5/21/81

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of BOSTON EDISON COMPANY et al. (Pilgrim Nuclear Generating Station, Unit 2)	Docket No. 50-471

BRIEF

BY THE INTERVENOR/APPELLANT MASSACHUSETTS WILDLIFE FEDERATION IN SUPPORT OF ITS EXCEPTIONS TO THE "PARTIAL INITIAL DECISION FINDINGS OF FACT AND CONCLUSIONS OF LAW ON ALL MATTERS EXCEPT EMERGENCY PLANNING AND TMI-2 RELATED ISSUES" AND TO THE BOARD'S ORDER OF JULY 14, 1978 REFERRED TO THEREIN.

The Massachusetts Wildlife Federation ("MWF"), an Intervenor/Appellant in the above-captioned proceeding, by its attorney, hereby submits its Brief in support of its exceptions to the "Partial Initial Decision Findings Of Fact and Conclusions Of Law On All Matters Except Emergency Planning And TMI-2 Related Issues" (hereinafter "the Decision") and to the Board's Order of July 14, 1978 referred to therein.

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SUBJECT MATTER OF APPEAL

This appeal deals with the MWF's challenge to the constitutionality and legality of 10 CFR Part 50, Appendix I, Sec. II-D (hereinafter "the Regulation"), which establishes a dollar value for dose reduction to human beings and of the decision of the Licensing Board to apply the Regulation to this proceeding notwithstanding consitutional and legal challenges thereto, and the resulting decision of the Board that for Pilgrim #2, no augments are required to the gaseous radwaste system.

PRELIMINARY BACKGROUND STATEMENT AS TO APPELLANT MWF'S POSITION

The MWF intervened in this proceeding on a broad scope of issues. Since this case was initiated in 1974, the MWF has reduced its differences with the Applicant and Regulatory Staff to the one issue delineated above.

We think it fair to state that in the intervening years, the MWF has moved, generally to a posture of cooperation rather than confrontation with the Applicant. In lengthy and complex settlement negotiations (in which the good offices of the Staff and its counsel played an important role) we reached an accord (approved by the Licensing Board) which provides for an offsite radiological monitoring program [See MWF Exhibit No. 1-A, Decision A-12, Tr. 6460] which was described as unprecedented as to its scope and rigor. In

addition, an independent advisory Board, in which the MWF participates, was established to review and guide offsite radiological monitoring for both the existing Unit #1 and proposed Unit #2, and the MWF looks forward to cooperating with the Applicant in this area in the years ahead for the public benefit.

The MWF, therefore, has no quarrel, generally, with the Applicant, nor with the Staff; the MWF feels itself obliged, notwithstanding its limited resources, to carry forward its appeal on the issue of the "dollar valuation of human life and health" presented. The MWF feels that this regulation is ethically and morally repugnant, and moreover, serves no useful purpose in nuclear power station licensing; nuclear power generating stations could be designed and licensed without it, as is shown by the design of Unit #2 prior to the promulgation of this regulation.

This appeal, and the MWF's litigation efforts that precede it, are therefore in no way an attempt to challenge the need for, or the desirability, of nuclear power generation; the MWF is not unaware of the shift in geopolitical factors which has occurred since this case was first docketed. This appeal is decidedly not an attempt to challenge the policy of nuclear power generation in the guise of, and within parameters of, individual plant licensing litigation.

PROCEDURAL HISTORY OF THE MWF'S LEGAL BASIS FOR THIS APPEAL

1. All contentions by the MWF other than the basis for this appeal have been disposed of by settlement and voluntary dismissal (Decision, pages 7 and 8, Sec. 4 and footnote 3 thereto).

2. MWF contention 1(a) which deals with compliance with the Commission's "as low as practicable standards" was admitted by the Board (Tr. 781).

3. The admission of MWF contentions (6) thru (10) (which were termed "legal contentions") was stipulated to by the MWF and the Staff (but not the Applicant) and these legal contentions were the subject of a Board ORDER of February 18, 1975; therein it was stated, at page 9:

> ". . . issues, such as those asserted by MWF . . . in contentions 6 through 10 are not properly the subject of an evidentiary hearing as normally constituted."

The MWF requested reconsideration of the Board's position, and the Board clarified it in a further ORDER of March 25, 1975 pertaining to the legal contentions (6) through (10). The Board indicated that these contentions were not being dismissed but that:

> ". . . such issues can more appropriately be addressed by legal memoranda and briefs rather than by factual testimony in an evidentiary hearing." (Order page 5).

The Board, moreover, proceeded in its ORDER to allow the MWF discovery on the legal contentions (6) through (10) with the anticipation that such discovery might provide the MWF with such facts as it considered essential to present these legal issues to the Board.

4. In its "MEMORANDUM ON MASSACHUSETTS WILDLIFE FEDERATION LEGAL CONTENTIONS AND FACTS ALLEGED IN SUPPORT THEREOF" filed on January 6, 1977, the MWF summarized the nature of its constitutional and legal arguments and basis pertaining to the Regulation in question, insofar as its impact upon one remaining concern of the MWF in these proceedings, specifically, its contention 1(a), (dealing with compliance with the Commission's "as low as practicable" standards).

5. In its "NUCLEAR REGULATORY COMMISSION STAFF RESPONSE TO MASSACHUSETTS WILDLIFE FEDERATION LEGAL CONTENTIONS AND FACTS ALLEGED IN SUPPORT THEREOF", dated January 19, 1977, the N.R.C. Regulatory Staff (hereinafter "the Staff") stated its opposition to the MWF legal contentions, as did the Applicant, in a separate filing. Subsequently, on April 15, 1977, the MWF filed a response thereto by leave of the Board.

6. The Board, in its ORDER of July 14, 1978, ruled that the MWF legal argument constituted an attack on an N.R.C. regulation prohibited by 10 CFR 2.758(a). The Board ruled,

on page 5:

> "We think the regulation is clear and that we are not at liberty to disregard it or any other regulation either because we doubt the adequacy of the underlying record on which it was adopted or because we think it violates the Constitution or any statute. It is not within the power delegated to this Board to refuse to apply some part of the regulatory scheme for the reason urged. We will apply Section II D of Appendix I to CFR Part 50, as it is relevant to this proceeding, as that Section is written."

7. The MWF deemed (with the concurrence of counsel for the Applicant and Staff) this ORDER of July 14, 1978 to be determinative, in the Licensing proceedings, of the MWF's attempts to litigate the applicability of the Regulation to this proceeding. Accordingly, since the MWF considered the record to demonstrate compliance with the numerical design objectives and the cost benefit analysis requirements of Appendix I to CFR Part 50, as it is written and as the Board has decided to apply it, the MWF filed on November 30, 1979, "EXCEPTIONS BY THE MASSACHUSETTS WILDLIFE FEDERATION IN LIEU OF REQUESTS FOR FINDINGS OF FACT AND CONCLUSIONS OF LAW" (See decision, page 8, note 3). It was informally agreed between counsel for the Staff, the Applicant and the MWF that the filing of the aforementioned exceptions in lieu of requests for findings was appropriate in view of the Board's ORDER of July 14, 1978.

8. On February 18, 1981, the MWF filed exceptions to the Decision and to the Board's ORDER of July 14, 1978.

SUMMARY OF ARGUMENT

The regulation in question, 10 CFR Part 50, Appendix I, Sec. II-D (hereinafter "the Regulation") establishes a monetary value for dose reduction to human beings.

The Regulation is unconstitutional and, further, violates the provisions of the Administrative Procedure Act; it deprives the MWF of due process and violates its substantive rights as an intervenor.

The Regulation was promulgated as a purely "interim" measure on the basis of what the Commission admitted to be an inadequate and incomplete record in the rule making proceeding. The Commission promised further rule making at the earliest practicable date, but the Commission later decided not to do so on grounds which are logically, factually, and legally unsound.

This Regulation, which has directly affected inter alia, the gaseous radwaste system for Pilgrim #2 is contrary to the Commission's statutory mandate and is ultra vires to the Commission's authority. Congress did not intend to confer upon the Commission the right to place a dollar value on human life and suffering; if arguendo, Congress did so intend, it could not delegate this authority to the Commission in the absence of proper standards, which are totally absent here.

Further, the rule making relevant to this Regulation was legally untenable on the grounds that it was arbitrary,

subjective, logically unsound, and based on a legally inadequate record.

In addition, insofar as the Regulation permits only one party (the Applicant) to introduce evidence to justify variance from the Commission's standards, but denies that right to intervenors, the Regulation masks adjudicative facts as legislative facts, has deprived the intervenors of due process and violates fundamental standards of fairness, and illustrates the arbitrary nature of the standards imposed.

STATEMENT OF FACTS

1. The design for Pilgrim Unit #2 originally submitted by the Applicant for licensing prior to the promulgation of the Regulation on April 30, 1975 included, as part of the gaseous radwaste system, provision for a charcoal adsorber for the main condensor evaluation system. (Tr. pp. 6797 - 6799)

2. The Applicant had submitted the design for the gaseous radwaste system (including the charcoal adsorber) prior to April 30, 1975 as being in conformance of the "as low as practicable standards" under Commission regulations, and the Staff did not oppose that position.

3. The deletion of the charcoal adsorber from the design

resulted in a calculated increase in emissions of radioiodines, with an increase in Iodine 131 releases from .11 curies to .15 curies per year (Tr. 6788-6789) and an approximately equal change with respect to Iodine 133. (Tr. 6791)

4. The Applicant introduced testimony to the effect that "- - - we would justify the removal of the filter [charcoal adsorber] solely on the basis of Appendix I, and in compliance with Appendix I." (Tr. 7306-7307)

5. For the purposes of the cost benefit analysis required by the Regulation, the Staff and Applicant calculated differing total annualized costs for the deleted charcoal adsorber (which was thereafter evaluated as a possible augment), with the Staff's figure being $11,500 and the Applicant's $8,900. (Tr. 7253, and, see Decision p. 72, §125).

6. There was considerable testimony by Staff witnesses as to the fact that no confidence limits (plus or minus values) could be assigned to the Staff's relevant computation and modelling of gaseous releases (inter alia) because the operating data is limited for some of the parameters on which the Staff's model was based) (Tr. 7683-7684), that there was a certain

element of uncertainty in the relevant numerical values calculated (Tr. 7690), and that the Staff's and the Applicant's differing evaluations and corresponding numbers could be expected as a normal variation between two sets of values proceeded by different reasonable scientists and engineers. (Tr. 7814 and 7815)

7. Table 4 to Staff testimony following Tr. 7659 shows that, with respect to a comparison of calculated doses with corresponding Appendix I Dose Design Objectives, the entry for Radioiodines and Particulates is the only one showing a ratio exceeding twenty-five percent (13 to 15 mi rem/yr.).

8. The Board ruled in its Decision that no augments to the gaseous radwaste system were required in order to comply with the "as low as practicable" (now "as low as is reasonably achievable") standards imposed by Appendix I.

ARGUMENT

I. Introduction

The Licensing Board, in its Decision, found compliance with Appendix I to 10 CFR Part 50, and, found further, that on the basis of a cost benefit analysis of specific radwaste system

augments called for by Section II D of Appendix I (which establishes a dollar valuation for human dose increments), no radwaste system augments are required; specifically, the Board found that the cheapest augment to the gaseous radwaste system (a charcoal adsorber), which had been deleted from the prior design for the plant, was not cost effective and therefore not required. That charcoal adsorber (hereinafter "the Augment") would have reduced Radioiodine releases by a significant increment. The MWF has challenged the constitutionality and legality of the Regulation, and submits it should have been permitted to litigate that the augment was required to comply with the "as low as practicable" standard notwithstanding the augments alleged non cost effectiveness under the Regulation. The record does show compliance with Appendix I, as the Board found, if the Regulation is applied as it is written.

II. Regulatory History and Nature of the Regulation

The Regulation provides in pertinent part:

> "As an interim measure, and until establishment and adoption of better values (or other appropriate criteria), the values $1000 per total body man-rem and $1000 per man-thyroid rem (or such lesser values as may be demonstrated to be suitable in a particular case) shall be used in this cost-benefit analysis."

The Regulation was adopted by the Commission in its Opinion United States Nuclear Regulatory Commission, In the

Matter of Rulemaking Hearing: Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "as low as practicable" for Radioactive Material in Lightwater Cooled Nuclear Power Reactor Effluents, Docket No. RM-50-2, Washington, D.C. April 30, 1975, (LI-75-5, pp. 277-345, hereinafter the "Opinion").

By its own wording, the Opinion stated that the record was insufficient for a finding as to a definite monetary value for dose reduction to human beings (Opinion, pp. 283, 311, 317) The Commission twice stated that it had adopted the stated monetary dose reduction values "purely as an interim measure" (p. 284) (and, see to that effect p. 318, and Appendix I Section II D). A rulemaking hearing to establish "appropriate monetary values" was promised "at the earliest practicable date" (p.283). A pertinent excerpt from the Opinion (pp. 283-284) dealing with the monetary value for dose limitation is set forth in Exhibit "A" hereto.

Three years subsequent to the promulgation of the "purely interim" Regulation, the Commission, in its "Decision Not to Conduct a Hearing to Refine or Reduce the Health Cost Figures Previously Adopted", dated May 18, 1978, (Federal Register, Vol 43, No. 101, May 24, 1978, pp. 22253 and 22254) decided that no further rulemaking on the dollar valuation was anticipated for the time being, notwithstanding the commitment

in the Opinion. --"However, experience has shown that a more precise determination of appropriate dollar per man-rem and dollar per man-organ-rem values is now necessary", supra, at p. 22253.

III. Exception 6: Failure by Licensing Board to make required findings according to "man-thyroid-rem" criteria.

In the final sentence in §125, p.72 of the Decision, the Board erred in making findings as to the expenditures for radwaste system augments only according to the man-rem criterion of the Regulation, and not also according to the "man-thyroid-rem" criterion of the Regulation. The latter unequivocally requires both. While the MWF challenges the constitutionality and legality of that very provision (and without waiving those challenges) the MWF submits that if the Regulation is to be applied at all, it should be applied consistently, and it would be appropriate for such findings to be made, if only to present a more complete record for possible judicial review.

We submit, however, that there is no need for remand to the Licensing Board on this issue: the omission appears to be merely an oversign, and can be remedied by the Appeals Board by means of an de novo review of the record (Staff witnesses testimony at p. 5 and Table 5 following Tr. 6482 as amended by p. 3 and table 5 following Tr. 7659) in order to make its independent finding as to the man-thyroid-rem criteria. Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power

Station), ALAB-73, 5 AEC 297, 298 (1972).

It would appear that the figures in this instance under both criteria are the same, but we submit the findings should so state explicitly.

IV. The Objectionable features of the Regulation and its relation to the Commission's enabling legislation: Exceptions 1-5.

The assignment of monetary values to the reduction of human life and suffering is a radical, chilling and totally unprecedented mode of administrative regulation. It is an approach, which, if legally sustainable, would mark an irreversible change in our societal structure. It is a mode of regulation which offends, procedurally and substantively, the basic precepts of our Anglo-American legal system, and the moral values which permeate the structure of American society.

The Opinion clearly sets forth that the Commission's own regulatory staff (to its credit) did not have the stomach to recommend specific monetary values for human radiation dose reduction. "The Staff took the position that there is no agreement on monetary values for the reduction of risk to human life or suffering or on how much values should be applied. They reason that it is not possible to reflect properly the worth of radiation to human life in monetary terms since there are overriding moral values that cannot be quantified."

(Opinion, p. 315) The Commission echoed these sentiments: "Moreover, we also recognize that selection of such values is difficult since it involves, in addition to actuarial considerations that are commonly reduced to financial terms, aesthetic, moral, and human values that are difficult to quantify. (Opinion, p. 283) The Commission nevertheless proceeded to do just that!"

This radical departure from previously accepted administrative regulatory approach and practices is sui generis in its methodology. There is nothing whatsoever in the legislative history of the Commission's enabling legislation to even hint that Congress even contemplated such a methodology, much less that it intended to delegate the authority to the Commission to utilize it.

The relevant enabling legislation is quite broad in its sweep, but it is also quite clear as to its general policy, namely, that nuclear power shall be licensed consistent "with the health and safety of the public". 42 U.S.C.A §2011, §2012 (d) and (e), §2013(d)

We submit that the underlying idealogy of the Regulation - that the reduction of risk to human life and suffering can be quantified in monetary terms - is totally at odds with the underlying statutory mandate, and contravenes the legislative intent and policy, which repeatedly stresses "the health and

safety of the public."

The Supreme Court has refused to sustain administrative action which transcends the delegation from Congress. See e.g. H.K. Porter Co. v. N.L.R.B., 397 U.S. 99, 90 S. Ct. 821, 25 L. Ed. 2d 146 (1970). In Porter, the Supreme Court held that while the powers of the agency concerned, under its enabling act, were broad, those broad powers were nevertheless limited by the policies of the act itself.

The Regulation is therefore, we submit, an ultra vires exercise by the Commission, and exceeds the latters statutory authority.

This is all the more so if one regards the manner in which the Commission achieved this purpose: it established the dollar value on the basis of what it admitted to be a clearly inadequate record, and, of course, the "interim" nature of the Regulation has been changed by the subsequent Commission Decision of May 24, 1978. The Commission has termed its monetary value as "conservative" in the Opinion, but that is a purely subjective judgment in the light of the paucity of facts on the rulemaking record to support that characterization. Thus, even if, arguendo, Congress had, and could have, delegated this authority to the Commission, the actual exercise of it in

so arbitrary and subjective fashion by the Commission contravenes its previously mentioned statutory mandate with regard to safeguarding the public health and welfare.

V. The unconstitutionality of any inferred delegation by the Congress to the Commission of authority to establish such monetary dose reduction values in the absence of any discernible standards; Exceptions 1-5.

To the extent that it is maintained, arguendo, that Congress did, within the scope of the enabling statute, delegate to the Commission the authority to assign dollar values to human dose increments, to that extent, we submit, the delegation is legally untenable and invalid.

Notwithstanding the general tendency of modern case law to validate delegation of extremely broad legislative powers to the executive branch and to administrative agencies (See, e.g. Mezines, Stein, Gruff, Administrative Law §3.03[1] pp. 3-71 and 72), the Supreme Court, in two landmark cases, has held that delegations by the Congress of legislative power without accompanying definite standards are unconstitutional. Panama Refining Co. v. Ryan, 293 U.S. 388, 55 S. Ct. 241, 79 L. Ed. 446 (1935); Schechter Poultry Corp. v. United States, 295 U.S. 495, 55 S. Ct. 837, 79 L. Ed. 1570 (1935).

A leading treatise has pointed out that the Supreme Court has consistently refused to overrule these two decisions (although they have been limited and distinguished) and has speculated perhaps the Court may wish to preserve them for extreme cases. Mezines, Stein, Gruff, Administrative Law §3.03 [1] p.p. 3-71 and 72. We submit that the Regulation is one of those "extreme cases". The Schechter case was cited with approval by the Supreme Court in National Cable Ass'n v. United States, 415 US 336, 39 L. Ed. 2d 370, 94 S. Ct. 1146 (1974); the Court calling for "an intelligible principle" to accompany delegation. Further, the courts have indicated that these are substantive limitations on overbroad, vague or standardless delegation. See, e.g. Kent v. Dulles, 357 U.S. 116, 78 S. Ct. 1113, 2 L. Ed. 2nd 1204 (1958).

VI. The Regulation constitutes an example of arbitrary and improper rulemaking which deprives the MWF of its procedural and substantive rights in this proceeding; Exceptions 1 - 5 and 7.

The Commission has attempted to mask the adjudicative facts as legislative facts by means of its Opinion. It has clearly stated that the record is inadequate to support the adoption of monetary dose reduction values. The Commission has labeled its "interim values" as "conservative" but that is merely a subjective characterization in the light of the incomplete record. Further, whatever validity the label

"conservative" may have had five years ago when the rule-making record closed, it has none at this time in the light of relevant scientific expertise which has accrued in the interval. There is, therefore, no justification for permitting the Applicant on one hand, to show that the monetary values should be lower and, on the other hand preventing the Intervenor from showing that the monetary value should be higher. (Opinion, p.284) What the Commission has done, in fact, is to leave it to the Applicant to establish the monetary value in any particular case with the proviso that if the Applicant makes no such showing, the monetary value will be set at an arbitrary figure. The monetary dose values are therefore merely adjudicative, and not legislative facts, and the Commission, in the guise of rulemaking, has merely a priori denied one party to an administrative litigation of a hearing on the merits. For a standard as to when adjudicative facts require a hearing, see, e.g., Hunt Oil Co. v. FPC, 424 F. 2d 982, at 985 (5th Cir. 1970):

> "If adjudicatory facts - governing the applicability of the rates to particular persons as distinguished from facts applying broadly across the industry - had been in issue then a hearing might be necessary."

In permitting the Applicant to introduce evidence in its favor, in any case, even absent an a priori showing of special circumstances, the Commission has in fact characterized the monetary cost factor as an adjudicative

fact, and has deprived the MWF of its constitutional and statutory rights to a procedurally adequate hearing on the merits.

The provision that only the Applicant may introduce evidence to vary the $1,000 valuation is not only an unconstitutional denial of due process, but also violates the underlying rationale of the Administrative Procedure Act, which is to establish conformance to commonly held standards of fairness. Further, this one-sided variance provision is also improper, for, if the Commission has been unable to ascertain a morally and rationally sustainable standard, it cannot delegate such an attempt to the individual licensing Boards in the absence of some ascertainable and rational standard; otherwise, the Intervenors should be free not only to litigate that the dollar figure should be higher (which the MWF would find repugnant in principle) but, also, that the determination cannot and should not be made on scientific and moral grounds.

The Commission has in fact not established any reasonable standards with respect to the monetary dose values in view of (i) the incomplete record, (ii) the unrestricted leave granted Applicants to establish <u>any</u> value <u>below</u> those stated, (iii) the inordinate passage of time since evidence was received to support the "purely interim measure," (iv) the accumulation of scientific evidence contradicting the

Commission's determination, and (v) the failure to actually initiate rulemaking at the "earliest practicable date." In view of the momentous public health and general societal import of the issue under discussion, the Commission's posture, and the resultant effect on the instant proceedings, constitutes regulation on the basis of inadequate administrative standards in nonconformance with the legislative purpose and applied in a non-uniform manner. See, Environmental Defense Fund v. Ruckelshaus, 439 F.2d 584 (D.C. Cir. 1971)

In the context of these present proceedings, the inadequate administrative standards established by the Commission have had an actual, rather than merely a theoretical, impact: for example, the adoption of the monetary dose reduction values under discussion has permitted a redesign of the radwaste treatment system by the Applicant, and a resultant removal of a charcoal adsorber originally provided for, and an increase of radiation exposure to the offsite human population.

Finally, we submit that the rulemaking in question leading to the Regulation is subject to judicial review, and the Regulation should not be applied in these proceedings to the Intervenor's detriment, if, as we argue, judicial remand for further rulemaking would be one option for curing

the injustice [another means would be to enjoin the application of the Regulation leaving the parties free, on remand to the Licensing Board, to litigate on the pre-existing "as low as practicable basis" in addition to the Appendix I numerical values].

In Portland Cement Association v. Ruckelshaus, 486 F.2d 375 (D.C. Cir. 1973) cert. denied 417 U.S. 921 (1974), the court held, at p.393: "It is not consonant with the purpose of a rule-making proceeding to promulgate rules on the basis of inadequate data- - -."

As previously stated, the fact that these values were termed as "interim" no longer has any relevance in the light of the Commission's Decision of 18 May 1978 not to conduct further rulemaking at this time. Nor, we submit, can the rationale for the Commission's Decision withstand testing on logical or factual grounds.

The Commission stated in its Decision, op. cit. at p. 22253 and 4"

> "However, experience has shown that a more precise determination of appropriate dollar per man-rem and dollar per man-organ-rem values is now unnecessary. The NRC staff has performed 30 evaluations of the cost-benefit analyses submitted in support of nuclear power reactor license applications as required by Section IID of Appendix I of 10 CFR Part 50. In each of these cases, it was found that no additional effluent control equipment was

> required to meet the cost-benefit provisions of Section IID of Appendix I beyond the equipment that was required to meet the individual dose design objectives contained in Sections IIA, IIB, and IIC of Appendix I to 10 CFR Part 50. This experience indicates that, for most situations, the individual dose design objectives will limiting, even for the conservative interim dollar per man-rem values. Further refinements are expected to provide lower numerical values, which would be even less likely to affect effluent treatment system requirements. For this reason the interim values of $1,000 per total body man-rem and $1,000 per man-thyroid-rem, although not precise, appear to remain usable values for regulatory decisionmaking."

This, it is respectfully submitted, is a textbook example of circular reasoning and begging the issue; the fact that no aguments were required in 30 analyses based on the monetary values is just as valid a basis for the inference that the values are not "conservative" but have been set arbitrarily low.

The remainder of the justifications therein for not proceeding with rulemaking are either not direclty germane, or, if they are would justify interim suspension rather than maintenance of this flawed criteria. Finally, there is no justification for the Commission's assumption that further refinements will result only in lower, rather than in higher values.

In addition to these generic defects, the record of these proceedings is at odds with the rationale of the Commission's Decision of May 18, 1978. It is only with the closing of the record in this proceeding (as to the matters in the Licensing Board Decision) that we can present a concrete example of the Regulation's monetary criteria not working satisfactorily.

In the first place, as already delineated, we have the example of a radwaste system augment, previously part of the plant design under the "as low as practicable" standards, being deleted in conformance with the Regulation.

Second, the record demonstrates the inherent uncertainties in the relevant modelling and computational process, Statement of Facts, #6, supra.

Third, the comparison of calculated doses with corresponding Appendix I Dose Design Objectives shows a ratio of 13 to 15 mi rem/yr. for radioiodines and particulates. Statement of Facts, #7, supra.

It should be noted at this point, that, with respect to MWF's exception #7, the Board erred in its evaluation of the propriety of the comparison between the Staff and the Applicant's data and the divergent trend shown. While it is true that at one time on the day in question (9 June 1977)

the Staff witnesses were comparing values based on an obsolete table, as the Board stated in the Decision, p.146, n.97, there was subsequently considerable discussion on this subject (Tr. 7772-7778, 7782-7789). The Board subsequently permitted cross-examination by the MWF as to a comparison of the proper updated data (Tr. 7789-7815) and the Staff witness testified that, as to the still existing divergence between the Staff and the Applicant's values, "- - -the explanation lies in the different evaluation models assumed by both the Staff and the Applicant." (Tr. 7811) Further, with the exception of Xenon-133, Xenon-131M, and Krypton-85, the same trend persisted (higher values from the Staff than the Applicant) according to the Staff witness (Tr. 7807-7809). The Board's comment in footnote 97 on page 146 therefore seems to relate to superseded testimony earlier on that same day.

When one considers the aforementioned uncertainties, divergencies of data, and lack of ascertainable confidence limits, it seems that the ratio of 13 to 15 mentioned above indicates that relevant "calculated" dose is sufficiently proximate to the Design Objective for radioiodines that the exclusion of the charcoal adsorber (as an augment purely on the application of an arbitrary cost benefit analysis) is not sound practice. The facts in this proceeding, therefore, are not consistent with the Commission's defense of its monetary value criteria.

Quite apart from the aforegoing, we submit that the Commission cannot, on the basis of 10 CFR Section s.758(a), prevent a challenge to the constitutionality or legality of the Regulation within the scope of this proceeding, if the Regulation, as MWF argues, directly imparts on its rights in this proceeding; this seems all the more evident when one considers that even if the MWF were to petition for further rulemaking (which would be futile since the Commission has unequivocally declined to do so at this time) any such hypothetical rulemaking proceeding would not stay the adjudication of the relevant contentions in this Licensing Proceeding.

If, as the Board indicated in its ORDER of 14 July 1978, it is not within the power delegated to it to refuse to apply some part of the regulatory scheme (see procedural history, supra, #6), then we submit the Board should have certified that issue to the Commission for its determination as the MWF requested, inter alia in its pleading filed on April 15, 1977, referenced in procedural history, supra #5.

CONCLUSION

For the reasons above stated, we respectfully submit that the Licensing Board erred in applying the Regulation in this proceeding so as to preclude augments to the radwaste

system without permitting the MWF to challenge the constitutionality and legality of the Regulation, or, in the alternative, certifying that issue to the Commission. Thereby, the MWF was deprived of its procedural and substantive rights with regard to the radwaste systems augments issue, and we respectfully pray that the case be remanded to the Licensing Board with a directive to litigate that issue without applying cost-benefit analysis with human dose reduction monetary values, and we further pray for such additional and other relief as the Board may deem meet and proper.

Respectfully submitted,

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other organs from all reactors on a site to not more than 5 millirems. The design objective in the new Appendix I is expressed as the annual quantity of radioactive iodine and radioactive material released which limits the annual dose or dose commitment to any organ, including the thyroid, of any individual in an unrestricted area from all pathways of exposure to not more than 15 millirems per year per light-water-cooled nuclear power reactor. In determining the annual dose or dose commitment, the applicant or licensee may evaluate the portion due to intake of radioactive material via the food pathways at the locations where the food pathways actually exist. The design-objective annual dose for radioactive iodine has been increased from 5 to 15 millirems on the basis of evidence developed in the hearing which showed that the previous design-objective annual dose of 5 millirems per year for doses to the thyroid from the milk pathway was not practicable.

4. Cost-Benefit Requirements

In addition to the numerical design-objective guides described in paragraphs 1, 2, and 3 above, our decision requires that the applicant include in the radwaste systems all items of reasonably demonstrated technology

that, when added to the system sequentially and in order of diminishing cost-benefit return, can with a favorable cost-benefit ratio effect reduction in dose to the population reasonably expected to be within 50 miles of the reactor. The definition of as low as practicable (10 CFR 50.34a(a)) includes consideration of "...the economics of improvements in relation to the benefits to the public health and safety...." We find support in the record for the application of a cost-benefit analysis as a part of the process for determination of the radwaste systems to be used. Such a cost-benefit analysis requires that both the costs of and the benefits from reduction in dose levels to the population be expressed in commensurate units, and it seems sound that these commensurate units be units of money. Accordingly, to accomplish the cost-benefit balancing, it is necessary that the worth of the decrease of a man-rem and man-thyroid-rem or some essentially equivalent quantities in dose to the population be assigned monetary values.

The record, in our view, does not provide an adequate basis to choose a specific dollar value for the worth of decreasing the population dose by a man-rem or a man-thyroid-rem. Published values for the worth of a man-rem were shown in the record to range from about

$10 to $980. No similar values for worth of a man-thyroid-rem are presented. One of the hearing participants chose $1000 per man-rem and $333 per man-thyroid-rem. This choice for worth of a man-rem simply reflected a value slightly more conservative than the highest previously published value and implied no independent assessment of the worth of either entity. We, therefore, recognize that there is no consensus in this record or otherwise regarding proper value for worth of a man-rem and even less information upon which to base the choice of a proper value for worth of a man-thyroid-rem.

Moreover, we also recognize that selection of such values is difficult since it involves, in addition to actuarial considerations that are commonly reduced to financial terms, aesthetic, moral, and human values that are difficult to quantify. At the same time we believe that meaningful cost-benefit balances are an essential part of the considerations of the as low as practicable concept for control of insult to the population from radioactive effluents, and for that matter, from other pollutants.

We propose, therefcre, at the earliest practicable date to conduct a rulemaking hearing to establish appropriate monetary values for the worth of reduction of radiation doses to the population. We are aware that the National Academy of Sciences - National Research Council Advisory Committee on Biological Effects of Ionizing Radiation is currently studying and developing methodologies for benefit-risk-cost analysis for activities involving radiation exposure. It is possible that information on monetary values for the worth of reduction of radiation dose, as well as useful methodology, may be provided by this study. When such appropriate values (or some other equivalent quantified, and as yet unspecified, criteria) are available, we shall consider them for incorporation in Appendix I.

Meanwhile, and purely as an interim measure, we believe that we can accept the conservative value of $1000 per total-body man-rem for these cost-benefit evaluations. Since we realize that the ultimately accepted value may well prove to be less than this, we should leave it open to demonstration in individual cases that a lower figure should be used if the applicant chooses to and can make that demonstration. It is also clear to us that

arguments can be made that the worth of reduction in thyroid dosage should have a smaller value than that for a total-body man-rem. Since the record can offer no clear guidance in this regard, we have accepted, purely as an interim measure, $1000 per man-thyroid-rem as the value to be used in the cost-benefit evaluations. This figure is subject to individual case demonstration of a lower value, as indicated above, since it may well be that the ultimately accepted value will be lower.

In summary, we have decided that, pending completion of the further rulemaking to establish better values (or suitable equivalent criteria), the cost-benefit balances required by section II, paragraph D of Appendix I, shall be accomplished using the value of $1000 per total-body man-rem and $1000 per man-thyroid-rem, or such lesser values as may be demonstrated by the applicant to be suitable in a particular case.

We intend that radwaste augments necessary to satisfy the limits (of section II, paragraphs A, B, and C of Appendix I) on maximum dosages to individuals will be required in all cases. Additional radwaste augments

will be required when, and only when, it can be shown that, where each is added sequentially and in order of diminishing cost-benefit return, the sum of its annualized cost of installation, its annual operating cost, and a reasonable allowance for its maintenance is less than the annual worth of the decreases in total-body man-rem and in man-thyroid-rem which the augment can achieve for the population within 50 miles of the reactor.

5. Per Site vs. Per Reactor

From the foregoing it is clear that the Commission's policy is to minimize the radiation exposure of human beings from the effluents of light-water-cooled nuclear power reactors. We have chosen to express the design objectives on a per light-water-cooled nuclear power reactor basis rather than on a site basis, as was originally proposed. While no site limits are being adopted, it is expected that the dose commitment from multi light-water-cooled reactor sites should be less than the product of the number of reactors proposed for a site and the per-reactor design-objective guides because there are economies of scale due to the use of common radwaste systems for multi-reactor sites which are capable of reducing exposures. Moreover, we note that the matter of overall environmental impact of

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of	)	
BOSTON EDISON COMPANY et al.	)	Docket No. 50-471
(Pilgrim Nuclear Generating Station, Unit 2)	)	

CERTIFICATE OF SERVICE

I hereby certify that the within "BRIEF OF THE INTERVENOR/APPELLANT MASSACHUSETTS WILDLIFE FEDERATION IN SUPPORT OF ITS EXCEPTIONS TO THE "PARTIAL INITIAL DECISION FINDINGS OF FACT AND CONCLUSIONS OF LAW ON ALL MATTERS EXCEPT EMERGENCY PLANNING AND TMI-2 RELATED ISSUES" AND TO THE BOARD'S ORDER OR JULY 14, 1978 REFERRED TO THEREIN" has been served on the following by deposit of copies thereof in the United States Mail, first class mail, postage prepaid this 21st day of May, 1981:

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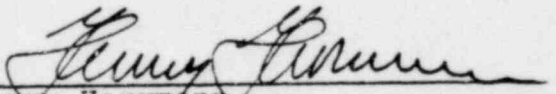

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