

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**

November 6, 2017

DEP Nuclear Power Plant Fee and Expense Review

Executive Summary

The Radiation Protection Act (Act 147), Act of July 10, 1984, P.L. 688, No. 147, 35 P.S. §§ 7110.101-7110.703, gives the Department of Environmental Protection (DEP) a mandate and broad authority to establish and maintain a program of radiation protection. Act 147 also establishes 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. Act 147 was amended by Act 31 of 2007 to provide such security and to increase fees paid by nuclear power plants (NPPs) that support DEP to \$550,000 per NPP site. Section 402 of Act 147, as amended by Act 31 of 2007, includes a provision that requires DEP to form a Working Group with NPP representatives to review the NPP fees every three years and make recommendations to the General Assembly. See 35 P.S. § 7110.402(b.1)(5). PEMA is also required by Act 147, to form a Working Group with the NPP representatives to review their fees on a triennial basis. See 35 P.S. § 7110.402(c)(5).

Annual fees paid to DEP under Section 402 of Act 147 were increased to \$650,000 per NPP site by Act 190 of 2014 as a result of the Working Group's 2014 review. This report is DEP's work product based on the three-year review period of FY 2013/2014 through FY 2015/2016 and a joint meeting of the DEP-NPP Working Group and the PEMA-NPP Working Group, which was held on May 30, 2017.

Based on this 2017 review, the Working Group recommends no change to the current annual NPP fees of \$650,000 per NPP site.

Introduction

Act 147 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 continue to remain with the U.S. Nuclear Regulatory Commission (NRC).

Act 147 also established a related and complementary nuclear/radiological emergency response authority in conjunction with PEMA. Two separate NPP fees were established in Act 147 to fund the expenses of DEP and PEMA. In 1991, DEP's NPP fee was fixed at \$400,000 per NPP site. After the terrorist attacks on Sept. 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.

The annual NPP fee paid to DEP under Section 402 of Act 147 has been increased twice since 2001. The fee was increased to \$550,000 per NPP site by Act 31 of 2007 and to \$650,000 per NPP site by Act 190 of 2014. These fee increases were a result of the collaborative efforts of the Working Group, which was comprised of DEP and the NPP utility owners: Exelon (Limerick Generating Station, Peach Bottom Atomic Power Station and Three Mile Island), First Energy Nuclear Operating Co. (Beaver Valley Power Station), and Pennsylvania Power and Light Corporation (Susquehanna Steam Electric Station) now owned and operated by Talen Energy.

Act 147 Annual Fee Review Requirements

Act 147, as amended by Act 31 of 2007, 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 Fiscal Year (FY) 2012/2013 through FY 2015/2016, and planned expenses through FY 2020/2021.

General Overview of Bureau of Radiation Protection Functions

Act 147 gives 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 by Act 147 is the responsibility of the BRP's Nuclear Safety Division and Decommissioning and Environmental Surveillance Division.

A separate Nuclear Safety Specialist (NSS) within the Nuclear Safety Division is assigned to each of the five NPP sites. Four Radiological Health Physicists (RHPs) and a Section Chief in the Emergency Response and Radioactive Waste Section within this Division also routinely interface with the NPP sites, PEMA, PSP, local responders and others to ensure emergency response vehicles, assets, equipment and instrumentation are operational and calibrated as appropriate. Many of the operational checks and maintenance require the support of a DEP Information Technology Technician (ITT). The Nuclear Safety Division staff also expend significant time and effort reviewing NPP license amendments and other NPP/NRC correspondence and actions, including implementation of lessons learned from the Fukushima Dai-ichi accident in Japan.

The Environmental Surveillance Section Chief and three Radiation Protection Specialists (RPSs) 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 and annual reporting with NPP staff for comparison. 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. A chemist in the BoL Radiochemistry Section is on BRP's complement to analyze all samples collected by the Environmental Surveillance Section.

Outputs by Program Area

Director's Office – 1.0 FTE

- Provide 24/7 availability to PEMA, NRC's duty officers and liaisons and NPPs.
- Participate in plume and 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 – 6.5 FTE

- 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 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.
- Interface with NRC and DEP staff on the Environmental Impact Statement for Bell Bend nuclear power plant. (Note: The Bell Bend license application was recently withdrawn.)
- 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.
- Participate in Low-Level Radioactive Waste Forum (Forum) and Northeast High-Level Waste Transportation Task Force.
 - The Forum is an association of states, compacts and federal regulatory agencies (DOE, NRC, and EPA) involved in management and disposal of LLRW. The PA representative is one of the directors of the Forum and

contributes significantly to discussions involving national issues and resulting actions, decisions and recommendations.

- Participate on the Forum's working group to review amendments to 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

Emergency Preparedness and Response – 5.5 FTE, plus 2% of all other BRP staff (~1.8 FTE)

- Participate in all Federal Emergency Management Agency (FEMA)-graded exercises.
 - Approximately 32 staff members (29 players and three controllers) from the BRP Central Office and Regional Offices participate in each FEMA-graded exercise and its rehearsal.
- Participate in rehearsals and graded 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 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 Central Office and Regional Offices participate in each HAB exercise and its rehearsal.
- Attend Planning Conferences for FEMA-graded exercises.
- Maintain, update and utilize real-time plant data system / IT support.
- Maintain state-of-the-art emergency response equipment – 10 equipment and 10 instrument kits.
- Maintain, update and utilize three Rapid Radiological Response Vehicles (R3V), seven modified F-150 trucks (dedicated field team response vehicles) and their onboard equipment.
- Provide field team "refresher training" prior to each federally graded exercise.
- Participate in drills and exercises, including performance indicator exercises.
- Attend NPP off-site refresher training; the number of staff in attendance varies from three to 20 depending upon the NPP.
- Attend quarterly off-site meetings.
- Attend quarterly PEMA / NPP meetings.
- Provide radiation refresher training to all six DEP Emergency Response HAZMAT Regional Offices.
- Provide basic radiological training to PSP staff as requested for each cadet class.

- Provide training sessions for Pennsylvania Medical Reserve Corps and Radiological Assessment Program (PA RAP) Team.
 - The Pennsylvania Reserve Corps is registered with the Pennsylvania Department of Health. It is an all-volunteer organization dedicated to serving the people 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, who can be called upon to support BRP during a response.
- Participate with other states, federal agencies, and NPPs at regional and national NRC, FEMA and Radiological Emergency Preparedness (REP) meetings.

Environmental Surveillance – 6.0 FTE (includes BoL chemist)

- Maintain a substantial Radiological Environmental Surveillance Program around the five NPP 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 182 thermoluminescent dosimeters (TLD) at all times in the vicinity of the five NPPs.
- Maintain 182 optically stimulated luminescence dosimeters (OSLs), collocated with the TLDs, for immediate on-site reading by Environmental Surveillance Section staff in case of emergencies.
- Perform monthly surface water sampling upstream and downstream of each of the five NPPs, 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 five NPPs.
- Collect over 2600 samples for submission to the DEP Laboratory Radiation Measurement Section annually for trend analysis.
- Perform data analysis and prepare the annual report required by Act 147.
- Evaluate all samples collected as part of the Environmental Surveillance Program around the five NPP sites.

Program Issues and Efficiencies

The top priority of the BRP is protecting 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:

- Data acquisition – BRP maintains state-of-the-art deployable remote radiation monitoring equipment that enables BRP staff to obtain precise and accurate data.
- DEP and BRP utilized grants funds, when available, to reduce the impact on the RP Fund. As an example, much of the state-of-the-art equipment was purchased with Department of Homeland Security (DHS) grant funds in the early 2000's.
- LLRW Generation Reporting by NPPs - DEP has significantly reduced the regulated community's reporting requirements for reporting low-level radioactive waste generation information by using the disposal information directly from the Manifest Information Management System (MIMS) database rather than quarterly survey questionnaires.
- Custom Maps of Emergency Planning Zone (EPZ) and Ingestion Pathway Zone (IPZ) – BRP produces these maps in-house vs. purchasing from a commercial vendor.

Financial Summary

The Financial Summary is attached to this report as Appendix A. Below is a summary of total expenditures by FY.

Previous Years Actual Spending

FY 2012/2013 - \$2,517,051
FY 2013/2014 - \$2,419,481
FY 2014/2015 - \$2,790,661
FY 2015/2016 - \$2,769,297

Planned Spending

FY 2016/2017 - \$2,860,803
FY 2017/2018 - \$3,372,187

Projected Spending

For purposes of this justification, planned expenditures are documented through the end of FY 2017/2018. However, to decrease the potential for frequent fee changes, the BRP has made an estimated projection of expenses through FY 2020/2021. This projection has assumed an approximate four percent annual increase of labor costs and a simple

three percent annual increase of expenses, predicated on adjusted FY 2017/2018 spending.

FY 2018/2019 - \$3.4M

FY 2019/2020 - \$4.1M

FY 2020/2021 - \$4.2M

Detailed Explanation of Financial Summary Table

A financial summary table is contained in Appendix A that details expenditures from FY 2012/2013 through FY 2020/2021. A detailed 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, leave payouts, and retirement. Actual benefit rates for the future years are not available. The decrease in FY 2013/2014 was due to loss of staff through retirements and a hiring freeze effected during that time.

Indirect Costs

Indirect costs include leases, rents, utilities, 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, e.g. Civil Service, State Employee Assistance Program, and Payroll Operations.

Operational Expenses

Operational expenses include but are not limited to: legal services/fees, travel, training, Emergency Response cellular telephones, satellite voice and data service, cellular data service for Emergency Response laptops and vehicles, software maintenance, advertising, office supplies, housekeeping supplies, general laboratory supplies, medical supplies, industrial supplies, publications, postage, printing, membership dues, subscriptions, food, and safety apparel. This line item also includes supplies for monitoring and sampling in the proximity of the NPPs (e.g., vacuum pumps, charcoal canisters).

BRP currently maintains off-site environmental radiation monitoring programs around the five NPP sites in Pennsylvania. There are 30 to 36 TLDs, depending on the plant site, from Mirion Technologies located at permanent locations around each NPP. At four of these locations a Radiation Dosimetry Company (RDC) crosscheck TLD 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 collocated OSL dosimeters from Landauer Calibration Facility. These dosimeters are read in the field by BRP personnel using a Microstar OSL reader each quarter and shipped annually to the Landauer laboratory for readout. Dosimeters of all three types are placed in control areas. Comparisons of results from the various types of dosimeters and services provide reliable quality control. Each quarter 182 dosimeters are read by the TLD services and 157 OSLs are read in the field by BRP staff. Annually, 157 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 activity and aggregated monthly for gamma spectrum 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 TLDs 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 power plant. Surface and/or drinking water is collected above and below station discharges monthly. In most cases, these samples are collected and split with the NPPs. Annual and semiannual fish, sediment and vegetation samples are also collected and split with the NPPs in the areas around the power plants. All samples are analyzed by gamma spectroscopy. Results are compared with the NPPs' reports and provide 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 trucks (F-150s), three vehicles for BRP's designated Agency Representatives to PEMA, two Environmental Surveillance vehicles and two shared-use vehicles. The R3Vs are heavily equipped, medium-duty vehicles that do not require a commercial driver's license to operate. Maintenance on 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.

Vehicles

For planning purposes, one new vehicle for FY 2017/2018 and two new vehicles per FY 2019/2020 and FY 2020/2021 are budgeted. DEP current replacement criteria is that a vehicle is eligible (not guaranteed) for replacement at 100,000 miles. The mileage criterion has fluctuated over the years.

Equipment – Replacement Gamma Probes

The Thermo Scientific real-time gamma monitoring ‘matrix probes’ and support equipment (i.e., the PDT-100 satellite antenna) have been in service for 10 years and are becoming 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 will be 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. In order to maintain cohesive data systems, this replacement is planned to occur over four fiscal years. BRP has obtained an informal quote for these radiation monitors, but plans to post a competitive bid for limited initial purchases for testing, followed by a full equipment purchase over two years. Therefore, BRP’s financial summary shows a \$53,000 expenditure in both FY 2017/18 and FY 2018/19, and \$543,000 in both FY 2019/20 and FY 2020/2021 for equipment replacement.

Equipment Purchases/Calibrations/Repairs

This includes costs for instrument calibration for DEP and U.S. Department of Homeland Security (DHS) purchased equipment. This also includes equipment issued to Medical Reserve Corps and PA RAP members.

BRP currently maintains 10 fully equipped instrument and equipment kits that are used in support of the NPP Emergency Response functions. Instruments in these kits are calibrated on an annual basis and checked on a quarterly basis. Consumables (i.e., 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. The 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 deployed among central office and the three regional offices.

The increase in FY 2017/2018 is due to planned purchases of new equipment such as RadEyes, computer tablets for emergency response vehicles, and replacement satellite phones.

Specialized Services: Bureau of Laboratories

The DEP maintains a certified laboratory where all NPP-related environmental surveillance samples are analyzed. This line includes sample analysis charges, not equipment.

Program Recommendation

Under the current fee structure, planned DEP spending will not exceed revenue plus carryover funds before the end of FY 2020/2021. ***Therefore, no NPP fee increase is recommended at this time.***

Working Group

On January 31, 2017, DEP Secretary Patrick McDonnell formally appointed the DEP's representatives to the official Working Group for this review. The NPP utilities also appointed three members in accordance with Act 31. The Working Group met on May 30, 2017, at PEMA Headquarters in Harrisburg and consisted of the following members:

Name	Title	Affiliation
James Gorman	Emergency Preparedness Manager	Talen Energy
Sean Zalesny	Manager of Fleet Emergency Preparedness	FENOC (First Energy)
James Barstow	Director, Licensing	Exelon Nuclear Generation Co.
George Hartenstein	Acting Deputy Secretary for Waste, Air, Radiation and Remediation	PA DEP
David Allard	Bureau Director, Radiation Protection	PA DEP
Rich Janati	Chief, Nuclear Safety Division	PA DEP

At the May 30, 2017 meeting, DEP 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. Discussions were illustrated with an organization chart that shows 107 staff positions directly involved in radiation protection throughout the Central and Regional Offices. DEP stressed that all radiation protection staff would be needed to respond to an NPP accident on a 24/7 basis. Therefore, all staff are trained and participate in 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 analysis; and state official and media briefings, etc.

At the Working Group meeting, DEP reviewed with the NPP representatives a BRP Financial Summary for FY 2012 through FY 2020. The NPP-related expenses were compared to fee revenue plus carryover funds from the prior FY. These current and projected expenses are summarized in a Financial Summary (Appendix A). Care and

effort was made to focus on NPP expenses and fees; BRP fees DEP collects 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. As noted in the previous section of this report, no NPP fee increase is recommended at this time.

Following the fiscal presentation, DEP requested comments from the NPP representatives. The only concern relates to BRP's ability to fill all vacant NPP-related staff positions. The NPP representatives reviewed a draft of this report and provided the Department with written statements, which are included as Appendix B.

- End of Report -

APPENDIX A

**PA DEP NUCLEAR POWER PLANT REVENUE - EXPENSE REVIEW
RADIATION PROTECTION ACT (147-1984, AMENDED 190-2014)
FINANCIAL SUMMARY (rev 5-30-2017)**

	FY 2012/2013 ACTUAL	FY 2013/2014 ACTUAL	FY 2014/2015 ACTUAL	FY 2015/2016 ACTUAL	FY 2016/2017 PLANNED	FY 2017/2018 PLANNED	FY 2018/2019 PROJECTED	FY 2019/2020 PROJECTED	FY 2020/2021 PROJECTED
Carry-over Funds	\$2,013,000	\$2,245,949	\$2,576,468	\$2,535,807	\$3,016,509	\$3,405,707	\$3,283,520	\$3,167,148	\$2,360,135
REVENUE									
(5 Facilities @ \$650,000 Each)	\$2,750,000	\$2,750,000	\$2,750,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000
TOTAL REVENUE	\$2,750,000	\$2,750,000	\$2,750,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000	\$3,250,000
TOTAL FUNDS	\$4,763,000	\$4,995,949	\$5,326,468	\$5,785,807	\$6,266,509	\$6,655,707	\$6,533,520	\$6,417,148	\$5,610,135
EXPENDITURES									
Nuclear Power Plant Related									
Salaries and Benefits	\$ 1,852,067	\$ 1,782,653	\$ 1,966,786	\$ 1,930,337	\$ 1,988,247	\$ 2,289,000	\$ 2,392,000	\$ 2,487,000	\$ 2,587,000
Indirect Costs ¹	\$ 67,471	\$ 182,909	\$ 201,744	\$ 181,012	\$ 186,442	\$ 192,036	\$ 197,797	\$ 203,731	\$ 209,843
Operational Expense ²	\$ 162,117	\$ 100,730	\$ 237,581	\$ 241,614	\$ 248,862	\$ 256,328	\$ 264,018	\$ 271,938	\$ 280,096
Vehicle Maintenance and Repairs ³	\$ 26,620	\$ 21,466	\$ 33,563	\$ 36,823	\$ 37,928	\$ 39,065	\$ 40,237	\$ 41,445	\$ 42,688
Vehicles	\$ 18,178	\$ -	\$ -	\$ 25,723	\$ 34,921	\$ 29,000	\$ -	\$ 70,000	\$ 70,000
Equipment - Replacement Gamma Probes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,000	\$ 53,000	\$ 543,000	\$ 543,000
Equipment									
Purchases/Calibrations/Repairs ⁴	\$ 69,210	\$ 10,482	\$ 19,735	\$ 17,681	\$ 18,211	\$ 133,757	\$ 19,320	\$ 19,900	\$ 20,497
Specialized Services:									
Bureau of Labs	\$ 321,388	\$ 321,242	\$ 331,252	\$ 336,108	\$ 346,191	\$ 380,000	\$ 400,000	\$ 420,000	\$ 440,000
TOTAL EXPENDITURES	\$ 2,517,051	\$ 2,419,481	\$ 2,790,661	\$ 2,769,297	\$ 2,860,803	\$ 3,372,187	\$ 3,366,372	\$ 4,057,013	\$ 4,193,124
									Bal: \$1,417,011

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

² Along with basic office expenses, this also includes items such as ER cell phones, satellite phones, wireless for ER laptops and ER vehicles and software maintenance, etc.

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).

APPENDIX B

**CONCURRENCE LETTERS FROM
NUCLEAR POWER PLANTS
UTILITY OPERATORS**



August 11, 2017

Mr. Richard Janati
Chief - Division of Nuclear Safety
Bureau of Radiation Protection
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Dear Mr. Janati:

We have reviewed the information provided by the Bureau of Radiation Protection at the May 30, 2017 meeting. We concur with your analysis and recommendation.

It is our understanding that no fee adjustment will be needed to adequately fund the Bureau of Radiation Protection's nuclear safety and environmental surveillance activities. Specifically, the annual fee will remain at \$650,000 per nuclear power plant site effective for the next three years.

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

Regards,

A handwritten signature in black ink, appearing to read "James Barstow", written over a horizontal line.

James Barstow
Director - Licensing and Regulatory Affairs
Exelon Generation Company, LLC

cc: Vince Cwietniewicz

August 17, 2017

Mr. Richard Janati
Chief – Division of Nuclear Safety
Bureau of Radiation Protection
Department of Environmental Protection
Rachael Carson State Office Building
400 Market Street
Harrisburg, PA 17101

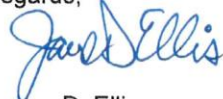
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Please let me know if you have any questions or require additional information.

Regards,



James D. Ellis
Director, Fleet Security and Emergency Preparedness
First Energy Nuclear Operating Company



August 15, 2017

Mr. Richard Janati
Chief – Division of Nuclear Safety
Bureau of Radiation Protection
Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101


Dear Mr. Janati:

We have reviewed the information provided by the Bureau of Radiation Protection at the May 30, 2017 meeting. We concur with your analysis and recommendation.

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

Regards,



Jason Jennings
Manager, Nuclear Regulatory Affairs
Susquehanna Nuclear, LLC

JJ:db

cc: James Gorman, Mgr, Emerg Plng
NEP Letter File

NUCSA4
NUCSA4

