

50-305

November 7, 1972

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Robert Vollen, Esq.
Businessmen for the Public
Interest
Suite 1001
109 North Dearborn Street
Chicago, Illinois 60602

Re: Kewaunee Nuclear Power Plant

Dear Bob:

Pursuant to our discussions in Chicago on Monday,
November 6, 1972, I am enclosing a copy of the
AEC Regulatory Staff's Answers to the Exceptions
Filed by the Union of Concerned Scientists.

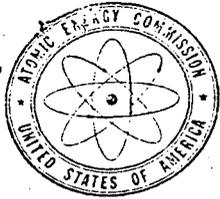
Sincerely,

R. Rex Renfrow, III
Counsel for AEC Regulatory
Staff

Enclosure (1)
Answers to Exceptions

cc: Gerald Charnoff, Esq.
w/enclo.

OFFICE ▶	OGC	OGC					
SURNAME ▶	RENFROW:ml						
DATE ▶	11/07/72						



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

October 31, 1972

William C. Parler, Esq.
Atomic Safety & Licensing
Appeal Board
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dr. John H. Buck
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Dr. Lawrence R. Quarles
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In the Matter of Boston Edison Company
Pilgrim Nuclear Power Station, Docket No. 50-293

Gentlemen:

Enclosed is a copy of the "AEC Regulatory Staff's Answer to the Exceptions of the Union of Concerned Scientists to the Initial Decision of the Atomic Safety and Licensing Board," in the above-captioned matter. This answer is being filed with the Board and other parties to this proceeding pursuant to 10 CFR § 2.762(c).

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Rex Renfrow, III", is written over a horizontal line.

R. Rex Renfrow, III
Counsel for AEC Regulatory Staff

Enclosure:
Answer to Exceptions (1)

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of)

BOSTON EDISON COMPANY)

(Pilgrim Nuclear Power Station))

) Docket No. 50-293
)
)
)

AEC REGULATORY STAFF'S ANSWER TO
THE EXCEPTIONS OF THE UNION OF CONCERNED
SCIENTISTS TO THE INITIAL DECISION
OF THE ATOMIC SAFETY AND LICENSING BOARD

1. On September 13, 1972, the Atomic Safety and Licensing Board (ASLB) issued its Initial Decision in the above captioned case. This decision authorized the issuance of a license to Boston Edison Company (BECO) to operate the Pilgrim Nuclear Power Station (PNPS) at steady state power levels not to exceed 1998 Megawatts thermal (MWt).
2. On September 15, 1972, the United States Atomic Energy Commission (Commission), through its Director of Regulation, issued a license to BECO authorizing the operation of PNPS at steady state power levels not to exceed 1998 MWt.
3. On October 4, 1972, the Union of Concerned Scientists (UCS), one of the Joint Intervenors in this case, 1/ filed ten exceptions to the ASLB's Initial Decision.

1/ The other Joint Intervenor, the Sierra Club, did not join in this motion.

4. On October 17, 1972, BECC filed its reply to UCS's exceptions.
5. The AEC Regulatory Staff (Staff) will reply to each of the contentions as they are set forth in UCS's exceptions.

A. The Atomic Safety and Licensing Board erred in ruling that UCS had not raised the Applicant's ability to comply with the Interim Acceptance Criteria as an issue in the hearing.

6. Paragraphs 1 - 16 of UCS's exceptions contend that certain specified contentions filed by the Joint Intervenors raised the question of whether or not PNPS could comply with the Interim Acceptance Criteria For Emergency Core Cooling Systems for Light-Water Power Reactors (Criteria). ^{2/}

It is clear from the applicable pronouncements of the Commission and of this Appeal Board ^{3/} that if UCS properly raised this issue in the hearing, then the ASLB was in error in its rulings and this Board should remand the case to the ASLB with a direction to hear evidence on whether or not PNPS complies with the Criteria.

^{2/} 36 F.R. 12247.

^{3/} Acceptance Criteria for Emergency Core Cooling Systems for Light Water-Cooled Nuclear Power Reactors, Docket No. RM 50-1, Supplemental Notice of Hearing, 37 F.R. 288, 289; and In the Matter of Vermont Yankee Nuclear Power Corporation, Docket No. 50-271, ASLB Memorandum and Order, June 20, 1972.

If, on the other hand, this Board concludes that the Joint Intervenors were attempting to attack the validity of the Criteria, then this Board should deny UCS's exceptions and affirm the ASLB's Initial Decision. 4/

7. The ASLB was under a mandate from the Commission to establish a clear and particularized identification of the matters in controversy 5/ in order to resolve the specific questions relating to PNPS. In order to accomplish this task, the ASLB held a number of prehearing conferences, and even after its ruling of November 15, 1971, 6/ which disallowed the specific contentions in question, the Joint Intervenors were granted the opportunity to present additional oral argument to the ASLB as to the merits of their contentions. 7/ As a result of these interchanges, the record of the instant case is replete with conflicting statements by counsel for each of the parties as to exactly what issues were being disputed.

4/ In the Matter of Vermont Yankee Nuclear Power Corporation, Docket No. 50-271, ASLAB Memorandum and Order, June 20, 1972.

5/ In the Matter of Boston Edison Company, Docket No. 50-293, Commission Memorandum and Order, July 12, 1972; and see In the Matter of Wisconsin Electric Power Company, et al., Docket No. 50-301, ASLAB Memorandum and Order, August 8, 1971.

6/ In the Matter of Boston Edison Company, Docket No. 50-293, ASLB Memorandum and Order, November 15, 1971.

7/ Id. ASLB Memorandum and Order, November 26, 1971.

Thus, selective statements by UCS seem to support the view that the Joint Intervenors were attempting to raise the issue of PNPS's compliance with the Criteria, while selective statements by BECO seem to support the view that the Joint Intervenors were attempting to challenge the validity of the Criteria as promulgated by the Commission. A review of UCS's exceptions and of BECO's answer to the exceptions provides a graphic illustration of this phenomenon.

8. It is the Staff's position that UCS, despite the protestations of its counsel that they wished to challenge both the validity of the Criteria and BECO's ability to comply with the Criteria, was, in reality, challenging the validity of the Criteria. As discussed more fully below, those portions of the record in which the Joint Intervenors set forth the evidence which they intended to present to the ASLB to support their contentions clearly show that it was the validity of the Criteria which was being challenged.

For example, in the oral argument before the ASLB on December 8, 1971, the Joint Intervenors stated that the testimony, if allowed, would bring out the weaknesses, inconsistencies, and anomalies present in BECO's tests. 8/ The Joint Intervenors then called upon Dr. Henry Kendall to give a statement concerning the scope of his testimony on these contentions. 9/ Dr. Kendall stated in part that:

8/ Tr. 599.

9/ Tr. 616 - 619.

...[T]he heat transfer coefficients developed in the entire body of tests are used in the General Electric analytical models which are used for loss-of-coolant accident analysis. The heat transfer coefficients which are occasionally negative are disregarded in the selection of heat transfer coefficients to be used in the models, and they are disregarded on basis which we believe to be unsubstantial because there is no adequate analysis as to why those occurred in the measurement or as to why they should be so disregarded.

We believe that this procedure is unwarranted and that it gravely weakens the confidence in the predictions of these mathematical models, the mathematical models themselves being used to develop the predicted course of a loss-of-coolant accident and are alleged to substantiate acceptance under the Interim Acceptance Criteria. 10/

Counsel for the Joint Intervenors then stated that in his opinion the heat transfer coefficients used by General Electric were not approved by the Commission because the heat transfer coefficients were specifically excluded from Appendix A by exception 3 of Part 2. 11/

10 Tr. 619.

11 Tr. 623.

Appendix A is entitled "Acceptable Evaluation Models Including Their Conservative Assumptions and Procedures," while Part 2 is the General Electric Evaluation Model. The pertinent portion states that:

Analyses should be performed for the entire break spectrum, up to and including a double-ended severance of the largest pipe of the reactor coolant pressure boundary. The combinations of systems used for analysis should be derived from a failure mode and effects analysis, using the single failure criterion as indicated in Table 2-1 of the topical report "Loss-of-Coolant Accident and Emergency Core Cooling Models for General Electric Boiling Water Reactor," NEDO-10329. The analytical techniques described in NEDO-10329 and its supplement should be used with the following exceptions:

* * *

3. The heat transfer coefficients associated with rated core spray flow should correspond to those derived from experimental data, assuming the cladding and channel box emissivity is equal to 0.9.

Thus, it is clear that exception 3 does not exclude the heat transfer coefficients from the approved model, but rather, it requires the use of an emissivity value of 0.9 in deriving the coefficients. The Staff Safety Evaluation 12/ further underlines this fact by stating:

In the GE analysis a value of 0.6 was used for the emissivity of both the stainless steel rods and the box. Subsequent tests made to measure the emissivity of the stainless steel bundles indicated that a value of 0.9 would be more appropriate. Since the use of the larger value of test bundle emissivity results in smaller values of the empirical convective heat transfer coefficient, we have required GE to perform the analysis of the accident using convective heat transfer coefficients derived using the larger value of emissivity. This matter is treated in accordance with Appendix A, Part 2 of the Commission's Interim Policy Statement on emergency core cooling systems. 13/

Counsel for the Joint Intervenors then offered to demonstrate the difference between two graphs, NEDO-10208, published in August, 1970, and GEAP 13197, published in June, 1971. 14/ It is apparent that both of the documents are studies which were used in the development of NEDO-10329 which, as the Joint Intervenors admit, 15/ is incorporated into the Criteria as part of the General Electric evaluation model.

It is apparent from the foregoing that the Joint Intervenors were laboring under a basic misunderstanding as to the exact composition of the Criteria.

13/ Id. at 61.

14/ Tr. 600.

15/ Tr. 623.

The first section of the Criteria sets forth specific standards which each plant must meet, while the second section sets forth particular assumptions and procedures, approved by the Commission, for calculating whether or not the plant meets the standards set forth in the first section. Thus, the Joint Intervenors' repeated assertions that PNPS will not comply with the Criteria, i.e. the basic standards, are, in reality, assertions that because of errors in the underlying evaluation models or in the factual data supporting these models, PNPS cannot meet the standards set forth in the first section of the Criteria. This is clearly a subject to be resolved in the ECCS rule-making hearing and not in this individual licensing hearing. 16/

9. Based on the foregoing, it is respectfully submitted that the ASLB properly excluded from the instant hearing contentions 2(a), 4, 12, 13, 14, and 16. There was no error.

B. The Atomic Safety and Licensing Board erred in preventing UCS from raising the Applicant's analysis of the maximum hypothetical accident for PNPS as an issue in the hearing.

10. This exception revolves around the Joint Intervenors' contention 2(b) which states that:

16/ In the Matter of Vermont Yankee Nuclear Power Corporation,
Supra. at 7 - 11.

(b) The LOCA described in the Pilgrim Station FSAR does not even approach the true maximum hypothetical accident that can be assumed for this reactor, namely a meltdown of the core, with subsequent breaching of the containment, releasing radioactivity in quantities many orders of magnitude above the releases set forth in the FSAR.

At the initial pre-hearing conference on October 13, 1971, counsel for the Joint Intervenors characterized 2(b) as an environmental issue which must be evaluated under the Calvert Cliffs decision. 17/

11. The ASLB then ruled that contention 2(b) could be more appropriately discussed in the environmental portion of the proceeding, especially in light of the guidelines issued with the revised Appendix D to 10 CFR 50 which was published on September 9, 1971. 18/

Paragraphs 18 and 19 of UCS's exceptions state that the Board was in error in relying on the guidelines as a basis for deferring consideration of contention 2(b) since they are not published regulations of the Commission. However, 10 CFR 2.721(d) confers upon the ASLB the powers of a presiding officer.

17/ Tr. 58 - 59; Calvert Cliffs Coordinating Committee, Inc. v. United States Atomic Energy Commission, 449 F. 2d 1109 (D.C. Cir. 1971).

18/ In the Matter of Boston Edison Company, Docket No. 50-293, ASLB Memorandum and Order, October 28, 1971; and see Implementation of National Environmental Policy Act of 1969, 36 F.R. 18071.

These powers, which are enumerated in 10 CFR 2.718, include the right to regulate the course of the hearing and the conduct of the participants. Therefore, the issue of whether or not the ASLB could base its ruling on the "guidelines" is immaterial, since the ASLB could defer consideration of contention 2(b) to the environmental portion of the hearing, by exercising the authority granted it under 10 CFR 2.718.

12. It should be noted that when the Joint Intervenors filed their specification of issues relating to environmental matters, that the following contention was stated:

7. The Applicant's Environmental Impact Statement substantially disregards the adverse environmental effects which will be caused by the operation of the Pilgrim Nuclear Power Station and contains no analysis of the adverse environmental consequences of an uncontrolled Loss of Coolant Accident or other accidents which are possible during the normal operation of the Pilgrim Nuclear Power Station. 19/

At the prehearing conference of May 5, 1972, the Joint Intervenors waived this contention. 20/

19/ In the Matter of Boston Edison Company, Docket No. 50-293, Initial Detailed Specifications relating to Liquid and Gaseous Effluents and Environmental Considerations, January 12, 1972.

20/ Tr. 856.

13. Moreover, the fact is that both BECO and the Staff have analyzed the "maximum hypothetical accident". 21/ Using the assumptions contained in 10 CFR 100.11(a), the results of these calculations indicate that the resulting dose rates are well below the 10 CFR 100 guidelines. 22/ The Final Environmental Statement for PNPS also contains an analysis of the environmental impact of postulated accidents. 23/ The analysis of the FES is based upon the considerations set forth in the Guide to the Preparation of Environmental Reports published by the AEC on September 1, 1971. This document provides in part that:

In the consideration of the environmental risks due to postulated accidents, the probabilities of their occurrence and their consequences must both be taken into account. It is not practicable to consider all possible accidents, so the spectrum of accidents, ranging in severity from trivial to very serious, is divided into classes in the attached table. Each class can be characterized by an occurrence rate and a set of consequences. Ideally, the classes would be small and homogeneous; practically, each of the

21/ Exhibit 1(c), § 14.9; and Tr. 698 at 89 - 99.

22/ Tr. 698 at 99.

23/ Tr. 954 at § IX.

classes in the table includes events with different probabilities and consequences. Using typical or average characteristics for each class is nevertheless satisfactory, since occurrences of greater or less severity are covered in other classes.

For each class except Classes 1 and 9, the environmental consequences should be evaluated using assumptions as realistic as the state of knowledge permits. Those classes found to have significant adverse environmental effects should be evaluated as to probability, or frequency of occurrence, to enable estimates to be made of environmental risks or cost arising from accidents of the given class.

14. On the basis of the foregoing, it is clear that the ASLB's initial ruling was proper and within its discretion, and the UCS waived any contentions it might now put forward by declining to raise as an issue in the environmental portion of the hearing contention 7 of its environmental specifications.

C. The Atomic Safety and Licensing Board erred in denying the Joint Intervenor's Motion to file additional detailed specifications.

15. Paragraphs 22 and 23 of UCS's exceptions state generally that the ASLB erred in denying the Joint Intervenors' motion to file additional detailed specifications which supposedly elaborated on the ability of BECO to comply with the Criteria. Once again, however, the UCS is laboring under a basic misconception as to the composition of the Criteria. 24

Each of the additional specifications (numbered 32 - 40) is a challenge to the General Electric model and/or its underlying assumptions. For example, contention 32 challenges the heat transfer coefficients, the computer data and the experimental measurements used to formulate the model. Each of these factors is an integral part of the second section of the Criteria.

16. Recognizing that there would be differences of opinion as to the validity of the Criteria, 25 the Commission initiated a rulemaking hearing on the Criteria which would allow these differing views to be heard, and in fact, UCS has taken part in the rulemaking hearing as part of a consolidated

24/ See Paragraph 8, infra.

25/ In the Matter of Rulemaking Hearing..., Docket No. RM50-1, Commission Orders, January 26, 1972 at 3 and February 4, 1972 at 4.

intervenor group (CNI). 26/ The Staff would agree with the ASLB when it stated that:

If, as a consequence of such hearing, the Criteria are materially altered, the Applicant will be obliged to conform to such alteration. Duplicative argument is not necessary. The Applicant did not select the Criteria and is not required to defend them. It is required only that the Applicant demonstrate its compliance with the Criteria, the defense of which remains as the task of the Commission.

(Footnotes deleted). 27/

17. On the basis of the foregoing, it is respectfully submitted that the ASLB properly denied the request to file additional specifications and properly ruled that these contentions were subject of such consideration as is appropriate in the ECCS rulemaking hearing.

D. The Atomic Safety and Licensing Board erred in denying the request by the Joint Intervenors to defer action on the pending application until the Commission has decided the validity of the Interim Acceptance Criteria.

18. Paragraphs 24 - 26 of UCS's exceptions challenges the ASLB's denial of certain Findings of Fact and Conclusions of Law filed by the Joint Intervenors.

26/ Id. Tr. 34, 35.

27/ In the Matter of Boston Edison Company, Docket No. 50-293, ASLB Memorandum and Order, March 20, 1972.

In addition, UCS alleges that the Calvert Cliffs Memorandum ___/ requires that challenges to the Commission's Regulations be decided prior to the issuance of an Initial Decision.

The Memorandum directed that issues challenging the validity of Commission Regulations be processed in two procedural stages. ___/ First, the ASLB is required to consider whether the issue as presented raises a substantial question. If the ASLB makes a finding to that effect, then it is required to certify the question to the Commission for guidance prior to issuing an Initial Decision.

19. In the instant proceeding, the ASLB established the procedural framework for a hearing to determine whether or not the Joint Intervenors could show a substantial question as to the validity of the Commission's Regulation. ___/ Subsequently, the Commission announced the scheduling of rule making hearings on the Criteria. ___/ As a result, the ASLB deferred UCS's challenges to the validity of the regulation to the rule making proceeding. ___/ Thus,

___/ In the Matter of Baltimore Gas and Electric Co., Docket Nos. 50-317, 318, Commission Memorandum, August 8, 1969.

___/ Id. at 3, 4.

___/ Supra., ASLB Supplemental Memorandum and Order, November 15, 1971, and ASLB Memorandum and Order, November 17, 1971.

___/ In the Matter of Rule-Making . . ., Docket No. RM 1, Notice of Hearing, November 26, 1971.

___/ Tr. 268.

the ASLB's action in this regard was plainly correct. The Atomic Safety and Licensing Appeal Board has already held on this point that:

The validity of the Interim Criteria, in whatever form may emerge from the pending rulemaking proceedings, will be considered by the Commission as part of its ultimate determination of that proceeding, and the Coalition and others may address to the Commission in that proceeding any arguments that could be raised here. The Commission's decision will of course be subject to judicial review. 42 U.S.C. 2239, 28 U.S.C. 2342, 5 U.S.C. 701-706. To allow the Coalition to conduct in this proceeding a simultaneous parallel attack on the Interim Criteria would serve no useful purpose and could obstruct enormously the Commission's performance of its duty that it "shall...within a reasonable time...set and complete proceedings...." Administrative Procedure Act, Sec. 9(b), 5 U.S.C. 558(c).... Under these circumstances the Licensing Board should not consider any challenge to the Interim Criteria in this proceeding or admit any evidence directed toward such an attack.

* * *

We thus summarize our responses to the questions certified to us: No attack by the Coalition may be allowed in this proceeding on the Interim Criteria. There is no occasion for discovery in order to

ascertain the "foundation evidence" utilized by the regulatory staff for its determinations regarding the Criteria. The Coalition's request for discovery should therefore not be granted. 33/

This holding, of course, has equal application in the circumstances of the present proceeding. As to UCS's suggestion that it has been denied due process, we would note that UCS is a party in the rule-making proceedings and as such may present its arguments there for consideration and appropriate action by the Commission. That remedy, moreover, is a meaningful one. The Appeal Board itself has emphasized that:

The Commission has explicitly reserved the power to modify any permit or license at any time (10 CFR Sec. 50.54(h)) and will be in position to apply to existing reactors, as appropriate, any new requirements which may be adopted. 34/

E. The Board erred in ruling that contention 6 was not an issue in the licensing hearing.

20. Paragraphs 27 - 30 of UCS's exceptions revolve around contention 6.

That contention, in its entirety, was stated as follows:

33/ In the Matter of Vermont Yankee Nuclear Power Corp., Docket No. 50-271, ASLAB Memorandum and Order, June 20, 1972, at 10, 11, and 12.

34/ Id.

Containment pressure during blowdown is likely to exceed the maximum pressure that the containment is designed to withstand. Applicant's computation of containment pressure during blowdown relies upon equilibrium assumptions concerning the thermodynamic behavior of the coolant, whereas non-equilibrium assumptions in the calculation - that indicated much higher containment pressure in the event of blowdown - should have been used.

21. Contention 6 is a further example of a basic misunderstanding of the relationship between design criteria and the Interim ECCS Criteria. The first sentence, standing alone, would have been a challenge to BECO's ability to comply with 10 CFR 50, Appendix A, Criterion 16 and 50. This is clearly an issue which could be raised in an individual licensing hearing. The second sentence speaks to the thermodynamic behavior of the coolant which necessarily challenges the equilibrium assumptions used by BECO in calculating containment pressure during blowdown.

The ASLB ruled that if the assumptions were part of the regulatory framework, the issue would be heard under the Calvert Cliffs doctrine. 35/ BECO then submitted the following response:

35/ In the Matter of Boston Edison Company, Docket No. 50-293, ASLB Memorandum and Order, October 28, 1971.

The above clearly indicates that the Joint Intervenors question whether equilibrium thermodynamic behavior during coolant blowdown is an adequate assumption for containment analyses. The thermal-hydraulic (thermodynamic) model utilized by General Electric to analyze coolant blowdown during LOCA is described in detail in Appendix A of NEDO-10329. Specifically, Section A.2.3.3 of NEDO-10329 states that coolant flow rate out the break is^a computed using the Moody critical flow model. This is the same computational model used for containment pressure analyses. The thermal-hydraulic model described in is an inherent part of the overall analytical method described in NEDO-10329 which was approved by the AEC in the Interim Policy Statement of June 29, 1971. Therefore, the assumption of equilibrium thermodynamic behavior of coolant during blowdown in accordance with the model described in NEDO-10329 is approved by AEC for coolant blowdown analysis^s on BWR's and any question regarding the validity of this assumption represents a challenge to the Commission's regulations. (Emphasis added). /

The lack of a complete understanding of the relationship between the design criteria and the Interim Criteria is compounded by the fact that BECO utilized

/ Id., Letter from BECO counsel, November 3, 1971. UCS's complaint that the letter should not be afforded any weight because it was not under oath is unfounded. Neither the specifications of the Joint Intervenors or the responses by the other parties were under oath.

the same computational model for analyzing containment pressure that it used to analyze coolant blowdown during LOCA. While this model is an integral part of NEDO-10329 and thus the Interim ECCS Criteria, it is not a part of the design criteria set forth in 10 CFR 50, Appendix A, criteria 16 and 50. Therefore, if the Joint Intervenors had raised the latter issue before the ASLB, the model would not have been part of the regulatory framework.

Instead, the complete focus of the Joint Intervenors was on the Interim ECCS Criteria. There is not a single reference in the transcript or the supporting papers to 10 CFR 50, Appendix A, Criteria 16 and 50. The ASLB was thereby justified in its assumption that the Joing Intervenors were challenging the validity of the Interim Criteria.

22. UCS's statement that they were denied the opportunity to discuss containment pressure generated during LOCA at the rule making hearing is in error. Containment pressure calculations and methods of calculating containment pressure were discussed. 37/ In addition, the following sections of the Consolidated National Intervenors testimony on reactor vessel blowdown were admitted:

8.1 Reactor Vessel Blowdown Rate;

8.2 Rate of Loss of Coolant by Reactor Vessel; and

8.4 UCS Evaluation of Increased Blowdown Rates. 38/

37/ In the Matter of Rule Making, Docket No. RM 50-1, Tr. 6502-6515, and 14,017-14,047.

38/ Id. at 16,595-16,604.

Section 8.3 of CNI's testimony entitled Example Calculation: Pilgrim Nuclear Power Station was struck from the record because it was focused on a reactor presently undergoing a licensing hearing, and because it was not necessary to support the remaining testimony. 39/

23. In view of the foregoing, it is respectfully submitted that the ASLB's rulings on contention 6 were correct and that UCS's exceptions numbered 27 - 30 should be denied.

F. The Board erred in Admitting Exhibits 1(a) through 1(g) into Evidence and Denying the Joint Intervenors' Motion to Strike Portions of those Exhibits from the Record.

24. Paragraphs 21 - 23 of UCS's exceptions challenge the admissibility of the FSAR. This document was admitted following the testimony of Mr. J. Edward Howard, BECO's Nuclear Project Manager. Mr. Howard was responsible for the preparation of the FSAR and it was prepared under his direct supervision. 40/ However, UCS argues that a proper foundation had not been laid for its introduction into evidence because certain portions of the document were not within the field of expertise of any member of the panel which was offered to support the FSAR. 41/

39/ Id. at 16,599.

40/ Tr. 362 - 366, and 426 - 432.

41/ Tr. 409, and 531 - 532.

25. 10 CFR 2.743(c) requires that an ASLB admit only relevant, material and reliable evidence, but 10 CFR 2, Appendix A III(c)(7) states that the strict application of the rules of evidence used in judicial proceedings will not be applied. As demonstrated by BECO 42/ and as noted by the ASLB, 43/ if the Joint Intervenors had availed themselves of the opportunity to specify issues in other areas, BECO could have enlarged the panel to include their experts in those areas. As a result of the absence of this further specification, BECO chose the rational approach of presenting a sponsoring witness and a panel which could speak to the issues in the proceeding, and not an irrational approach of presenting a sponsoring witness and every individual who worked on each specific area encompassed by the FSAR.

On this basis, it was within the presiding officer's discretion 44/ to receive into evidence the FSAR. The weight which that testimony should receive is then determined by cross-examination, not voir dire.

26. In view of the foregoing, it is respectfully submitted that the ASLB correctly admitted the FSAR into evidence and that UCS's exceptions numbered 21 - 23 should be denied.

42/ Tr. 437, 438.

43/ In the Matter of Boston Edison Company, Docket No. 50-293, ASLB Memorandum and Order, March 17, 1971.

44/ See 10 CFR 2.718(c).

G. The Board erred in Limiting the Scope of Contention 9 to Hydrogen Evolvement during a Loss of Coolant Accident in which PNPS met all the requirements of the Interim Acceptance Criteria.

27. Paragraphs 34 and 35 of UCS's exception revolve around contention 9 which states that:

The applicant provided no means of keeping the hydrogen that would be evolved during a LOCA below explosive concentration levels in the containment: The proposed inerting of the containment will prove of no assistance inasmuch as oxygen will also be evolved from radiolysis of water, and venting of the containment cannot be accomplished without exceeding release limits.

Staff's position was set forth as follows:

It is our position that under the banner of Contention number 9, which the Board has allowed as a specific contention to be heard in this proceeding, the Joint Intervenors propose to raise questions concerning whether, during the course of a loss-of-coolant accident, damage to the core by flow blockage or otherwise, is so geared that the emergency core cooling system operation fails to conform to the Interim Criteria, and a substantial metal-water reaction results. Therein, such quantities of hydrogen that venting of containment or control of such hydrogen would cause a release in excess of Part 100 limits.

The Staff believes that such a chain of events is not within the scope of Contention 9 as pleaded, and that the attempt to raise such an issue constitutes an objectionable amendment to Contention 9.

To the extent that Contention 9 relates to results associated with the quantities of hydrogen generated following the onset of a loss-of-coolant accident, from metal-water reaction, within the Interim Criteria, together with the amount that may be associated with radiolysis of water, the Staff believes that this is clearly within Contention 9 and would be prepared to respond to such contention.

Joint Intervenors now suggest Contention to be read--as they have now suggested it be read, it constitutes a simple elaboration of Contention 16(b). 45/

As was noted by the Staff, once again the Joint Intervenors were attempting to attack the validity of the Criteria by questioning the model and its underlying assumptions. When the ASLB ruled that the cross-examination would be limited to the areas delineated by the Staff, the Joint Intervenors decided not to cross-examine. 46/

45/ Tr. 484, 485.

46/ Tr. 511.

28. However, UCS now contends that the ASLB ruling, by implication, referred this issue to the rule making hearing, and that since the Hearing Board in that proceeding refused to allow evidence on the consequences of loss of coolant accident, the UCS was denied a forum within which to litigate this issue. However, the ruling on the admissibility of evidence concerning the consequences of such an accident by the Hearing Board in the rule making proceeding has no relevancy to the issue now before this Board. The fact remains that once again the Joint Intervenors were attempting to challenge the validity of the Criteria in a licensing hearing by attacking the models and assumptions set forth in 10 CFR 50, Appendix A, Part 2.

29. On the basis of the foregoing, it is respectfully submitted that the ASLB correctly limited the scope of cross-examination of Contention 9 and therefore, UCS's exceptions numbered 34 and 35 should be denied.

H. The Board erred in accepting the findings and conclusions of the Final Environmental Statement and in concluding that the Requirements of Section 102(2)(C)(D) (sic) of NEPA and 10 CFR Part 50, Appendix D, have been complied with in this proceeding.

30. Paragraphs 36 - 39 of UCS's exceptions state in general that the Final Environmental Statement (FES) does not consider, to the fullest extent possible, the environmental effects of operation of PNPS over the complete

range of release rates permitted by the technical specifications. While the staff would agree that the National Environmental Policy Act (NEPA) requires a thorough discussion of environmental impacts, the Staff submits that, as shown in the following paragraphs, the FES does provide the analysis required by the pertinent portions of NEPA.

PNPS has installed an augmented liquid radwaste treatment system and is in the process of installing an augmented gaseous radwaste treatment system. The augmented gas system will not be available until January, 1974, and consequently the Staff has analyzed the gaseous releases based on presently installed equipment. It should be noted that the FES also considered releases with the addition of the augment gaseous treatment system and noted that the installation of this system will result in a reduction in the activity released by a factor of 40. 47/

The FES states that "prior to the installation of the augmented gaseous treatment system in January, 1974, the Staff estimates that less than 60,000 uCi/sec (2,000,000 Ci/yr) of noble gases (as shown in Table I) would be released from the station as a yearly average." 48/ This estimate is made on the basis of experience at other operating plants with similar gaseous waste systems. However, as the Staff noted, "we expect actual releases

47/ Staff Safety Evaluation, Supplement 1 (S.S.E. Sup. 1) pp. 12-13; Tr. 939.

48/ FES at 34.

during this period to be in the range of 25,000 to 30,000 \pm 15 uCi/sec. This is based on a probable lower than average load factor during early operation and few fuel failures at low power levels during starting of the facility". 49/

31. Estimates from liquid and gaseous effluents were calculated on the basis of annual releases of radioactivity which the Staff estimated would be discharged from the station. These estimated releases were not based on "design objectives" which represent the optimum operating conditions at the plant. They are based on the Staff's realistic evaluation of the treatment systems considering the equipment installed at Pilgrim and the experience of other operating plants. The design objective for the Pilgrim liquid and gaseous waste treatment systems is set forth in the technical specification Section 3.8 which reads, in part, as follows: "...to assure that any radioactive releases are as low as practicable and would not result in radiation exposures greater than a few percent of natural background exposures and, in any event, within the limits of 10 CFR Part 20 for instantaneous release rates.

Section 3.8.A.2 of the technical specifications sets forth limiting conditions for operation which state "the release rate of radioactive liquid effluents

49/ Tr. 1432.

excluding tritium and noble gases shall not exceed 10 curies during any calendar quarter without specific approval from the Commission." The Staff, however, would not allow a continual release of this amount and has established certain action levels as delineated in 3.8.B.3 of the technical specifications which states "the release rate of gross gaseous activity from the main stack shall not exceed 0.10 curies/second when averaged over any calendar quarter". This is a limiting condition for operation. As noted in paragraph 30, the Staff expects the actual routine releases to be much less than this amount. This expectation is reinforced by Section 3.8.B.3 of the Technical Specifications which also states that "when the release rate exceeds 0.05 Ci/sec for a period of greater than 48 hours, the licensee shall notify the Director, Directorate of Licensing, in writing within 10 days". In addition the Staff testified that "on receipt of such notification we would again receive a red light and again continue to follow the applicant's progress in reducing the releases from the station." 50/

32. Thus, while the Staff has not provided an analysis at each and every level of release, the FES does provide an outer limit of the environmental effects which can be expected from the normal operation of PNPS. In addition, as noted in paragraph 13, infra., the FES has analyzed the environmental impact from postulated accidents. On the basis of the foregoing, it is respectfully submitted that UCS's exception numbered 36 - 39 should be denied.

- I. The Board erred in its view of its Legal Responsibilities and Obligations in this proceeding.

33. Paragraphs 40 - 44 of UCS's exceptions state generally that the ASLB committed an error of law by eschewing an independent review of BECO's application. In support of this contention, UCS cites the following specific examples:

1. The refusal by the ASLB to permit contentions 2(a), 6, 9 or 16 as issues in this proceeding;
2. The ASLB's acceptance of an unsworn letter of BECO's counsel in resolving the issues surrounding Contention 6; and
3. The ASLB's acceptance of the FSAR without allowing the Joint Intervenors to question the reliability of the document.

The Staff has answered these specific contentions in its replies to exceptions A, B, E, F and G.

34. UCS also recites the now familiar phrase that the ASLB is not to act as an "umpire" in the proceeding. However, a distinction must be made between the public health and safety findings which the ASLB must make and the environmental findings which are required. The ASLB must independently consider and balance the conflicting environmental factors and determine whether the proposed license should be issued, denied or

appropriately modified. ^{51/} There has been no complaint by UCS that the ASLB did not conform to this requirement.

On the other hand, UCS appears to misconceive the role of the ASLB on the radiological portion of the proceeding. 10 CFR 2, Appendix A, VI(d) states:

In contested proceedings, the board will determine controverted matters as well as decide whether the findings required by the Act and the Commission's regulations should be made. Thus, in such proceedings, the board will determine the matters in controversy and may be called upon to make technical judgments of its own on those matters. As to matters which are not in controversy, boards are neither required nor expected to duplicate the review already performed by the regulatory staff and the ACRS and they are authorized to rely upon the testimony of the regulatory staff and the applicant, and the conclusions of the ACRS, which are not controverted by any party. Thus, the board need not evaluate those matters already evaluated by the staff which are not in controversy.

Therefore, while the ASLB need not evaluate uncontested matters, it is clear that they must determine whether the findings required by the Atomic Energy Act, as amended, and the Commission's Regulations can be made on the record before it. Thus, the ASLB is required to obtain from the applicant and the

^{51/} 10 CFR 50, Appendix D A.11 (as effective prior to August 27, 1972).

staff, the information sufficient to resolve those questions. This information is obtained from the evidence introduced by the parties and, if necessary, by additional requests and/or questions submitted by the ASLB to the parties. A further requirement imposed on the ASLB, is to establish a clear and particularized identification of those matters in controversy. 52/ In the instant case, the record clearly indicates that the ASLB established the issues to be heard and obtained sufficient information from the parties to decide whether the required findings could be made. UCS's agreement or disagreement with the exact rulings in this area has no relevance to the issue of whether or not the ASLB complied with the legal requirements imposed on it.

35. On the basis of the foregoing, it is respectfully submitted that UCS's exceptions numbered 40 - 44 be denied.

J. The Board's Initial Decision is Invalid because it does not satisfy the Requirement of the Administrative Procedure Act.

36. Paragraph 45 of UCS's exceptions contends that section 557(c) of the Administrative Procedure Act has not been complied with in that each of the Joint Intervenor's findings and conclusions have not been specifically granted or denied.

52/ In the Matter of Boston Edison Co., Docket No. 50-293, Commission Memorandum and Order, July 12, 1972.

While it is true that the Initial Decision does not specifically rule on each proposed finding of the Joint Intervenors, specific rulings on particular findings are not required by the cited provision of the Administrative Procedure Act. The ASLB's decision must clearly inform parties of the ruling of the presiding officer and its position with respect to the proposed findings but further particularity is not required. 53/ The instant decision clearly informed the parties of the ASLB's rulings and its position with respect to intervenors' proposed findings. Certainly the Joint Intervenors have suffered no prejudice from the failure of the Board to specifically rule on each of its proposed findings since they have filed some 10 exceptions to the Board's decision, thereby demonstrating that the views of the Board were clearly understood by intervenors.

CONCLUSION

On the basis of the foregoing, the Regulatory Staff respectfully requests that UCS's exceptions to the ASLB's Initial Decision be denied.

without derogation to the Staff's position stated in the foregoing paragraphs, if this Board disagrees with the Staff's interpretation of the record in regard

53/ See Brooklyn Eastern District Terminal v. United States, 302 F. Supp. 1095 (E.D.N.Y. 1969); and North American Van Lines, Inc. v. United States, 217 F. Supp. 837 (N.D. Ind. 1963).

to the Joint Intervenors contentions dealing with ECCS matters and containment pressure, or believes the record to be unclear in these respects, the Staff would not object to this matter being remanded to the ASLB to consider the following items:

A. With respect to containment pressure:

1. Whether or not PNPS complies with 10 CFR 50, Appendix A, Criterion 16; and
2. Whether or not PNPS complies with 10 CFR 50, Appendix A, Criterion 50.

B. With respect to whether or not PNPS complies with the Interim Acceptance Criteria:

1. Whether the input parameters used in the approved General Electric Evaluation Model (Appendix A, Part 2 of the Interim Acceptance Criteria) appropriately represent the reactor design, plant design and/or the operating characteristics of PNPS (e.g., reactor power level, core power distribution and peaking factors, diesel actuation and pump start-up times, etc.).
2. Whether exceptions 1 - 6 to the analytical techniques described in NEDO-10329 (Appendix A, Part 2 of the Interim Acceptance Criteria) were properly applied.

3. Whether PNPS satisfies the Criteria for All Light-Water Power Reactors (Part A of the Interim Acceptance Criteria) using the analytical techniques of the approved General Electric Evaluation Model (Appendix A, Part 2 of the Interim Acceptance Criteria).

In such a case a remand to the ASLB should specify the foregoing specific issues with a further direction that the issues be considered on an expedited basis.

If this matter is remanded to the ASLB, the Staff believes that no suspension of the license is warranted. The record in this case fully supports a conclusion that all appropriate matters, including ECCS and containment pressure questions, were explored on the record and considered by the ASLB. No question exists with respect to this plant operating safely within the parameters authorized by the operating license issued on September 15, 1972. There is, in short, no health and safety basis for suspension of the license which has been issued. Should the Joint Intervenors prevail on the merits of their exceptions, the final decision of this agency will, of course, so reflect.

Respectfully submitted,



R. Rex Renfrow, II
Counsel for AEC Regulatory Staff

Dated at Bethesda, Maryland
this 31st day of October, 1972.

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

In the Matter of)

BOSTON EDISON COMPANY)

(Pilgrim Nuclear Power Station))

Docket No. 50-293

CERTIFICATE OF SERVICE

I hereby certify that copies of "AEC Regulatory Staff's Answer to the Exceptions of the Union of Concerned Scientists to the Initial Decision of the Atomic Safety and Licensing Board," dated October 31, 1972, in the captioned matter, have been served on the following by deposit in the United States mail, this 31st day of October, 1972:

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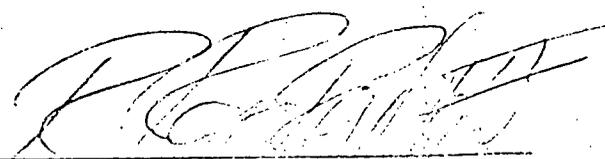
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