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

May 22, 1980

OFFICE OF THE
SECRETARY

MEMORANDUM FOR: William J. Dircks, Acting EDO
Leonard Bickwit, Jr., General Counsel

FROM: Samuel J. Chilk, Secretary

SUBJECT: STAFF REQUIREMENTS - AFFIRMATION SESSION 80-22*, 3:30 P.M., THURSDAY, MAY 15, 1980, ROOM 550 EAST WEST TOWERS, BETHESDA, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

I. SECY-80-131 - Accident Considerations Under NEPA (CONSENT CALENDAR ITEM)

The Commission, by a vote of 3-2[1/] (Commissioners Gilinsky & Bradford dissenting in part):

1. approved the publication of the attached Federal Register Notice containing a statement of interim policy relative to accident considerations under NEPA. (NRR) (SECY Suspense: 6/3/80)

II. SECY-A-80-53 - Proposed Response to Motion Filed With the Commission (CONSENT CALENDAR ITEM)

The Commission by a vote of 5-0[2/]:

1. approved an Order referring an interlocutory motion from the Environmental Coalition on Nuclear Power to the Atomic Safety Licensing Appeal Board for appropriate action; (OGC)
(The Secretary signed the Order on May 16, 1980, and the Order was transmitted to the Appeal Board on May 16, 1980).

Chairman Ahearne requested:

2. that EDO check into problems associated with LPDRs (noted on page 19 of the 4/11 Board Order). (EDO) (SECY Suspense: 6/3/80)

III. SECY-A-80-54 - Request for Commission Funding of Witnesses Called by Intervenors in TMI-1 Restart (CONSENT CALENDAR ITEM)

The Commission, by a vote of 5-0[2/]:

1. approved a Memorandum & Order which denies the request of the Consumer Advocate of Pennsylvania to provide financial assistance to intervenors for retaining expert witnesses to be called during the TMI-1 restart proceeding. Commissioner Bradford filed a separate concurring opinion with which Commissioner Gilinsky agrees. (OGC)
(The Secretary signed the Memorandum & Order on 5/16/80).

* All footnotes for this Session appear at the end of the Text.

IV. SECY-A-80-58/58A - Intervenor Funding in TMI-1 Restart -- Licensing Board Certification (CONSENT CALENDAR ITEM)

The Commission, by a vote of 5-0[2/]:

1. approved a Memorandum & Order which makes it clear that although the Commission has not yet determined whether the issue of psychological distress should be considered in the TMI-1 restart proceeding, the Commission will not provide funds for intervenors to plan for and address this issue in fiscal year 1980. (OGC)
(The Secretary signed the Memorandum & Order on 5/16/80)

V. SECY-A-80-29A - Certification to the Commission by the Licensing Board in the Three Mile Island Restart Proceeding -- Docket No. 50-289 (CONSENT CALENDAR ITEM)

The Commission, by a vote of 3-2[1/] (Commissioners Gilinsky and Bradford approving in part and disapproving in part as noted below):

1. approved a Memorandum & Order stating that 10 CFR 50.44 will not be waived in the restart proceeding, and that post-accident hydrogen gas control should be an issue in this proceeding. (OGC)
(The Secretary signed the Memorandum & Order on 5/16/80).

Commissioners Gilinsky and Bradford indicated that they would have preferred waiving 10 CFR 50.44 in the restart proceeding. Their separate views were attached to the Memorandum & Order.

Attachment:
As stated

cc:
Chairman Ahearne
Commissioner Gilinsky
Commissioner Kennedy
Commissioner Hendrie
Commissioner Bradford
Commission Staff Offices

1/ Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this item was approved. Had Commissioner Gilinsky been present, he would have dissented from the decision in part. Had Commissioner Kennedy been present, he would have voted with the majority. Accordingly, the formal vote of the Commission is 2-1 in favor of the proposed Notice.

2/ Section 201 of the Energy Reorganization Act, 42 U.S.C. 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioners Gilinsky and Kennedy were not present at the meeting at which this Order was approved. Had they been present they would have voted to approve this Order. Accordingly, the formal vote of the Commission is 3-0.

Nuclear Power Plant Accident Considerations
Under the National Environmental Policy Act of 1969

AGENCY: U.S. Nuclear Regulatory Commission

ACTION: Statement of Interim Policy

SUMMARY: The Nuclear Regulatory Commission is revising its policy for considering the more severe kinds of very low probability accidents that are physically possible in environmental impact assessments required by the National Environmental Policy Act (NEPA). Such accidents are commonly referred to as Class 9 accidents, following an accident classification scheme proposed in 1971 for purposes of implementing NEPA.[1] The March 28, 1979 accident at Unit 2 of the Three Mile Island nuclear plant has emphasized the need for changes in our policies regarding the considerations to be given to serious accidents from an environmental as well as a safety point of view.

This statement of interim policy announces the withdrawal of the proposed Annex to Appendix D of 10 CFR Part 50 and the suspension of the rule-making proceeding that began with the publication of that proposed Annex on December 1, 1971. It is the Commission's position that its Environmental Impact Statements shall include considerations of the site specific environmental impacts attributable to accident sequences that lead to releases of radiation and/or radioactive materials, including sequences that can result in inadequate cooling of reactor fuel and to melting of the reactor core. In this regard, attention shall be given both to the probability of occurrence of such releases and to the environmental consequences of such releases. This statement of interim policy is

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1 Proposed as an Annex to 10 CFR Part 50, Appendix D, 36 F.R. 22851. The Commission's NEPA-implementing regulations were subsequently (July 18, 1974) revised and recast as 10 CFR Part 51 but at that time the Commission noted that "The Proposed Annex is still under consideration..." 39 F.R. 26279.

taken in coordination with other ongoing safety related activities that are directly related to accident considerations in the areas of plant design, operational safety, siting policy, and emergency planning. The Commission intends to continue the rulemaking on this matter when new siting requiremens and other safety related requirements incorporating accident considerations are in place.

DATES: Comment period expires (date inserted to be 90 days after date of publication in the Federal Register).

ADDRESSES: The Commission intends the interim policy guidance contained herein to be immediately effective. However, all interested persons who desire to submit written comments or suggestions for consideration in connection with this statement should send them to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch.

FOR FURTHER INFORMATION CONTACT: R. Wayne Houston, Chief, Accident Analysis Branch, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Telephone: (301) 492-7323.

SUPPLEMENTARY INFORMATION:

Accident Considerations in Past NEPA Reviews

The proposed Annex to Appendix D of 10 CFR Part 50 (hereafter the "Annex") was published for comment on December 1, 1971 by the (former) Atomic Energy Commission. It proposed to specify a set of standardized accident assumptions to be used in Environmental Reports submitted by applicants for construction permits or operating licenses for nuclear power reactors. It also included a system of classifying accidents according to a graded scale of severity and probability of occurrence. Nine classes of accidents were defined ranging from trivial to very serious. It directed that "for each class, except classes 1 and 9, the environmental consequences shall be evaluated as indicated." Class 1 events were not to be considered because of their trivial consequences, whereas in regard to Class 9 events, the Annex stated as follows:

> "The occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for the design basis for protective systems and engineered safety features. Their consequences could be severe. However, the probability of their occurrence is so small that their environmental risk is extremely low. Defense in depth (multiple physical barriers), quality assurance for design, manufacture, and operation, continued surveillance and testing, and conservative design are all applied to provide and maintain the required high degree of assurance that potential accidents in this class are, and will remain, sufficiently remote in probability that the environmental risk is extremely low. For these reasons, it is not necessary to discuss such events in applicants' Environmental Reports."

A footnote to the Annex stated:

> "Although this annex refers to applicant's Environmental Reports, the current assumptions and other provisions thereof are applicable, except as the content may otherwise require, to AEC draft and final Detailed Statements."

During the public comment period that followed publication of the Annex a number of criticisms of the Annex were received. Principal among these were the following:

(1) The philosophy of prescribing assumptions does not lead to objective analysis,

(2) It failed to treat the probabilities of accidents in any but the most general way,

(3) No supporting analysis was given to show that Class 9 accidents are sufficiently low in probability that their consequences in terms of environmental risks need not be discussed,

(4) No guidance was given as to how accident and normal releases of radioactive effluents during plant operation should be factored into the cost-benefit analysis,

(5) The accident assumptions are not generally applicable to gas cooled or liquid metal cooled reactors, and

(6) Safety and environmental risks are not essentially different considerations.

The Commission took no further action on this rulemaking except in 1974 when 10 CFR Part 51 was promulgated. Over the intervening years the accident considerations discussed in Environmental Impact Statements for proposed nuclear power plants reflected the guidance of the Annex with few exceptions. Typically, the discussions of accident consequences through Class 8 (design basis accidents) for each case have reflected specific site characteristics associated with meteorology (the dispersion of releases of radioactive material into the atmosphere), the actual population within a fifty mile radius of the plant, and some differences between boiling water reactors (BWR) and pressurized water reactors (PWR). Beyond these few specifics, the discussions have reiterated the guidance of the Annex and have relied upon the Annex's conclusion that the probability

of occurrence of a Class 9 event is too low to warrant consideration, a conclusion based upon generally stated safety considerations.

With the publication of the Reactor Safety Study (WASH-1400), in draft form in August 1974 and final form in October 1975, the accident discussions in Environmental Impact Statements began to refer to this first detailed study of the risks associated with nuclear power plant accidents, particularly events which can lead to the melting of the fuel inside a reactor.[2] The references to this study were in keeping with the intent and spirit of NEPA "to disclose" relevant information but it is obvious that it did not form the basis for the conclusion expressed in the Annex in 1971 that the probability of occurrence of Class 9 events was too low to warrant their (site specific) consideration under NEPA.

The Commission's staff has however, identified in certain cases unique circumstances which it felt warranted more extensive and detailed consideration of Class 9 events. One of these was the proposed Clinch River Breeder Reactor Plant (CRBRP), a liquid metal cooled fast breeder reactor very different from the more conventional light water reactor plants for which our safety experience base is much broader. In the Final Environmental Statement for the CRBRP,[3] the staff included a discussion of the consideration it had given to Class 9 events.

In the early site review for the Perryman site, the staff performed an informal assessment of the relative differences in Class 9 accident consequences among the alternative sites. (SECY-78-137)

In the case of the application by Offshore Power Systems to manufacture floating nuclear power plants, the staff judged that the environmental

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[2]It is of interest that the Reactor Safety Study never refers to nor uses the term "Class 9 accident" although it is commonly used loosely equivalent to a core melt accident.

risks of some Class 9 events warranted special consideration. The special circumstances were the potentially serious consequences associated with water (liquid) pathways leading to radiological exposures if a molten reactor core were to fall into the water body on which the plant floats. Here the staff emphasized its focus on risk to the environment but did not find that the probability of a core melt event occurring in the first place was essentially any different than for a land based plant. In its Memorandum and Order In the Matter of Offshore Power Systems,[4] the Commission has concurred in the staff's judgment. Thus, the Reactor Safety Study and our experience with these cases has served to refocus our attention on the need to reemphasize that environmental risk entails both probabilities and consequences, a point that while made in the publication of the Annex, was not given adequate emphasis.

In July 1977 the NRC commissioned a Risk Assessment Review Group "to clarify the achievements and limitations of the Reactor Safety Study." One of the conclusions of this study, published in September 1978, as NUREG/CR-0400 "Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission," was that "The Review Group was unable to determine whether the absolute probabilities of accident sequences in WASH-1400 are high or low, but believes that the error bounds on those estimates are in general, greatly understated." This and other findings of the Review Group have also subsequently been referred to in Environmental Impact Statements, along with a reference to the Commission's policy statement on the Reactor Safety Study in light of the Risk Assessment Review Group Report, published on January 18, 1979. The Commission's

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[4] Docket No. STN 50-437, September 14, 1979

statement accepted the findings of the Review Group, both as to the Reactor Safety Study's achievements and as to its limitations.

A few Draft Environmental Statements have been published subsequent to the Three Mile Island accident. These were for conventional land based light water reactor plants and continued to reflect the past practice with respect to accidents at such plants, but noted that the experience gained from the Three Mile Island accident was not factored into the discussion.

Our experience with past NEPA reviews of accidents and the TMI accident clearly leads us to believe that a change is needed.

Accordingly, the proposed Annex to Appendix D of 10 CFR Part 50, published on December 1, 1971, is hereby withdrawn and shall not hereafter be used by applicants nor by the staff for the following reasons:

1. The Annex proscribes consideration of the kinds of accidents (Class 9) that the reactor Safety Study found dominate the accident risk.

2. The definition of Class 9 accidents in the Annex is not sufficiently precise to warrant its further use in Commission policy, rules and regulations, nor as a decision criterion in agency practice.

3. The Annex's prescription of assumptions to be used in the analysis of the environmental consequences of accidents does not contribute to objective consideration.

4. The Annex doe not give adequate consideration to the detailed treatment of measures taken to prevent and to mitigate the consequences of accidents in the safety review of each application.

The classification of accidents proposed

in that Annex shall no longer be used. In its place the following interim guidance is given for the treatment of accident risk considerations in NEPA reviews.

Accident Considerations in Future NEPA Reviews

It is the position of the Commission that its Environmental Impact Statements, pursuant to Section 102(c)(i) of the National Environmental Policy Act of 1969, shall include a reasoned consideration of the environmental risks (impacts) attributable to accidents at the particular facility or facilities within the scope of each such statement. In the analysis and discussion of such risks approximately equal attention shall be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences of those releases. Releases refer to radiation and/or radioactive materials entering environmental exposure pathways including air, water, and ground water.

Events or accident sequences that lead to releases shall include but not be limited to those that can reasonably be expected to occur. In-plant accident sequences that can lead to a spectrum of releases shall be discussed and shall include sequences that can result in inadequate cooling of reactor fuel and to melting of the reactor core. The extent to which events arising from causes external to the plant which are considered possible contributors to the risk associated with the particular plant shall also be discussed. Detailed quantitative considerations that form the basis of probabilistic estimates of releases need not be incorporated in the Environmental Impact Statements but shall be referenced therein. Such references shall include, as applicable, reports on safety evaluations.

The environmental consequences of releases whose probability of occurrence has been estimated shall also be discussed in probabilistic terms. Such consequences shall be characterized in terms of potential radiological exposures to individuals, to population groups, and, where applicable, to biota. Health and safety risks that may be associated with exposures to people shall be discussed in a manner that fairly reflects the current state of knowledge regarding such risks. Socio-economic impacts that might be associated with emergency measures during or following an accident should also be discussed. The environmental risk of accidents should also be compared to and contrasted with radiological risks associated with normal and anticipated operational releases.

In promulgating this interim guidance the Commission is aware that there are and will likely remain for some time to come many uncertainties in the application of risk assessment methods and it expects that its Environmental Impact Statements will identify major uncertainties in its probabilistic estimates. On the other hand the Commission believes that the state of the art is sufficiently advanced that a beginning should now be made in the use of these methodologies in the regulatory process and that such use will represent a constructive and rational forward step in the discharge of its responsibilities.

It is the intent of the Commission in issuing this Statement of Interim Policy that the staff will initiate treatments of accident considerations in accordance with the foregoing guidance, in its on-going NEPA reviews, i.e., for any proceeding at a licensing stage where a Final Environmental Impact Statement has not yet been issued. These new treatments, which will take into account significant site and plant specific features, will result

in more detailed discussions of accident risks than in previous environmental statements, particularly those related to conventional light water plants at land based sites. It is expected that these revised treatments will lead to similar conclusions regarding the environmental risks of accidents as would be reached by a continuation of current practices including cases involving special circumstances where Class 9 risks have been considered by the staff, as described above. Thus, this change in policy is not to be construed as any lack of confidence in conclusions regarding the environmental risks of accidents expressed in any previously issued Statements, nor absent a showing of similar special circumstances, as a basis for opening, reopening or expanding any previous or ongoing proceeding.[1/]

However, it is also the intent of the Commission that the staff take steps to identify additional cases that might warrant early consideration of additional features or other actions to prevent or to mitigate the consequences of serious accidents. Cases for such consideration are those for which a Final Environmental Statement has already been issued at the Construction Permit stage but for which the Operating License review stage has not yet been reached. In carrying out this directive, the staff should consider relevant site features, including population density, associated with accident risk in comparison to such features at presently operating plants and the likelihood that substantive changes in plant design features which may compensate further for adverse site features may be more easily incorporated in those plants when construction has not yet progressed very far.

1/ Commissioners Gilinsky and Bradford disagree with the inclusion of the preceding two sentences. They feel that they are absolutely inconsistent with an even-handed reappraisal of the former, erroneous position on Class 9 accidents.

Environmental Reports submitted by applicants for construction permits and for operating licenses on or after July 1, 1980 should include a discussion of the environmental risks associated with accidents that follows the guidance given herein.

Related Policy Matters Under Consideration

In addition to its responsibilities under NEPA, the NRC also bears responsibility under the Atomic Energy Act for the protection of the public health and safety from the hazards associated with the use of nuclear energy. Pursuant to this responsibility we note that there are currently a number of on-going activities within the Commission and its staff which intimately relate to the "Class 9 accident" question and either are the subject of current rulemaking or are candidate subjects for rulemaking.

On December 19, 1979 the Commission issued for public comment[5] a proposed rule which would significantly revise its requirements in 10 CFR Part 50 for emergency planning for nuclear power plants. One of the considerations in this rulemaking was the potential consequences of Class 9 accidents in a generic sense.[6]

In August 1979, pursuant to our request, a Siting Policy Task Force made recommendations to us with respect to possible changes in our reactor siting policy and criteria,[7] currently set forth in 10 CFR Part 100. As stated therein, its recommendations were made to accomplish (among others) the following goal:

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[5] 44 F.R. 75167

[6] cf. NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants," November 1978.

[7] NUREG-0625, "Report of the Siting Policy Task Force," August 1979.

"To take into consideration in siting the risk associated with accidents beyond the design basis (Class 9) by establishing population density and distribution criteria."

This matter is currently before us.

This and other recommendations that have been made as a result of the investigations into the Three Mile Island accident are currently being brought together by the Commission's staff in the form of proposed Action Plans.[8] Among other matters these incorporate recommendations for rulemaking related to degraded core cooling and core melt accidents. We expect to issue decisions on these Action Plans in the near future. It is our policy and intent to devote our major resources to matters which we believe will make existing and future nuclear power plants safer, and to prevent a reoccurrence of the kind of accident that occurred at Three Mile Island. In the interim, however, and pending completion of rulemaking activities in the areas of emergency planning, siting criteria, and design and operational safety, all of which involve considerations of serious accident potential, we find it essential to improve our procedures for describing and disclosing to the public the basis for arriving at conclusions regarding the environmental risks due to accidents at nuclear power plants. On completion of the rulemaking activities in these areas, and based also upon the experience gained with this statement of interim policy and guidance, we intend to pursue possible changes or additions to 10 CFR Part 51 to codify our position on the role of accident risks under NEPA.

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[8]Draft NUREG-0660, "Action Plans for Implementing Recommendations of the President's Commission and Other Studies of the TMI-2 Accident," December 10, 1979.

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

August 14, 1980

The Honorable John Ahearne
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Ahearne:

The Council was gratified by the positive response informally expressed by the Commission for the views set forth in our letter and attachment to you, dated March 20, 1980, concerning accident analyses in the Commission's environmental impact statements ("EISs") for nuclear reactors. We believe that the subsequent formal announcement of Interim Policy on the issue by the Commission is the most significant and encouraging step you have taken to rectify the serious problems in accident analysis inherited from the Atomic Energy Commission. I am writing to you at this time to convey the Council's specific views on the Interim Policy and the steps which must be taken to fulfill the Commission's obligations under the National Environmental Policy Act ("NEPA").

The accident considerations to be included in future NEPA reviews described by the Commission in the June 13th policy statement (45 Fed.Reg. 40101, at 40103) appear to conform to the basic outline for the required accident analysis prescribed in the Council's letter of March 20, 1980. However, such an analysis is difficult to describe accurately in purely abstract terms. For that reason we look forward to the issuance of the first such NEPA analysis for a reactor in the licensing process. The Council will carefully examine the draft of that analysis and public comments thereon with a view toward providing the Commission with comments that would be useful in the preparation of a final analysis for NEPA review purposes.

As the Interim Policy indicates, consideration of the environmental consequences of severe reactor accidents might warrant the need "for additional features or other actions which would prevent or mitigate the consequences of serious accidents." 45 Fed.Reg. at 40103. Consideration of such information might indicate, among other things, the need to modify plant design, select an alternative site, implement emergency preparedness measures, or reconsider a construction permit altogether. In this regard, the Council strongly disapproves of the Commission majority's statement that such new NEPA reviews "will lead to conclusions regarding the environmental risks of accidents similar to those that would be reached by a continuation of current practices . . . ." 45 Fed.Reg. at 40103. Two members of the Commission disagreed with the majority on this point and concluded that that position is "absolutely inconsistent with an even-handed reappraisal of the former erroneous position on Class 9 accidents." 45 Fed.Reg. at 40103. The Council agrees. The two sentences

at issue in the Commission's Interim Policy inappropriately prejudge the NEPA analysis yet to be performed on a site-by-site basis by staff. Not only is the position contrary to the purposes of the NEPA to provide information which serves as a guide to the decisionmaker, but it would appear to require powers of prediction that the Commission simply does not possess with regard to the multitude of factual variables at each site.

Two other points of importance to the Council concern (a) the timing of the disclosure under NEPA of this new information on reactors for which a final EIS has been issued at the construction permit stage, but for which the operating license review stage will not be reached for some time, and (b) the indications in the Interim Policy that, for such reactors, the NRC may choose not to prepare the requisite NEPA documents for public review and comment.

Our Office of the General Counsel has prepared an opinion on the NRC's obligation to discuss major accident analyses and significant new developments under NEPA for reactors which have not yet reached the operating license stage. On the basis of that opinion, it is our conclusion that where reactor construction is still in the initial stages, the NRC should prepare supplemental EISs containing analyses of major accidents as early as possible rather than waiting until the operating license review. By ensuring the timeliness of such analyses, this approach will be of greatest use to the public, the NRC and the utilities. Significantly, the Commission has acknowledged that "substantive changes in plant design . . . may be more easily incorporated in plants when construction has not yet progressed very far." Id.

The Council, of course, is not of the view that construction on reactors must stop pending these supplemental NEPA reviews. Our purpose, and NEPA's, is to ensure that public disclosure of the significant new information and considerations regarding reactor accidents, and their review by the Commission, occur to the maximum extent possible while there is still time to correct earlier decisions based on the Commission's "former erroneous position on Class 9 accidents" (45 Fed.Reg. at 40103).

As in the past, we would be pleased to discuss the Council's views with you at any time. Please let me know how we can be of assistance.

Sincerely,

GUS SPETH
Chairman

cc: Members of the Commission

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

August 14, 1980

MEMORANDUM FOR THE CHAIRMAN

THROUGH: Foster Knight, Acting General Counsel FK

FROM: John Shea, Counsel JS

SUBJECT: The Need to Supplement NRC EISs on Unconstructed and Partially Constructed Reactors to Disclose Significant New Information

This memorandum analyzes the Commission's responsibilities under NEPA with respect to reactors which are in large part or completely unconstructed. It specifically addresses the obligation of the NRC to supplement EISs, so as to disclose significant new information and provide the necessary analysis of nuclear reactor accidents.

Background

1. The NRC's Recent Statement of Interim Policy Concerning Accident Analyses.

On June 13, 1980, the NRC published an Interim Policy for the consideration of severe reactor accidents in EISs. 45 Fed.Reg. 40101. The Statement of Policy announced the withdrawal of the old classification system for nuclear accidents and announced "the Commission's position that its EISs shall include considerations of the site specific environmental impacts attributable to accident sequences that lead to releases of radiation and/or radioactive materials, including sequences that can result in inadequate cooling of reactor fuel and to melting of the reactor core." Id.

The Commission specifically addressed how its new policy would be phased in to licensing proceedings:

> "It is the intent of the Commission in issuing this Statement of Interim Policy that the staff will initiate treatments of accident considerations, in accordance with the foregoing guidance, in its on-going NEPA reviews, i.e., for any proceeding at a licensing stage where a Final Environmental Impact Statement has not yet been issued . . . .
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> "However, it is also the intent of the Commission that the staff take steps to identify additional cases that might warrant early consideration of either additional features or other actions which would prevent or mitigate the consequences of serious accidents. Cases for such consideration are those for which a Final Environmental Statement has already been issued at the Construction Permit stage but for which the Operating License review stage has not yet been reached." 45 Fed.Reg. 40101, 40103.

In carrying out this policy, the staff is directed to consider relevant site features associated with accident risk, including population density. Staff is also directed to "consider the likelihood that substantive changes in plant design features . . . may be more easily incorporated in plants when construction has not yet progressed very far." Id.

2. Status of Reactors Under Construction.

There are a number of nuclear reactors for which construction permits have been issued, but no significant construction has taken place. According to the NRC's Program Summary Report, dated September 21, 1979 (NUREG-0380, vol. 3, number 9, at 35), a total of 95 reactors have either limited work authorizations or construction permits. Approximately 10 of those reactors are less than 10% complete. A total of 9 other reactors are between 10 and 20% complete. The NRC figures generally have been optimistic as to current stage of completion and projected completion date.

The Legal Issues Under NEPA

The Council's NEPA regulations specifically provide at 40 CFR §1502.9(c) (1979) that

> "(c) Agencies:
>
> (1) Shall prepare supplements to either draft or final impact statements if:
>
> (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
>
> (ii) There are significant new circumstances or information, relevant to environmental concerns, bearing on the proposed action or its impacts."

The Supreme Court has ruled that the Council's regulations and interpretations of NEPA are "entitled to substantial deference." Andrus v. Sierra Club, ___ U.S. ___, 47 U.S.L.W. 4676, 4679 (June 11, 1979). See also Alaska v. Carter, 462 F.Supp. 1155, 1164 (D.Alas., 1978) in which the district court relied heavily on the Council's interpretation of the section of its former guidelines on supplemental EISs. 40 CFR §1500.11(b) (1978). That section provided that:

> An agency may at any time supplement a draft or final environmental statement, particularly when substantial changes are made in the proposed action, or significant new information becomes available concerning its environmental aspects. 40 CFR §1500.11(b)(1978).

In Essex County Preservation Association v. Campbell, which was decided prior to the adoption of the Council's new regulations, the First Circuit affirmed a district court's order directing the Federal Highway Administration to prepare a supplemental EIS on significant new

circumstances involving a moratorium on certain highway extension work. The moratorium purportedly called into question the need for highway expansion that was at issue in the case. The Court of Appeals affirmed the district court, stating that:

> . . . the [district] court held that a supplemental EIS had to be prepared in order to effectuate the basic aims of NEPA which favor disclosure of all relevant factors affecting agency decisions. See Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693, 697 (2d Cir., 1972). We are inclined to agree with this judgment. While we cannot determine with certainty what the ultimate environmental effects [of these new circumstances] will be, it would seem to constitute the type of "significant new information . . . concerning [an] action's environmental aspects" that makes a supplemental EIS necessary. 23 CFR §771.15. Such a supplemental statement, which receives the same type of public comment and exposure as an original EIS, is likely to facilitate the "complete awareness on the part of the actor of the environmental consequences of his action . . . ," National Helium Corp. v. Morton, 455 F.2d 650 (10th Cir., 1971), mandated by NEPA. Essex County Preservation Association v. Campbell, 536 F.2d 956, 8 ERC 2156, 2159 (1st Cir., 1976).

The Court went on to hold that

> In view of the fact that the reconstruction project at issue here is not yet completed and that certain agency decisions may "remain open to revision" [citation omitted] we cannot say it was improper for the district court to require appellees to prepare and circulate a supplemental EIS . . . . Id.

In the past the Council has advised agencies to prepare supplemental EISs in order to fulfill the NEPA mandate identified by the Court of Appeals in the Essex County case, i.e., that agencies must be aware of the potential consequences of their actions and that agencies such as the NRC should weigh all of their decisions in light of significant new data and developments. Scenic Hudson Preservation Conference v. FPC, 354 F. 2d 608, 620 (2d Cir., 1965), cert. denied, 384 U.S. 941 (1966); Hudson River Fishermen's Association v. FPC, 498 F.2d 827, 832-33 (2d Cir., 1974). This should be done only after preparation of a supplemental EIS. As stated by the Second Circuit in interpreting 40 CFR §1500.11 of the Council's former guidelines:

> Although an EIS may be supplemented, the critical agency decision must, of course, be made after the supplement has been circulated, considered and discussed in the light of alternatives, not before. Otherwise the process becomes a useless ritual, defeating the purpose of NEPA, and rather making a mockery of it. NRDC v. Callaway, 524 F.2d 79, 92 (2d Cir., 1975).

Significant new circumstances and information have developed since the issuance of most of the Commission EISs on reactor construction permits, including:

a) The reevaluation of WASH-1400, the Reactor Safety Study (October 1975) by H. Lewis' Risk Assessment Review Group in NUREG/CR 0400 (1978).

b) The accident at Three Mile Island and the subsequent studies of the accident, including the Report by the President's Commission on the Accident at Three Mile Island and the report to the Nuclear Regulatory Commission by the Special Inquiry Group.

c) The issuance on September 26, 1979, of a memorandum from R.W. Houston, Chief of the NRC Accident Analysis Branch, to Daniel P. Muller, Acting Director of the NRC's Division of Site Safety and Environmental Analysis, indicating that 31 nuclear power plants under active review do not meet certain proposed siting criteria.

d) The transmittal of the Council's letter of March 20, 1980, to the NRC and the Council's report entitled, NRC's Environmental Analysis of Nuclear Accidents: Is It Adequate?

The review of NRC EIS's by the Environmental Law Institute for the Council released in March revealed that none of the EISs prepared to date by the NRC for land based reactors has included an analysis of what were formerly known as "Class 9" or worst case accidents. We urged the Commission to move quickly to revise its policy on accident analysis in EISs and to require the discussion in NEPA reviews of the environmental and other consequences of the full range of accidents that might occur at nuclear reactors, including core melt events. As noted in our March 20th letter to the NRC, under the Atomic Energy Act the NRC has a continuing obligation to review information which may indicate a need to reconsider or modify a construction permit or an operating license for a proposed reactor. 42 U.S.C. §2232(a). This responsibility is supplemented by NEPA's requirements. Calvert Cliffs' Coordinating Committee, Inc. v. AEC, 449 F.2d 1109, at 1112 (D.C. Cir., 1971), cert. denied, 439 U.S. 942 (1972); Public Service Co. of New Hampshire v. Nuclear Regulatory Commission, 582 F.2d 77 (1st Cir., 1978), cert. denied, 439 U.S. 1046.

As acknowledged by the Commission in its Interim Policy, consideration of information such as the environmental and other consequences of major nuclear accidents might indicate the need for "additional features or other actions which would prevent or mitigate the consequences of serious accidents." 45 Fed.Reg. at 40103. Obviously, the new data developed as a result of the Three Mile Island accident might also warrant reevaluation of prior plans. Consideration of this new information might indicate, among other things, the need to modify plant design, select an alternative site, implement certain emergency preparedness measures, or reconsider a construction permit altogether.

The NRC concluded that such analyses must be initiated in its ongoing NEPA reviews on proposed reactors, "i.e., for any proceeding at a licensing stage where a Final Environmental Statement has not yet been issued." Id. This means that if a final EIS has already been issued at the construction permit stage, such a review must eventually be done for

the operating license EIS. The basic issue then is not whether but when the NRC should consider environmental and other factors concerning the full range of accidents that might occur at nuclear power reactors, including core melt events. The Commission recognizes that, should such accident analyses indicate the need for modifications, "substantive changes in plant design features . . . may be more easily incorporated in plants when construction has not yet progressed very far." Id. In addition, NEPA's "action-forcing" procedures for EISs must be carried out by the NRC "to the fullest extent possible" so as to achieve the substantive requirements of the Act. NEPA §102(2)(c); Calvert Cliffs' Coordinating Committee, Inc. v. AEC, supra; 40 CFR §1500.1 (1979). The Council's regulations, which direct all agencies to commence the NEPA process at the earliest possible time (40 CFR §1501.2(d)(3)), provide that an EIS "shall be prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made (§§1500.2(c), 1501.2, and 1502.2)." 40 CFR §1502.5 (1979). The purpose of the EIS process is to ensure "meaningful consideration of environmental factors at all stages of agency decisionmaking." Scientists' Institute For Public Information, Inc. v. AEC, 481 F.2d 1079, 5 ERC 1418, 1425 (D.C. Cir., 1973)(emphasis added).

To delay the NEPA review and consideration of new accident analysis information until operating license EISs are prepared would thwart the purposes of NEPA. Id. at 1427. While an EIS "drafted by the Commission can be amended to reflect newly obtained information as the program progresses," id. at 1430, the consideration of information pursuant NEPA must be given "at the earliest possible time to insure that planning and decisions reflect environmental values." 40 CFR §1501.2 (1979).

Conclusion

Accordingly, the supplemental EISs for plants under construction should be prepared at the earliest possible time in the construction stage, while the Commission's prior permit actions "remain open to revision," (Essex County Preservation Association v. Campbell, supra), so that the Commission has the greatest ability to make necessary substantive changes in its decisions regarding proposed reactors. 42 U.S.C. 2232(a).