

January 5, 1987

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Docket No. 50-352

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Mr. Edward G. Bauer, Jr.  
Vice President and General Counsel  
Philadelphia Electric Company  
2301 Market Street  
Philadelphia, Pennsylvania 19101

Dear Mr. Bauer:

SUBJECT: FEDERAL REGISTER NOTICE

RE: Limerick Generating Station, Unit 1

Enclosed is an Individual Notice of Consideration of Issuance of Amendment to Facility Operating License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing. This amendment was requested by your letter dated November 17, 1986, as amended December 22, 1986. This Notice was forwarded to the Office of the Federal Register for publication.

Sincerely,

~~Original signed by~~

Robert E. Martin, Project Manager  
BWR Project Directorate No. 4  
Division of BWR Licensing

Enclosure:  
As stated

cc w/enclosure:  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

January 5, 1987

Docket No. 50-352

Mr. Edward G. Bauer, Jr.  
Vice President and General Counsel  
Philadelphia Electric Company  
2301 Market Street  
Philadelphia, Pennsylvania 19101

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SUBJECT: FEDERAL REGISTER NOTICE

RE: Limerick Generating Station, Unit 1

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Sincerely,

*Robert E. Martin*  
Robert E. Martin, Project Manager  
BWR Project Directorate No. 4  
Division of BWR Licensing

Enclosure:  
As stated

cc w/enclosure:  
See next page

Mr. Edward G. Bauer, Jr  
Philadelphia Electric Company

Limerick Generating Station  
Units 1 & 2

cc:

Troy B. Conner, Jr., Esquire  
Conner and Wetterhahn  
1747 Pennsylvania Ave, N.W.  
Washington, D. C. 20006

Chairman Board of Supervisors of  
Limerick Township  
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Limerick, Pennsylvania 19468

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Office of General Counsel  
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Frank R. Romano, Chairman  
Air & Water Pollution Patrol  
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Federic M. Wentz  
County Solicitor  
County of Montgomery  
Courthouse  
Norristown, Pennsylvania 19404

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ATTN: Director, Office Radiologic  
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Mr. John Franz, Plant Manager  
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Mr. David Stone  
Limerick Ecology Action, Inc.  
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Pottstown, Pennsylvania 19464

Mr. Karl Abraham  
Public Affairs Officer  
Region I  
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Harrisburg, Pennsylvania 17102

cc:

Director, Pennsylvania Emergency  
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Basement, Transportation &  
Safety Building  
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Washington, D. C. 20555

Dr. Jerry Harbour  
Administrative Judge  
Atomic Safety & Licensing Board  
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Washington, D. C. 20555

Mr. Spence W. Perry, Esq.  
Associate General Counsel  
Federal Emergency Management Agency  
Room 840  
500 C St., S.W.  
Washington, D. C. 20472

UNITED STATES NUCLEAR REGULATORY COMMISSIONPHILADELPHIA ELECTRIC COMPANYDOCKET NO. 50-352NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE AND PROPOSED NO SIGNIFICANT HAZARDS  
CONSIDERATION DETERMINATION AND OPPORTUNITY FOR HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-39 issued to Philadelphia Electric Company for operation of the Limerick Generating Station, Unit 1, located in Montgomery County, Pennsylvania.

The proposed amendment would change the Technical Specifications (TS) and would satisfy a condition to the facility operating license in accordance with the licensee's application for amendment dated November 17, 1986 as amended on December 22, 1986. The proposed changes would revise Technical Specification (TS) 3/4.2.3 "Minimum Critical Power Ratio," TS Table 3.3.6-2, "Control Rod Block Instrumentation Setpoints," and TS 4.4.1.1.2, "Reactor Coolant System-Surveillance Requirements." License Condition 2.C(13), "Operation With Partial Feedwater Heating at End-of-Cycle" would be satisfied since the basis for the condition, namely that the applicable safety analyses to permit operation with partial feedwater heating (PFH) had not been performed, has been satisfied by the submittal of such analysis by the licensee. The reason for these changes is to permit operation of the unit with PFH and increased core flow (ICF) in order to extend the fuel cycle and provide increased operational flexibility. The proposed increase in core flow up to 105 percent of rated flow and the proposed

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decrease in feedwater temperature by up to 60°F tend to decrease the percentage of voiding in the coolant in the reactor core. This results in increased moderator density with an attendant increase in reactivity and hence power level. The ability to thus increase power level above that which the reactor would otherwise be capable of without PFH and ICF late in the fuel cycle is desirable to offset the reduction in power production late in the fuel cycle due to depletion of fissionable material. While continuing to meet all safety analysis acceptance criteria, the proposed changes will result in operations at a relatively higher power level for several months and will also provide an estimated one to two weeks extension of full power cycle length. This amendment does not involve an increase above the currently licensed power level.

The proposed changes consist of the following:

- a. The minimum critical power ratio (MCPR) limits in TS 3/4.2.3 would be revised by the addition of specified MCPR limits for operation with ICF and PFH as shown on TS pages 3/4 2-8, 8a, 9, Figure 3.2.3-1a and Figure 3.2.3-1b. The additional limits for operation with ICF and PFH ensures that abnormal operational transients initiated when operating with ICF and PFH do not result in violation of the safety limit MCPR. The safety limit MCPR is unchanged from the value previously provided in the Final Safety Analysis Report (FSAR).
- b. The addition of a "high flow clamped" trip setpoint limit of 106 percent and allowable value of 109 percent of rated flow for the rod block monitor upscale alarm in TS Table 3.3.6-2 ensures that the rod blocks currently included in the TS cannot be exceeded. This is the same requirement that has been in effect since initial plant operation.

c. Changing the control rod block instrument setpoints for the reactor coolant system recirculation flow upscale trip setpoint from 108 to 111 percent of rated flow and the allowable value from 111 to 114 percent of rated flow in TS Table 3.3.6-2 ensures that the indication and alarm functions for this parameter will be provided to the operators at a sufficiently greater value than the 105 percent upper limit core flow to allow for hardware uncertainties and signal noise. This parameter serves an indication and alarm function only to the plant operator and is not directly involved in plant protective actions and safety analyses.

d. Changing the recirculation pump motor-generator set scoop tube mechanical overspeed stop setpoint from 105 to 109 percent and the electrical overspeed stop setpoint from 102.5 to 107 percent of rated core flow in TS 4.4.1.1.2 provides adequate margin to allow the recirculation pump to operate up to 105 percent of rated flow.

e. An addition to the list of references on page B 3/4 2-5 has been made to reflect the analysis report provided in support of the amendment application. A change to index page xi has been made to reflect the additional table and figure for the MCPR limits.

The licensee proposes to make these changes to the TS to extend the Cycle 1 operating time by several months by operating at reduced thermal power with commensurate feedwater temperature and steam pressure conditions. Continued operation is possible because reduced steam voids, reduced fuel temperature and reduced equilibrium xenon yield reactivity gains which compensate for reactivity losses due to depletion of fissionable material near the end of the fuel cycle. The amendment does not involve an increase above the currently licensed power level.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that 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; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The licensee has provided analyses of significant hazards considerations in its request for a license amendment. The licensee has concluded with appropriate bases, that the proposed amendment satisfies the standards in 10 CFR 50.92 and, therefore, involves no significant hazards considerations.

The NRC staff has made a preliminary review of the licensee's submittals. The staff's evaluation of the proposed changes is provided below.

Standard 1 - Involve a significant increase in the probability or consequences of an accident previously evaluated.

The anticipated operational occurrences (AOOs) and accidents that have the potential for being impacted by the proposed changes are generator load rejection with steam bypass failure (LRNRP), feedwater controller failure to maximum demand (FWCF), FWCF without bypass, FWCF without bypass and recirculation pump trip, MSIV closure with flux scram, rod withdrawal error, fuel loading error, rod drop accident, LOCA and ATWS. All these AOOs and accidents

have been reassessed to determine the consequences resulting from the proposed changes. The results of these assessments show that the consequences are within the appropriate acceptance criteria discussed below.

Standard Review Plan (SRP) 15.1.2 requires that increase in feedwater flow events be evaluated and SRP 15.2.1-15.2.5 requires that loss of load and closure of MSIVs be evaluated considering the potential for fuel damage or excessive reactor system pressure. The acceptance criteria are that the critical power ratio must remain above the MCPR safety limit and that system pressure should be maintained below 110 percent of the design value. The results of the FWCF and the FWCF without bypass or recirculation pump trip analyses indicate that the MCPR remains above the safety limit value of 1.06 and that system pressure is well below the limit of 1375 psig. The results of the LRNDP and the MSIV closure, which is the limiting overpressure transient, indicate that MCPR remains above the safety limit value of 1.06 and that peak vessel pressure does not exceed 1273 psig, thus maintaining a 102 psig margin to the limit of 1375 psig.

The rod withdrawal error transient was evaluated. As shown in TS Table 3.3.6-2 the control rod block monitor upscale trip setpoint is a function of flow rate,  $V$ , and would increase to a value of 106 percent at rated flow conditions. Operating with ICF, without other compensations, would allow this setpoint to increase beyond 106 percent. Therefore the licensee has limited or "clipped" the trip setpoint to a maximum value of 106 percent. Thus the results of this transient are unchanged.

SRP 15.4.7 specifies that the worst case fuel loading error be determined and that the effect on reactor power distribution be determined. The results

of the analysis considering ICF and PFH indicate that this does not become the limiting MCPR event nor does it reduce overall MCPR margin.

SRP 15.6.5 specifies the acceptance criteria for loss-of-coolant accidents. Results of analyses of the effects of ICF and PFH on peak cladding temperature (PCT) show that it increases by less than 10°F for the limiting break and that the previously established maximum average planar linear heat generation rates (MAPLHGRs) are applicable for ICF and PFH operations.

The results of analysis of effects of ICF and PFH on anticipated transients without scram (ATWS) show that performance is within design allowable limits for overpressure protection, core and fuel performance, containment performance and stability and that, furthermore, these results are bounded by the results of previously performed analyses.

The results of analysis of effects of ICF and PFH on containment performance show that the containment parameters are bounded by the results previously reported in the FSAR except for the drywell deck downward differential pressure, the pool swell loads, the condensation oscillation and chugging loads which are bounded by the previously established design values.

Therefore, since all AOO's and accidents which may have been impacted by the proposed changes have been analyzed and found to be acceptable, the proposed changes will not significantly increase the probability or consequences of any accident previously evaluated.

Standard 2 - Create the possibility of a new or different kind of accident from any accident previously evaluated.

Operation with ICF and PFH does not involve any equipment design changes. It effectively provides for normal plant operation in an increased area of

the power-flow operating map. While the events previously analyzed may be initiated from new operating conditions, no new path is created that could lead to a new or different kind of accident. With the incorporation of the new MCPR, rod block and recirculation pump speed limits, operation is kept within equipment design and regulatory limits. The licensee concluded, and staff agrees, that the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

### Standard 3 - Involve a Significant Reduction In a Margin of Safety

The purpose of the revised MCPR limits for operation with ICF and PFH is to ensure that AOC's initiated during ICF and PFH operations do not result in violation of the MCPR safety limit. In the analyses of AOCs the revised MCPR limits have been shown to be sufficient to accomplish this objective and thus preserve a margin to safety equivalent to that previously established.

As discussed above, the changes concerning the rod withdrawal error transient ensure that the margin is unchanged for this event.

The control rod block instrument setpoints for the recirculation flow trip setpoint are for the purpose of providing indication and alarms to the operator and thus have not been relied upon to establish the margin to design or safety limits. However, since the core flow would be increased by five percent and this trip setpoint would be increased by only three percent, the difference between the intended flowrate and the trip setpoint would be reduced thus enhancing its function as an indication and alarm of unintended high flow operation.

The recirculation pump motor-generator set mechanical and electrical overspeed stop setpoints have been increased from 105 to 109 percent and from

102.5 to 107 percent respectively. These setpoints will ensure that the set trips either on the mechanical or the electrical stops at either 107 or 109 percent of rated speed. The effect on plant design transients with a maximum core flow runout to 107 percent and 109 percent has been considered. Whereas the core flow rate would be increased by five percent the mechanical and electrical overspeed stops are only being increased by 4 and 4.5 percent, respectively, thus enhancing the function of the stops to prevent unintended high flow operation. The effects on the MCPR limits for flows up to 109 percent has also been considered.

The results of operation with ICF and PFH on the mechanical loads on reactor internals and fuel assemblies, the flow induced vibration of reactor internals and on the feedwater nozzle and sparger fatigue usage factors were also considered and found not to involve significant reductions in the margin of safety associated with these parameters.

Therefore, the operation of the facility in accordance with the proposed changes will not involve a significant reduction in a margin of safety.

Accordingly, the Commission proposes to determine that the proposed changes to the facility operating license and to the Technical Specifications to allow plant operations with increased core flow and partial feedwater heating does not involve significant hazards considerations.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination. The Commission will not normally make a final determination unless it receives a request for a hearing.

Written comments should be addressed to the Rules and Procedures Branch, Division of Rules and Records, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and should cite the publication date and page number of this FEDERAL REGISTER notice. Copies of comments received may be examined at the NRC Public Document Room, 1717 H Street, NW, Washington, D.C.

By February 9, 1987, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written petition for leave to intervene. Request for a hearing and petitions for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR §2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest

in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than fifteen (15) days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter, and the bases for each contention set forth with reasonable specificity. Contentions shall be limited to matters within the scope of the amendment under consideration. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and

make it effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attn: Docketing and Service Branch, or may be delivered to the Commission's Public Document Room, 1717 H Street, NW Washington, D.C., by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at (800) 325-6000 (in Missouri (800) 342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to Walter R. Butler, Director, BWR Project Directorate No. 4, Division of BWR Licensing: petitioner's name and telephone number; date petition was mailed; plant name; and publication date and page number of this FEDERAL REGISTER notice.

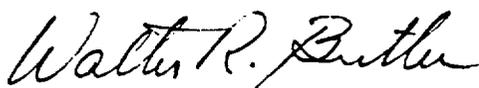
A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and to Conner and Wetterhahn, 1747 Pennsylvania Avenue, Washington, D.C. 20036, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board, that the petition and/or request should be granted based upon a balancing of factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment dated November 17, 1986, as amended on December 22, 1986, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, NW, Washington, D.C. 20555, and at the Pottstown Public Library, 500 High Street, Pottstown, Pennsylvania 19464.

Dated at Bethesda, Maryland, this 5th day of January, 1987.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Walter R. Butler, Director  
BWR Project Directorate No. 4  
Division of BWR Licensing

Docket



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

MAR 6 1986

MEMORANDUM FOR: Sholly Coordinator  
Division of BWR Licensing

FROM: Walter R. Butler, Director  
BWR Project Directorate No. 4  
Division of BWR Licensing

SUBJECT: REQUEST FOR PUBLICATION IN MONTHLY FR NOTICE - NOTICE OF  
ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

Philadelphia Electric Company, Docket No. 50-352, Limerick Generating Station,  
Unit 1, Montgomery County, Pennsylvania

Date of Amendment Request: December 18, 1985, January 29, February 5,  
February 25, and March 3, 1986.

Brief Description of Amendment: The amendment to Operating License NPF-39  
revises the Limerick Generating Station Unit 1 Technical Specification to  
provide a one-time-only extension of up to 12 weeks on the surveillance  
testing interval for certain containment isolation valves. The purpose of  
the amendment is to allow a combination of the isolation valve testing,  
which must be performed with the reactor in a shutdown condition, with  
other surveillance testing and maintenance activities to take place in an  
outage beginning on or before May 26, 1986. The NRC staff has concluded  
that the licensee's determinations that postponing the tests until  
May 26, 1986 will have little or no effect on containment integrity and  
will require no changes to the safety analyses are acceptable.

Date of Issuance: March 3, 1986

Effective Date: March 3, 1986

Amendment No.: 2

Facility Operating License No. NPF-39: Amendment revises the Technical  
Specifications.

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Handwritten initials/signature

Date of initial notice in the Federal Register: December 30, 1985

(50 FR 53235).

Comments Received: No timely comments were received.

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated March 3, 1986.

No Significant Hazards considerations comments received: No public comments were received within the time provided by the Federal Register notice of consideration of this amendment request.

Local Public Document Room Location: Pottstown Public Library, 500 High Street, Pottstown, Pennsylvania 19464.

**Original Signed by**

Walter R. Butler, Director  
BWR Project Directorate No. 4  
Division of BWR Licensing

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