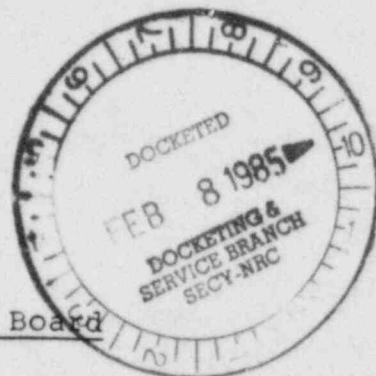


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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board



In the Matter of)
)
Philadelphia Electric Company)
)
(Limerick Generating Station,)
Unit 1))

Docket No. 50-352 O L

APPLICANT'S MOTION FOR EXEMPTION FROM THE REQUIREMENTS
OF 10 C.F.R. §50.47(a) and (b) AS THEY RELATE TO THE
NECESSITY OF ATOMIC SAFETY AND LICENSING BOARD
CONSIDERATION OF EVACUATION PROVISIONS OF THE EMERGENCY
PLAN FOR THE STATE CORRECTIONAL INSTITUTION OF GRATERFORD

Preliminary Statement

Pursuant to 10 C.F.R. §50.12,^{1/} Philadelphia Electric Company, Applicant in the captioned proceeding, moves the Atomic Safety and Licensing Board ("Licensing Board" or "Board") for an exemption from the requirements of 10 C.F.R. §50.47(a) and (b) to permit operation of the Limerick Generating Station at power levels greater than 5% of rated prior to the completion by the Board of its consideration of any contentions which it may admit related to the evacuation

1/ 10 CFR §50.12(a) reads in pertinent part:

The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

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provisions of the radiological emergency plan for the State Correctional Institution of Graterford ("Graterford").^{2/}

On September 18, 1981, the National Lawyers Guild filed a petition to intervene in the captioned matter on behalf of certain inmates at Graterford. In response to a Board Order of October 14, 1981, the National Lawyers Guild filed a Supplemental Memorandum in support of its petition. In its June 1, 1982, Special Prehearing Conference Order, the Atomic Safety and Licensing Board admitted the Graterford prisoners as a party to this proceeding.^{3/} On April 20, 1984, in a Special Prehearing Conference Order, the Board granted the Graterford inmates 20 days after receipt of the evacuation plan for Graterford to submit specific contentions. Through no fault of Applicant^{4/} the completion of the plan was significantly delayed. It was not until December 13, 1984, that the Commonwealth sent counsel for

^{2/} The Commission has directed that, in similar circumstances, requests for exemptions be submitted to the presiding Licensing Board. Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-8, 19 NRC 1154, 1155 n.2 (1984).

^{3/} Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), IBP-82-43A, 15 NRC 1423, 1446-47 (1982). It found that the National Lawyers Guild had no standing in its own right. Id. at 1442-43.

^{4/} The plan for Graterford was drawn up by PEMA and the Pennsylvania Bureau of Corrections without any participation from Applicant. See the Affidavit of V.S. Boyer, attached hereto.

the Graterford inmates an unclassified expurgated ("sanitized") copy of the Pennsylvania Bureau of Correction's Radiological Emergency Response Plan for Graterford ("Graterford Plan").

On December 19, 1984, the Graterford inmates moved for an order requiring full disclosure by Pennsylvania of the Graterford Plan. They further moved that the time for submission of contentions be measured from their receipt of an unexpurgated copy of the plan.

On January 29, 1985, after hearing oral argument on Graterford inmates' motion for full disclosure and examining Mr. Erskind DeRamus, the Commonwealth's Deputy Commissioner of Corrections, on the matter, the Board orally denied Graterford inmates' motion for full disclosure and permitted them 20 days in which to file contentions based on the expurgated copy of the plan. Tr. 20479-81.^{5/} At that time, it also denied Graterford inmates' motion for a stay of the Board's decision pending appeal. Tr. 20842.

It is therefore obvious that it will not be possible to litigate any contention related to the Graterford plan which the Licensing Board may admit without significant delay in the power ascension test program and full power operation of

^{5/} The Board indicated that it would file a published memorandum and order memorializing its oral decision. Tr. 20479. No further schedule beyond the 20 days allowed for the submission of contentions was established by the Board.

Limerick Unit 1. Applicant estimates that this facility will be ready to proceed beyond the 5% power level to which it is limited by the present low power license by March 1, 1985. See the Affidavit of V. S. Boyer which is attached hereto and incorporated herein by reference.

On January 29, 1985, the Licensing Board closed the record on all other offsite emergency planning contentions. The Board ruled on January 24, 1985, that Applicant's proposed findings of fact and conclusions of law are to be received by February 20, 1984, that proposed findings by the NRC Staff, LEA/FOE, FEMA and the Commonwealth are due March 6, 1985, and that Applicant's reply findings are due March 13, 1985. Tr. 20187.^{6/} Given the schedule for submission of proposed findings set by the Board, an initial decision authorizing full power operation could be issued by mid-April but for the Graterford Plan being the subject of possible future hearings in the proceeding.^{7/}

As noted above, any contentions involving the Graterford prisoners cannot be considered for a substantial period of time and certainly not on the schedule for issuance of a full power license discussed above. Any

^{6/} This was confirmed by the Board in Schedule for Filing of Proposed Findings of Fact and Conclusions of Law (January 28, 1985).

^{7/} Pursuant to 10 C.F.R. §2.764(f)(2), the Commission would thereafter decide whether the decision should become effective.

discovery, the preparation of testimony regarding any admitted contentions, the evidentiary hearing, the submission of post-hearing pleadings and the time for preparation of an initial decision would prevent completion of this matter without significant delay. While this matter is being considered, for the reasons discussed below, which establish that no exposure of the Graterford prisoners could result from any event at Limerick except a core melt accident, in which any significant exposure is of the lowest probability, an exemption from the Commission's regulations to authorize full power operation is warranted.

Discussion

In a decision involving an exemption to permit site preparation activities pursuant to 10 C.F.R. §50.12(b), the Commission stated that it considers the use of the exemption authority under 10 C.F.R. §50.12 as available in exigent circumstances. United States Department of Energy (Clinch River Breeder Reactor Plant), CLI-83-1, 17 NRC 1, 2 n.1 (1983). In that proceeding, the Commission summarized the circumstances it considers in evaluation whether exigent circumstances exist:

[U]nder Commission case law the Commission considers the totality of the circumstances in determining whether to grant an exemption, and evaluates the exigency of the circumstances in that overall determination. Exigent circumstances have been found where: (1) further delay would deny the public of currently needed benefits that would have been provided by timely completion of the facility but were delayed due to

external factors, and would also result in additional otherwise avoidable costs; and (2) no alternative relief has been granted (in part) or is imminent. Moreover, the Commission will weigh the exigent circumstances offered to justify an exemption against the adverse environmental impacts associated with the proposed activities. Where the environmental impacts of the proposed activities are insignificant, but the potential adverse consequences of delay may be severe and an exemption will mitigate the effects of that delay, the case is strong for granting an exemption that will preserve the option of realizing those benefits in spite of uncertainties in the need for prompt action. 8/

In Long Island Lighting Company (Shoreham Nuclear Power Station, Unit 1), CLI-84-8, 19 NRC 1154, 1156 n.3 (1984), in addition to applying the "exigent circumstances" test to an exemption issued pursuant to 10 C.F.R. §50.12(a), the Commission discussed the factors that governed the exercise of its discretion in issuing an exemption:

A reasoned exercise of such discretion should take into account the equities of each situation. These equities include the stage of the facility's life, any financial or economic hardships, any internal inconsistencies in the regulation, the applicant's good-faith effort to comply with the regulation from which an exemption is sought, the public interest in deference to the Commission's regulations and the safety significance of the issue involved.

8/ Id. at 6. Because the Clinch River case related to an exemption for site preparation activities, only environmental impacts were considered. Here, health and safety matters, as opposed to environmental concerns, are at issue.

In Mississippi Power and Light Company (Grand Gulf Nuclear Station, Units 1 and 2), CLI-84-19, n.7, slip op. at 8 n.7 (October 25, 1984), the Commission directed its staff to "continue its practice of granting exemptions only after making the findings required by 10 C.F.R. §50.12 and documenting the information supporting its determination." The Commission disavowed general use of the more stringent test for granting exemptions announced in Shoreham, supra, as only applicable to the particular circumstances of that case. Thus the Board must find that the issuance of the exemption is in the public interest and will not endanger life or property. Judged by this or even by any other previous standard, the issuance of the exemption is warranted.

The Grant of the Exemption is in
the Public Interest

The Limerick facility will be physically ready to begin operations above 5% power by March 1, 1985. Affidavit of V. S. Boyer at Paragraph 3. The only matter remaining to be heard involves evacuation of the Graterford inmates. The exemption is being requested only for the period of time in which the Commission considers any additional contentions. As the Licensing Board is aware, Applicant has attempted to assure that all offsite emergency plans were prepared in a timely manner. It has made available consultants to assist offsite authorities in the preparation of the plans.

Affidavit of V. S. Boyer at Paragraph 2. Any delays in its preparation are beyond the control of Applicant.

It is self-evident that there will be financial hardships when there is a physically completed nuclear facility, standing unused and nonproductive because of licensing delays. Such delays will increase the costs of Limerick Unit 1 by \$28 million per month. This cost figure is made up of \$23 million per month allowance for funds used during construction ("AFUDC") and \$5 million per month operational, security and maintenance costs. In addition, the fuel costs of the Philadelphia Electric Company customers will be increased by \$5 million a month for each month of delay. Any delays in the authorization for full power for Unit 1 can also impact on the restart of construction of Unit 2. The Pennsylvania Public Utility Commission ("PUC") is presently holding hearings on whether construction at Unit 2 should be continued, but in compliance with an order issued by the PUC, construction of Unit 2 has been suspended until Unit 1 is placed in commercial operation. Affidavit of V. S. Boyer at Paragraphs 4 and 5.

As discussed infra, the Licensing Board in the Waterford proceeding permitted operation of that facility without specific plans for evacuation of correctional institutions being required to be in place; sheltering was the accepted protective action to allow operation, with evacuation plans being developed during operation.

Moreover, as discussed infra, any risks to the Graterford inmates associated with the requested exemption are extremely small. There is substantial compliance with the emergency planning requirements in that the Graterford plan, including provisions for evacuation, is complete.

All these factors demonstrate that the public interest strongly weighs in favor of the issuance of the exemption. In addition to meeting the "exigent" circumstances test, as discussed below, Applicant also meets the other requirements for issuance of an exemption contained in 10 C.F.R. §50.12(a).

Life or Property Would Not Be Endangered
By Issuance of the Exemption

Life or property would not be endangered by issuance of the requested exemption.^{9/} As discussed below, and in further detail in the Affidavit of E. Robert Schmidt and Geoffrey D. Kaiser Concerning the Risks to the Inmates of the State Correctional Institute at Graterford Arising from Accidental Releases of Radioactive Material from Limerick Generating Station, Unit 1 ("NUS Affidavit") which is attached hereto, and incorporated herein by reference, the probability of requiring the implementation of the protective action of evacuation by the inmates of Graterford, which is approximately 8.3 miles east from the

^{9/} No common defense and security matters are involved.

Limerick Generating Station, is extremely small. The population affected by this exemption is limited to the Graterford inmates. Indeed, as discussed in the NUS Affidavit at Paragraph 14, the hypothetical risk to such individuals is less than to a member of the public at that same distance in the same sector under similar circumstances. Moreover, the protective action of sheltering for the inmates in this particular facility is effective. NUS Affidavit at Paragraph 10.

The Graterford Plan has now been completed and reviewed by the Pennsylvania Emergency Management Agency ("PEMA").^{10/} Notwithstanding the fact that its provisions regarding evacuation have not been examined by the Licensing Board, there exist a number of reasons for confidence that the plan is reasonable and capable of being implemented pending completion of any possible Board review of certain of its provisions relating to evacuation. The Commonwealth of Pennsylvania, in general, and PEMA, in particular, are experienced in emergency planning relating to nuclear facilities. PEMA together with the Department of Corrections, has developed existing plans for other nuclear power plants in the Commonwealth which include provisions for correctional institutions within the plume exposure

^{10/} Tr. 20431, 20437.

EPZ.^{11/} There is reason to conclude that the plan is capable of being implemented even though matters related to evacuation have not yet been heard.

Further, there is no absolute requirement that evacuation be an element of emergency planning for Graterford. In Louisiana Power and Light Company (Waterford Steam Electric Station, Unit 3), LBP-82-100, 16 NRC 1550, 1566 (1982), the Licensing Board approved the issuance of operating licenses based upon plans for sheltering alone for correctional facilities within the plume exposure EPZ and conditioned the license on the development of emergency plans for evacuation. Id. As discussed in the NUS Affidavit at 10, because of the high protection factors which are present at Graterford, as determined by actual survey, sheltering is an adequate protective action for the inmates.

During the period necessary for the Board to complete its consideration of any admitted contention concerning the Graterford plan, the risk to the Graterford prisoners is extremely small. As the Board is well aware, an extensive probabilistic risk assessment ("PRA") was conducted for the Limerick Generating Station. The methodology and assumptions of this PRA were extensively litigated during a

^{11/} For example, the plan for the Three Mile Island Nuclear Station includes a plan for the Camp Hill Correctional Institution.

prior phase of this proceeding.^{12/} In its second Partial Initial Decision the Licensing Board found that the risk of operation of the Limerick Generating Station compared to natural occurring events was "clearly small."^{13/}

In support of this motion, Applicant has examined in detail the risk from severe, i.e., core melt, accidents as they specifically relate to the Graterford prisoners using the methodologies and assumptions of the PRA which were fully litigated. As discussed in the NUS Affidavit at Paragraph 7, the risk from anything other than a severe "core melt" accident (Class 9), i.e., a design basis or lesser accident (Class 1 to 8), would not result in the necessity for taking protective actions at distances of eight miles or greater, the distance that Graterford is located from the facility. In this regard, the Environmental Report - Operating License Stage for the Limerick Generating Station at page 7.1-23 found with regard to such Class 1 to 8 accidents:

- a. The radiation exposures that would result from the occurrence of accidents are generally lower than those expected from normal operation, and much lower than that from natural background radiation.

^{12/} Philadelphia Electric Company (Limerick Generating Station, Units 1 and 2), LBP-84-31, 20 NRC 446, 550-598 (1984).

^{13/} Limerick, supra, LBP-84-31, 20 NRC 446, 573 (1984).

- b. The population exposure from possible station accidents is negligible when compared to the population exposure received from just the variation in natural background radiation, which overshadows the potential population exposure from any accident considered.
- c. Most of the radiation dose levels are so low as to be undetectable, even with the most sensitive modern radiation detection instruments.
- d. When these potential exposures are considered in conjunction with their predicated frequencies of occurrence, it is judged that Class 1-8 accidents are small contributors to public risk.

See also Final Environmental Statement related to the Operation of Limerick Generating Station, Units 1 and 2, NUREG-0974 (April, 1984) at 5-73.

The input to the analysis for the inmates is specific to Graterford, e.g., the distance from Limerick to Graterford, the sector in which it was located and shielding factors. NUS Affidavit at Paragraphs 8-13. As discussed in the NUS Affidavit, Applicant considered the risk to the prisoners by considering the risk of occurrence of the various sequences of events which result in releases from core melt-type accidents and considering site specific meteorology such as wind direction and diffusion parameters. The actions to be taken at Graterford were also modelled. NUS Affidavit at Paragraph 13. The evaluation resulted in a determination of the probability of exceeding the Protective

Action Guide for evacuation recommended by the U.S. Environmental Protection Agency and adopted by PEMA for use in its emergency planning. NUS Affidavit at Paragraph 7.

A number of cases have been examined to both realistically look at the risk to the inmates and then to conservatively bound them. It should be noted that while a "realistic" evaluation is being done, it is known to still be extremely conservative for a number of reasons, e.g., present knowledge is that the source term used in the Limerick Severe Accident Risk Analysis is very conservative.^{14/}

The first two cases assume that the inmates leave the prison 6 and 10 hours after notification of the need to evacuate and travel at 10 mph. These two values bound the 6-10 hours which the Department of Corrections has estimated for the time for the last inmate to leave the institution.^{15/} The next two cases are for 24 and 48-hour delay periods and demonstrate the very low risk associated with these time periods in the implementation of evacuation of the Graterford inmates. It is obvious that even without a plan for evacuation, ad hoc measures could be taken within these times.

^{14/} See NUS Affidavit at Paragraph 15, particularly n.*.

^{15/} NUS Affidavit at Paragraph 13.

As more fully discussed in the Affidavit, the probability of exceeding 5 rem, which is maximum whole body dose where sheltering is to be utilized and would therefore be the threshold for evacuation is 5.0×10^{-8} (1 chance in 20 million) for a 6-hour evacuation delay time and 8.4×10^{-8} (1 chance in 12 million) for an 10-hour evacuation delay time. The probability of reaching a dose of 25 rem, which is the level below which clinically detectable symptoms of radiation, is not detectable are 2.8×10^{-9} (1 chance in 360 million) for a 6-hour delay time and 3.1×10^{-9} (1 chance in 320 million) for a 10-hour delay time.^{16/}

The results show that with regard to the probability of exceeding the PEMA PAG value of 5 rem for 24 and 48 hour delays, the corresponding values are 1.1×10^{-7} (1 chance in 9 million) and 1.3×10^{-8} (1 chance in 8 million), both still exceedingly small. As shown in Table 1 of the NUS Affidavit, the probability of exceeding 25 rem for the 24 and 48 hour delay cases is 5.0×10^{-9} (1 chance in 200 million) and 9.2×10^{-9} (1 chance in 110 million), respectively.

The Atomic Safety and Licensing Appeal Board has held that if the probability of an accident affecting a nuclear facility was less than 10^{-7} for a realistic calculation and 10^{-6} for a conservative calculation, then an applicant would

^{16/} Affidavit at Paragraph 14 and Table 1, thereto.

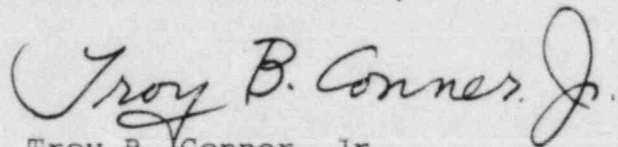
not be required to design a plant to a particular accident due to its low probability. Public Service Electric and Gas Company (Hope Creek Generating Station, Units 1 and 2), ALAB-518, 9 NRC 14, 16 (1979). Thus, tested by such standards, the probability of exceeding the 5 rem standard is so low that it need not even be considered.^{17/} Thus, viewed by any perspective, the risk is extremely small and life and property will not be endangered.

Conclusion

For the foregoing reasons, Applicant submits that the criteria of 10 C.F.R. §50.12 have been met and the requested relief should be granted.

Respectfully submitted,

CONNER & WETTERHAHN, P.C.



Troy B. Conner, Jr.
Mark J. Wetterhahn
Counsel for Applicant

February 7, 1985

^{17/} In that proceeding, the Appeal Board also held that for an event meeting its criteria, the "event is so unlikely that its environmental impact need not be considered." Hope Creek, supra, ALAB-518, 9 NRC 14, 39 (1979) (citation omitted).

STATE OF MARYLAND

:

COUNTY OF MONTGOMERY

:

Affidavit of V. S. Boyer

V. S. Boyer, being first duly sworn, states as follows:

1. My name is V. S. Boyer. I am Senior Vice President, Nuclear Power of Philadelphia Electric Company, ("the Company"), owner and operator of the Limerick Generating Station. I have been deeply involved with the construction, licensing, and operation of the Limerick Generating Station and oversee the efforts of the Company in the area of Emergency Planning for our nuclear generating stations. I am aware of the status of and responsibility for emergency planning efforts for the Limerick Generating Station on the part of the Commonwealth of Pennsylvania, the Federal Emergency Management Agency, local governments and the Nuclear Regulatory Commission.
2. Annex 1 to Appendix E of the Bureau of Correction's Emergency Plan - the Radiological Emergency Response Plan for the State Correctional Institution of Graterford ("Graterford Plan") has been prepared by the Bureau of Correction of the Commonwealth of Pennsylvania. Although the Company has provided assistance to many entities with radiological emergency planning responsibilities, neither the Pennsylvania

Emergency Management Agency nor Bureau of Corrections requested the assistance of Philadelphia Electric Company in the development of the Graterford Plan. The Company is, however, providing certain equipment required for the implementation of the plan and requested by the Commonwealth.

3. The schedule for the power ascension phase of operation of Unit 1 of the Limerick Generating Station is such that the plant will be ready to proceed to power levels greater than allowed under our existing license by March 1, 1985.
4. Delays in the issuance of approval for proceeding to full power will result in a delay in the commercial operation of the unit. Such delays will increase the costs of Limerick Unit 1 by \$28 million per month. This cost figure is made up of \$23 million per month AFUDC and \$5 million per month operational, security and maintenance costs. In addition, the fuel costs of the Company's customers will be increased by \$15 million a month for each month of delay.
5. Any delays in the authorization for full power for Unit 1 may also impact on the restart of construction of Unit 2. The Pennsylvania Public Utility Commission is presently holding hearings on whether construction at Unit 2 should be continued, but in compliance with a

prior order issued by the PUC construction of No. 2 unit has been suspended until No. 1 is placed in commercial operation.

V. L. Boyer

Senior Vice President

Subscribed and sworn to before me
this 7th day of February, 1985.

Karen M. Thompson
Notary Public

Karen M. Thompson

My commission expires: July 1, 1986