

February 4, 1997

Mr. George A. Hunger, Jr.  
Director-Licensing, MC 62A-1  
PECO Energy Company  
Nuclear Group Headquarters  
Correspondence Control Desk  
P.O. Box No. 195  
Wayne, PA 19087-0195

SUBJECT: LIMERICK GENERATING STATION, UNITS 1 AND 2 (TAC NOS. M97283 AND M97284)

Dear Mr. Hunger:

The Commission has issued the enclosed Amendment No. 121 to Facility Operating License No. NPF-39 and Amendment No. 85 to Facility Operating License No. NPF-85 for the Limerick Generating Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated November 25, 1996.

These amendments revise the wording in TS Section 4.8.1.1.2.e.2 and the associated TS Bases Section 3/4.8, to remove the specific reference to the Residual Heat Removal (RHR) pump motor and its corresponding kW rating value, and replace it with wording consistent with that specified in the Improved TS (i.e., NUREG-1433, Revision 1, "Standard Technical Specifications General Electric Plants," dated April 1995).

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/  
Frank Rinaldi, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352/353

- Enclosures: 1. Amendment No. 121 to License No. NPF-39
- 2. Amendment No. 85 to License No. NPF-85
- 3. Safety Evaluation

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

February 4, 1997

Mr. George A. Hunger, Jr.  
Director-Licensing, MC 62A-1  
PECO Energy Company  
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These amendments revise the wording in TS Section 4.8.1.1.2.e.2 and the associated TS Bases Section 3/4.8, to remove the specific reference to the Residual Heat Removal (RHR) pump motor and its corresponding kW rating value, and replace it with wording consistent with that specified in the Improved TS (i.e., NUREG-1433, Revision 1, "Standard Technical Specifications General Electric Plants," dated April 1995).

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, appearing to read "Frank Rinaldi".

Frank Rinaldi, Project Manager  
Project Directorate I-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352/353

Enclosures: 1. Amendment No. 121 to  
License No. NPF-39  
2. Amendment No. 85 to  
License No. NPF-85  
3. Safety Evaluation

cc w/encls: See next page

Mr. George A. Hunger, Jr.  
PECO Energy Company

Limerick Generating Station,  
Units 1 & 2

cc:

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Chairman  
Board of Supervisors  
of Limerick Township  
646 West Ridge Pike  
Linfield, PA 19468



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

PHILADELPHIA ELECTRIC COMPANY  
DOCKET NO. 50-352  
LIMERICK GENERATING STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.121  
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company (the licensee) dated November 25, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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;
  - 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.

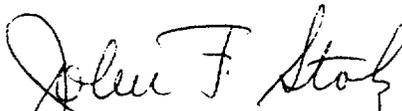
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-39 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 121, are hereby incorporated into this license. Philadelphia Electric Company 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 shall 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: February 4, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 121

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

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

Remove

3/4 8-4

B 3/4 8-2

Insert

3/4 8-4

B 3/4 8-2

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- b. By removing accumulated water:
  - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  - 2) From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:
  - 1) By verifying in accordance with the tests specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:
    - a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.
    - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification.
    - c) A flash point equal to or greater than 125°F, and
    - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.
  - 2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-78, Method A, except that the filters specified in ASTM D2276-78, Sections 5.1.6 and 5.1.7, may have a nominal pore size of up to three (3) microns.
- e. At the following frequency by:
  - 1. Every 18 months subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
  - 2. Every 24 months verify each diesel generator's capability to reject a load of greater than or equal to that of its single largest post-accident load while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts.

## ELECTRICAL POWER SYSTEMS

### BASES

#### A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

"Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977 except for paragraphs C.2.a(3), C.2.c(1), C.2.c(2), C.2.d(3) and C.2.d(4), and the periodic testing will be performed at least once per 24 months. The exceptions to Regulatory Guide 1.108 allow for gradual loading of diesel generators during testing and decreased surveillance test frequencies (in response to Generic Letter 84-15). The single largest post-accident load on each diesel generator is the RHR pump.

The surveillance requirements for demonstrating the OPERABILITY of the units batteries are in accordance with the recommendations of Regulatory Guide 1.129 "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978 and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," except that certain tests will be performed at least once every 24 months.

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8.2.1-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8.2.1-1 is permitted for up to 7 days. During this 7-day period: (1) the allowable value for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.



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

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-353

LIMERICK GENERATING STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 85  
License No. NPF-85

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Philadelphia Electric Company (the licensee) dated November 25, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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;
  - 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.

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 Facility Operating License No. NPF-85 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 85 , are hereby incorporated in the license. Philadelphia Electric Company 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 shall be effective 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: February 4, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 85

FACILITY OPERATING LICENSE NO. NPF-85

DOCKET NO. 50-353

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

Remove

3/4 8-4

B 3/4 8-2

Insert

3/4 8-4

B 3/4 8-2

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

- b. By removing accumulated water:
  - 1) From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  - 2) From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:
  - 1) By verifying in accordance with the tests specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:
    - a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.
    - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification.
    - c) A flash point equal to or greater than 125°F, and
    - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.
  - 2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-78, Method A, except that the filters specified in ASTM D2276-78, Sections 5.1.6 and 5.1.7, may have a nominal pore size of up to three (3) microns.
- e. At the following frequency by:
  - 1. Every 18 months subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.
  - 2. Every 24 months verify each diesel generator's capability to reject a load of greater than or equal to that of its single largest post-accident load while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts.

## ELECTRICAL POWER SYSTEMS

### BASES

#### A.C. SOURCES, D.C. SOURCES, and ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

Supplies, March 10, 1971, Regulatory Guide 1.137 "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979 and Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977 except for paragraphs C.2.a(3), C.2.c(1), C.2.c(2), C.2.d(3) and C.2.d(4), and the periodic testing will be performed at least once per 24 months. The exceptions to Regulatory Guide 1.108 allow for gradual loading of diesel generators during testing and decreased surveillance test frequencies (in response to Generic Letter 84-15). The single largest post-accident load on each diesel generator is the RHR pump.

The surveillance requirements for demonstrating the OPERABILITY of the units batteries are in accordance with the recommendations of Regulatory Guide 1.129 "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978 and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," except that certain tests will be performed at least once every 24 months.

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates and compares the battery capacity at that time with the rated capacity.

Table 4.8.2.1-1 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8.2.1-1 is permitted for up to 7 days. During this 7-day period: (1) the allowable value for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than 0.040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 121 AND 85 TO FACILITY OPERATING

LICENSE NOS. NPF-39 AND NPF-85

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNITS 1 AND 2

DOCKET NOS. 50-352 AND 50-353

1.0 INTRODUCTION

By letter dated November 25, 1996, the Philadelphia Electric Company (the licensee) submitted a request for changes to the Limerick Generating Station (LGS), Units 1 and 2, Technical Specifications (TSs). The requested changes would revise the wording in TS Section 4.8.1.1.2.e.2 and the associated TS Bases Section 3/4.8, to remove the specific reference to the Residual Heat Removal (RHR) pump motor and its corresponding kW rating value, and replace it with wording consistent with that specified in the Improved TS (i.e., NUREG-1433, Revision 1, "Standard Technical Specifications General Electric Plants," dated April 1995).

2.0 EVALUATION

The proposed TSs changes involve revising TS Surveillance Requirement (SR) 4.8.1.1.2.e.2, and supporting TS Bases Section 3/4.8, to clarify the requirements associated with performing single load rejection testing of the Emergency Diesel Generators (EDGs). Currently, TS SR 4.8.1.1.2.e.2 reads as follows for LGS, Units 1 and 2:

Every 24 months verify the diesel generator capability to reject a load of greater than or equal to that of the RHR Pump Motor (992 Kw) for each diesel generator while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts."

The proposed TS wording for LGS, Units 1 and 2 reads as follows:

Every 24 months verify each diesel generator's capability to reject a load of greater than or equal to that of its single largest post-accident load while maintaining voltage at  $4285 \pm 420$  volts and frequency at  $60 \pm 1.2$  hz and after steady state conditions are reached, voltage is maintained at  $4280 \pm 120$  volts."

The current TSs for both units require that every 24-months each EDG be tested to verify its capability to reject a load of greater than or equal to that of the Residual Heat Removal (RHR) pump motor while maintaining voltage and frequency within established parameters. The proposed TSs for both units remove the specific reference made to the RHR pump motor, and replace it with wording consistent with that delineated in the Improved TS (i.e., NUREG-1433, Revision 1, "Standard Technical Specifications General Electric Plants") while maintaining the existing voltage and frequency parameters. The licensee also proposes to revise TS Bases to include a statement clarifying that the single largest post-accident load on each EDG is the RHR pump motor.

The approval of the proposed TS changes will provide to the licensee greater flexibility in performing future plant maintenance activities (i.e., replacement of a pump motor or addition of a new post-accident load on the 4kV emergency buses) at LGS, Units 1 and 2.

NUREG-1433, Revision 1, TS SR 3.8.1.9 states:

Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and...."

Also, the supporting Bases state that each EDG is provided with an overspeed trip to prevent damage to the engine. Recovery from a transient caused by the loss of a large electrical load could cause the EDG engine to overspeed, which, if excessive, might result in the trip of the engine. This requirement demonstrates the EDG load response characteristics and capability to reject the single largest post-accident electrical load without exceeding predetermined voltage and frequency parameters and maintaining a specified margin to the overspeed trip.

The largest electrical loads connected to the 4kV emergency buses are the drywell chillers, which are non-safety related loads, and are shed upon receipt of a Loss-of-Coolant-Accident (LOCA) or Loss-of-Offsite-Power (LOOP) signal. Also, if the EDGs are the only source of AC power, then the drywell chillers cannot be started since the drywell chilled water circulation pumps cannot be operated under LOOP conditions. With the drywell chilled water pumps not operating, pressure differential and low-flow switches prevent the starting of the drywell chillers. Therefore, they are not considered the single largest post-accident load under LOOP conditions when the EDGs are supplying the 4kV emergency buses. The RHR pump motors are the single largest post-accident loads on the 4kV emergency buses.

Also, the licensee has addressed the condition when non-safety-related power is restored while the diesel generators are supplying the 4kV emergency buses. Administrative controls prevent the drywell chillers from being started until the normal offsite power is restored to the 4kV emergency buses and the EDGs are disconnected from the emergency buses. The existing administrative controls are contained in PECO's procedure E-10/20, "Loss of Offsite Power," which requires that offsite power be restored and the EDGs shutdown prior to starting the drywell chilled water system.

The staff finds that the proposed TS changes are consistent with the requirements stipulated in NUREG-1433, Revision 1, and agrees that no changes are being made to the existing voltage and frequency parameters. Further, the staff agrees that the licensee is not modifying any existing EDG testing methods or testing frequencies, and that the largest post-accident electrical load on each 4kV emergency bus is the RHR pump motor. Based on the above discussion the staff concludes that the proposed TSs changes are acceptable.

### 3.0 STATE CONSULTATION

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

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (61 FR 66716). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

### 5.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: F. Rinaldi

Date: February 4, 1997