.

Contact: Elliot Rosenfeld (609) 984-7548

Salem Unit 2

Salem Unit 2 ran at essentially full power throughout July.

Contact: Elliot Rosenfeld (609) 984-7548

BNE Activities at Artificial Island

On July 6th, the NES supervisor was onsite to re-establish his security badge and to complete his annual access training requalification. Following these activities, the supervisor discussed plant activities with PSEG and NRC personnel.

Contact: Jerry Humphreys (609) 984-7469

On July 30th, a NES engineer was onsite to complete his annual access training requalification.

Contact: Jacob Fakory (609) 984-7458

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

NES staff continue to work remotely. 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 health and safety 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 daily 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 Conducts Security Baseline Inspection at Salem and Hope Creek

During the week of July 6th, a NES engineer remotely observed an NRC Security Baseline Inspection at Salem and Hope Creek. This inspection covered: Access Control, Protective Strategies, Security Training, and Verification of the Security Performance Indicator. Due to the security nature of the inspection, observation details are not being made available in this report. The NRC issued its inspection report on July 23rd. For the publicly available results of the NRC inspection, the report can be found in the NRC's Agencywide Documents Access and Management System (ADAMS) under Ascension # ML20205L551.

Contact: Elliot Rosenfeld (609) 984-7548

NES Staff Attends NRC Teleconferences/Webinars while Working Remotely

A. Open Public Meeting with the Nuclear Industry to Discuss Plans for Force-on-Force Inspections in 2020 during the COVID-19 Public Health Emergency (PHE)

On July 9th, the NRC held a public teleconference the purpose of which was to discuss the criteria for resuming NRC-conducted force-on-force (FOF) inspection activities and the plan for force-on-force inspection activities during the COVID-19 PHE.

The NRC has taken action to enable licensees to implement social distancing and assembly recommendations to conform to guidance from the federal government as well as state and local policies. The NRC has postponed all NRC-led FOF inspections scheduled through June 2020. The NRC staff recognizes that social distancing measures implemented by sites present a challenge for conducting a FOF inspection in accordance with normal inspection procedures. During previous public meetings, the nuclear industry voiced concerns over resuming onsite inspections due to impacts to currently-implemented pandemic plans, risk of infection being introduced to sites, and the size and nature of FOF inspections (especially NRC-conducted exercise week activities) Inspection concerns include challenges associated with use of personnel protective equipment (PPE) during exercises, the need to conduct multiple briefings to ensure social distancing due to conference room capacity, and having multiple individuals in a bullet resistant enclosure (BRE) during exercises.

During the meeting, the NRC presented nine (9) considerations for resuming FOF inspections. Five (5) of these considerations concern travel restrictions and associated protocols. These NRC feels that these five (5) considerations have been met. The

remaining four (4) address onsite concerns due to social distancing and the performance and protection of the inspectors and the players participating in the FOF. The consideration of wearing masks onsite also is considered to have been met. The NRC presented its proposed general plan for performing the FOFs. This includes performing the planning work ("A") week onsite in anticipation of performing the FOF ("B") week. "A" weeks are being performed presently with the intent of starting to perform "B" weeks in August. The industry representatives stated the industry's concerns about the number of people that would be required to be in a BRE with limited area; the risk vs. benefit of performing a BRE drill; the use of on-shift security guards as controllers during a drill; etc. The NRC will take into consideration the industry's concerns in finalizing its process for resuming the FOF inspections. Results of the meeting will be publicly available in the near future.

One NES engineer and the NES supervisor attended this teleconference.

Contact: Jerry Humphreys (609) 984-7469

B. Pre-Submittal Teleconference Regarding Proposed Alternative Relief Request for Salem Units 1 & 2

On July 20th, the NRC and PSEG Nuclear held a teleconference to discuss PSEG Nuclear's proposed alternative relief request for Salem Units 1 & 2, to extend the interval for pressurizer weld examinations from 10 years to 30 years using Electric Power Research Institute (EPRI) Report 3002015905, "Technical Bases for Inspection Requirements for PWR Pressurizer Head, Shell-to-Head and Nozzle-to-Vessel Welds". The EPRI report contains technical justifications that PSEG will rely on to support its request. PSEG's request is limited to the upper and lower head circumferential and longitudinal welds; no nozzle welds will be included in the request because the nozzles were integrally cast with the pressurizer shell. PSEG intends to submit the request before the end of August and will request NRC approval no later than August 2021 in order to support implementation prior to the Salem 2 2021 refueling outage.

Contact: Jerry Humphreys (609) 984-7469

NES Supervisor 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. NTSF Planning Committee Teleconference

Each year the NTSF holds a national meeting bringing together the four (4) state regional groups (SRG) (Northeast, Midwest, Southern and Western) and the Tribal Radioactive Materials Transportation Committee (TRMTC) and participants from the DOE, NRC and the nuclear industry. Planning for the 2021 meeting is in progress. On July 9th, the Planning Committee for annual meetings met via teleconference. The NES supervisor is a member of the committee and attended the teleconference. Updates concerning the proposed location and logistics for the 2021 meeting were presented by the representative from the Southern regional group.

Contact: Jerry Humphreys (609) 984-7469

B. Transportation Core Group Planning Teleconference

On July 29th, the four (4) SRGs and TRMTC held a teleconference to discuss the regional/tribal groups' input for the upcoming DOE NTSF Core Planning Group teleconference scheduled for August 6th. The Core Planning Group consists of the chairs/cochairs and directors of the SRGs and TRMTC, and the DOE staff that maintains and supports the cooperative agreements between the SRGs and TRMTC. The NES supervisor, co-chair of the Northeast SRG, attended the meeting.

Contact: Jerry Humphreys (609) 984-7469

Nuclear Decommissioning Citizens Advisory Panel Meeting for the Pilgrim Nuclear Power Station Holds Public Webcast

On July 20th, Pilgrim Nuclear Power Station Decommissioning Citizen's Advisory Panel (NDCAP) held a Skype meeting. One NES engineer watched the recording of the meeting on July 28th. The NDCAP advises the Massachusetts Governor and educates citizens across the state on activities related to the Pilgrim Nuclear Power Station shut down and decommissioning. The NDCAP holds public meetings at least four times per year. Comprehensive Decommissioning International (CDI), subsidiary of Holtec International, provided an update on the current decommissioning activities (fuel move campaign, building demolition, reactor segmentation and site characterization study). Following the presentations, questions and concerns from the panel members were addressed by CDI representatives. A status of the license transfer application petition with the NRC was provided. Information contained in the introduction to the Pilgrim Watch decommissioning handbook was also discussed.

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 July 2020:

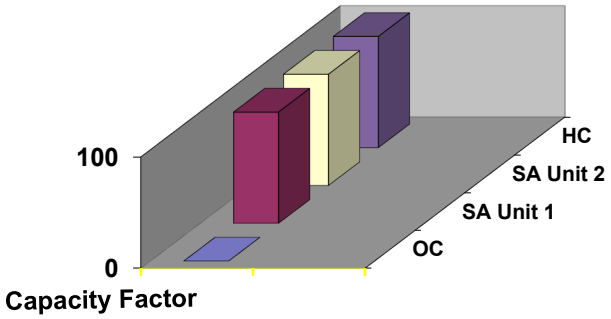
Spent Fuel and Nuclear Waste	Highway Route Control Quantity Shipments	Radionuclides of Concern
0	1	0

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

BUREAU OF NUCLEAR ENGINEERING

Plant Operating Performance – July 2020

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



STATISTICAL INFORMATION

EMERGENCY AND NON-EMERGENCY EVENT NOTIFICATIONS FOR JULY 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.

	JULY 2020		JAN - JULY 2020		JAN – JULY 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 114 samples during the month of July 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 JULY 2020

SAMPLE MEDIUM	NUMBER OF SAMPLES
AIR FILTER	29
AIR IODINE	10
AIR COMPOSITE	13
MILK (Cow)	4
SURFACE WATER	11
POTABLE WELL WATER	8
AQUATIC BIOTA	2
VEGETABLE	31
TOTAL SAMPLES	114

Documents Reviewed

United States Nuclear Regulatory Commission, "Best Practices for Establishment and Operation of Local Community Advisory Boards Associated With Decommissioning Activities at Nuclear Power Plants, A Report for the Senate Committee on Environmental and Public Works and the House Committee on Energy and Commerce", Document Number ML20113E857, ADAMS Public Document Site, https://www.nrc.gov/reading-rm/adams.html

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

During the month of July 2020, 20 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

Webinar/Meetings

On July 1, 2020, staff members took part in an NRC-sponsored webinar on the proposed interpretation of the low-level radioactive waste disposal regulations in 10CFR20.2001 (Subpart K – Waste Disposal) that would permit licensees to dispose of waste by transfer to persons who hold specific exemptions for the purpose of disposal, rather than needing the individual disposal requests approved on a case-by-case basis. The meeting information can be found at, https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20182A827

On July 9, 2020, a staff member attended a webinar/public meeting sponsored by the USNRC regarding the Draft Environmental Impact Statement (EIS) for the Proposed Holtec Hi-Store Consolidated Interim Storage Facility. The purpose of the meeting was to present the results of the draft environmental impact analysis for Holtec's proposed Hi-Store consolidated interim storage facility for storing spent nuclear fuel and receive the public's comments on the draft report. The public meeting announcement for this webinar can be found, https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML20189A545

Contact: Karen Tuccillo (609) 984-7443

USNRC Inspection of the Radioactive Waste Treatment, and Effluent and Environmental Monitoring Program at OCNGS

A staff member observed the annual Decommissioning Radioactive Waste Treatment, and Effluent and Environmental Monitoring Inspection at the Oyster Creek Nuclear Power Plant from July 27, 2020 through July 30, 2020.

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

reactor and secondary coolant pressure boundaries and minimize out-of-core radiation field buildup.

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

Inspection Reports for the Oyster Creek Nuclear Plant can be found through the NRC Public Library (ADAMS) website at, USNRC Inspection Reports for Oyster Creek

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

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

Effluent Release Data

The BNE monitors the effluents released from all four (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 June 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 Releases[1]
Nuclear Environmental Engineering Section
For the Period of 06-01-20 to 06-30-20

Hope Creek Gaseous Effluents

Effluent		
Fission Gases	0	Ci
Iodines	0.0000603	Ci
Particulates	0.0000001	Ci
Tritium	13.1	Ci

Hope Creek Liquid Effluents

Effluent		
Fission Products	0.00184	Ci
Tritium	3.05	Ci

Salem Unit 1 Gaseous Effluent

Effluent		
Fission Gases	0.0207	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	141.0	Ci

Salem Unit 1 Liquid Effluents

Effluent		
Fission Products	0.00036	Ci
Tritium	17.5	Ci

Salem Unit 2 Gaseous Effluent

Effluent		
Fission Gases	0.0095	Ci
Iodines	0	Ci
Particulates	0	Ci
Tritium	5.58	Ci

Salem Unit 2 Liquid Effluents

Effluent		
Fission Products	0.00078	Ci
Tritium	16.6	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 06-01-20 to 06-30-20

Oyster Creek Gaseous Effluents Elevated Releases			**Oyster Creek Gaseous Effluents Ground Releases**		
Effluent			Effluent		
Fission Gases	0	Ci	Fission Gases	N/A	Ci
Iodines	0	Ci	Iodines	N/A	Ci
Particulates	0.0000172	Ci	Particulates	N/A	Ci
Tritium	0.172	Ci	Tritium	0	Ci

Holtec Decommissioning International (HDI)
Radioactive Effluent Releases
Nuclear Environmental Engineering Section
For the Period of 06-01-20 to 06-30-20

Oyster Creek Liquid Effluents

Effluent		
Fission Products	.00004	Ci
Tritium	0.081	Ci

Oyster Creek Liquid Effluent Groundwater Extraction[2]

Effluent		
Tritium	Not in Service	Ci

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

[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.

D. NUCLEAR EMERGENCY PREPAREDNESS SECTION

Continuous Radiological Environmental Surveillance Telemetry System

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

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

Contact: Ann Pfaff (609) 984-7451

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

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

AI1	AI2	AI3	AI4	AI5
.0065	.0066	.0063	.0067	.0067
AI6	AI7	AI8	AI9	AI10
.0066	.0057	.0056	.0075	.0053

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

OC1	OC2	OC3	OC4
.0042	.0055	.0045	.0049
OC5	OC6	OC7	OC8
.0055	.0067	.0047	.0051
OC9	OC10	OC11	OC12
.0059	.0064	.0055	.0056
OC13	OC14	OC15	OC16
.0057	.0054	.0052	.0054

**** 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. Further, NEPS staff successfully navigated staffing shortfalls due to furloughs to ensure continued state-of-readiness. 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 week 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

RERP Public Hearings

As required by the New Jersey Radiation Accident Response Act, NEPS Staff held public hearings in July on the Radiological Emergency Response Plan (RERP). The hearings give the public opportunity to provide comment or ask questions regarding the adequacy and effectiveness of the RERP for nuclear power plants. Normally, the hearings are held in each of the impacted counties, Ocean for Oyster Creek and Salem and Cumberland for Salem Units 1&2 and Hope Creek Nuclear Generating Stations. Due to the national public health emergency, the hearings were held virtually using Microsoft Teams. The public joined via the internet or telephone link. The hearing for Ocean County was held Tuesday, July 7, 2020 at 6pm. Salem and Cumberland Counties were combined given the remote nature of the meetings and was held on Wednesday, July 8, 2020 at 6pm. The meeting format resembled the annual in-person hearings and gave several members of the public opportunity to comment in Ocean County, although none choose to speak at the Salem/Cumberland meeting. Overall, the virtual format was successful in accomplishing the hearings' intention.

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SANS Training

NEPS staff worked to complete annual SANS training to ensure staff is up to date on information security risks and threats and are aware of statutory and policy requirements that are intended to protect State information systems.

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CBRNResponder Webinar on Fixed Monitoring Locations

NEPS staff attended a RadResponder/CBRNResponder Webinar highlighting Fixed Monitoring Location functions in RadResponder on July 29, 2020. NEPS uses Fixed Radiation Monitoring Stations as part of Emergency Preparedness Response and has established RadResponder as an alternative means to view data coming from the Continuous Radiological Environmental Surveillance Telemetry (CREST) system monitoring stations. Both hourly averages and minute

data from NJDEP's Air/Radiation Monitoring (ARMS) system flow to RadResponder, the nation standard and Whole Community solution for management of radiological data.

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