Commonwealth of Pennsylvania

Radiation Protection Act

Report to the General Assembly

Pursuant to Act 31 of 2007

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Prepared by:

The Pennsylvania Department of Environmental Protection
Bureau of Radiation Protection

September 28, 2023

2900-RE-DEP5320 10/2023

DEP Nuclear Power Plant Fee and Expense Review

Executive Summary

The Radiation Protection Act (Act 147), Act of July 10, 1984, P.L. 688, 35 P.S. §§ 7110.101-7110.703, gave the Department of Environmental Protection (DEP or Department) a mandate and broad authority to establish and maintain a program of radiation protection. Act 147 also established a related and complementary nuclear/radiological emergency response authority in conjunction with the Pennsylvania Emergency Management Agency (PEMA).

After the terrorist attacks on September 11, 2001, it became necessary to provide additional transportation security of large-quantity shipments of radioactive materials moving within and through the Commonwealth. Thus, Act 147 was amended by Act 31 of 2007 to provide such security, increasing fees paid by nuclear power plants (NPPs), which support DEP's radiation protection initiatives, to $550,000 per NPP site. Act 31 of 2007 also included a provision that required DEP to form a Working Group with NPP representatives to review the NPP fees every three years and to make recommendations to the General Assembly; see 35 P.S. § 7110.402(b.1)(5). PEMA was also required by Act 31 to form a Working Group with the NPP representatives to review their fees on a triennial basis.

Due to increased program expenses, DEP fees were increased to $650,000 per NPP site by Act 190 of 2014. The increase had the full support of the NPP Working Group, as captured in the 2014 review. The reviews in 2017 and 2020, respectively, concluded that a fee increase for DEP at that time was not necessary.

With Three Mile Island (TMI) Unit 1 being shut down and the U.S. Nuclear Regulatory Commission (NRC) terminating its operating license, the spent nuclear fuel that was used throughout Unit 1's operational history is now stored onsite within an Independent Spent Fuel Storage Installation (ISFSI). This will still require some oversight from DEP. It is necessary to add a new definition for ISFSI in Act 147 and a separate fee category for this type of reduced oversight requirement. This separate fee has been determined to be $100,000 annually.

DEP provides this report based on the actual expenses during the three-year review period of Fiscal Years (FYs) 2019/2020, 2020/2021, and 2021/2022; and projected expenses through FY 2022/2023 to 2025/2026. Based on the projected costs, annual NPP per site fees should be $825,000 effective July 1, 2024. The fee category for non-operating NPPs with all spent nuclear fuel (SNF) stored in an onsite ISFSI will also be effective July 1, 2024. A joint meeting of the DEP-NPP Working Group and the PEMA-NPP Working Group was held to review this information on June 26, 2023.

Based on this review, the recommendation is an increase of $175,000 to the current annual NPP fees. This results in a total fee of $825,000 per site annually. It is also recommended to add an annual fee of $100,000 for any NPP that no longer holds an operating license and their SNF is stored in an onsite ISFSI.

Introduction

The Radiation Protection Act (Act 147), Act of July 10, 1984, P.L. 688, 35 P.S. §§ 7110.101-7110.703, requires DEP to establish and maintain a program for:

- Radiation protection through the registration, licensing, and regulation of radiation sources (e.g., X-ray equipment and radioactive materials);
- Environmental radiation monitoring in the proximity of the NPP sites and other locations throughout the Commonwealth;
- Independent monitoring and evaluation of NPP sites; and
- Establishing and maintaining a technical emergency radiation response capability to respond to accidents at NPP sites or at any other location throughout the Commonwealth.

DEP provides independent oversight of NPP operations in Pennsylvania; however, the actual licensing and regulatory oversight of NPP sites remains with the NRC.

Act 147 also established a related and complementary nuclear/radiological emergency response authority in conjunction with PEMA, resulting in two separate NPP fees being established to fund the expenses of DEP and PEMA. In 1991, DEP's NPP fee was fixed at $400,000 per site. After the terrorist attacks on September 11, 2001, it became necessary to provide additional transportation security of large-quantity shipments of radioactive materials moving within and through the Commonwealth. In late 2001, both DEP and PEMA determined their fees were not sufficient to cover the NPP-related expenses associated with the nine operating reactors at five NPP sites within the Commonwealth.

DEP's NPP fee has been increased twice since 2001. The fee was increased to $550,000 per NPP site by Act 31 of 2007 (Act 31), and to $650,000 per NPP site by Act 190 of 2014. These fee increases were a result of the collaborative efforts of the NPP Working Group, which was comprised of DEP and the NPP utility owners: Constellation, formerly Exelon (Limerick Generating Station, Peach Bottom Atomic Power Station and Three Mile Island), Energy Harbor Corp., formerly First Energy Nuclear Operating Co. (Beaver Valley Power Station), and Talen Energy, formerly Pennsylvania Power and Light Corporation (Susquehanna Steam Electric Station).

Act 31 Requirements

Act 31 amended Act 147 and included a provision that requires a review of DEP's NPP fees every three years:

> "Every three years beginning in 2009, the department shall convene a working group consisting of personnel from the department selected by the secretary and an equal number of representatives from the nuclear facilities selected by the owners of those facilities to review the nuclear facility fees paid to the department, related issues that may have an impact on those fees and the expenditures made by the department in administering its radiation protection programs. This working group shall issue a report to the General Assembly outlining its findings of fact and its recommendations relative to the fees imposed by the department pursuant to this section, including any individual or minority recommendations from members of the working group."

See 35 P.S. § 7110.402(b.1)(5).

This report reflects a review of fees and actual expenses for the period of FY 2018/2019 through FY 2021/2022, planned expenses through FY 2023/2024, and projected expenses through FY 2026/2027.

General Overview of Bureau of Radiation Protection Functions

Act 147 gave DEP the authority to, *inter alia*, implement a comprehensive program to monitor radiation levels in Pennsylvania's environment, including NPP sites; employ qualified personnel to assess radiation safety and emergency response issues at NPP sites; and to assist in the decontamination of damaged nuclear power reactors. *See* 35 P.S. §§ 7110.301(c).

The DEP Bureau of Radiation Protection's (BRP) Director and support staff provide administrative oversight and technical guidance for all NPP-related program elements. The Director is also the lead for radiological dose assessment and is the incident manager for all NPP classified or non-classified events or incidents. As such, the Director advises senior state officials on any needed protective actions during an incident. The Director, Nuclear Safety Division Chief, Decommissioning and Environmental Surveillance Division Chief and Emergency Response Section Chief are DEP's four PEMA Agency Representatives. Lastly, the Director is the Governor's official liaison to the NRC. As noted above, the NRC has primary responsibility for licensing and regulatory oversight at the NPP sites in Pennsylvania.

Day-to-day implementation of the responsibilities and duties mandated in Act 147 is the responsibility of the BRP's Nuclear Safety Division and Decommissioning and Environmental Surveillance Division. There are four Nuclear Safety Specialists (NSSs) within the Nuclear Safety Division, with one NSS assigned to each of the four operating NPP sites. There are also three Radiological Health Physicists and a Section Chief in the Emergency Response & Radioactive Waste Section within this Division who routinely interface with the NPP sites, PEMA, Pennsylvania State Police (PSP), local responders, and others to ensure emergency response vehicles, assets, equipment and instrumentation are operational and calibrated as appropriate. All Nuclear Safety Division staff report to the Nuclear Safety Division Chief. The Nuclear Safety Division staff also expend significant time and effort reviewing license amendments and other NPP/NRC correspondence and actions.

The Environmental Surveillance Section Chief and three Radiation Protection Specialists and/or Environmental Trainees report to the Decommissioning and Environmental Surveillance Division Chief and are responsible for the deployment of passive radiation measuring devices and routine sampling of air, soil, sediment and food stuffs around the five NPP sites. This group splits a portion of samples and exchanges data with NPP staff for comparison and annual reporting. The Environmental Surveillance Section is supported by DEP's Bureau of Laboratories' (BOL) Radiochemistry Section, which processes and measures the various media samples for radioactivity. There is one radiation health physicist to monitor and review the decommissioning work of TMI Unit 1.

Outputs by Program Area

There are currently about 16.5 BRP Full Time Employees (FTEs) dedicated to nuclear safety, environmental surveillance, and emergency response programs for Pennsylvania's five NPP sites.

Director's Office – 1.0 FTE

- Provide 24/7 availability to PEMA, NRC's duty officers and liaisons, and NPP staff.
- Participate in plume, ingestion phase, and hostile action emergency tabletops, rehearsals and exercises including preparation and training.
- Brief DEP upper management, Governor's Office and Legislature.
- Serve as alternate Commissioner for the Appalachian States Low-Level Radioactive Waste Compact Commission.
- Provide administrative and clerical support.

Nuclear Safety – 4.0 FTEs

- Perform an independent nuclear safety oversight review of Pennsylvania NPP sites by conducting routine site visits and interacting with NRC inspectors.
- Participate in joint inspections with the NRC inspectors.
- Review and evaluate all proposed license amendments and provide input into the NRC review process.
- Participate in Federal Emergency Management Agency (FEMA) evaluated and non-evaluated emergency preparedness drills and exercises for Pennsylvania NPPs.
- Provide technical support and assistance to PEMA during a nuclear event or incident.
- Act as on-site representatives for the Commonwealth during emergencies.
- Attend meetings and conferences and review NRC and industry documents and correspondence.
- Review license renewal-related correspondence and documents.
- Review new application-related documents and correspondence.
- Participate in plume and ingestion phase and Hostile Action Based (HAB) emergency tabletops, drills and exercises including preparation and training.
- Monitor post-Fukushima industry actions and the NRC regulatory initiatives.

Low-Level and High-Level Radioactive Waste – 0.5 FTE

- Track and report low-level radioactive waste (LLRW) generation and disposal from NPPs and other radioactive materials licensees.
- Manage and organize an annual Low-Level Radioactive Waste Advisory Committee meeting.
- Administer the Appalachian States Low-Level Radioactive Waste Compact Commission.
- Prepare required LLRW reports for the DEP and Legislature.

- Participate in Low-Level Radioactive Waste Forum (Forum) and Northeast High-Level Waste Transportation Task Force.*
- Participate on the Forum's working group to review amendments to 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

*Note: The Forum is an association of states, compacts and federal regulatory agencies (Department of Energy (DOE), NRC, and EPA) involved in management and disposal of LLRW. The Pennsylvania representative is currently one of the directors of the Forum and contributes significantly to discussions involving national issues and resulting actions, decisions and recommendations.

Emergency Preparedness and Response – 6.5 FTEs, includes 2% of all other RP staff (~2.0 FTEs)

- Participate in all FEMA-evaluated exercises.
  - Approximately 32 staff members (29 players and three controllers) from the BRP Central Office (CO) and Regional Offices (RO) rotate and participate in each FEMA-evaluated exercise and its rehearsal.
- Participate in rehearsals and evaluated exercises at on- and off-site locations.
- Participate in HAB exercises that involve a security-based scenario or event at a nuclear power plant that may or may not result in a release of radioactive materials.
  - The NRC regulations in 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," and Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," require licensees to include HAB scenarios in drills and exercises every eight years. For States involved with multiple nuclear power plant sites such as Pennsylvania, the requirements specify that these States should fully participate in one HAB exercise each exercise cycle and rotate their participation from site to site.
  - Approximately 33 staff (30 players and three controllers) from the BRP CO and ROs participate in each HAB exercise and its rehearsal.
- Attend Planning Conferences for FEMA-evaluated exercises.
- Working with NPP, DEP and PEMA IT staff to maintain, update and utilize real-time plant parameter data system at DEP and PEMA.
- Maintain radiation protection emergency response equipment – 10 equipment and 10 instrument kits for CO and ROs.
- Maintain, update and utilize three Rapid Radiological Response Vehicles (R3V), seven modified F-150 pickup trucks (dedicated field team response vehicles) and their onboard equipment.
- CO provides RO Field Monitoring Team "refresher training" prior to each FEMA-evaluated exercise.
- Participate in drills and exercises.
- Attend NPP off-site refresher training; the number of CO and RO staff in attendance varies.
- Attend quarterly off-site DEP/PEMA/NPP meetings.

- Provide radiation refresher training to all six DEP RO Emergency Response HAZMAT Regional Offices.
- Provide basic radiological training to PSP staff as requested for each cadet class.
- Provided training sessions for Pennsylvania Medical Reserve Corps (MRC) and Radiological Assessment Program (PA RAP) Team.
    - The Pennsylvania MRC is registered with the Pennsylvania Department of Health. It is an all-volunteer organization of medical professionals dedicated to serving the citizens of Pennsylvania.
    - The PA RAP Team is registered with PEMA and is comprised of professional health physicists throughout the state, supplied with radiation monitoring equipment, and who can be called upon to support BRP during an emergency response.
- Participate with other states, federal agencies and NPPs at regional and national NRC, FEMA, and Radiological Emergency Preparedness meetings.

Environmental Surveillance – 4.0 FTEs

- Maintain a substantial Radiological Environmental Surveillance Program around the four NPP and TMI sites.
- Collect precipitation from the roof of the DEP Laboratory and analyze samples for radioactivity.
- Maintain 21 radio-iodine air monitors.
- Utilize 21 particulate air monitors to analyze for gross alpha, gross beta and isotopic analysis.
- Repair and replace environmental surveillance equipment as needed (21 air pumps, 21 meters and 21 equipment housings).
- Maintain 162 optically stimulated luminescence dosimeters (OSLs) at all times in the vicinity of the four NPPs and TMI and the TMI ISFSI.
- Perform monthly surface water sampling upstream and downstream of each of the four NPPs and TMI, as well as monthly milk sampling.
- Sample seasonal and annual food stuff, flora and fauna grown within a three-mile radius of each of the four NPP and TMI sites in Pennsylvania.
- Collect over 2,600 samples of various media for submission to the DEP Laboratory Radiation Measurement Section annually, and review data for trend analysis.
- Evaluate all samples collected as part of the Environmental Surveillance Program around the four NPP and TMI sites and ISFSI.
- Perform full data analysis and prepare the Annual Report required by Act 31.

Decommissioning – 0.5 FTEs

- Review of decontamination plans.
- Review and tracking of waste generation and packaging activities, including waste shipments offsite and waste stored on-site.

- Attendance of planning meetings as necessary for decontamination and decommissioning activities.
- Collaboration with the Licensee's Regulatory Affairs personnel to stay abreast of submittals to the NRC.
- Be onsite as needed and assigned by management depending on decommissioning site activities.

Program Issues and Efficiencies

The top priority of the BRP is to maintain a state-of-the-art nuclear safety and environmental surveillance programs to protect the health and safety of the citizens of Pennsylvania. The BRP believes it has been a good steward of the funds provided by the NPPs and strives to manage the program efficiently. To that end, the following program efficiencies have been implemented in recent years:

- Data acquisition – BRP has maintained deployable remote gamma radiation monitoring equipment that enables BRP staff to obtain precise and accurate data in an emergency.
- Alternative Funding – The Department and BRP utilized grant funds, when available, to reduce the impact on the Radiation Protection Fund. As an example, much of the remote deployable radiation monitoring equipment was purchased with Department of Homeland Security (DHS) grant funds in the early 2000's. That equipment now needs to be replaced.
- LLRW Generation Reporting by NPPs – DEP has significantly reduced the regulated community's reporting requirements for reporting LLRW generation information by using the disposal information directly from the U.S. DOE's Manifest Information Management System database rather than quarterly paper survey questionnaires.
- Custom Maps of Emergency Planning Zone and Ingestion Pathway Zone – BRP produces these maps in-house vs. purchasing from commercial vendor.

Financial Summary

The Financial Summary is attached to this report as Appendix A. Below is a tally of total expenditures by FY for the Nuclear Safety and Environmental Surveillance programs.

Previous Years <u>Actual</u> Spending

FY 2018/2019 - $2,745,925
FY 2019/2020 - $3,463,850
FY 2020/2021 - $2,642,627
FY 2021/2022 - $2,743,796

<u>Planned</u> Spending

FY 2022/2023 - $4,147,545
FY 2023/2024 - $4,114,864

Projected Spending

For purposes of this fiscal review, BRP outlines planned expenditures documented through the end of FY 2023/2024. However, to evaluate the potential for future needed fee changes, BRP has made an estimated projection of expenses through FY 2026/2027. Labor and benefit costs are a major expense for the programs described above. Thus, the projected spending has assumed an approximate 4.75 percent annual increase of labor costs, based on the current contract agreement, and a simple three percent annual increase of expenses for an average of the consumer price index, and predicated on the planned FY 2023/2024 spending.

FY 2024/2025 - $3.5M
FY 2025/2026 - $3.7M
FY 2026/2027 - $3.8M

Detailed Explanation of Financial Summary Table

A financial summary table is contained in Appendix A that details expenditures from FY 2018/2019 through FY 2026/2027. A description of each line item in the table follows.

Nuclear Power Plant-Related Salaries and Benefits

These costs are based on actual timesheets coded to NPP-related work codes in the Commonwealth's 'SAP' enterprise accounting system. It includes health benefits, Social Security, Medicare, life insurance, workers' compensation and leave payouts at the time of staff retirement. Actual benefit rates for the future years are not available.

Indirect Costs

Indirect costs include leases, rents, utilities, phones, general office information technology and other shared operational expenses. Leases and rents pertain to the "real estate" commitment item, which is the leased office space, and includes State office buildings. Indirect costs also include shared interagency expenses, such as, Civil Service, State Employee Assistance Program and Payroll Operations.

Operational Expenses

Operational expenses include but are not limited to: legal services/fees, travel, training, advertising, office supplies, housekeeping supplies, general laboratory supplies, medical supplies, industrial supplies, publications, postage, printing, membership dues, subscriptions, meeting expenses, and safety apparel. This line item also includes supplies for monitoring and sampling in the proximity of the NPPs (e.g., air sampler vacuum pumps, charcoal canisters).

BRP currently maintains off-site passive environmental radiation monitoring programs around the four NPP sites and the TMI site and ISFSI in Pennsylvania. There are 30 to 36 OSLs, depending on the plant site, from Landauer Dosimetry Services located at permanent locations around each NPP. At four locations per plant, a Radiation Dosimetry Company crosscheck OSL is in place. These dosimeters are exchanged each quarter and shipped to the respective companies to be read in their accredited laboratories and reported to DEP. In addition, there are 30 to 36 co-located OSL dosimeters from Landauer Dosimetry Services. These dosimeters are read in the field by BRP personnel using a commercial OSL reader each quarter and shipped annually to the Landauer laboratory for readout. Dosimeters are also placed in control areas for

comparison readings. Comparisons of results from the dosimeters and services provide rigorous quality control. Each quarter, 172 dosimeters are read by Landauer Dosimetry Services, and 172 OSLs are read in the field by BRP staff. Annually, 172 OSLs are read by Landauer. All reported results are reviewed and compared with control results and NPP results for anomalies.

Air samples are collected by drawing air through a particulate filter and an activated charcoal canister using continuously running vacuum pumps. The particulate filters are analyzed for gross alpha and gross beta/gamma activity, and then aggregated monthly for gamma spectroscopy analysis. The charcoal canisters are analyzed for iodine-131. These filters and canisters are collected and analyzed weekly. Four air samplers are located within a five-mile radius of each NPP, with a statewide control station located in Harrisburg. The locations of both the OSLs and air sampling sites are chosen with respect to the meteorology and population distribution around each plant.

Milk is collected monthly from two dairy farms in the proximity of each NPP. Surface and/or drinking water is collected above and below plant discharges monthly. In most cases, these samples are collected and split with the NPPs. Annual and semiannual fish, sediment/soil, and vegetation samples are also collected and split with the NPP staff in the areas around the plant sites. All samples are analyzed by gamma spectroscopy. Results are compared with the NPPs' results and provides assurance that the NPPs are being operated safely and not impacting the environment.

Vehicle Maintenance and Repairs

This includes maintenance and repairs for three R3Vs, seven modified pickup trucks (F-150s), three vehicles for BRP's designated Agency Representatives to PEMA, two Environmental Surveillance vehicles and two shared-use vehicles for Nuclear Safety staff. The R3Vs are large, heavily equipped, medium-duty vehicles that do not require a commercial driver's license to operate. They are designed to support and direct field monitoring teams (FMTs) during exercises or an actual incident. Maintenance for the R3Vs is substantial because of the large size and specialized on-board equipment. Fuel accounts for approximately 70 percent of the annual amount budgeted for vehicles.

Vehicles

For planning purposes, four new vehicles for FY 2022/2023 and two new vehicles in future years are budgeted. DEP's current replacement criteria states that a vehicle is eligible (not guaranteed) for replacement at 100,000 miles. The vehicle replacement mileage criterion has fluctuated slightly over the years.

Equipment – Replacement Gamma Probes

The current real-time gamma monitoring 'matrix probes' and support equipment (i.e., the PDT-100 satellite antenna) have been in service for more than twenty years and are now obsolete. There have been frequent difficulties with communication and parts subcontractors, and BRP has been informed that some components will lose functionality in the future. Continuing to maintain, repair, and calibrate these devices has become cost prohibitive – if not impossible. Consequently, this equipment must be replaced. These devices may cost up to $25,000 each. BRP currently maintains 24 matrix probes with PDT-100s. BRP plans to continue to use this technology and increase monitoring capability with future iterations and acquisitions of similar hardware. BRP is now purchasing a total of 56 new gamma probes to

replace the current matrix probes. In order to maintain cohesive data systems, this replacement is planned to occur over two to three fiscal years. BRP has worked to obtain a quote and purchase order for new gamma probes and plans to purchase these over FY 2022/2023 and FY 2023/2024. Therefore, BRP's financial summary shows a $56,438 expenditure in FY 2021/2022, $816,000 in FY 2022/2023, and $300,000 in FY 2023/2024.

Equipment Purchases/Calibrations/Repairs

Instrument calibration and repair costs for DEP and DHS purchased equipment are included. Most equipment is basic hand-held health physics instruments; however, BRP also maintains two portable, high-purity germanium gamma spectroscopy systems for field use in an emergency. Also included in BRP's equipment inventory are several dozen 'pancake' G-M probes ready for issuance to Pennsylvania MRC and RAP members during an incident involving a release of radioactive material. Equipment such as laptops and satellite phones are also included in this category.

BRP currently maintains 10 fully equipped instrument and equipment kits that are used in support of in-house NPP Emergency Response functions. Instruments in these kits are calibrated on an annual basis and checked on a quarterly basis. Consumables (e.g., air sample filters, KI tablets, charcoal, and silver zeolite cartridges) that are used in support of NPP exercises are replenished on an "as needed" basis. BRP also maintains radiological detection equipment that is permanently installed in seven field team response vehicles and three R3Vs. Each R3V is also equipped with hand-held survey instruments and isotopic identifiers. The response vehicles and associated emergency response instrument/equipment kits are distributed among central office (Harrisburg) and the three regional offices.

Increases noted in FY 2022/2023 are partly due to planned purchases of needed, new low-level radioactivity counting equipment and vendor support contracts for the BOL's Radiochemistry Section.

Specialized Services: Bureau of Laboratories

Within the BOLs Radiochemistry Section, the DEP maintains a certified laboratory where all NPP-related environmental surveillance samples are analyzed. This line item includes internal sample analysis charges only, not equipment.

TMI Unit 1 and Unit 2 Nuclear Power Plants

TMI's Unit 2 is where the worst U.S. commercial NPP accident occurred in March of 1979. Currently, Unit 2 is owned by Energy Solutions, and under Act 147, is subject to full cost recovery for decommissioning oversight by the Department. However, these DEP expenses are not subject to or covered by this fee review and report.

In September 2019, Exelon (now Constellation) permanently shut down the TMI Unit 1 NPP. In July 2022, the SNF was transferred from the SNF pool to dry casks. These casks were placed on an ISFSI storage location on the island. The Act 147's Section 402, related to Department Fees, states:

> *"By July 1, 2007, and July 1 of each year thereafter, each person who has a current nuclear power reactor construction permit or operating license from the NRC for a site within this Commonwealth shall pay the department an annual fee of $650,000 per nuclear power reactor*

site, regardless of the number of individual nuclear power reactors located at the site. For the purposes of this subsection only, a nuclear power reactor site shall be deemed to be the location of one or more individual nuclear power reactors which still has spent nuclear fuel stored onsite, has not been fully dismantled and decommissioned pursuant to applicable Federal law and regulations and has not been granted license termination by the NRC."

TMI no longer has an operating license on its site. TMI Unit 1 SNF is now stored in an onsite ISFSI. Due to this being the first site to no longer have an operating license, language is necessary to be inserted into Act 147 that covers the onsite ISFSI. The language includes a definition for ISFSI and a separate fee category. Environmental monitoring will continue at the TMI site, and the ongoing process with be monitored by the Department. There is still a need for maintaining the ability for an emergency response if necessary. The Department has done an analysis and has recommended a fee of $100,000 for this situation at any site that no longer has an operating license.

Long-term Projection Analysis and Program Recommendation

Rising personnel and operational costs have resulted in carryover funds steadily being depleted by FY 2026/2027. Therefore, it is the recommendation of the DEP Working Group that the operating NPP fee be increased to $825,000, and a new fee category for NPPs that no longer have an operating license and the SNF is now stored in an onsite ISFSI. That fee will be $100,000 annually. This legislation should be in place in advance of this date to facilitate smooth implementation for both the Commonwealth and the NPPs.

In summary, the recommendation is to increase the operating NPP annual fee to $825,000 per site and add an annual fee of $100,000 for any NPP that no longer holds an operating license and their SNF is stored in an onsite ISFSI. Additionally, a definition for ISFSI is being added to Act 147.

Working Group

On February 8, 2023, DEP's Secretary, Richard Negrin, formally appointed the Department's representatives to the official Working Group for this fee review. The NPP utilities also appointed members in accordance with Act 31. The Working Group met at PEMA on June 26, 2023, coordinated by PEMA Headquarters in Harrisburg and consisted of the following members:

Name	Title	Affiliation
Sean Zalesny	Manager, Fleet Emergency Preparedness	Energy Harbor Nuclear Corp.
Jack Balser	Emergency Preparedness Specialist	Energy Harbor Nuclear Corp.
Jay Barnes	EP Manager	Talen Energy
Jessica Shoup	Sr. Nuclear Emergency Preparedness Coordinator	Talen Energy
Dennis Moore	Emergency Preparedness Supervisor	Constellation Energy
Sara Schmidt	Emergency Preparedness Specialist	Constellation Energy

Ali Tarquino Morris	Deputy Secretary for Waste, Air, Radiation and Remediation	DEP
Dwight Shearer	Director, Bureau of Radiation Protection	DEP
Bryan Werner	Chief, Decommissioning/Environmental Surveillance	DEP

During the June 26, 2023 meeting/conference call, the Department presented to the NPP representatives a brief overview of the BRP's roles and responsibilities for radiation protection in the Commonwealth with its four main functional areas: The Divisions of Nuclear Safety, Decommissioning and Environmental Surveillance, Radiation Control, and Radon. The Department stressed that all radiation protection staff would be needed to respond to a major NPP accident on a 24/7 basis. Therefore, all staff are trained and participate in various roles during drills and exercises. Many staff are cross-trained to perform a variety of functions, including: evaluations of plant condition; computerized radiation dose projections from releases; direct radiation measurements with hand-held and deployable instruments; air sampling; communications; data collection, recording and analysis and state official and media briefings, etc.

At the Working Group meeting, the Department provided a draft of the BRP Report and a Financial Summary for FY 2018/2019 through FY 2026/2027. During the meeting, NPP-related expenses were compared to fee revenue plus carryover funds from the prior FY. These current and projected expenses are summarized in the Financial Summary included in Appendix A. Care and effort were made to focus on just NPP-related expenses and fees, and fees collected under other program areas were excluded from discussion.

The financial summary data in Appendix A was obtained through an extensive analysis of the Department's SAP accounting system, staff, equipment and service expenses as captured in annual approved spending plans. The anticipated expenses were projected based on known salary increases in accordance with the current labor union agreement and other required services and supplies.

Following the fiscal presentation, the Department requested written comments from the NPP representatives. These comments and the Department's responses are appended to this report. Also, the NPP representatives have submitted letters with comments or concurrence that are also appended to this report.

After the Department's presentation, PEMA provided a similar review and fiscal analysis of their NPP-related expenses. Similar to DEP, the NPP representatives submitted comments and PEMA responded. The NPP representatives have submitted letters with comments or concurrence that are appended in PEMA's report. Two suggestions for the next review are to provide more detail and to look at implementing an annual increase instead of every three years. These suggestions are being considered.

Recommendation

Under the current fee structure, planned DEP spending will exceed expected revenue plus carryover funds before the end of FY 2026/2027. Following the June 26, 2023 meeting, the

Department requested written comments from the representatives. In September of 2023, the Department received letters from Talen Energy and Energy Harbor Nuclear Corp. with comments for a future review and concurring with the Department's recommendation that the annual operating NPP fee is increased to $825,000 and an annual fee of $100,000 is established for NPP's no longer holding an operational license and their SNF is being stored in an onsite ISFSI.

- End of Report -

APPENDIX A

BRP NUCLEAR POWER PLANT
REVENUE – EXPENSE REPORT

PA DEP NUCLEAR POWER PLANT REVENUE - EXPENSE REVIEW
RADIATION PROTECTION ACT (147-1984, AMENDED 190-2014)
FINANCIAL SUMMARY (12-19-2022)

	FY 2018/2019 ACTUAL	FY 2019/2020 ACTUAL	FY 2020/2021 ACTUAL	FY 2021/2022 ACTUAL	FY 2022/2023 PLANNED	FY 2023/2024 PLANNED	FY 2024/2025 PROJECTED	FY 2025/2026 PROJECTED	FY 2026/2027 PROJECTED
Carry-over Funds	$3,568,172	$4,072,248	$6,458,397	$4,661,770	$5,167,974	$4,256,029	$3,014,165	$2,038,630	$1,048,565
REVENUE									
(5 Facilities @ $650,000 Each)/ (4 Facilities 2023/24 on)	$3,250,000	$5,850,000	$846,000	$3,250,000	$3,250,000	$2,600,000	$2,600,000	$2,600,000	$2,600,000
TOTAL REVENUE	*$3,250,000*	*$3,250,000*	*$846,000*	*$3,250,000*	*$3,250,000*	*$2,600,000*	*$2,600,000*	*$2,600,000*	*$2,600,000*
TOTAL FUNDS	**$6,253,574**	**$6,818,172**	**$7,304,397**	**$7,911,770**	**$8,417,974**	**$6,856,029**	**$5,614,165**	**$4,638,630**	**$3,648,565**
EXPENDITURES									
Nuclear Power Plant Related Salaries and Benefits	$ 2,009,804	$ 1,967,068	$ 1,908,302	$ 2,048,679	$ 1,999,470	$ 2,403,735	$ 2,517,912	$ 2,637,513	$ 2,762,795
Indirect Costs[1]	$ 101,346	$ 806,192	$ 266,136	$ 211,000	$ 278,557	$ 193,659	$ 199,469	$ 205,453	$ 211,616
Operational Expense[2]	$ 113,266	$ 122,192	$ 40,406	$ 108,627	$ 124,368	$ 185,725	$ 191,297	$ 197,036	$ 202,947
Vehicle Maintenance and Repairs[3]	$ 7,889	$ 35,379	$ 5,678	$ 12,909	$ 68,640	$ 24,177	$ 24,902	$ 25,649	$ 26,419
Vehicles	$ 28,039	$ -	$ -	$ -	$ -	$ 215,000	$ 120,000	$ -	$ -
Equipment - Replacement Gamma Probes[5]	$ -	$ -	$ 89,225	$ 56,438	$ 816,000	$ 300,000	$ -	$ -	$ -
Lab Equipment and Service Contract	$ -	$ 73,599	$ -	$ -	$ 60,000	$ -	$ -	$ -	$ -
Equipment Purchases/Calibrations/Repairs [4]	$ 169,309	$ 147,493	$ 77,546	$ 52,024	$ 364,910	$ 79,568	$ 81,955	$ 84,414	$ 86,946
Specialized Services:									
Bureau of Labs	$ 316,272	$ 311,927	$ 255,333	$ 254,119	$ 450,000	$ 440,000	$ 440,000	$ 440,000	$ 440,000
TOTAL EXPENDITURES	**$ 2,745,925**	**$ 3,463,850**	**$ 2,642,627**	**$ 2,743,796**	**$ 4,161,945**	**$ 3,841,864**	**$ 3,575,535**	**$ 3,590,065**	**$ 3,730,723**
								Bal:	**($82,158)**

[1] Includes leases, rents, utilities, phones and other shared operational expenses.

[2] Basic office expenses

[3] Includes fuel, rentals, maintenance and repairs.

[4] Includes office equipment leases and maintenance, radiation monitoring instrument calibration, repair and new equipment purchases (tablets, Rad Eyes, replacement satellite phones), and software maitenance.

[5]Replacement gamma probes also includes the software and extra expense for possible compatibility maintenance.

APPENDIX B

COMMENTS FROM
NUCLEAR POWER PLANTS
UTILITY OPERATORS AND RESPONSES FROM THE DEPARTMENT

Energy Harbor

1. There are currently about 16.5 BRP Full Time Employees (FTEs) dedicated to nuclear safety, environmental surveillance, and emergency response programs for Pennsylvania's five NPP sites.

Comment: I would recommend removing the word "about" in lieu of a more accurate or rigorous assessment that would give enough confidence to say "There are currently 16.5…"

Response: It would not be realistic to give an exact FTE number here. When the Bureau is at full complement, it is 14.0 FTE for everyday duties involving the operating plants, and 0.5 FTE for non-operating plants that have spent nuclear fuel in an ISFSI (this 0.5 FTE is in that separate proposed fee), but there is an added approximately 2% (for instance, one year all other staff time was equivalent to 2.37 FTE and another year was equivalent to 1.51 FTE, etc.) from all other staff for participation in the drills and exercises. The amount of FTE's can change based on the amount of overtime acquired from the evening drills and exercises and the loss and gain of staff throughout the three-year period of this report. The actual expenses are reflected in the expense summary sheet for previous years. However, we need to project based on the program being at full complement. All cost savings that occur in the three-year period is rolled into the Fee analysis which provides additional years without fee increases or at least offset expenses going up in other areas.

2. Serve as alternate Commissioner for the Appalachian States Low-Level Radioactive Waste Compact Commission.

Low-Level and High-Level Radioactive Waste – 0.5 FTE

- Track and report low-level radioactive waste (LLRW) generation and disposal from NPPs and other radioactive materials licensees.
- Manage and organize an annual Low-Level Radioactive Waste Advisory Committee meeting.
- Administer the Appalachian States Low-Level Radioactive Waste Compact Commission.
- Prepare required LLRW reports for the DEP and Legislature.
- Participate in Low-Level Radioactive Waste Forum (Forum) and Northeast High-Level Waste Transportation Task Force.*
- Participate on the Forum's working group to review amendments to 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

Comment: This does not appear to be NPP related. I don't see another funding source that has input into the budget you provided, so based on this it appears NPPs are providing funding for other licensees. Can you clarify please?

Response: These activities are directly related to management and disposal of LLRW (PA LLRW Disposal Act of 1988 and PA Appalachian States LLRW Compact Act of 1985), and transportation of spent nuclear fuel (SNF). The nuclear power plants are the major generators of LLRW and SNF in PA and the Appalachian Compact.

3. Provide basic radiological training to PSP staff as requested for each cadet class.

Comment: Is this something in addition to the Hazardous Materials Awareness that is provided as an on-line course that is part of the Municipal Police Officers Training? – PSP

Response: One of the BRP's major responsibilities is to provide radiological training and technical assistance to other state agencies, i.e., PEMA, DOH and PSP. These three agencies have an important role to play during a radiological accident and a Hostile Action Based (HAB) event at a nuclear power plant. They will also be prepared to respond to a transportation accident involving radioactive materials and SNF.

4. Maintain a substantial Radiological Environmental Surveillance Program around the four NPP and TMI sites.

Comment: As licensees we are required by regulation to maintain a very extensive environmental monitoring program, which is inspected by the NRC. The inspection has been and continues to be something that BRP can also participate in with the NRC. Taking that into consideration, why is it necessary for BRP to maintain its own environmental monitoring program at the expense of the NPP? Is there an assumption that the NPP and the NRC would report false information? Given the formal nature of the program required by the NRC it seems like an unnecessary burden to continue to ask the NPP to provide funding for an additional independent monitoring program.

Response: The Radiation Protection Act under Section 102(3), 35 P.S. § 7110.102(3), requires the establishment of a comprehensive environmental radiation monitoring program around the nuclear power plants. This program has been in place for decades and is an important part of our Program's commitment to the protection of the public and the environment. Several other states with nuclear power plants have implemented their own independent environmental monitoring program. The state's independent monitoring program helps improve public confidence in the operations of the nuclear power plants. The nuclear utilities fund the environmental monitoring program for at least both New Jersey and Illinois.

5. Collect precipitation from the roof of the DEP Laboratory and analyze samples for radioactivity.

Comment: Why would this be necessary for NPP Environmental Monitoring? Should the wind from one just happen to be blowing in the right direction on a given day it's possible, but for an ongoing monitoring plan it would be irrelevant. – rooftop lab

Response: The Bureau of Labs location acts as a background sampling location for all NPP's in PA.

6. Collect over 2,600 samples of various media for submission to the DEP Laboratory Radiation Measurement Section annually, and review data for trend analysis.

Comment: Does this mean 2600 samples are a minimum number, or is this bullet just describing how many you have taken in recent years? I am asking to understand if this is setting a requirement vs. describing a recent practice.

Response: The program collects over 2,600 samples on a yearly basis. This includes, air samples, fish, produce, sediment, water, milk, etc. All samples and results are published in the program's annual reports.

7. *Decommissioning – 0.5 FTEs*

Comment: If an NPP owner / operator only has fully operational plants, why would they be required to provide any funding for these activities?

Response: The 0.5 FTE in Decommissioning is the position overseeing the NPPs that have their SNF in an ISFSI and is included in the fee set for those plants. It is not part of the operating plant fees.

8. *Nuclear Power Plant-Related Salaries and Benefits*

These costs are based on actual timesheets coded to NPP-related work codes in the Commonwealth's 'SAP' enterprise accounting system. It includes health benefits, Social Security, Medicare, life insurance, workers' compensation and leave payouts at the time of staff retirement. Actual benefit rates for the future years are not available.

Comment: I am confused regarding this line item. The language above states that there are 16.5 FTEs being supported by the fund, but this paragraph states that the costs are based on actual time sheets coded to NPP related work in SAP. So, what is the tally of the actual time? How much does that differ from 16.5 FTE? In other states, Ohio for example, I can see the salary and benefits for each individual position and how much of each FTE is assigned to their NPP duties. Can you provide us with that so we can understand how many people and what percentage of their time is attributed to NPP related work?

For us, this is where some confusion lies in that some expected decrease in burden from TMI should occur. If not, then Energy Solutions should be providing additional funding for this program. Without more information, it appears that BRP maintained the same organization, reduced fees for TMI, and divided that cost among the remaining operating plants.

Response: The expense summary consists of the prior four years of actual costs. For the actual costs, the personnel costs are based on actual time sheets and its coding. For example, the last year on the summary for actual costs the exact FTE is 16.239999. As stated in a previous response, this will change year to year based on personnel moves and overtime costs.

At this time, the loss of TMI's one unit is not significant enough to change the needed response to the remaining plants. While it is very easy to slip into training mode and events are over in four hours, we need only to look at the three most significant plant accidents which is well documented that response and recovery goes into days, weeks, months and years. The Nuclear Safety Section (NSS) position for TMI-1 has not been filled and the TMI-1 fee is now covered by the proposed fee schedule. The licensee for TMI-2 plant is subjected to the department's actual cost recovery for the BRP's decommissioning oversight responsibilities. The cost of everything has been rising, therefore, the program cannot remain at a static cost over the next five to 10 years.

9. This includes maintenance and repairs for three R3Vs, seven modified pickup trucks (F-150s), three vehicles for BRP's designated Agency Representatives to PEMA, two Environmental Surveillance vehicles and two shared-use vehicles for Nuclear Safety staff. The R3Vs are large, heavily equipped, medium-duty vehicles that do not require a commercial driver's license to operate. They are designed to support and direct FMTs during exercises or an actual incident. Maintenance for the R3Vs is substantial because of the large size and specialized on-board equipment. Fuel accounts for approximately 70 percent of the annual amount budgeted for vehicles.

Comment: Our other states don't employ these large expensive vehicles to support the NPP / REP programs. Has BRP evaluated more efficient and cost-effective ways of performing the functions provided by these vehicles? Have you reviewed whether or not the function performed is actually necessary or just desired?

Response: The R3Vs are used primarily for NPP exercises and over the next three years we are going to be rethinking the need for a forward command post.

10. For planning purposes, four new vehicles for FY 2022/2023 and two new vehicles in future years are budgeted. DEP current replacement criteria are that a vehicle is eligible (not guaranteed) for replacement at 100,000 miles. The vehicle replacement mileage criterion has fluctuated slightly over the years.

Comment: Can you provide more information that would explain the basis for the total number of vehicles? I am looking to understand why a smaller number wouldn't work etc.

Response: Bounding the plume in a timely manner requires two vehicles. Typically, there is a vehicle on either side of the river, large city or lake. In an actual event, shift crews will be mobilizing their own set of vehicles. Having multiple sets, will allow vehicles to be taken out of service for decontamination while the next set of vehicles are deployed.

As stated earlier, these vehicles, along with the R3Vs, are going to be evaluated for a better long-time solution. If solutions are developed and there is a cost savings, then obviously that would roll into the Fees analysis and extend the next fee increase.

11. *Equipment – Replacement Gamma Probes*

The current real-time gamma monitoring 'matrix probes' and support equipment (i.e., the PDT-100 satellite antenna) have been in service for more than twenty years and are now obsolete. There have been frequent difficulties with communication and parts subcontractors, and BRP has been informed that some components will lose functionality in the future. Continuing to maintain, repair and calibrate these devices has become cost prohibitive – if not impossible. Consequently, this equipment must be replaced. These devices may cost up to $25,000 each. BRP currently maintains 24 matrix probes with PDT-100s. BRP plans to continue to use this technology and increase monitoring capability with future iterations and acquisitions of similar hardware. BRP is now purchasing a total of 56 new gamma probes to replace the current matrix probes. In order to maintain cohesive data systems, this replacement is planned to occur over two to three fiscal years. BRP has worked to obtain a quote and purchase order for new gamma probes and plans to purchase these over FY 2022/2023 and FY 2023/2024. Therefore, BRP's financial summary shows a $56,438 expenditure in FY 2021/2022, $816,000 in FY 2022/2023, and $300,000 in FY 2023/2024.

Comment: I seem to remember that these probes were purchased with funding from homeland security and were not purchased from NPP funds. Can you please confirm that?

Without more information I am finding it difficult to agree that this equipment must be replaced. Our other states perform all of their functions required by the REP program without any similar equipment to these "matrix probes." I see these as a nice to have but not necessary and beyond a reasonable request for NPP to fund. If they are actually "required" please explain the basis so I may better understand.

This is a very large expense that I don't believe is required, based on what information I have. I also believe these are deployed in many other ways that were not NPP related. For example, I seem to remember they were deployed around Pocono Raceway during NASCAR events. Can you confirm these other uses?

Response: At present, the matrix probes are being used only for NPP drills and exercises and for response to an event at a nuclear power plant. The matrix probes provide the real-time radiation monitoring capability that we currently lack due to the absence of real-time monitors around the PA nuclear power plants. Some of the states that don't have the matrix probes, or similar portable equipment, have already installed real-time monitors that are funded by their respective nuclear utility(ies). For example, the State of New Jersey has installed one of the most advanced remote monitoring systems for all of the NJ nuclear power plants, including the one with the ISFSI. The State of Illinois conducts real-time monitoring of the nuclear power plant sites including the permanently shut down facilities. The data obtained from the matrix probes are being shared with the utilities (Field Teams) during drills and exercises and this has contributed significantly to a more effective communication and sharing of information regarding radiological conditions within the EPZ. Additionally, the ability to deploy this equipment in a timely manner has enhanced confidence in the Commonwealth's protective action decision making process (i.e., sheltering vs evacuation of the special group and the general public).

12. *Equipment Purchases/Calibrations/Repairs*

Comment: Is all equipment included exclusively used for NPP emergency response and preparedness?

Response: All equipment included in this report and in the projected costs are used exclusively for emergency response and preparedness.

Talen

Comment: Is the intention to combine the DEP and PEMA report together into one report? We have discussed in our group that we thought it was two separate documents in the past and this made it much easier to read. We would suggest two separate documents.

Response: BRP and PEMA create and submit separate reports for the General Assembly.

Comment: I believe this was brought up at the working group meeting, but I want to reiterate it again. It appears the remaining plants are being asked to cover the deficit for the decommissioned plant. This raises a strong question as to what will happen in the future if other plants close. Will the entire financial burden be shouldered by one or two remaining plants? Is there a plan to reduce the budget/staff/equipment if additional plants close in the future?

Response: At this time, the loss of TMI's one unit is not significant enough to change the needed response to the remaining plants. While it is very easy to slip into training mode and events are over in four hours, we need only to look at the three most significant plant accidents which is well documented that response and recovery goes into days, weeks, months and years. The NSS position for TMI-1 has not been filled and is now covered by that plants proposed new fee.

It is difficult to predict what will happen in the future if additional PA nuclear power plants close for decommissioning. We do not foresee the closure of any PA nuclear power plants in the near future because all of the eight operating plants have obtained approval from the NRC for license renewal. Actually, one of the PA nuclear utilities has already received approval from the NRC for the Second License Renewal that would extend the life of the units from 60 to 80 years. The bureau must maintain certain number of staff and equipment for the implementation of effective environmental monitoring and emergency response programs. This is required by the PA Radiation Protection Act. It is possible that there will be a need for staffing reduction due to the closure of additional nuclear power plants in PA. For example, the responsibility for the nuclear safety oversight of TMI-2 (and eventually TMI-1 once it is placed in SAFSTOR) has been transferred from the Nuclear Safety Division to the Environmental Monitoring & Decommissioning Division and the oversight of this unit is subjected to actual cost recovery. The experience that we acquire during decommissioning of TMI-2 and eventually PB-1 will allow for a better assessment of our future staffing and budgetary needs.

Comment: On Page 6 of the report there is reference to providing support for the PA RAP team. Although I have heard of this team in the past, it has been many years ago. Does this team still exist? Do they still provide services and receive training?

Response: We are not paying to maintain the PARAP at this time. There is no cost.

Comment: On Page 8 under project spending – the report shows a 4.75 percent annual increase for salaries and 3 percent annual cost of living adjustment. Is this the same number that was discussed at the meeting? I thought I remembered hearing 3 percent annual increase and 3 percent annual cost of living adjustment. A 7.75% increase per year in salaries seems high.

Response: During the meeting, it was stated that projected personnel costs are at a 4.75 percent increase based on current Commonwealth contracts and the projected indirect and operating costs are at a three percent increased based on the average consumer pricing index. It is not an overall 7.75 percent increase.

Comment: We also wanted to expand on the comments that Sean made regarding the R3v's. We had discussing regarding the original funding stream for these vehicles. If they were originally purchased with homeland security funds, I don't believe they should be replaced entirely with NPP fees. Are the vehicles used for other purposes beyond NPP activities? If they are, I would suggest a pro-rated funding of the vehicles from the NPP fees. This would be similar to how the ORO grants are administered, such as if you use the vehicle 10% of the time for NPP activities, then that is how much should be funded from NPP fees.

Response: The R3Vs are used primarily for NPP exercises and over the next three years we are going to be rethinking the need for a forward command post. All cost savings that occur in the three-year period is rolled into the Fee analysis which provides additional years without fee increases or at least offset expenses going up in other areas.

All other comments regarding word changes or name updates, have been changed in the report.

APPENDIX C

LETTERS FROM
NUCLEAR POWER PLANTS
UTILITY OPERATORS

TALEN ENERGY

Susquehanna Steam Electric Station
769 Salem Boulevard
Berwick, PA 18603
www.susquehannanuclear.com

Bureau Director, Dwight A. Shearer
Department of Environmental Protection | Bureau of Radiation Protection
Rachel Carson State Office Building
P.O Box 8469
Harrisburg, PA 17101-8469

9/13/2023

SUSQUEHANNA STEAM ELECTRIC STATION
SSES Concurrence Letter to Pennsylvania DEP/BRP
PLE-0026557

Director Shearer:

Susquehanna Steam Electric Station has reviewed the final draft "Commonwealth of Pennsylvania Radiation Protection Act Report to the General Assembly Pursuant to Act 31 of 2007," provided by the Bureau of Radiation Protection ("BRP") on August 23, 2023.

Susquehanna Steam Electric Station understands that BRP is recommending an increase from $650,00 to $825,000 annually per nuclear reactor site, regardless of the number of individual reactors located at the site, based on actual expenses from Fiscal Years (FY) 2019/2020, 2020/2021, and 2021/2022 and projected expenses for FYs 2022/2023 to 2025/2026.

Susquehanna Steam Electric Station also understands that BRP is recommending a fee of $100,000 annually for DEP oversight associated with spent fuel stored onsite at decommissioning plants within an Independent Spent Fuel Storage Installation (ISFSI).

We concur with your analysis and recommendation.

Susquehanna Steam Electric Station requests the Commonwealth consider the following during the next update to the Commonwealth of Pennsylvania Radiation Protection Act Report to the General Assembly Pursuant to Act 31 of 2007:

- Increased transparency in agency spending that supports understanding of how fees are being spent on radiological emergency support. For example, if funds are used to purchase a vehicle, specific information regarding what percentage of the time the vehicle is used for nuclear power plant related activities.

- Consideration of an annual increase versus a large increase incurred at one time which would assist with the annual and long-term budgeting process.

Please let me know if you have any questions or require additional information.

Respectfully,

Jay Barnes
Emergency Preparedness Manager
Talen Energy | Susquehanna Steam Electric Station

cc: Jessica Shoup, Emergency Preparedness Supervisor

energy harbor

168 E. Market Street
Akron, Ohio 44308

Darin M. Benyak, Senior VP
Fleet Nuclear Operations

330-436-1380

September 25, 2023

Mr. Dwight A. Shearer, Bureau Director
Department of Environmental Protection
Bureau of Radiation Protection

Dear Mr. Shearer:

Energy Harbor has reviewed the final draft "Commonwealth of Pennsylvania Radiation Protection Act Report to the General Assembly Pursuant to Act 31 of 2007," provided by the Bureau of Radiation Protection ("BRP") on August 23, 2023.

Energy Harbor understands that BRP is recommending an increase from $650,00 to $825,000 annually per nuclear reactor site, regardless of the number of individual reactors located at the site, based on actual expenses from Fiscal Years (FY) 2019/2020, 2020/2021, and 2021/2022 and projected expenses for FYs 2022/2023 to 2025/2026.

Energy Harbor also understands that BRP is recommending a fee of $100,000 annually for DEP oversight associated with spent fuel stored onsite at decommissioning plants within an Independent Spent Fuel Storage Installation (ISFSI).

We concur with your analysis and recommendations with the following exceptions:

While we agree that it would be unrealistic to be able to hold costs static, the amount of the increase and provided justification lack clarity and a sound foundation. Some examples are included below.

- The information provided states that there is a fleet of 17 vehicles covered by the funding from Act 31. The purpose of this large fleet of vehicles is not clearly understood and we do not believe such a large fleet of vehicles is specifically required to implement the requirements of the program.
    - Three R3Vs – large medium duty vehicles further discussed below
    - Seven modified F-150 trucks
    - Three vehicles for BRP's designated Agency Representatives to PEMA
    - Two Environmental Surveillance vehicles
    - Two shared-use vehicles for Nuclear Safety Staff

- The use of three "R3Vs", large expensive medium duty vehicles, is not warranted to perform field survey or field monitoring team functions. The use of such vehicles is unusual in nuclear power plant emergency preparedness. As a result, it is inappropriate to ask the current licensees to provide the funding for their maintenance, repair, and replacement.

- It is our understanding that these vehicles were not purchased with funding provided by the nuclear plants but were purchased with funding from The Department of Homeland Security.
- Vehicles of this type, while impressive, are not required to complete the field monitoring team functions outlined in the FEMA Radiological Emergency Preparedness Program.

- As a result of TMI-1 being permanently shutdown, it no longer is required to have an offsite emergency preparedness program that is evaluated by FEMA under 10CFR350.1. The elimination of the program in an entire Emergency Planning Zone resulted in no noticeable reduction in staffing, equipment or resources maintained by Pennsylvania BRP. While we understand that the reduction in the resources required by the program is certainly not linear, it is reasonable to expect some noticeable reduction should have occurred. Instead, it appears that the current licensees are being asked to maintain the program in its previous size and divide that cost among fewer operating units.

- The use of PDT-100 "matrix probes" is well over and above anything required by the program standards provided in the FEMA REPP Manual. PA BRP has informed us that they currently have 24 matrix probes that are becoming obsolete and can cost up to $25,000 each.
  - We have been informed that BRP plans to purchase "a total of 56 new gamma probes to replace the current matrix probes" – We have not been provided a justification as to why it is necessary to now purchase over twice the number of this type of probe.
  - No other state we partner with currently employs a matrix probe to implement the planning standards evaluated by FEMA.
  - BRP has stated that data from the matrix probes "are being shared with the utilities (Field Teams) during drills and exercises and this has contributed significantly to a more effective communication and sharing of information regarding radiological conditions within the EPZ", however we have not observed this information to be shared in any previous drill or exercise.

In addition to the response provide above, Energy Harbor requests the Commonwealth of Pennsylvania to consider the following:

1. Increased transparency in agency spending that supports understanding of how fees are being applied to radiological emergency support. For example, the report details seven modified pickup trucks that are owned by the department. It would be beneficial for the utility to have a more thorough understanding of how these trucks are being used to support the radiological emergency preparedness program. Energy Harbor requests consideration of added detail to the budgetary breakdowns provided by BRP.
2. Fee adjustments based on annual consideration of inflation and cost of living expenses. The current model has historically resulted in significant increases in fees at irregular intervals. For advanced budgeting purposes, Energy Harbor requests that the Commonwealth consider a gradual approach to fee changes.

3. Evaluate the current fleet of vehicles and equipment, such as the use of matrix probes, to ensure that the number, complexity and scale of the vehicles and equipment are appropriate and cost-effective choices for the FEMA planning standards they are utilized to meet.

Please let me know if you have any questions or require additional information.

Respectfully,

saz/

Constellation

October 4, 2023

Mr. Dwight Shearer, PE
Bureau Director, Bureau of Radiation Protection
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Dear Mr. Shearer:

Constellation has reviewed the final draft "Commonwealth of Pennsylvania Radiation Protection Act Report to the General Assembly Pursuant to Act 31 of 2007," provided by the Bureau of Radiation Protection ("BRP") on August 23, 2023.

Constellation understands that BRP is recommending a fee of $100,000 annually for DEP oversight associated with spent fuel stored onsite at decommissioning plants within an Independent Spent Fuel Storage Installation (ISFSI). Per the updated guidance in sections b.1(1)and b.3, Three Mile Island ("TMI") Unit 1 will no longer incur the annual fee associated with an operational reactor license from the Nuclear Regulatory Commission ("NRC") beginning on July 1, 2024. TMI is currently operating under an ISFSI-Only Emergency Plan ("IOEP"), resulting in a significant reduction in emergency planning support and necessitates minimal nuclear oversight function. Constellation anticipates an annual fee of $100,000 for DEP support and oversight of IOEP functions at TMI Unit 2.

Constellation also understands that BRP is recommending an increase from $650,00 to $825,000 annually per nuclear reactor site, regardless of the number of individual reactors located at the site, based on actual expenses from Fiscal Years (FY) 2019/2020, 2020/2021, and 2021/2022 and projected expenses for FYs 2022/2023 to 2025/2026.

We concur with your analysis and recommendation.

In addition to our concurrence, Constellation requests the Commonwealth of Pennsylvania to consider the following:

1. Increased transparency in agency spending that supports understanding of how fees are being applied to radiological emergency support. For example, the report details seven modified pickup trucks that are owned by the department. It would be beneficial for the utility to have a more thorough understanding of how these trucks are being used to support the radiological emergency preparedness program. Constellation requests consideration of added detail to the budgetary breakdowns provided by BRP.
2. Fee adjustments based on annual consideration of inflation and cost of living expenses. The current model has historically resulted in significant increases in fees at irregular intervals. For advanced budgeting purposes, Constellation requests that the Commonwealth consider a gradual approach to fee changes.

Please let me know if you have any questions or require additional information.

Respectfully,

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Moore, Dennis M
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Dennis M Moore
Senior Manager, Constellation Emergency Preparedness
Constellation Energy Generation, LLC