

April 9, 1997

Mr. Robert G. Byram  
Senior Vice President-Nuclear  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, PA 18101

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 (TAC NO. M98166)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 136 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 17, 1997.

This amendment would modify the Design Features Section 5.3.1 of the TSs to reflect the Atrium-10 design and would include a Siemens Power Corporation topical report in Section 6.9.3.2 to reflect mechanical design criteria for this fuel. This change would allow this fuel to be loaded into the core only under Operational Condition 5 (refueling) and does not permit startup or power operation using the Atrium-10 fuel.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly Federal Register Notice.

Sincerely,

/s/

Chester Poslusny, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-388

- Enclosures: 1. Amendment No. 136 to License No. NPF-22
- 2. Safety Evaluation

cc w/encls: See next page

*DFOI*

DISTRIBUTION

Docket File	JStolz	GHill(2)	WPasciak, RGN-I
PUBLIC	MO'Brien	JLyons	
PDI-2 Reading	CPoslusny	CGrimes	
SVarga	OGC <i>SL for 4/1/97</i>	ACRS	<i>#97-049</i>

OFF	PDI-2/PM <i>CP</i>	PDI-2/LA <i>MO'Brien</i>	BC:SRXB*	BC:TSB	OGC <i>MO'Brien</i>	PDI-2/D
NAME	CPoslusny:cw	MO'Brien	JLyons	CGrimes <i>CS</i>	<i>WYoung</i>	JStolz
DATE	<i>4/8/97</i>	<i>4/1/97</i>	04/02/97	<i>4/7/97</i>	<i>4/18/97</i>	<i>1/97</i>

OFFICIAL RECORD COPY  
DOCUMENT NAME: SU98166.AMD

**NRC FILE CENTER COPY**

9704220234 970409  
PDR ADOCK 05000388  
PDR



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

April 9, 1997

Mr. Robert G. Byram  
Senior Vice President-Nuclear  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, PA 18101

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2 (TAC NO. M98166)

Dear Mr. Byram:

The Commission has issued the enclosed Amendment No. 136 to Facility Operating License No. NPF-22 for the Susquehanna Steam Electric Station, Unit 2. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 17, 1997.

This amendment would modify the Design Features Section 5.3.1 of the TSs to reflect the Atrium-10 design and would include a Siemens Power Corporation topical report in Section 6.9.3.2 to reflect mechanical design criteria for this fuel. This change would allow this fuel to be loaded into the core only under Operational Condition 5 (refueling) and does not permit startup or power operation using the Atrium-10 fuel.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Biweekly Federal Register Notice.

Sincerely,

A handwritten signature in cursive script that reads "Chester Poslusny".

Chester Poslusny, Senior Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-388

Enclosures: 1. Amendment No.136 to  
License No. NPF-22  
2. Safety Evaluation

cc w/encls: See next page

Mr. Robert G. Byram  
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station,  
Units 1 & 2

cc:

Jay Silberg, Esq.  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street N.W.  
Washington, D.C. 20037

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

Bryan A. Snapp, Esq.  
Assistant Corporate Counsel  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. George Kuczynski  
Plant Manager  
Susquehanna Steam Electric Station  
Pennsylvania Power and Light Company  
Box 467  
Berwick, Pennsylvania 18603

Mr. J. M. Kenny  
Licensing Group Supervisor  
Pennsylvania Power & Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. Herbert D. Woodeshick  
Special Office of the President  
Pennsylvania Power and Light Company  
Rural Route 1, Box 1797  
Berwick, Pennsylvania 18603

Mr. K. Jenison  
Senior Resident Inspector  
U. S. Nuclear Regulatory Commission  
P.O. Box 35  
Berwick, Pennsylvania 18603-0035

George T. Jones  
Vice President-Nuclear Operations  
Pennsylvania Power and Light Company  
2 North Ninth Street  
Allentown, Pennsylvania 18101

Mr. William P. Dornsife, Director  
Bureau of Radiation Protection  
Pennsylvania Department of  
Environmental Resources  
P. O. Box 8469  
Harrisburg, Pennsylvania 17105-8469

Dr. Judith Johnsrud  
National Energy Committee  
Sierra Club  
433 Orlando Avenue  
State College, PA 16803

Mr. Jesse C. Tilton, III  
Allegheny Elec. Cooperative, Inc.  
212 Locust Street  
P.O. Box 1266  
Harrisburg, Pennsylvania 17108-1266

Chairman  
Board of Supervisors  
738 East Third Street  
Berwick, PA 18603



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-388

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.136  
License No. NPF-22

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for the amendment filed by the Pennsylvania Power & Light Company, dated March 17, 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

9704220236 970409  
PDR ADOCK 05000388  
P PDR

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-22 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No.136, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. PP&L shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and is to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: April 9, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 136

FACILITY OPERATING LICENSE NO. NPF-22

DOCKET NO. 50-388

Replace the following pages of the Appendix A Technical Specifications with enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE

5-6

6-20b

INSERT

5-6

6-20b

## **DESIGN FEATURES**

---

### **5.3 REACTOR CORE**

#### **FUEL ASSEMBLIES**

5.3.1 The reactor core shall contain 764 fuel assemblies.\* Each assembly consists of a matrix of Zircaloy clad fuel rods with an initial composition of non-enriched or slightly enriched uranium dioxide as fuel material and water rods or water channels. Limited substitutions of Zirconium alloy filler rods for fuel rods, in accordance with NRC-approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff-approved codes and methods, and shown by test or analyses to comply with all fuel safety design bases.\*\* A limited number of lead use assemblies that have not completed representative testing may be placed in non-limiting core regions. Reload fuel shall have a maximum lattice average enrichment of 4.5 weight percent U-235.

#### **CONTROL ROD ASSEMBLIES**

5.3.2 The reactor core shall contain 185 cruciform shaped control rod assemblies. The control material shall be boron carbide powder ( $B_4C$ ), and/or Hafnium metal. The control rod shall have a nominal axial absorber length of 143 inches. Control rod assemblies shall be limited to those control rod designs approved by the NRC for use in BWRs.

### **5.4 REACTOR COOLANT SYSTEM**

#### **DESIGN PRESSURE AND TEMPERATURE**

- 5.4.1 The reactor coolant system is designed and shall be maintained:
- a. In accordance with the code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements,
  - b. For a pressure of:
    1. 1250 psig on the suction side of the recirculation pumps.
    2. 1500 psig from the recirculation pump discharge to the jet pumps.
  - c. For a temperature of 575°F.

#### **VOLUME**

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is approximately 22,400 cubic feet at a nominal  $T_{ave}$  of 532°F.

---

\* ATRIUM™-10 fuel is only allowed in the reactor core in OPERATIONAL CONDITION 5.

\*\* The design bases applicable to ATRIUM™-10 fuel are those which are applicable to OPERATIONAL CONDITION 5.

## **ADMINISTRATIVE CONTROLS**

---

### **CORE OPERATING LIMITS REPORT** (Continued)

14. ANF-1125(P)(A) and ANF-1125(P)(A), Supplement 1, "ANFB Critical Power Correlation," April 1990.
15. NEDC-32071P, "SAFER/GESTR-LOCA Loss of Coolant Accident Analysis," GE Nuclear Energy, May 1992.
16. NE-092-001A, Revision 1, "Licensing Topical Report for Power Uprate With Increased Core Flow," Pennsylvania Power & Light Company, December 1992.
17. NRC SER on PP&L Power Uprate LTR (November 30, 1993).
18. PL-NF-90-001, Supplement 1-A, "Application of Reactor Analysis Methods for BWR Design and Analysis: Loss of Feedwater Heating Changes and Use of RETRAN MOD 5.1," September 1994.
19. PL-NF-94-005-P-A, "Technical Basis for SPC 9x9-2 Extended Fuel Exposure at Susquehanna SES," January 1995.
20. NEDE-24011-P-A-10, "General Electric Standard Application for Reactor Fuel," February 1991.
21. PL-NF-90-001, Supplement 2, "Application of Reactor Analysis Methods to BWR Design and Analysis: CASMO-3G Code and ANFB Critical Power Correlation."
22. ANF-89-98(P)(A) Revision 1 and Revision 1 Supplement 1, "Generic Mechanical Design Criteria for BWR Fuel Designs" Advanced Nuclear Fuels Corporation, May 1995.

6.9.3.3 The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, transient analysis limits and accident analysis limits) of the safety analysis are met.

### **6.10 RECORD RETENTION**

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

- 6.10.1 The following records shall be retained for at least 5 years:
- a. Records and logs of unit operation covering time interval at each power level.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.136 TO FACILITY OPERATING LICENSE NO. NPF-22

PENNSYLVANIA POWER & LIGHT COMPANY

ALLEGHENY ELECTRIC COOPERATIVE INC.

SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

DOCKET NO. 50-388

1.0 INTRODUCTION

By letter dated March 17, 1997, Pennsylvania Power and Light Company (the licensee) submitted a request for changes to the Susquehanna Steam Electric Station (SSES), Unit 2, Technical Specifications (TSs). The requested changes would modify the Design Features Section 5.3.1 of the TSs to reflect the Atrium-10 design and would include a Siemens Power Corporation (SPC) topical report in Section 6.9.3.2 to reflect mechanical design criteria for this fuel. This change would allow this fuel to be loaded into the core only under Operational Condition 5 (refueling) and does not permit startup or power operation using the Atrium-10 fuel.

2.0 EVALUATION

Fuel Characteristics and Criticality

The ATRIUM-10 fuel design is a 10x10 lattice design which contains 83 full length rods, 8 part length rods, and a central water channel.

Criticality calculations were performed to ensure that ATRIUM-10 fuel with a lattice average enrichment of 4.5 percent can be safely stored in the new fuel vault and the spent fuel storage pool at SSES. These SPC analyses used the KENO Monte Carlo code. The results demonstrated that the maximum  $k_{eff}$  of both the new fuel vault and spent fuel storage pool will not exceed 0.95 under the worst credible storage array or accident conditions. The staff finds these results acceptable. It is noted that TS Section 5.3.1 states that the fuel is clad with zircaloy. This is not changed because the current and new ATRIUM-10 fuel both are clad with the same material.

Section 5.3.1 would be revised to reflect the use of a central water channel in the ATRIUM-10 design. Reference to a 150 inch active fuel length is removed. The staff finds these changes acceptable because Condition 5 does not permit startup or operation and precludes criticality for fuel loaded into the core. Also, the maximum enrichment is increased from 4.0 to 4.5 weight percent  $^{235}\text{U}$  to accommodate ATRIUM-10 fuel. Footnotes are also added to state that the ATRIUM-10 fuel is only allowed in the reactor core in Operational Condition 5 and that the design bases applicable to ATRIUM-10 fuel are those which are applicable to Operational Condition 5. This TS change restricting the fuel to refueling conditions is acceptable to the staff.

### Core Loading Evaluation

The licensee also stated that the ATRIUM-10 fuel weighs approximately the same as the current 9x9 fuel and is compatible with the refueling platform main grapple. Hence the refueling platform main hoist is sufficient to handle the new fuel. Further, the ATRIUM-10 fuel channel design is identical to that of the current fuel and its lower tie plate has similar dimensions to the current fuel. The staff finds that this new fuel can be safely loaded into the reactor core because it is physically similar to the current 9x9 fuel.

Support of fuel load in Operational Condition 5 requires consideration of core shutdown margin (SDM) and fuel bundle mechanical integrity. Core SDM is defined as the amount of shutdown core reactivity with all the control rods inserted and with the strongest worth control rod fully withdrawn at 68° F and at zero Xenon concentration. The licensee's methodology for calculating SDM is contained in References 4 and 5, both previously approved by the NRC. Core SDM for beginning of cycle loading is greater than 1.00%  $\Delta k/k$ , which satisfies the TS value of 0.38%  $\Delta k/k$ . Therefore, the staff finds that the ATRIUM-10 fuel can be loaded and placed in its planned Cycle 9 configuration and remain subcritical with the strongest worth control rod withdrawn.

The Fuel and Equipment Handling Accidents were also considered. Since the ATRIUM-10 fuel is unexposed and the bundle weight is approximately the same as for the 9x9-2 design, the Fuel Handling Accident involving the drop of an ATRIUM-10 bundle with its dose consequences is bounded by the current 9x9-2 analysis.

### Mechanical Design

TS Section 6.9.3.2 would be revised to include the NRC-approved topical report ANF-89-98(P)(A) Revision 1 and Revision 1, Supplement 1, "Generic Mechanical Design Criteria for BWR Fuel Designs," (Reference 1) describing the criteria used by SPC to design boiling-water reactor (BWR) fuel assemblies. The ATRIUM-10 mechanical design has been analyzed according to this generic mechanical design criteria.

SPC mechanical design calculations using the above NRC-approved methodology demonstrate that ATRIUM-10 complies with the criteria. This plant-specific application of the NRC-approved criteria is acceptable by the staff along with the proposed TS reference change.

In conclusion, the proposed changes to the SSES Unit 2 TS support loading of ATRIUM-10 fuel during Operational Condition 5. Approved methodologies are used to analyze shutdown margin and fuel bundle integrity during fuel loading in Operational Condition 5. The staff has concluded that all applicable limits for CONDITION 5, refueling, such as nuclear (shutdown margin), and accident analysis limits are met. Therefore, the changes are acceptable.

### 3.0 EXIGENT CIRCUMSTANCES

The licensee submitted an application on December 18, 1996, Reference 2, which would allow the use of ATRIUM-10 fuel for the upcoming fuel cycle. Subsequently, the licensee became aware that the NRC staff review of Reference 2 would not be completed without delaying the loading of this fuel during Operational Condition 5 and delaying planned refueling outage activities. Accordingly, the licensee promptly submitted the March 17, 1997, application to allow loading of the ATRIUM-10 during the pendency of the staff's review of the December submittal.

Based on the above, pursuant to 10 CFR 50.91(a)(6), the staff has found that exigent circumstances exist, in that both the licensee and the Commission must act quickly and that time does not permit the Commission to publish a FEDERAL REGISTER notice allowing 30 days for prior public comment. The staff has also determined that the licensee has exercised its best efforts to submit the proposed amendment promptly, and as discussed below, that the amendment involves no significant hazards considerations.

### 4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any previously evaluated; or (3) involve a significant reduction in a margin of safety.

The licensee has analyzed the proposed amendment to determine if a significant hazard consideration exists:

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The description of a fuel assembly (Section 5.3.1) is revised to reflect the fact that ATRIUM<sup>TM</sup>-10 contains a central water channel. Since the active fuel length of ATRIUM<sup>TM</sup>-10 is different from that of 9x9-2, reference to an active fuel length of 150 inches is no longer appropriate and was deleted. There is no safety significance to these changes.

Due to the limitation of this proposed change to Operational Condition 5, only a subset of the accident events analyzed in the FSAR [Final Safety Analysis Report] needed to be addressed. All other events were considered and the addition of ATRIUM<sup>TM</sup>-10 fuel to the reactor core in Operational Condition 5 did not increase the probability or consequences of an accident previously evaluated. The events considered are described below.

The maximum allowed enrichment (Section 5.3.1) is increased from 4.0 to 4.5 weight percent  $U_{235}$ . Criticality calculations were performed with a KENO Monte Carlo code to ensure that ATRIUM<sup>TM</sup>-10 fuel with a lattice average enrichment of 4.5 weight percent  $U_{235}$  can be safely stored in both the new fuel vault and the spent fuel storage pool at Susquehanna. These calculations demonstrated, consistent with current Technical Specifications, that the maximum k-effective of both the new fuel vault and spent fuel storage pool will not exceed 0.95 under the worst credible storage array or accident conditions.

The ATRIUM<sup>TM</sup>-10 fuel assembly is unirradiated and its weight is nearly identical to the current SPC 9x9-2 fuel assembly weight as well as being less than the fuel assembly weight used in the 9x9-2 analyses (680 lbs.). The dose consequences of the current 9x9-2 licensing analyses of the Fuel and Equipment Handling Accidents bound the dose consequences of a Fuel Handling Accident involving ATRIUM<sup>TM</sup>-10 fuel.

The grappling of the ATRIUM<sup>TM</sup>-10 fuel is similar to the 9x9-2, due to the similar bail handle dimensions and assembly weights. Therefore, ATRIUM<sup>TM</sup>-10 fuel is completely compatible with the refueling platform main grapple. Because the assembly weights of the ATRIUM<sup>TM</sup>-10 fuel and the 9x9-2 fuel are essentially the same, the capacity of the refueling platform main hoist will be sufficient to handle the ATRIUM<sup>TM</sup>-10 fuel. Also, the ATRIUM<sup>TM</sup>-10 fuel uses the identical fuel channel design as the 9x9-2 fuel and the lower tie plate has very similar outside dimensions. Therefore, the ATRIUM<sup>TM</sup>-10 fuel is compatible with, and can be safely inserted/placed into the reactor core.

Storage of channelled ATRIUM<sup>TM</sup>-10 fuel in the Reactor Core was evaluated. Core shutdown margin calculations were performed using NRC approved methodology for the beginning of cycle core configuration. Validation of the shutdown margin methodology as it applies to ATRIUM<sup>TM</sup>-10 was done through comparisons to Siemens' Power Corporation analyses and higher-order Monte Carlo calculations. Calculated core shutdown margin for the beginning of cycle core loading is greater than 1.00% $\Delta$ k/k which far exceeds the Technical Specification value of 0.38% $\Delta$ k/k. Therefore, ATRIUM<sup>TM</sup>-10 fuel can be placed into the U2C9 final core configuration with assurance that the core will remain subcritical with the strongest worth rod withdrawn. A positive core shutdown margin assures protection against the control rod removal error during refueling (FSAR Section 15.4.1.1) because subcriticality is maintained.

In addition, the ATRIUM<sup>TM</sup>-10 fuel assembly dimensions critical to interface with the Spent Fuel Storage Pool and Reactor Vessel are essentially the same as the 9x9-2 design. Therefore, the ATRIUM<sup>TM</sup>-10 can be properly stored.

Included in the revised Technical Specifications via reference (Section 6.9.3.2) is one NRC approved topical report containing the criteria for the design of Siemens Power Corporation fuel. SPC analyses have demonstrated that ATRIUM™-10 fuel complies with the NRC approved criteria thus assuring the structural integrity of the fuel. Compliance with the criteria applicable to Operational Condition 5 assures that ATRIUM™-10 fuel can be safely stored in the spent fuel pool and loaded in the Unit 2 reactor core during Operational Condition 5.

Based on the foregoing, the proposed action does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The changes to the Unit 2 Technical Specifications (Design Features and inclusion of the methodology reference) to allow Operational Condition 5 loading of ATRIUM-10 fuel do not require any physical plant modifications (other than loading of the ATRIUM™-10 assemblies), physically affect any plant components, or entail changes in plant operation. ATRIUM™-10 fuel assemblies have approximately the same weight, outer dimensions, and the same basic bail handle design as 9x9-2 fuel assemblies and are handled in the same manner as 9x9-2 fuel assemblies. Thus, the proposed change does not create the possibility of a previously unevaluated operator error.

The topical report reference added to Section 6.9.3.2 contains NRC approved acceptance criteria. SPC analyses have been performed according to their Quality Assurance Program which demonstrate compliance with these NRC approved fuel design criteria. Thus, the ATRIUM™-10 fuel will maintain its structural integrity during core loading.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

The changes to the Unit 2 Technical Specifications discussed in Item 1 above (Design Features and inclusion of the mechanical design methodology reference) will allow loading of ATRIUM-10 fuel in Operational Condition 5. The proposed change does not require any physical plant modifications (other than the loading of the ATRIUM™-10 fuel), physically affect any plant components, or entail changes in plant operation. Therefore, the proposed change will not jeopardize or degrade the function or operation of any plant system or

component governed by Technical Specifications. The analyses performed provide assurance that the ATRIUM™-10 fuel will remain subcritical during storage and core loading and meets the requirements of Technical Specification 5.6 and, thus, an equivalent margin of safety is maintained.

ATRIUM™-10 fuel assemblies have approximately the same weight, outer dimensions, and the same basic bail handle design as 9x9-2 fuel assemblies and are handled in the same manner as 9x9-2 fuel assemblies. The dose consequences of the Fuel and Equipment Handling Accidents are not increased and, thus, an equivalent margin of safety is maintained.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above considerations, the staff concludes that the amendment meets the standards set forth in 10 CFR 50.92 for a no significant hazards determination. Therefore, the staff has made a final determination that the proposed amendment involves no significant hazards consideration.

#### 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (62 FR 14167). The amendment also relates to changes in recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 7.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such

activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: G. Golub

Date: April 9, 1997

## 8.0 REFERENCES

1. ANF-89-98(P)(A) Revision 1 and Revision 1 Supplement 1, "Generic Mechanical Design Criteria for BWR Fuel Designs," Advanced Nuclear Fuels Corporation, May 1995.
2. Letter, Pennsylvania Power and Light to USNRC, "Proposed Amendment No. 166 to License NPF-22: Unit 2 Technical Specification Changes for ATRIUM-10 Fuel," December 18, 1996.
3. Letter, Pennsylvania Power and Light to USNRC, "Addendum to Proposed Amendment No. 166 to License NPF-22: Revised ANFB Methodology and Core Flow Dependent MCPR Safety Limits," March 12, 1997.
4. PL-NF-90-001-A, "Application of Reactor Analysis Methods for BWR Design and Analysis," July 1992.
5. PL-NF-90-001, Supplement 2-A, "Application of Reactor Analysis Methods to BWR Design Analysis" CASMO-3G Code and ANFB Critical Power Correlation," July 1996.