30-19311

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

In the matter of :

PENNSYLVANIA POWER & LIGHT COMPANY :

And :

ALLEGHENY ELECTRIC COOPERATIVE, INC. :

Application for a Byproduct Material License
Pursuant to 10 CFR 30 for the Interim Storage of
Low-level Radioactive Waste

Pursuant to the Atomic Energy Act of 1954, as amended, and the Rules and Regulations issued thereunder, Pennsylvania Power & Light Company and Allegheny Electric Cooperative, Inc. (hereinafter referred to as "Applicants") hereby apply to the United States Nuclear Regulatory Commission for a Byproduct Material License pursuant to 10 CFR 30 for the interim storage of 11,700 curies of mixed fission and activation products, and associated trace quantities of special nuclear material in the form of low-level radioactive waste (LLRW). In support of this application, Applicants state as follows:

1. Name of Applicants

   Pennsylvania Power & Light Company (hereinafter "PP&L") and Allegheny Electric Cooperative, Inc. (hereinafter "AE")

2. Address of Applicants

   PP&L: Two North Ninth Street, Allentown, Pennsylvania 18101
   AE: 212 Locust Street, Harrisburg, Pennsylvania 17101

21285

3. Purpose and Need

Applicants currently own and are licensed to operate Unit 1, and construct Unit 2 of the Susquehanna Steam Electric Station (Susquehanna SES), pursuant to Operating License No. NPF-14 and Construction Permit No. CPPR-102. The Susquehanna SES is located about eight kilometers (5 miles) northeast of Berwick, Pennsylvania, and consists of two 1050 MWe boiling water reactor (BWR) units. Applications for operating licenses for these uints were docketed July 20, 1978. (Docket Nos. 50-387 and 50-388).

In view of current uncertainties over the near term availability of disposal sites, Applicants seek authorization to store on the Susquehanna SES site LLRW in a Low-Level Radioactive Waste Holding Facility (LLRWHF). The facility will have the capacity to temporarily store LLRW to be generated from up to four reactor-years per unit of operation. Permanent retention of these wastes in this facility is not planned. The waste to be temporarily stored is only that LLRW incidental to the operation of the Susquehanna SES. Acceptance of any off-site generated wastes for storage in this facility is not contemplated.

4. Facility Description

The LLRWHF is a structural steel frame building with uninsulated metal siding and roofing that encloses a system of three concrete storage vaults. Details of facility design and usage plans are provided in the attached Facility Description (Attachment 1).

5. Description of Material to be Stored

The LLRWHF is designed to store dry, active waste and dewatered, solidified (cement) waste generated by the Susquehanna SES. The dry, active waste will include contaminated paper, trash, clothing, small equipment and filters. The solidified waste will include wet, dewatered waste in the form of evaporator bottoms, resins, and sludges that have been immobilized in cement and contain less than 0.5 percent free standing water. The estimated nuclides and curie content of the waste forms to be stored in the LLRWHF are contained in Section II of Attachment 1. The facility may also be used to temporarily store large pieces of contaminated plant equipment.

6. Environmental Assessment

Impacts to the general public from storage of LLRW in the LLRWHF will be substantially less than applicable limits and insignificant in comparison with natural background radiation doses. An environmental assessment of the operation of the LLRWHF at the Susquehanna SES site is provided in Attachment 2.

7. Safety Analysis

The control or mitigation of the consequences of postulated failures or accidents arising out of storage of LLRW in the LLRWHF is discussed in the attached safety analysis of the operation of the LLRWHF (Attachment 3).

8. Radiation Protection

Radiation control and protection for operation of the LLRWHF will be maintained in accordance with Susquehanna SES Plant Administrative and Technical Procedures. The radiation protection program is described in detail in the attached Section 12.5 of the Susquehanna SES Final Safety Analysis Report (FSAR) (Docket Nos. 50-387, July 20, 1978). (Attachment 4). Since the radiation protection functions will be an intergal part of the plant health physics program, no segregation of exposures of individuals to radiation between the LLRWHF and the Susquehanna SES will be delineated. To avoid duplication and possible summation of exposures attributed to PP&L Company licensed activities, information required to be reported pursuant to 10 CFR parts 20.403(a)(1), 20.403(b)(1), 20.403(c), 20.405 and 20.407 will be embodied in the reports submitted in accordance with the requirements of the Susquehanna SES Operating License(NPF-14). The qualification, training and experience of the Radiation Protection Officer and his alternates are provided in Attachment 5.

Individuals working with radioactive materials are to be designated by the Radiation Protection Officer of his alternate and shall, as a minimum, have experience as gained by successfully completing the Radiation Protection Training program as outlined in Attachment 6.

9. Quality Assurance

To assure the LLRWHF will perform its intended function, the design, procurement, construction, installation, inspection and testing of this facility will be controlled by a Quality Assurance Plan. Attachment 7 provides a table of systems, equipment and structures of the LLRWHF to which the Quality Assurance Plan is applied. Sufficient records will be identifiable and retrievable to furnish evidence that the Quality Assurance Plan is implemented.

10. Operations

Attachment 8 identifies appropriate operational activities which will be controlled by procedures during the operation of the LLRWHF.

Sufficient records will be identifiable and retrievable to furnish evidence that the operational procedures have been implemented. Records will be maintained in accordance with Susquehanna SES Administrative Proceedures and will as a minimum include container identification, date of placement

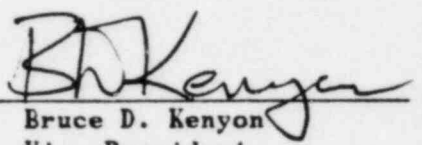
in the LLRWHF, location in the LLRWHF, waste type, curie content and dose rate.

Attachment 9 outlines the operational concept of the LLRWHF and provides a discussion of the inspection and surveillance of the facility inventory.

11. Certificate

Applicants certify that this Application is prepared in conformity with Title 10 Code of Federal Regulations, Part 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of their knowledge and belief.

PENNSYLVANIA POWER & LIGHT COMPANY
ALLEGHENY ELECTRIC COOPERATIVE
By:



Bruce D. Kenyon
Vice President,
Nuclear Operations
Pennsylvania Power & Light Company

COMMONWEALTH OF PENNSYLVANIA)
: SS
COUNTY OF LEHIGH)

I, BRUCE D. KENYON, being duly sworn according to law, state that I am Vice President, Nuclear Operations of Pennsylvania Power & Light Company and that the facts set forth in the foregoing Application are true and correct to the best of my knowledge, information and belief.

B D Kenyon

Bruce D. Kenyon
Vice President,
Nuclear Operations

Sworn to and subscribed
before me this 23rd day
of September, 1983

Martha C. Barto

Notary Public
MARTHA C. BARTO, Notary Public
Allentown, Lehigh County, Pa.
My Commission Expires Jan. 13, 1986

ATTACHMENT 5

Resume of training and experience for the Radiation Protection Officer, (Michael R. Buring) is included as pages 2 and 3 of this attachment.

The resume of training and experience for the Radiation Protection Officers alternates are as follows:

Mark W. Granus - included as pages 4 and 5 of this Attachment.

F. Peter Jaegar - included as pages 6 through 9 of this Attachment.

ATTACHMENT 5

RADIATION PROTECTION OFFICER - TRAINING AND EXPERIENCE

Name: Michael R. Buring

Education and Training

1970 Ohio State University; B.S. - Zoology

Work Experience

1962-1967 U.S. Navy - Enlisted Nuclear Plant Operator, Engineering Lab Technician, Prototype Instructor

Duties: Mechanical Operator/Instructor at Naval Nuclear Power Plant Prototype, Health Physics and Water Chemistry Control, both Primary and Secondary.

1967-1970 Batelle Memorial Institute - Safety Technician

Duties: Inspection and Auditing of various research projects in progress, for compliance with established procedures and regulatory requirements.

1970-1973 Virginia Electric and Power Company - Surrey Power Station Health Physicist

Duties: Assist station health Physicist in routine and special projects, personnel dosimetry, radwaste, radiochemistry, procedure writing, radiological environmental monitoring.

1973-1979 Metropolitan Edison Company - Corporate Radiation Safety.

Duties: Technical Support of TMI station personnel in Health Physics, personnel dosimetry, radwaste, procedure writing and review, radiological environmental monitoring, etc. Supervised personnel dosimetry group during and after accident.

1979-198[illegible] Pennsylvania Power & Light Company - Environmental Group Supervisor - Nuclear

Duties: Supervise the implementation of radiological and non-radiological environmental monitoring programs.

1981- Present - Pennsylvania Power & Light Company - Radiation Protection Officer

Duties: Management of Radiation Protection Program controlling all H.P. activities including whole body counting personnel dosimetry, radwaste, ALARA control, respiratory protection and supervisor of H.P. personnel.

Licenses and Certificates

None.

ATTACHMENT 5

Experience With Radiation - Michael R. Buring

Isotope	Amount	Location	Duration of Use	Type of Use
Mixed Fission, Activation, & Corrosion Products - By-product, Source and Special Nuclear Material	Trace - Kilo-curie	U. S. Navy Surrey Nuclear Sta., Three Mile Island	12 years	Power and Naval Reactor Health Physics Physics Program

ATTACHMENT 5

HEALTH PHYSICS SPECIALIST

Name: Mark W. Granus

Education and Training

1978 Purdue University
B.S. - Environmental Health & Health Physics

Work Experience

10/80-Present	Health Physics Specialist, PP&L Nuclear Support Group
Duties:	Assist the Staff Health Physicist in the following activities: ALARA training, review of health physics procedures, radwaste.
6/78-10/80	Health Physicist, Dresden Nuclear Power Station, Commonwealth Edison Co.
Duties:	Health Physics related to Dresden Unit 3, station respiratory, bioassay and radwaste programs
9/77-5/78	Health Physics Technician, Radiological Services Dept., Purdue University
Duties:	Assist Radiation Safety Officer in leak testing, receipt of radioactive material, laboratory survey and decontamination.

License and Certificates

None.

ATTACHMENT 5

Experience With Radiation - Mark W. Granus

Isotope	Max. Amt.	Where Exp. Gained	Duration	Type of Use
MFP*	Trace to Kilo Curies	Dresden Nuclear Power Station	2.5 yrs.	Power Reactor Health Physics
CO-60	7500 Curies	Purdue Univ.	3 mos.	Irradiation Facility
CS-137	3[illegible] Curies	Dresden Nuclear Power Station	2.5 yrs.	Calibration Facility
CS-137	3 Curies	Purdue Univ.	9 mos.	Calibration Device
CO-60	1500 Curies	Purdue Univ.	9 mos.	Irradiation Facility

* Mixed Fission, Activation & Corrosion Products-By Product, Source and Special Nuclear Material

ATTACHMENT 5

NAME: F. Peter Jaeger

Work Experience

NUCLEAR WORK:

POSITION Health Physics Specialist
Pennsylvania Power & Light Co.
Susquehanna SES

DATES: November 1977 to Present

LOCATION: Susquehanna Steam Electric Station - Berwick, PA

DUTIES: Assisted in the development and writing of health physics procedures, based on FSAR and tech spec requirements, for a two unit BWR. (1050 MWE) Responsible for developing our health physics budget from pre-fuel load through Unit 1 outage. Procured the bulk of equipment and supplies required for normal operation and outage situations. Supervised 10 Health Physics Monitors for the past year and a half since they were brought into our section. Spent five days (Mar. 28-Apr. 2) at TMI providing health physics support to Met-Ed. This support was in the form of on-site radiological surveys, aerial surveys, job coverage for any entry to island, etc. Revamped our emergency materials budget as a result of the experience gained at TMI.

POSITION: Radiation Protection Man
Florida Power & Light Co.
Ft. Pierce, FLA

DATES: June 76' to June 77'

LOCATION: St. Lucie I

DUTIES: Radiation Protection Man - Joined the Health Physics Department at St. Lucie Nuclear Unit #1 (850 (MWE PWR) at start of fuel modification program. This program consisted of removing all the fuel from the reactor and changing faulty poison pins. Provided HP coverage for all phases of this job. This included radiation/contamination surveys, air and gas sampling, writing Radiation Work Permits and providing constant HP coverage for all hot work done in containment building. This project completed after five months and plant went back on line. Routine duties then consisted of conducting required (license) surveys, air samples, instrument calibrations, procedure review, etc. We also coordinated work with operations/maintenance and provided HP coverage where needed.

POSITION: Lead Shift Tech Nuclear Fuel Services

Dates: 1967 to June 1976

LOCATION: West Valley, N.Y.

DUTIES: Supervisor Technician - Waste Burial Site - Receive and monitor all radioactive waste from outside sources and our own waste. Determine which area of burial grounds to bury waste, oversee operation of burial and supervise six to eight operators. Maintain radiation and contamination control burial grounds, keep burial records and coordinate shipments.

Health Physics Coordinator - Supervised two junior technicians and provided HP coverage during our clean up effort following an incident in our fuel pool storage area. This task consisted of having an average of 10-15 contract personnel per shift who were indoctrinated, suited up and provided health physics coverage while working in highly contaminated areas. Dose rates were routinely 10-50R/hr.

Lead Shift Technician - Responsible for all aspects of health physics functions during off shifts and weekends at fuel reprocessing plant. Duties included conducting radiation surveys, air sampling, and personally entering and inspecting work areas before entry by operations/maintenance/contract personnel. Contract personnel averaged 20-30 men per shift. Determine dose rates, working times, shielding if required, respiratory and clothing requirements for work in grossly contaminated areas. Personally monitor all work in these areas to insure there were no overexposures.

EDUCATION: Hamburg High School, Hamburg, New York 1957 - 1961
U.S. Army Administration School; Fort Harrison, Indiana
"Personnel Administrative Specialist Course"
University of Maryland; extension courses in math and history
Labor Relations; plant level at Nuclear Fuel Services
Red Cross; several advanced first aid courses.

SPECIAL TRAINING/COURSES:

Radiation Protection Technology - Rockwell International (1 week)
Basic Health Physics - Harvard University (1 week)
Respiratory Protection Course - Los Alamos Lab. (3 days)
BWR Systems Course - General Electric (3 weeks)
BWR Design Technology - General Electric (3 weeks)
BWR Design Technology - General (3 weeks)
Instructors Course - PP&L (1 week)
Instructors Course - American Red Cross (multi-media, CPR)

PROFESSIONAL SOCIETIES:

Delaware Valley Society for Radiation Safety

CERTIFICATIONS:

Registered (1978) with the National Registry of Radiation Protection
Technologist (NPRPT) as a Radiation Protection Technologist

ATTACHMENT 5

Experience with Radiation - P. Jaeger

Isotope	Amount	Location	Duration	Type of Use
Mixed Fission, activated and corrosion products. By-product and Special nuclear material.	Trace to kilo-curie	Nuclear Fuel Svs., West Valley, NY	9 yrs.	Fuel Reprocessing
		Florida Power & Light St. Lucie I	1 yr.	Reactor H.P. Program

ATTACHMENT 6

RADIATION SAFETY TRAINING PROGRAM

Individuals working with licensed material will, as a minimum, receive Level I and Level II Health Physics Training or equivalent. To be qualified in Level I Health Physics an individual must demonstrate proficiency in the following areas as evidenced by passing a written exam. All training shall be conducted by Pennsylvania Power & Light personnel with lesson plans and instruction material approved by the Health Physics Supervisor. Retraining shall be conducted at least once every two years.

- Requirements of 10CFR19.12
- Radiation/Contamination (examples and controls)
- ALARA (Corporate commitments, meaning and individual responsbility)
- Personal Monitoring and Self-Survey Requirements
- Radiological Control Signs and Posting Requirements
- Radiological Control Signs and Posting Requirements o Radiation Exposure Control and Limits
- Radiation Emergency Plan and Applicable Procedures
- Prenatal Radiation Exposure

To be qualified in Level II Health Physics an individual must demonstrate proficiency in the following areas as evidenced by passing a written exam.

- All Level I Areas Listed Above
- ALARA
- Contamination Control and Self-Survey Requirements
- Fundamentals of Radioactivity
- Radiation Dose Units and Biological Effects
- Radiation and High Radiation Area Survey Techniques
- Principles of Radiation Sfaety (time, distance and shielding)
- Radiation Work Permits (RWP)
- Use of Protective Clothing/Devices

ATTACHMENT 7

LOW LEVEL RADWASTE HOLDING FACILITY
TABLE OF QUALITY ASSURANCE APPLICABIILTY

System, Equipment or Structures	Testing	Engineering	Installation or Construction	Manufacturing
The Building	No	Yes	No	N/A
Foundation	No	Yes	No	N/A
Building Framework	No	Yes	No	No
Building Shell	No	Yes	No	No
Floor Pad	No	Yes	No	No
Internal Shield Walls/Roof	No	Yes	No	No
Doors	No	Yes	No	No
The Overhead Crane	Yes	Yes	No	Yes
Ventilation System	Yes	Yes	Yes*	Yes
Floor Drains System	Yes	Yes	No	N/A
Fire Detection System	Yes	Yes	Yes	No
Fire Protection System	Yes	Yes	Yes	No
AC Power System	Yes	Yes	No	No
Radiation Monitoring System	Yes	Yes	Yes	Yes
Annunciator System	Yes	Yes	No	No
Grounding System	Yes	Yes	No	No
Communications System	Yes	Yes	No	No
Shipping Inspection Station	Yes	Yes	Yes	Yes

* Auto Shutdown Feature Only

ATTACHMENT 8

OPERATIONAL ACTIVITIES CONTROLLED BY PROCEDURE

Procedures governing the operation of the LLRWHF will be developed in accordance with Susquehanna SES FSAR Chapter 17.2. Procedures will consist of administrative procedures to control inventory, use and surveillance of the facility, and technical procedures for cask handling, container inspection, radiation surveys, etc. Many of the technical procedures will be existing plant procedures with LLRWHF considerations factored in.

ATTACHMENT 9

OPERATING CONCEPT OF THE LLRWHF

The LLRWHF will be used in the event that sufficient burial space is not available to PP&L. Upon commencement of facility use, PP&L will continue to dispose of waste as it can obtain burial space. The methodlogy for the unloading of the facility will be as follows:

1. time in storage of a particular container will not exceed 4 years.

2. associated charges and surcharges will be examined with respect to the burial site that is to be used.

3. upon examination of all parameters, the most cost-beneficial shipment will be made.

Surveillance of the facility inventory will consist of a quarterly inspection of one percent of the liner inventory that has been in storage for greater than 1 year. The inspection will consist of a visual inspection of the liner for corrosion or breach of integrity and a radiation and contamination survey. Due to the physical and chemical characteristics of dry active waste, inspection of DAW containers will only occur prior to shipment.