

NUCLEAR REGULATORY COMMISSION ISSUANCES

OPINIONS AND DECISIONS OF THE NUCLEAR REGULATORY COMMISSION WITH SELECTED ORDERS

January 1, 1977 – March 31, 1977

**Volume 5
Book I of II
Pages 1 - 715**



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2. It also emphasizes the need for regular audits to ensure the integrity of the financial data.

3. Furthermore, the document highlights the role of transparency in building trust with stakeholders.

4. In addition, it outlines the various methods used to collect and analyze financial information.

5. The document also addresses the challenges associated with data security and privacy protection.

6. Finally, it concludes by discussing the future trends and innovations in financial reporting.

7. The following table provides a detailed overview of the key findings and recommendations.

8. It is important to note that the data presented here is preliminary and subject to further review.

9. The document is intended to serve as a guide for best practices in financial management.

10. We encourage all stakeholders to actively engage in the process of improving financial reporting.

11. The information provided in this document is for informational purposes only and does not constitute an offer.

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PREFACE

This is Book I of the fifth volume of issuances of the Nuclear Regulatory Commission and its Atomic Safety and Licensing Appeal Boards and Atomic Safety and Licensing Boards. It covers the period from January 1, 1977, to March 31, 1977.

Atomic Safety and Licensing Boards are authorized by Section 191 of the Atomic Energy Act of 1954. These Boards, comprised of three members conduct adjudicatory hearings on applications to construct and operate nuclear power plants and related facilities and issue initial decisions which, subject to internal review and appellate procedures, become the final Commission action with respect to those applications. Boards are drawn from the Atomic Safety and Licensing Board Panel, comprised of lawyers, nuclear physicists and engineers, environmentalists, chemists, and economists. The Atomic Energy Commission first established Licensing Boards in 1962 and the Panel in 1967.

Beginning in 1969, the Atomic Energy Commission authorized Atomic Safety and Licensing Appeal Boards to exercise the authority and perform the review functions which would otherwise have been exercised and performed by the Commission in facility licensing proceedings. In 1972, that Commission created an Appeal Panel, from which are drawn the Appeal Boards assigned to each licensing proceeding. The functions performed by both Appeal Boards and Licensing Boards were transferred to the Nuclear Regulatory Commission by the Energy Reorganization Act of 1974. Appeal Boards represent the final level in the administrative adjudicatory process to which parties may appeal. The Commission may, however, on its own motion, review various decisions or actions of Appeal Boards.

This volume is made up of reprinted pages from the three monthly issues of the Nuclear Regulatory Commission publication *Nuclear Regulatory Commission Issuances (NRCI)* for this period, arranged in chronological order. Cross references in the text and indexes are to the NRCI page numbers which are the same as the page numbers in this publication.

Issuances are referred to as follows: Commission--CLI, Atomic Safety and Licensing Appeal Boards--ALAB, and Atomic Safety and Licensing Boards--LBP.

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or to have any independent legal significance.

THEORY

The theory of the present study is based on the concept of the "learning curve" which is a graph showing the relationship between the number of units produced and the time taken to produce them. The learning curve is a downward-sloping curve which indicates that the time taken to produce a unit decreases as the number of units produced increases. This is due to the fact that as the number of units produced increases, the worker becomes more experienced and efficient, and the time taken to produce a unit decreases. The learning curve is a key concept in the theory of the present study, and it is used to explain the relationship between the number of units produced and the time taken to produce them.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman
Edward A. Mason
Richard T. Kennedy

In the Matter of

Docket No. STN 50-482

**KANSAS GAS AND ELECTRIC COMPANY
KANSAS CITY POWER AND LIGHT COMPANY**

**(Wolf Creek Nuclear Generating
Station, Unit No. 1)**

January 12, 1977

Upon review pursuant to 10 CFR 2.786 of ALAB-321 and ALAB-331, the Commission concludes that (1) the Licensing Board had authority to grant declaratory relief in order to avoid delay; (2) the Commission is authorized to evaluate, under NEPA, the environmental impacts occurring "offsite" of constructing a facility access road and railroad spur; and (3) the Appeal Board's factual findings on these questions need not be reviewed, since its formulation of the applicable legal standard was substantially correct.

Appeal Board decisions affirmed.

LICENSING BOARD: DELEGATED AUTHORITY

A licensing board has the authority to grant appropriate declaratory relief in order to remove uncertainty and avoid delay. 5 U.S.C. 554(e) and 556(c)(9), and 10 CFR 2.718.

NEPA: SCOPE OF REVIEW

The NRC must consider, under NEPA, the environmental impacts of activities attributable to the operation of nuclear power plants, even if they take place "offsite," and where necessary may impose license conditions to minimize those impacts.

NEPA: PRE-LWA CONSTRUCTION ACTIVITIES

A licensing board may, as a matter of discretion, grant permission for offsite activities before an LWA is granted provided that either (1) the impact is so trivial that no conceivable harm could be done to any of the interests sought to be protected by NEPA or (2) the possible damage is fully redressable and the applicant is willing to obligate itself, if required, to undertake such activities as are necessary to restore the site.

Mr. Jay E. Silberg, for the applicants, Kansas Gas and Electric Company, *et al.*

Messrs. Milton Grossman, Stephen H. Lewis, and Michael E. Riddle, for the NRC Staff.

MEMORANDUM AND ORDER

This construction permit proceeding has given rise to two important and recurrent legal questions: first, whether Atomic Safety and Licensing Boards have authority to rule on legal issues arising in connection with licensing actions in advance of ruling on an application for a limited work authorization, construction permit, or operating license; second, whether and to what extent boards are authorized or required by NEPA to take into account environmental impacts occurring "offsite"—*i.e.*, beyond the exclusion area fence—and to impose license conditions concerning these impacts. Recognizing the significance of these issues, the Atomic Safety and Licensing Appeal Board accepted certification from the Licensing Board to which they were first posed. Its response was a divided one with different majorities on the two questions. ALAB-321, NRCI-76/4 293 (April 7, 1976). We announced our decision to review and called for further briefing. We now affirm. A summary of the factual and procedural background will place these issues in perspective.

Factual and Procedural Background

The applicants, Kansas Gas and Electric Company and Kansas City Power and Light Company have jointly applied for a permit to construct a nuclear reactor designated as the Wolf Creek Generating Station. Hearings have now been held before an Atomic Safety and Licensing Board and a decision on a limited work authorization is pending.¹ In December 1975, applicants requested

¹The Board will follow the procedure prescribed by our Supplemental General Statement of Policy of November 5, 1976, concerning assessment of environmental impacts associated with parts of the uranium fuel cycle. 41 Fed. Reg. 49898.

the Licensing Board to determine that they could legally proceed with construction of offsite portions of a railroad spur and plant access road for the Wolf Creek facility prior to issuance of a limited work authorization. The Board was told that the spur and road would reach the site boundary and connect it with existing trackage and roadways, thereby facilitating transportation of workers and materials to the site as soon as a limited work authorization might issue. The applicants pointed to delays that had already occurred in the hearing schedule of the proceeding, and contended that the effects of those delays could be mitigated by starting construction of these offsite transportation links. The applicants sought a determination that the Commission lacked authority to limit or condition offsite construction activities of this kind, at least prior to a ruling on the construction permit application.

The NRC opposed this motion, arguing that the Commission has broad regulatory jurisdiction over offsite activities associated with the construction of a nuclear power facility, such as the road and spur in question here. If the Commission could impose conditions on such activities in a construction permit or limited work authorization, the staff argued, then 10 CFR 50.10, the regulation designed to implement NEPA in this regard, also prohibits such activities prior to Commission approval. The staff response also suggested, however, that the applicant's motion was "essentially a request for declaratory relief" and questioned whether the licensing boards have been delegated authority to issue declaratory orders.

The Licensing Board denied the motion. Notwithstanding the staff's contrary suggestion, the Board determined that it was empowered to decide the question posed by applicants. On the merits, it held that applicants are required to obtain prior Board approval before engaging in offsite construction activities which could properly be the subject of license conditions.

Applicants then sought a directed certification of the issues from the Atomic Safety and Licensing Appeal Board. The Appeal Board accepted certification and, by differing majorities on each issue, upheld the Licensing Board's decisions. The Board found that (1) "the Commission's boards are empowered to pass on the merits of questions concerning whether certain activities are within the scope of pending adjudicatory proceedings"; and (2) that "the construction facilities here involved are . . . an activity that falls within the Commission's regulatory jurisdiction and . . . required advance approval in some form." ALAB-321, NRCI-76/4 293. We discuss these questions in turn.

The Procedural Issue

The NRC staff initially characterized the applicant's motion as a request for "declaratory relief," and suggested that the Board lacked delegated authority to grant such relief. The proper characterization of the applicant's request was a

point of disagreement and the subject of extended discussion in the Appeal Board decision. NRCI-76/4 at 298-304, 316-322. The dissenting Board member agreed with the staff that declaratory relief was being sought and expressed the view that such relief was beyond the power of licensing boards to grant. The majority on this question reached its affirmative conclusion by alternative routes: first, that the relief sought was not "declaratory," but merely a ruling on the board's jurisdiction; alternatively, the majority reasoned that the Licensing Board had been authorized by 10 CFR 2.718 to act, even if the relief were properly characterized as "declaratory."

For purposes of Commission decision, resolution of this question need neither turn on whether the present issue fits neatly under judicial "declaratory judgment" doctrines nor be cast in the rubric of ruling on a tribunal's "jurisdiction." Without regard to labels, this Commission has undoubted authority to tell the Kansas Gas and Electric Company whether it is free to proceed with construction relating to a nuclear power plant before it obtains a construction permit for that plant. Cast in simplest terms, the present question, then, is whether our rules can be fairly read as delegating to licensing boards a power we concededly possess. In resolving that question, we read our rules, as did the Appeal Board, in the light of judicially developed doctrines that may be relevant. Beyond that, however, the Commission, as the source of delegated power, is more free than the boards to resolve debatable issues of rule interpretation on the basis of relevant policy considerations.

We believe that the relief involved here may properly be characterized as "declaratory" and that this Commission's regulations, 10 CFR 2.718(1), are fairly read as authorizing licensing boards to grant such relief. In requesting that the Licensing Board rule that construction of offsite access roads and railroad spurs could proceed in advance of receipt of a limited work authorization, the applicant was attempting to discover before acting whether the proposed activity would subject it to legal risks, or—put another way—whether the proposed course of conduct is within the regulatory authority of the agency. Had the applicant proceeded with construction without requesting a determination from the board, it might have exposed itself to the risk of civil liability or even criminal prosecution. On the other hand, the applicants argue that there are substantial costs in delaying the work in question until the issuance of an LWA, pointing out that should the LWA issue, construction activity then authorized would be substantially delayed by the need to build access routes first. The costs to the applicants of either proceeding or of waiting because of uncertainty as to its legal obligations create the type of dilemma which declaratory relief is fashioned to resolve. See *e.g. Abbott Laboratories v. Gardner*, 387 U.S. 136 (1967).

The Administrative Procedure Act, 5 U.S.C. 554(e) authorizes this Commission to issue declaratory orders "to terminate a controversy or to remove

uncertainty," and, by agency rule, to empower presiding officers to exercise this power. 5 U.S.C. 556(c)(9). General commentary on administrative practice² supports the use of this authority as an efficient tool of administrative justice. The relevant delegation to presiding officers of this Commission is contained in 10 CFR 2.718, giving them "all powers necessary" to carry out their duties "to take appropriate action to avoid delay." Among the powers enumerated in this rule is the authority to "take any other action consistent with the (Atomic Energy) Act," the Commission's other regulations and the Administrative Procedure Act. Thus, the licensing boards have the power to issue declaratory relief provided there is the requisite connection between the rendering of a declaratory order and fulfillment of the board's duty to take appropriate steps to avoid delay in a proceeding otherwise before it. The applicants' motion, made to a licensing board already constituted to hear their application, has such a connection.

A clarification of the kind requested of an applicant's responsibilities under this Commission's regulations could have an impact upon the time necessary to prepare for hearing, as well as the duration of the hearing itself. It would be a disservice to the applicants, the parties and the licensing board itself if hearing participants engaged their own resources and ours in consideration of matters which were later found to be beyond this Commission's licensing authority.

Other policy considerations support this reading of the regulation. No useful purpose can be served by forcing applicants to act at their peril to discover whether their actions would place them in legal jeopardy. Rather, it should be our purpose to encourage applicants to bring questions such as these to licensing boards for early resolution. As matters have turned out, the applicant has been allowed to go ahead with a portion of the proposed offsite work, following scrutiny of its environmental impacts under NEPA standards. Thus, the availability of declaratory relief has removed uncertainty, accommodated an applicant's practical needs, and promoted the environmental concerns underlying NEPA. We note in conclusion that the only practical alternative in a case like this to recognition of declaratory order authority in the boards is the mechanism of opinions of the General Counsel. That mechanism is available. See 10 CFR Part 8. However, the General Counsel does not possess the licensing board's familiarity with possibly crucial factual issues, and his other functions include advice to the Commission in the exercise of its own review function following upon licensing hearings. For these reasons, we believe that questions of this kind are, in general, more effectively addressed by the board having jurisdiction over a particular proposed facility.

² See, e.g., Davis, Administrative Law § 4.10.

The Substantive NEPA Issue

The facts presented by this case, as we have indicated, concern the construction of an access road and railroad spur which applicants say are needed to allow the efficient transport of men and materials to the site when onsite work activities begin. The road and spur in question are not located on the land where the nuclear reactor will be built, but lead to it. The legal issue now before us was summarized by the Appeal Board as the "extent to which the National Environmental Policy Act has conferred jurisdiction on the Commission (and its licensing boards) over service facility construction which, although directly associated with and attributable to a nuclear power plant, occurs away from its immediate location." NRCI-76/4 at 304. And in addressing this issue, we must take into consideration the possible significance of the fact that some offsite preconstruction activity might not turn out to be associated with a nuclear facility, and in fact could or would have been taken even absent an application to construct a nuclear facility.

The obligation to apply to this agency for permission to build a nuclear power plant arises under the Atomic Energy Act of 1954. As relevant here, the Act provides for issuance of construction permits upon findings that a proposed facility will provide a reasonable assurance of public health and safety. Prior to enactment of NEPA, implementing regulations reflected the principal thrust of the Atomic Energy Act and barred *safety-related* construction activities on a proposed facility site until a construction permit was issued. The bar on construction extended to "pouring the foundation for, or the installation of, any portion of the permanent facility." 10 CFR 50.10(b). However, there was no bar to site activities that might have a substantial environmental impact but which had no safety significance. Construction permit applicants willing to assume the risk that their applications might be denied were specifically allowed to proceed with "site excavation, preparation of the site for construction of the facility, including the . . . construction of roadways, railroad spurs, and transmission lines." Section 50.10(b)(1).

With the passage of NEPA, the AEC was obliged to amend its regulations in several respects to provide for the requisite examination of environmental consequences of license applications. These amendments included a new section 50.10(c) defining "commencement of construction" more broadly to include "any clearing of land, excavation or other substantial action that would adversely affect the environment of the site." The word "site" is not separately defined. Unlike the preceding subsection 50.10(b) described above, which antedates NEPA, new subsection 50.10(c) does not specifically refer to roadways and railroad spurs. However, the broad and general prohibition of construction so as not to affect "the environment of a site" is easily read to bar such

activities as road and railway construction leading to a site, at least where substantial clearing or grading is involved.³

Applicants argue for a restricted interpretation of NEPA and section 50.10, the relevant implementing regulation we have described. Under the reading urged by applicants, the physical boundaries of the site owned by the applicants—the chain link fence—would mark off the area for which Commission authorization would be required in advance of construction.

The NRC staff argues that the regulations must be interpreted broadly in light of the Commission's responsibilities to comply with NEPA, and that so interpreted, those regulations proscribe environmentally significant construction activities associated with nuclear power plant construction—including activities beyond the fence—without prior Commission approval. We essentially agree with the staff's position.

The contention that we need not consider and seek to mitigate significant environmental impacts away from the immediate location of a proposed nuclear facility in meeting our NEPA obligations has been considered and rejected in the past. *Detroit Edison Company* (Greenwood Energy Center), ALAB-247, 8 AEC 936 (1974), it was proposed that new reactors for which licenses were requested be connected to the applicant's existing power grid by constructing a ninety-mile transmission line having a right-of-way in some cases of over 400 feet. There also, applicants contended that the Commission lacked authority to condition permits in order to mitigate offsite environmental effects associated with the transmission lines. The licensing board asserted jurisdiction, noting that a nuclear power plant without transmission lines is "like an airplane that can't fly." 8 AEC at 937. The Appeal Board agreed that "no other conclusion is reasonable" than that the transmission lines be viewed as an integral part of nuclear generating plants. 8 AEC at 939. The *Greenwood* Appeal Board discussed our NEPA responsibilities in this respect at some length, concluding in the following language, at 938:

..it is settled that the responsible federal officials must place in the balance, in addition to all the usual economic and technological considera-

³This reading is consistent with the Statement of Considerations which accompanied the post-NEPA amendment of section 50.10. See 37 Fed. Reg. 5745. While the Statement does not shed direct light on the present problem, it confirms that the amendments were "to facilitate consideration and balancing of a broader range of realistic alternatives and provide a more significant mechanism for protecting the environment during the earlier stages of a project." Site preparation was recognized to be a "key point, from the standpoint of environmental impact." This reading gains additional support from the language of subsection 50.10(e); the enumeration there of activities which require advance authorization includes items such as access roads, railway spurs, transmission lines and the like. See also Regulatory Guide 4.2, Revision 2 (July 1976), at Chapter 4, 4.1, "Site Preparation and Station Construction."

tions, the consequences their actions will entail for the people and places they affect [and must] evaluate the "reasonably foreseeable environmental impact" of its proposed actions. It must then decide in light of those ramifications whether any given action should be allowed to go forward.

Review of the environmental impacts of transmission line routes has since been conducted in most cases. See, e.g., *Virginia Electric and Power Co.* (North Anna Station), ALAB-325, NRCI-76/4 404 (April 16, 1976), petition for review pending *sub nom. Culpeper League for Environmental Protection v. NRC*, No. 76-1484 (D.C. Cir.); *Public Service Co. of New Hampshire* (Seabrook Station), LBP-76-26, NRCI-76/6 857, 885-892 (June 29, 1976).

In other instances, this Commission has assumed the necessity of considering and, where necessary, adopting license conditions with reference to the environmental consequences of matters away from the immediate site of the reactor in question. See e.g., *Consolidated Edison Company* (Indian Point Station, Unit 3), CLI-75-14, 2 NRC 835 (1975) (construction of cooling towers to mitigate offsite fish kills); *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-349, NRCI-76/9 235, 254 (September 30, 1976) (construction of a barge landing).⁴

The applicants seem to appreciate that the apparent thrust of their position—that no consideration need be given to environmental impacts away from the immediate environs of the site—is contrary to our past decisions and difficult to square with judicial interpretations of NEPA. See, e.g., *Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109, 1122 (D.C. Cir. 1971). They accordingly narrow their position with the qualification that offsite construction impacts can be "considered" by the boards in striking the overall cost-benefit analysis. Thus, if the final balance is favorable in comparison, say, to a fossil facility or another site, we are told that the project must be approved, even if the environmental impacts of the project as proposed might be significantly lessened by conditioning the way in which offsite construction is carried on. We disagree with this contention for the following reasons.

There can be no serious dispute that in connection with a ruling on an application for a license (a limited work authorization, construction permit, or operating license), we may consider the environmental impacts of related offsite construction projects—such as connecting roads and railroad spurs—and where necessary impose license conditions to minimize those impacts.

⁴Certainly the courts have also assumed that the Commission must consider the environmental effects of activities attributable to the operation of nuclear reactors, whether they take place "off" or "onsite." See *Natural Resources Defense Council, et al., v. NRC*, ___ F.2d ___, Nos. 74-1385 and 74-1586 (D.C. Cir. July 21, 1976) at fn. 3, concerning the nuclear fuel cycle, in which most of the "events take place off the individual reactor site, but are necessary to its continued operation."

Although our prior decisions make it clear that our NEPA review extends to significant offsite environmental impacts, it must be conceded that the regulation limiting preclicensing construction—10 CFR 50.10—is somewhat ambiguous. The phrase in present subsection 50.10(b) barring construction “on a site on which the facility is to be operated,” read in isolation, lends some support to the applicants’ fence-line interpretation. On the other hand, subsection (c)’s reference to “the environment of a site,” as well as the subsection (e) language, suggests the broader interpretation urged by the NRC staff. But beyond the semantics of the rule, we must of course interpret it in the light of our responsibilities to implement NEPA. We believe, as does the staff, that if we are to discharge fully our NEPA responsibilities, a “site” for purposes of section 50.10 must mean all the land on which the plant and its necessary accouterments, including transmission lines and access ways, are to be located. And those impacts need not be limited to impacts characterized as related to radiological health and safety.⁵ Otherwise, the Commission will not be allowed to review the proposed work at a time when it is still possible to mitigate the particular environmental damage that may be caused thereby.⁶

We take this view of our NEPA obligations aware of the difficulties it may entail. The NEPA requirement of review and approval may duplicate reviews undertaken on State or local levels. Such duplication is wasteful of resources, and may not be significantly beneficial to the environment.

More important, nice questions of judgment will doubtless arise whether given site-related activities are sufficiently tied to nuclear reactor construction to require our prior approval. Absent a planned nuclear facility (or other special circumstances), the road in question could undoubtedly be built without engaging the processes and scrutiny of the federal government. But one may postulate

⁵ A limitation on our authority which is defined strictly on the basis of the boundary of the applicant’s site wrongly suggests that the concept of a “site” can be fixed for all purposes by where the applicant chooses to put a chain link fence. But “site” concepts may vary for different purposes. From the standpoint of exclusion area size, for example, the area of the “site” is not itself an “arbitrary minimum,” set by this Commission. It is “flexible and can be reduced as the extent of the engineered safety features is increased.” *Southern California Edison Company* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-268, 1 NRC 383, 405 (1975).

⁶ The cases cited to us by the applicants are not controlling. No nuclear plant can be built without a license from this agency. By contrast, in *Homeowners Emergency Life Protection Committee v. Lynn*, 388 F.Supp. 971 (C.D. Cal. 1974), for example, the dam rebuilding project proposed by the Los Angeles Department of Water and Power would have been built by the city whether or not federal funds were eventually secured. The only federal activity was related to the processing of an application for federal funds, and some anticipatory coordinate planning on the part of the city officials. Similarly, in *City of Boston v. Volpe*, 464 F.2d 254 (1st Cir. 1972), an injunction sought against the State port authority was denied. While the State officials had applied for federal assistance, such assistance had not been received or even committed in such a way as to make it binding.

a situation in which a utility buys land suitable either for a fossil or a nuclear plant, but has not decided which option to pursue. In such a case, one may ask whether the utility can build an access road without NRC approval. An applicant may wish to engage in offsite activities of utility to it independent of the final purpose of the land in question (and/or any pending license application), and which activity applicant would have undertaken in any event.

We need not and do not attempt to decide these questions which are not before us now, although they clearly bespeak a need for restraint. We believe we can, however, give the board, regulatory staff and potential license applicants some useful guidance, and allow the law to develop on a case-by-case basis. In the present case, the applicants point out that the Wolf Creek site is also suitable for a fossil facility, thereby suggesting another reason for us to eschew any NEPA scrutiny of offsite activities prior to a ruling on the application. But, as the Appeal Board pointed out, the applicants here concede a "close relationship" between the proposed nuclear plant and the offsite construction activities. NRCI-76/4 at 304, note 18. Quite apart from that concession, however, we agree with the staff that where, as here, an applicant is actively prosecuting an application for a construction permit for a nuclear reactor, we must assume for NEPA review purposes that the applicant actually intends to build a reactor. The fact that the site might also be suitable for a fossil facility is relevant to consideration of alternatives under NEPA, but it affords no reason for ignoring offsite construction activities associated with the license application being pursued.

More difficult questions might arise in the case where a prospective applicant for a Commission license proceeds with access road construction or site clearing before filing any papers with this Commission. It is possible that our decision today will have the undesirable impact of encouraging certain applications to be filed late, following the completion of related offsite construction, in order to circumvent NEPA review. We do not think this very likely, however. The types of activities we are discussing are generally quite insignificant in relation to the size and cost of nuclear power plant projects. There are other planning and scheduling items that take precedence. Moreover, as the staff has suggested, if attempts were made to circumvent our NEPA regulation, we would not be "powerless to do anything about [such] activities deliberately undertaken to frustrate [our] status quo regulation by a person who had formed a definite plan to apply for a nuclear generating license." Beyond that, should we adopt a proposal now under consideration for early site review (41 Fed. Reg. 16835), situations like the present one may not even arise, because, with early advance approval, roads and railroad spurs would not become obstacles on the critical path of construction.

In addition to possible questions concerning the existence of a nexus between a given precicensing activity and an intention to construct a nuclear facility, there will in some cases be questions concerning the degree of environ-

mental impact associated with the activity. As we shall discuss, work on the access road involved here turned out to have no significant impact on the environment and was therefore allowed to proceed in advance of a board ruling on an LWA. The acquisition of land, which was the subject of challenge in *Gage v. AEC*, 479 F.2d 1214 (D.C. Cir. 1973), would appear to be an activity which would not require advance Commission approval.⁷ When a deed evidencing ownership of land changes hands, the impact on the environment, if any, is negligible. Under the "rule of reason" applicable under NEPA, we have discretion to draw lines of this kind from a common-sense standpoint. This type of activity illustrates one practical outer bound on our preclicensing review. Other limitations can be developed on a case-by-case basis.

Prelicensing Scrutiny of Insignificant Impacts

The Appeal Board in ALAB-321 suggested that the regulations provided possible means for an applicant to expedite the types of building involved here, if the environmental effects of the construction were, as claimed, insignificant. The Board suggested that: (1) the utility could seek an exemption under 10 CFR §§ 50.12 and 51.4; (2) it could plead special circumstances under 10 CFR § 2.758, which provides that a particular rule or regulation can be waived or an exception made when it is shown that the "application of the rule or regulation. . . would not serve the purpose for which [it] was adopted." If the licensing board so found, after hearing, the question would be certified immediately to the Commission; or (3) the utility may attempt to demonstrate to the licensing board that its proposed construction of transportation routes will not "adversely affect the environment." See 10 CFR 50.10(c). If it can do so, it may "be able to obtain a ruling from the board that it may proceed—at its own risk—in advance of a ruling on the LWA." As the Board pointed out, each of these three procedures would involve Commission or Board scrutiny under NEPA before construction could be approved.

Applicants chose the third of these routes. An evidentiary hearing which examined the extent of the environmental impact of the proposed road and railroad spur was thereafter held before the Licensing Board. The Board entered an order on May 18, 1976, which authorized construction of the road only. That portion of the order which denied applicants' request for permission to construct the railroad spur was appealed to the Appeal Board, which rendered ALAB-331, affirming the Licensing Board's decision by a divided vote. *Kansas*

⁷The transfer of land from a federal agency to a utility for possible future use as a reactor site raises separate issues we do not reach here. See *Concerned Citizens of Rhode Island v. NRC*, C.A. 76-0520, United States Federal District Court (D.R.I.) (decision pending).

Gas and Electric Company (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-331, NRCI-76/6 771 (June 8, 1976). By Order dated June 28, 1976, we extended the time for review of that decision to coincide with our previously announced review of ALAB-321.

The Appeal Board majority found that building the proposed railroad spur would have an adverse impact upon the environment of the site sufficient that such activities should not be allowed in advance of receipt of a limited work authorization. As the majority of the Board viewed it, the question was "whether the spur can be built with so trivial an impact that it can safely be said that no conceivable harm would have been done to any of the interests sought to be protected by NEPA should the eventual outcome of this proceeding be a denial of the Wolf Creek application." NRCI-76/6 at 777.

We agree with this formulation of the applicable legal standard, with one qualification and decline to review the Appeal Board majority's factual findings under this standard.

We wish to qualify our endorsement of the Board's legal standard with reference to the question of redressability. The dissenting member in ALAB-331 argued persuasively that redressability should be carefully considered in the present setting. He pointed out that while railroad tracks and gradings can have significant environmental impacts, they are impacts that can be largely reversed later, if necessary. It is impossible to restore a virgin stand of timber; but one can, with some expense, pick up railroad tracks and ties and restore land to agricultural production. We think that there will be instances in which it will be possible to correct damage to the environment which is caused by site preparation or other preconstruction activities, should the Commission eventually deny an applicant a construction permit. In those instances in which damage is fully redressable, and the applicant is willing to obligate itself to undertaking such activities as are necessary to restore the site, a licensing board might in its discretion allow the applicant to proceed accordingly.

It is so ORDERED.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 12th day of January 1977.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Edward A. Mason, Acting Chairman
Victor Gilinsky
Richard T. Kennedy

In the Matter of

Docket Nos. 50-3
50-247
50-286

**CONSOLIDATED EDISON COMPANY OF
NEW YORK, INC.
POWER AUTHORITY OF THE STATE
OF NEW YORK**

(Indian Point Station,
Units 1, 2 and 3)

January 14, 1977

In ALAB-357, the Appeal Board deferred decision on a motion by licensees requesting an extension of time for compliance with a specific operating license condition and ordered an evidentiary hearing on that condition; the Board also continued an earlier temporary stay of the license condition. Upon review pursuant to 10 CFR §2.786, the Commission notes that the licensees have failed to carry their burden in support of the requested extension, that their motion was inexcusably late, and that the decision in ALAB-357 was a departure from the basic assumption in Commission proceedings that parties will assert their own interests in a timely fashion with adequate support. Nevertheless, the Commission lets ALAB-357 stand, in view of the imminency of the hearing and the fact that an Appeal Board decision on the merits is expected in the near future.

RULES OF PRACTICE: BURDEN OF PROOF

The moving party has the burden of proving that its motion should be granted. 10 CFR §2.732.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

The staff has the obligation to lay all relevant materials before an adjudicatory board to enable the board to dispose of issues before it.

MEMORANDUM

The Atomic Safety and Licensing Appeal Board here is currently engaged in a special proceeding to investigate certain seismic issues concerning licensee Consolidated Edison Company's Indian Point Station, pursuant to the Commission's order, CLI-75-8, 2 NRC 173 (August 4, 1975). The background of the case is discussed in ALAB-319, NRCI-76/3 188, 191-193 (March 16, 1976), and need not be repeated here. On April 5, 1976, two weeks before the commencement of evidentiary hearings in this proceeding, the NRC staff amended the operating license of Indian Point Unit 3, increasing its permissible operating power subject to certain conditions, including the construction of an expanded seismic monitoring network. See Section 2.C(4) of Amendment No. 2 of the operating license of Unit 3 of the Indian Point facility. This condition contained a time limit requiring that two years' data be obtained from the system within three years of the issuance of the amendment. The amendment was not entered into the docket of the pending seismic proceeding, and the Board did not become aware of it until the last day of the hearings, during the licensee's cross-examination of staff witnesses. The Board then stated that it would take no action on the condition without an opportunity for a hearing on the condition. Tr. 5509.

On August 27, 1976, after the close of the hearing in the special seismic proceeding, the licensee moved the Board to modify the time limits imposed for compliance with the condition. Specifically, the licensee requested that the three-year period allowed for the construction of the monitoring system and the collection of two years' data begin to run on the date of final Commission action and any associated judicial review in the special seismic proceeding, rather than on the already fixed date of issuance of the amendment, April 5, 1976.

On September 14, 1976, the Appeal Board deferred decision on the motion, but temporarily stayed the effectiveness of the condition pending an opportunity to review the existing record. In addition, it announced that even if the motion were denied, it would extend the date for compliance by the length of time it required after September 15 to reach a decision. On November 10, 1976, in the decision herein reviewed, the Board, in a divided opinion, deferred ruling on the motion pending an evidentiary hearing in January 1977 and, in the meantime, continued the earlier stay. ALAB-357, NRCI-76/11 542.

The moving party, here the licensee, has the burden of proving that its motion should be granted. 10 CFR § 2.732. Since the licensee failed to provide information tending to show that the allegations in support of its motion were true, it failed to carry its burden, whatever the appropriate quantum of proof may be. The Appeal Board was unanimous on this point. Moreover, the licensee made its motion three and a half months after the staff issued the amendment, three months after the beginning of the hearing—a comprehensive hearing dealing with the subject matter of the amendment—approximately one month

after the close of the hearing, and in no way brought the amendment to the Board's attention until the final day of the hearing. Although the Board unanimously concluded that the motion was inexcusably late, the majority nevertheless concluded that it should attempt to determine the merits of the motion on its own initiative, notwithstanding deficiencies in the moving party's submission. It concluded that the overall public interest required a stay of the condition and an evidentiary hearing to determine whether the condition should be lifted or modified. The dissenter, on the other hand, stressed that the licensees had neither met nor even addressed the criteria which the Board has always required of other parties before issuing a stay, even though they had ample opportunity and resources to do so. In addition, the order continuing the previous stay effectively granted part of the relief requested.

The Commission is sensitive to the concerns expressed by the dissenter here. We have previously recognized the "public interest in the timely and orderly conduct of our proceedings." *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-754, 1 NRC 273, 275 (1975). We observe here that the Commission's adjudicatory system requires a certain discipline to keep it operating efficiently. It assumes that parties will assert their own interests in a timely fashion with adequate support, and that they will live with the costs of their decisions. As we view it, the majority's decision represents a departure from these basic assumptions.

However, under the particular facts of this case, we choose not to reverse. Implementation of the license condition has already been postponed for four months, and a hearing on the merits before the Appeal Board is imminent. In light of the guidance we are providing here to future boards, we consider it pointlessly burdensome to now require the licensee to construct the network, with a decision on its merits expected in the near future. Under the circumstances, we believe that the Appeal Board should move expeditiously to complete those hearings.

We note in conclusion that it is unfortunate that the staff did not bring the existence of the newly imposed license condition to the attention of the Board so that it might have been considered. The staff has the obligation to lay all relevant materials before the Board to enable it adequately to dispose of the issues before it.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 14th day of January 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman
Victor Gilinsky
Richard T. Kennedy

In the Matter of

Docket Nos. 70-8 70-371

70-25 70-734

NUCLEAR REGULATORY COMMISSION

70-27 70-754

70-33 70-820

(Licensees Authorized to
Possess or Transport Strategic
Quantities of Special Nuclear
Materials)

70-135 70-1143

70-143 70-1257

70-364 70-1319

et al.

January 21, 1977

Upon motion by NRDC requesting action by the Commission on a petition for emergency safeguards measures to protect strategic special nuclear material or, in the alternative, for revocation of licenses, the Commission concludes that (1) existing safeguards programs are adequate to provide reasonable assurance that current activities of licensees are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety; (2) the decision by the Director of the Office of Nuclear Material Safety and Safeguards not to invoke the emergency action requested was not an abuse of discretion; and (3) certain of the issues raised are appropriate for resolution through rulemaking.

Petition denied.

RULES OF PRACTICE: STANDARD FOR REVIEW OF SHOW-CAUSE DETERMINATION

A staff decision not to issue an order to show cause under 10 CFR §2.202 is reviewable by the Commission under an abuse of discretion standard based on the following elements: (1) whether the statement of reasons given permits rational understanding of the basis for the decision; (2) whether the decision-

maker has correctly understood governing law, regulations, and policy; (3) whether all necessary factors have been considered, and extraneous factors excluded, from the decision; (4) whether inquiry appropriate to the facts asserted has been made; and (5) whether the decision is demonstrably untenable on the basis of all information available to the decisionmaker. *Consolidated Edison Company of New York, Inc.* (Indian Point, Units 1, 2 and 3), CLI-75-8, 2 NRC 173 (1975). That review is essentially a deferral to the staff's judgment on the facts relating to a potential enforcement action, to avoid premature commitment by the Commission on factual issues.

ATOMIC ENERGY ACT: EMERGENCY MEASURES

Neither the Atomic Energy Act nor NRC regulations require the invocation of drastic emergency action whenever information adverse to the integrity of existing nuclear power safety or safeguards systems is alleged. *Nader v. Nuclear Regulatory Commission*, 513 F.2d 1045, 1054-55 (D.C. Cir. 1975). Where the balance of available information demonstrates an undue risk, prompt remedial action is taken.

MEMORANDUM AND ORDER

On February 2, 1976, the Natural Resources Defense Council, Inc. ("NRDC") filed a petition requesting that the NRC either immediately implement emergency safeguards measures to protect strategic special nuclear material ("SSNM") currently held or transported by NRC licensees or revoke forthwith the licenses and take immediate possession of the SSNM. The emergency safeguards measures included immediate dispatch of U.S. Marshals to licensee facilities, curtailment or complete suspension of licensee activities, revocation of outstanding SSNM licenses, and immediate recovery of SSNM.

The "Emergency Safeguards Petition" before the Commission addresses the adequacy of safeguards measures used by NRC licensees who are authorized under our regulations (10 CFR Parts 70 and 73) to possess or transport substantial quantities of strategic special nuclear material.¹ The term "safeguards" refers to the security measures undertaken by a licensee to protect SSNM from loss, theft, or diversion and to prevent sabotage of a licensee's facilities or activities.

By notice in the *Federal Register* dated February 4, 1976 (41 FR 5357), the Commission requested comments on the petition. The Commission referred the

¹ The term strategic special nuclear material ("SSNM") includes uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium alone or in any combination in a quantity of 5,000 grams or more computed by the formula, grams=(grams contained U-235) + 2.5 (grams U-233 + grams plutonium).

petition to the Director of NRC's Office of Nuclear Material Safety and Safeguards ("NMSS") under 10 CFR §2.206. After reviewing the matter and meeting with NRDC representatives, the Director denied the request for emergency relief on March 22, 1976, concluding that the requested emergency action was "unnecessary" and failed to "take into account the competing interest of the licensees and the broader public interests involved." In the Director's words, "the present safeguards programs of the licensees in question are adequate to provide a reasonable assurance of public health and safety and are not inimical to the common defense and security." On April 8, 1976, petitioner filed a motion requesting action at the Commission level, in response to the emergency safeguards petition. In its response, the NRC staff did not oppose the request for Commission action. However, the staff contended that our review should be a limited one under our *Indian Point* decision.² In *Indian Point*, we stated our authority to review, under an abuse of discretion standard, a staff decision made under 10 CFR § 2.206 not to issue an order to show cause.

Ten private companies (operating 13 facilities) licensed by NRC currently possess SSNM, and four transport companies hold NRC-approved transportation plans for shipments of SSNM. The licensees utilize the SSNM for a number of purposes, but most of the SSNM—more than 90%—is high-enriched uranium held by certain licensees whose principal business is fabricating fuel for the Navy Nuclear Propulsion Program, an important national defense activity relating to the initial fueling and refueling of Navy nuclear submarines and surface ships. Other SSNM is used in various research and development programs of private organizations and institutions and of governmental agencies. The SSNM which licensees possess or transport (predominantly high-enriched uranium) differs from the low-enriched uranium primarily utilized as fuel in commercial light water-cooled power reactors in that the former is capable of being used to fabricate a nuclear explosive device while the latter is not.³ SSNM licensees are therefore required by NRC regulations to protect the SSNM against loss, theft, or diversion (10 CFR parts 70 and 73). The potential consequences which could arise from the illicit use of SSNM are sufficiently great that licensees are required to employ detailed security measures to provide a high-degree of assurance against the threat of theft or diversion of the SSNM. Safeguards programs of licensees typically have several dimensions including: (1) physical security measures, such as private guards, physical barriers, and intrusion alarms (e.g., 10 CFR § 73.50); (2) material containment programs providing for separate material access areas and vault storage of SSNM (e.g., 10 CFR § 73.60); and (3)

² *Consolidated Edison Company of New York, Inc.* (Indian Point, Units 1, 2, and 3), 2 NRC 173 (1975). See note 5 *infra*.

³ Some licensees also possess limited amounts of plutonium. Plutonium is toxic. Adverse consequences could follow from its dispersal in the atmosphere. This is not as great a concern with either low or high-enriched uranium.

material control and accounting procedures such as inventory and measuring systems designed to detect discrepancies in the amount of material on hand (e.g., 10 CFR § 70.57).

Petitioner contended that the safeguards programs of the SSNM licensees do not sufficiently and adequately protect SSNM from theft or diversion by, for example, an armed terrorist group intent on obtaining SSNM for its illicit use. In support of its position, petitioner relied principally on internal memoranda and reports done by or for the NRC and its predecessor agency, the Atomic Energy Commission.⁴ Petitioner asserted that the common defense and security and the public health and safety require either that the licensees' safeguards programs be immediately supplemented to provide protection against the maximum credible threat of theft—as, for example, by the immediate dispatch of federal marshals—or, if this cannot expeditiously be done, that the SSNM licenses be revoked forthwith and that possession immediately be taken of the SSNM.

1. Preliminary Considerations.

At the outset, we need to address two aspects of the emergency petition each of which affects our consideration. The first relates to our scope of review. The petition can be viewed as requesting both enforcement action against individual licensees and special rulemaking on a generic level. Because of its request for enforcement action, the petition was initially referred to the staff under 10 CFR § 2.206. The Director's decision not to institute action under 10 CFR § 2.202 is reviewable by the Commission utilizing the standard of review established in *Consolidated Edison Company of New York, Inc.* (Indian Point, Units 1, 2, and 3), 2 NRC 173 (1975). Under this standard, detailed in a note below,⁵ the Director's decision will not be disturbed unless it is clearly unwarranted or an abuse of discretion. The *Indian Point* review is essentially a deferral to the staff's judgment on the facts relating to a potential enforcement action, in order to avoid premature commitment by the Commission on factual

⁴The reports and memoranda include an early draft of the NRC Security Agency Study required by the Energy Reorganization Act of 1974, an internal memorandum, dated January 19, 1976, written by Carl Builder, the Director of NRC's Division of Safeguards, NMSS ("Builder Memorandum"), the Rosenbaum Special Safeguards Study done for the AEC and issued in April 1974 ("Rosenbaum Report"), and a Mitre Corporation report to the NRC entitled "The Threat to Licensed Nuclear Facilities," done in September 1975.

⁵Review of the Director's decision embodies the following elements: (1) whether the statement of reasons given permits rational understanding of the basis for his decision; (2) whether the Director has correctly understood governing law, regulations, and policy; (3) whether all necessary factors have been considered, and extraneous factors excluded, from the decision; (4) whether inquiry appropriate to the facts asserted has been made; and (5) whether the Director's decision is demonstrably untenable on the basis of all information available to him.

issues. While the Director's decision not to institute emergency action was rendered in March 1976, we consider this to remain his decision today by virtue of his responsibility under our regulations to act on his own initiative. The Director has not initiated the emergency action requested by petitioner to date. Thus, the *Indian Point* issue is whether the Director's decision was an abuse of discretion, either when he made it or in light of the current facts.

In this case, contrary to petitioner's view utilization of the *Indian Point* standard will not noticeably limit Commission involvement in the issues raised by the emergency safeguards petition. As we have earlier noted, a substantial part of the petition relates to policy matters which, as is clear from *Indian Point* and otherwise, the Commission itself must decide. In any event, we would rely heavily on the staff's judgment of factual matters, quite apart from the considerations in *Indian Point*. Of course, we would examine the staff's judgment and its basis with the appropriate degree of discrimination to satisfy ourselves of the judgment's validity. A searching inquiry is also considered essential to an *Indian Point* review.⁶

The second important aspect of the petition relates to the emergency nature of the relief sought. Much of the substance of the NRDC's position is of a policy nature which would warrant close Commission attention whether or not available information compelled the precipitate action it sought.⁷ Nonetheless, petitioner's contentions must be weighed in the context of its request for emergency action.

The emergency action requested by petitioner is a drastic procedure which can radically and summarily affect the rights and interests of others, including licensees and those who depend on their activities. Our emergency powers must be responsibly exercised. Cf. *Nader v. Federal Aviation Administration*, 440 F.2d 292, 294 (D.C. Cir. 1971). Available information must demonstrate the need for emergency action and the insufficiency of less drastic measures. In the context of the request for emergency relief in this case, the available information must show that the continued activities of NRC licensees, under current safe-

⁶ The *Indian Point* standard of review is similar to the review that would be accorded the Director's decision by a court. 2 NRC at 175. See *Dunlop v. Bachowski*, 421 U.S. 560, 568-576 (1975); *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971). Using the *Indian Point* standard to review the Director's decision in this case is not an abdication of Commission responsibilities as petitioner maintains. As we have noted, the Commission itself will decide questions of safeguards policy. The *Indian Point* standard is reserved for the factually oriented controversies in which full Commission review at the very outset of a proceeding risks premature commitment on factual disputes which the Commission might later be called upon to review.

⁷ Indeed, as we note later, the petitioner's contentions relate to policy matters being considered by the Commission. For this reason and as we note *infra*, we retain these aspects of petition for further review.

guards programs, are inimical to the common defense and security and constitute an unreasonable risk to the public health and safety. We are not required either by the Atomic Energy Act or by our regulations, to take the emergency action petitioner has requested whenever we receive information adverse to the integrity of existing nuclear power safety or safeguards systems. See *Nader v. Nuclear Regulatory Commission*, 513 F.2d 1045, 1054-55 (D.C. Cir. 1975). Where the balance of available information demonstrates an undue risk, we of course take prompt remedial action. Actions have been taken to improve our safeguards posture. But the facts have never called for the drastic relief which petitioner seeks. And as we state in detail in the following paragraphs, we believe that current available information also falls short of establishing a basis for the emergency relief.

2. Review of the Director's Decision and the Staff's Site-Specific Actions.

Petitioner has raised a number of safeguards issues calling for our consideration. Although there were safeguards deficiencies pointed up by a series of staff site visits initiated prior to receipt of the petition, the Commission is of the view that the emergency remedies sought by petitioners were inappropriate in March 1976, when Mr. Chapman denied the petition, and are equally inappropriate now. As we now discuss, what the staff review indicated as necessary to remedy the shortcoming revealed in fuel cycle facility safeguards was a systematic and integrated increase in safeguards protection implemented on an expedited, but not emergency, basis. Such an orderly enhancement of safeguards effectiveness has indeed been in progress since March, and we have recently directed implementation of additional measures at a limited number of facilities. Additionally, the Commission has decided to conduct a rulemaking, the details of which will be publicized shortly to establish, through public proceedings, a long-term regulatory framework for safeguarding strategic quantities of special nuclear material.

We believe the orderly approach adopted by the staff was and remains the correct one, in view of the compressed timetable under which needed safeguards improvements have been and are being implemented. In contrast, the emergency measures proposed by petitioners would have required our taking action in the absence of the results of the staff's careful, though expeditious, review of the situation and could have had an unwarranted and severe impact on the operations of our licensees, most of whom are engaged in activities of importance to the national security.

In January of last year and prior to this petition, the Director of the NRC Office of Nuclear Material Safety and Safeguards initiated a special onsite review

of all SSNM licensees.⁸ The purpose of the special review was to evaluate the safeguards measures of licensees against current NRC regulations and to analyze safeguards capabilities against a hypothetical internal threat of diversion of SSNM by at least one insider—an employee of the licensee—occupying any position, and a hypothetical external threat of theft presented by a determined violent attack of, at minimum, three well-armed, well-trained attackers, who might possess inside knowledge or assistance.⁹ Two separate task groups of the NRC safeguards staff visited each licensee's facilities. The task groups consisted of six-to-eight staff personnel, and the visits ranged from two-to-four days' duration. One task group examined the licensee's physical security measures for the purpose of gauging the timeliness, likelihood and adequacy of the licensee's response to an external attack. The second task group reviewed the licensee's material control programs to evaluate procedures controlling access to and containment of SSNM. The reviews were completed in May.¹⁰ While the fixed-facility licensees were found to have safeguards programs which were generally in compliance with existing regulations, nearly all licensees were unable to defeat both hypothetical threats. The most frequently observed weaknesses were control of access to significant quantities of SSNM (both stored and in process), exit search procedures, and adequacy of response by onsite and offsite forces.

The special review task groups reported that most weaknesses could be

⁸The January review was directed at the fixed-facility fuel cycle licensees. Activities of companies authorized to transport SSNM had been under special review since October 1975, and are discussed *infra*. Much of the information generated by these staff reviews and followup activities is classified or proprietary. We have attempted in this memorandum and order to set forth the salient aspects of the information without, of course, compromising the classified nature of it. But the factual underpinning of our conclusions includes the classified information and briefings we have received from the staff.

⁹No specific threat levels are defined in our regulations.

¹⁰While the Director's decision on the NRDC emergency request preceded completion of the site reviews, we do not conclude that his inquiry into the facts asserted by petitioner was thereby rendered incomplete. In our view the factual issues raised by the petition center primarily on the nature of the threat to licensed facilities, generally, rather than on the implementation of safeguards measures at specific sites, which was the subject of the staff's site reviews. The Director properly focused his inquiry on the former, broader question. The Director's denial of the emergency relief requested amounted to a finding that modification of NRC's regulatory standards on an emergency basis was not called for. The Director's action was based in large measure on examination of the very information and reports cited by petitioner, who, as the Director pointed out in his response to the petition, brought forward no new factual material on this subject. Nevertheless, implicit in the petition was a request for the actual implementation of emergency safeguards measures to protect the public against whatever threat was ultimately found to be appropriate. As we note in the text, each site visit was followed by the imposition of new license conditions as appropriate, although in no case were the dramatic measures petitioner sought found to be required.

corrected by licensees instituting changed procedures, and the Director concluded that shutdown or curtailment of SSNM activities was not necessary. A few weaknesses were found which required structural changes, but these were susceptible to correction through compensatory procedural changes as a short-term solution. The NRC safeguards staff suggested specific procedural alterations to each fixed-facility licensee at the conclusion of each site visit, and has continued to work closely with the licensees to increase safeguards capabilities and correct weaknesses found. A special survey, conducted by inspectors in the NRC Regional Offices during June, determined that all licensees had made significant improvements in their safeguards systems, although further upgrading measures still had to be taken.

Beginning in May, new license conditions were issued to individual SSNM licensees which, in effect, formally required each licensee to employ the safeguards measures that the review teams had determined were sufficient to defend against the hypothetical threats. During September and October, the staff conducted a second round of special onsite reviews to verify that the actions required by the new license conditions had been fully implemented. These onsite reviews were similar, in personnel, time, and procedures, to the earlier initial staff review. Our staff's conclusions were that marked safeguards improvements had been made by all SSNM licensees, and that, in the judgment of the site-review teams, all facilities visited have the capability of meeting the postulated threat. However, as to several facilities, the site reviews have suggested that the level of assurance underlying that judgment was not as great as for the remaining facilities. The Commission considers it prudent—in order to maintain a reasonably assured margin of safeguards at all facilities—to undertake additional measures at these facilities to increase the level of assurance that they are protected against the postulated threat. Based on a generic staff analysis that shows a strong relationship between onsite guard strength and the level of safeguards protection afforded at SSNM facilities, the Commission has decided to require the facilities to increase the number of guards on site or to implement alternative measures which are equally effective within the next two months.¹¹

As regards SSNM transportation activities, on October 1, 1976, ERDA assumed responsibility for shipment of all Government-owned SSNM—over 90% of the total SSNM road shipments. In a separate series of reviews, the NRC staff evaluated the vulnerability of road shipments of SSNM to attack by at least one

¹¹ All SSNM facilities and transportation activities will be the object of continued NRC review, inspection, and evaluation. In this regard, the Commission has asked the staff to develop a plan for the comprehensive assessment of all SSNM facilities, to be used in the context of current safeguards as well as upgraded safeguards measures which are to be the subject of a Commission rulemaking described later in this document. The staff's expertise in using safeguards evaluation techniques is growing, and future site visits will likely include the use of additional evaluation strategies.

insider, or an external group of a minimum of three attackers with military training and skills, at least one of whom could be an insider. As to the private shipments which are still subject to NRC regulation—about 10-30 shipments annually—the NRC staff reviews have led to improvements in commercial transportation planning and scheduling. New license conditions responding to other problems identified by the staff vulnerability studies were implemented in May 1976. The license conditions required increased escort guards, training and instruction of shipment guards and drivers, and installation of citizen band radios for shipment and escort vehicles. The staff is conducting additional reviews, and further upgrading measures remain under consideration.

As we next address, we believe the NRC policy of orderly strengthening of safeguards which the staff is implementing and enforcing provides adequate protection to the public. This policy includes planned agency public proceedings directed at requiring additional upgrading actions by SSNM licensees. In this context, we are satisfied with the staff's conclusions that licensees have safeguards programs which are adequate for the immediate term and that the emergency safeguards sought by NRDC are unwarranted. Our conclusion to initiate rulemaking directed at further upgrading of existing safeguards discussed below, is founded on considerations of prudence. As we have described above, the staff's conclusions rest on extensive onsite reviews of and work with individual licensees. We do not construe the staff's efforts as a statement that the safeguards measures of NRC licensees are insufficient. Rather, we view the activities as an important ingredient to enhance a safeguards posture which we believe is adequate to protect during this interim period while the upgrading measures discussed below are implemented. Because of the staff's past and continuing safeguards efforts, we believe that the emergency measures which petitioner requests are not necessary and that the continued activities of SSNM licensees are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety. Based upon the information presently available, we cannot conclude that the Director's decision not to invoke the emergency action petitioner requests was an abuse of discretion.¹²

3. Consideration of Safeguards Policy Matters.

Specific threat levels are not defined in NRC regulations. However, the effect of the staff's recent activities with individual SSNM licensees has been to

¹²Analyzing the Director's March 22 decision under the *Indian Point* standards (See footnote 5, *supra*), we consider the letter-decision to be understandable and to rationally explain the basis for the decision. The Director understood and executed then-current safeguards policy and his obligations under the Atomic Energy Act and NRC regulations. No essential factor was excluded from consideration or extraneous factor included. An appropriate factual inquiry was made (see footnote 10 *supra*), and the decision was, and remains, not demonstrably untenable in light of the available information.

require safeguards systems that will protect against the postulated threat of diversion of SSNM by at least one insider occupying any position, or by, at minimum, three well-armed, well-trained outside attackers, who might possess inside knowledge or assistance. This current NRC safeguards posture rests on judgment and experience. It is supported by (1) analysis of and to the extent possible extrapolation from historical evidence on the size and character of groups involved in incidents of terrorism and other antisocial behavior; (2) communications and work with other federal agencies having special knowledge and expertise in this area; and (3) review of our records of the types of actual and threatened violence in the commercial nuclear industry. No NRC-licensed nuclear facility or activity has ever been subjected to armed attack, and we have no evidence suggesting that any such attack is likely. Nonetheless, the danger of attack cannot be wholly discounted. Given our impending proposals for safeguards upgrading, we believe the current level of safeguards reasonably assures that continued SSNM activities of NRC licensees are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety.

The principal safeguards policy issue raised by the NRDC is whether SSNM licensees should be required immediately to employ safeguards measures which would protect against attacks by groups substantially larger than the threat postulated in the staff's special safeguards review. The documents upon which petitioner relies are several reports and memoranda generated by or for the NRC and the AEC over the last two years.¹³ The authors of some of these documents judge larger groups to be a possible risk as petitioner contends. However, neither these judgments nor the factual context in which they must be evaluated suggest that the emergency action petitioner requests is either necessary or appropriate. Petitioner has not provided information demonstrating an imminent threat to SSNM licensees—although such risks cannot be wholly discounted—and in this regard it is noteworthy that the reports and memoranda referenced by petitioner do not recommend the kind of precipitate action which petitioner seeks.¹⁴

In the safeguards context, the specifications of the threat against which safeguards should protect—its size and characteristics—cannot be precisely

¹³ Representative of the internal reports and memoranda—and also the documents upon which petitioner principally relies in seeking emergency action—are the Rosenbaum Report, and the Builder Memorandum. See not 4 *supra*. The former hypothesizes a threat of 15 highly trained persons, three of whom might be insiders; the latter assumes, for purposes of future safeguards consideration, an internal and external threat of two and six persons respectively (noting a range of expert opinion from one and three to four and 12) and hypothesizes a minimum level of one insider and three outsiders.

¹⁴ The Builder Memorandum, for example, did not suggest that additional safeguards must be implemented on an emergency basis. Rather, the memorandum recommended a review of existing facilities while awaiting further judgments about what may be a prudent design threat level. This, of course, has been done by the staff.

quantified. In this respect, threat analysis appears to be an example of regulatory action that would greatly benefit, before implementation, from a detailed and open review, including a public examination of the costs and benefits attendant to increasing safeguards measures to meet varying levels of threat. Some historical perspective exists for threat analysis, but it appears to be of limited value. Much of the safeguards question deals in the complexities and unpredictable nature of human character. Thus, the possible analogy of safeguards planning and design and of the technical health and safety planning and design undertaken incident to the licensing of commercial nuclear facilities is of uncertain scope or validity.¹⁵ At present we are not convinced that the empirical or technical means exist to assess the threat with such precision as to establish as mandatory one specific level of safeguards and no higher or lower level. Further examination of safeguards policy may reveal that the appropriate level of safeguards protection will depend on the public acceptability of the measures employed and on the cost-benefit balance of increasing safeguards protection.¹⁶ In this regard, we cannot discount that the ultimate decision to require additional safeguards may involve substantial amounts of initial and continuing expenditures.¹⁷ Before requiring this action, we should be reasonably certain that the expenditures will provide a publicly desired benefit in safeguards protection. Additional safeguards protection need not be implemented on an emergency basis unless necessitated by the facts. Available information does not provide a factual basis for emergency implementation. Thus, in refusing petitioner's requests for emergency action, we do not put a price on basic public safety. Rather, we simply recognize that we must determine that the common defense and security and the public health and safety are advanced by proposed safeguards improvements. All of this discussion convinces us that the issues addressed by petitioner are of important concern but can and should be resolved in contexts other than that of a request for immediate, emergency action.

We do not perceive an actual threat to our licensees, although such may not be wholly discounted. As we have said, no NRC licensee has ever been the target of an armed attack, and available information does not indicate that an attack is probable. However, prudence dictates that our safeguards policy be subject to close and continuing NRC review.

Thus, we have decided to conduct a public rulemaking to consider upgraded

¹⁵See "A Report to the U.S. Nuclear Regulatory Commission on a Conceptual Approach to Safeguards," p. 21 (October 31, 1975).

¹⁶*Id.* at 16.

¹⁷On this point, we note that some of the SSNM licensees are engaged in important national defense activities. Thus, there may not be the option of ultimate shutdown of these SSNM licensees even though the publicly desired level of safeguards might be greater and more expensive than the present level. Petitioners recognize this, albeit in the context of short-term, emergency relief.

interim safeguards requirements and proposed longer-term upgrading actions. The specific upgrading actions remain to be defined in the proposed rule and in developing these actions the Commission will consult and coordinate with the Energy Research and Development Administration and other federal agencies having special knowledge and expertise in this area.¹⁸ For the reasons already stated, we have concluded that continuing activities of SSNM licensees are neither inimical to the common defense and security nor present an unreasonable risk to the public health and safety.

The rulemaking is currently planned for the next few months. This proceeding is intended as a public review of generic safeguards policy for SSNM licensees, and transportation activities and will consider requirements for upgraded safeguards programs in both the near and long term. At the Commission's request, the staff is formulating, for consideration in the rulemaking, recommendations for additional steps that might be taken to upgrade safeguards to protect against higher levels of threat. In formulating its recommendations, the staff is considering, among other materials, the report from a joint NRC-ERDA Task Force which evaluated safeguards of the fixed-facility licensees involved in this proceeding for the purpose of formulating a safeguards action plan for NRC licensees and government-owned SSNM facilities.¹⁹ The Task Force recommended employing additional safeguards measures to counter the hypothetical threats of internal conspiracies among licensee employees and determined violent assaults which would be more severe than those postulated in evaluating the adequacy of current safeguards. The Commission has approved this objective as an appropriate proposal for purposes of the planned public review.²⁰ The

¹⁸In this regard, we note that ERDA has recently initiated upgrading actions at its facilities and plans additional actions in Fiscal Year 1978. Over 90% of the SSNM possessed by NRC licensees is government-owned and subject to ERDA possession and safeguards at one point or another. Our safeguards concerns relate, of course, to those periods when SSNM is in the hands of our licensees.

¹⁹The Task Force was directed by Carl H. Builder, then Director of NRC's Division of Safeguards. Its report—sometimes referred to as the "Builder Task Force Report"—contains Restricted Data, and is classified "Confidential," under the Atomic Energy Act of 1954. 42 U.S.C. § 2014y. Like previous reports on this subject, the report based its recommendation to increase safeguards on prudence, rather than a perception of the imminence of threats to the nuclear industry. An unclassified version of the report is planned for release shortly.

²⁰While we are committed to proposing for public review an upgrade of safeguards capabilities at SSNM facilities, this is not to say that the Commission will necessarily adopt the proposed upgrade measures as its ultimate course of action. The Commission remains free, at the close of the public proceeding, to adopt the course it considers as most prudent to maintain a margin of safeguards protection, taking into consideration all ingredients of responsible regulatory action, including the education it undergoes as a result of the public process. While we have no evidence of actual threats, we cannot wholly discount that SSNM licensees will be the object of assaults more severe than those currently postulated or of internal conspiracies among employees.

rulemaking proposal will also include interim safeguards actions to be taken over a shorter span of time. Proposed interim actions include: (1) increasing the capability of weapons supplied to guards; (2) improving guard training; (3) requiring SSNM licensees to employ additional safeguards measures, as the staff determines necessary at each facility or for each transport company, to defend against an external threat having the capability of a determined assault more severe than that currently postulated;²¹ (4) a security clearance program for employees with access to SSNM;²² and (5) other measures which may, for the interim, be utilized to increase protection against internal threats of theft or diversion of SSNM.

The Commission believes that the contemplated safeguards rulemaking proceeding presents a satisfactory framework for near- and long-term safeguards decisionmaking. We see no reason to short-circuit the usual rulemaking procedures to address safeguards policy matters.²³

One final matter merits comment. Petitioner has contended that SSNM licensees must employ safeguards measures designed to combat "the maximum credible threat of theft or diversion." It is maintained that the concept finds support, by analogy, in the health and safety requirements incident to the licensing of commercial nuclear facilities—an analogy which, as we have previously indicated, is of uncertain validity. The maximum credible threat concept is not now a part of NRC safeguards policy. Without intending to prejudice the utility of the concept, which will likely be evaluated in planned agency proceedings and studies, the present state of safeguards information does not render the concept obviously useful. For example, there does not now appear to be sufficient sophistication in safeguards analysis to establish conclusively the precise nature and level of threats which may be posed to nuclear facilities.²⁴ Current

²¹ Depending on the staff's evaluation of what is preferable at each facility, these additional safeguards measures would include additional guards at some facilities, installation of undefeatable offsite communications systems, improved guard deployment and defensive positions, and hardened facility alarm stations.

²² Security clearances are already required by ERDA for employees of SSNM licensees that are engaged in activities under ERDA contract. This covers 90% of the SSNM in facilities licensed by the NRC.

²³ The Commission's analysis of safeguards issues in the context of the wide-scale use of mixed-oxide fuels in commercial light water-cooled power reactors ("GESMO") may also offer a forum for discussion of longer-term safeguards matters. GESMO does not apply to existing SSNM licensees, but could serve to focus long-term generic safeguards issues and develop future approaches that would be relevant to existing SSNM licensees.

²⁴ For example, petitioner asserts that existing information places the maximum credible threat at from 12-15 armed outsiders or 3-4 industry employees in collusion, with the chance that future review and assessment may reveal a significantly larger threat. We consider these numbers to be essentially matters of judgments. Such judgments, together with the other available information, have been taken into account by the Commission in arriving at its safeguards decisions.

safeguards policy relies on extrapolation from historical evidence and communications with law enforcement authorities and with other Federal agencies having intelligence-gathering responsibilities or experience and expertise in protecting materials similar to SSNM. Yet, as we have noted earlier, the empirical basis for nuclear safeguards threat assessment is not well developed. This, of course, is not to say that an analytical framework for threat analysis cannot be developed and would not be important in the resolution of safeguards policy issues. In this regard, we again note that the parameters appear to us to be more social than technical. The staff has underway several studies which address the analytical basis for a design basis threat. Additionally, consideration of this safeguards matter may be a part of the planned NRC public proceedings. Thus, while future information and developments may provide clarity, we are not now convinced that the maximum credible threat concept is a helpful one in safeguards planning.

4. Disposition of the Petition

On the basis of the above, we conclude that existing safeguards programs, including the extensive and continuing activities of the staff and the SSNM licensees along with the planned safeguards policy activities, are adequate to provide a reasonable assurance that the current SSNM activities of NRC licensees are not inimical to the common defense and security, and do not constitute an unreasonable risk to the public health and safety. We further conclude that the Director's decision not to invoke the emergency action requested by petitioner was not an abuse of discretion. We accordingly deny petitioner's request for the immediate dispatch of federal guards, or similar emergency measures, or the revocation of SSNM licenses. As to the safeguards policy issues raised by the emergency petition—apart from the requested emergency relief—we retain these to be incorporated into ongoing and contemplated reviews and proceedings, and shall invite NRDC participation at appropriate stages in these proceedings. The staff will be instructed to notify petitioner of agency proceedings, which involve public participation, on agency proposals relating to the safeguards measures to be used by SSNM licensees and in related transportation activities. Nothing contained herein should be construed as precluding petitioner from renewing its request for emergency action upon a showing of new information which demonstrates the need for emergency relief.²⁵

²⁵Petitioner has filed a motion entitled "Motion to Ensure Compilation of the Record." The motion reflects petitioner's concern that all materials relevant to the contentions made in the Emergency Safeguards Petition be available and before the Commission for review. We agree with this concern and note that the Commission is free to consider any materials it believes relevant including, but not limited to, the documents enumerated in petitioner's

Continued on next page

It is so ORDERED.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 21st day of January 1977.

Continued from previous page

motion. This follows from the fact that our consideration of the Emergency Safeguards Petition is not a formal agency proceeding conducted on the record. Thus, the Commission is free to rely on its expertise in the matter and to consider any and all available information whether or not cited by NRDC or the staff, and whether or not it has been or could be made publicly available. The information relevant to and considered in this case includes staff reports and documents on the special onsite reviews (some of which are classified Restricted Data or National Security Information), information and reports provided to the Commission in connection with its continuing interchanges with the Congress and other Executive branch agencies, safeguards studies done by or for the Commission (some of which are classified Restricted Data or National Security Information), and other information, documents and reports furnished to the Commission in the course of performing its daily business affairs.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman

Victor Gilinsky

Richard T. Kennedy

In the Matter of

Docket Nos. 50-443
50-444PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

January 24, 1977

The Commission, pursuant to 10 CFR 2.786, elects to review ALAB-366, establishes a schedule for such review, seeks further information from the Appeal Board, and postpones for three days the effectiveness of that decision.

ORDER

On January 21, 1977, the Atomic Safety and Licensing Appeal Board rendered ALAB-366, suspending the effectiveness of the outstanding construction permits for the proposed Seabrook facility. 5 NRC 39. The Board's decision is to become effective on February 4, 1977. An application for a stay of construction is pending before the United States Court of Appeals for the First Circuit. *Audubon Society of New Hampshire v. United States*, 76-1346. On December 17, 1976, the Court rendered an opinion deferring its ruling on the stay application pending further agency consideration of the issues. The Court stated its expectation that it would rule on the stay application unless further agency action eliminating a need for a stay were taken by February 18, 1977.

Pursuant to 10 CFR 2.786, the Commission has elected to review ALAB-366. The matter raises complex legal and policy issues with possible ramifications for other proceedings. As is our custom, we will articulate in appropriate detail the reasons for any action we may decide to take in our decision announcing the results of our review.

As previously noted, the Appeal Board decision will become effective by its own terms and construction must cease (except for measures which protect the environment or buildings, material or personnel) on February 4, 1977. In order

to allow adequate time for consideration of the submissions of the parties under the schedule we are establishing by this order, the effectiveness of the Appeal Board decision is hereby stayed until 6:00 p.m., February 7, 1977. Any party who believes that the Appeal Board decision should be stayed beyond that date should apply for a stay. The other parties will have an opportunity to respond. The Commission will rule on any such stay application no later than February 7, 1977. Should the Commission decline to issue a further stay, the applicant will be given a reasonable period of time to comply with the Board's decision.

Apart from the question of a temporary stay pending completion of Commission review, the parties are to file papers addressed to the correctness of the Appeal Board decision. In addition, the applicant is to provide a detailed description of the status of work at the site and its plans with reference to construction over the next several months, should continued construction be permitted. In this regard, the applicant should explain the meaning of its Board of Directors resolution of January 6, 1977, referred to in the Appeal Board's opinion at pp. 70-71, detailing the work now underway whose continuation is regarded as "necessary or desirable in order to complete a particular phase or phases of the Project or to permit full construction activity to be resumed in an efficient and orderly manner as soon as possible . . ."

In view of time constraints the parties are free to incorporate relevant portions of papers previously submitted to the Licensing and Appeal Boards and to the Court, so long as such submissions are readily intelligible.

The following schedule is established for Commission review:

January 31, 1977 — All parties submit papers on the merits of the Appeal Board decision; any party seeking a stay pending a completion of Commission review shall file an appropriate submission.

February 3, 1977 — Reply papers due from all parties on the merits and any stay application.

February 7, 1977 — Oral argument before the Commission.

All submissions must be put in the hands of all parties by the close of business on the specified deadlines. The oral argument will take place at 9:30 a.m. in the Commissioners Conference Room, 1717 H Street, N.W., Washington, D.C. Counsel wishing to participate in oral argument should so inform the Secretary by January 31, 1977. The Secretary will thereafter issue an order allocating time for oral presentations.

In footnote 54 of the majority opinion, the Board noted that it had not reached the merits of many of the issues pending before it for decision in this proceeding. It indicated, however, that some of those issues appear to be "troublesome." The Appeal Board is requested to identify these issues and to provide the Commission with a statement of the seriousness of these issues and the competing considerations involved. This submission is requested by February 3, 1977.

The reconstituted Licensing Board in this proceeding should proceed with preparation for the hearing contemplated in the Appeal Board's opinions without awaiting the outcome of Commission review of ALAB-366.

IT IS SO ORDERED.

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 24th day of January 1977.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Docket Nos. 50-346A
50-500A
50-501A

(Davis-Besse Nuclear Power Station,
Units 1, 2 & 3)

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.

Docket Nos. 50-440A
50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

January 17, 1977

Upon motion by applicants for a stay of the antitrust conditions directed to be imposed by the Licensing Board in LBP-77-1, the Appeal Board (1) finds insufficient the justification offered for not first seeking such relief from the Licensing Board and (2) refers the motion to the Licensing Board, with instructions for it to decide the motion as expeditiously as possible following receipt of responses from other parties.

Messrs. Wm. Bradford Reynolds and Robert E. Zahler,
Washington, D.C., for the applicants, Toledo Edison Com-
pany, et al.

MEMORANDUM AND ORDER

The applicants have filed a motion for a *pendente lite* stay of the antitrust

conditions which in its initial decision¹ the Licensing Board has directed be imposed upon their licenses. We think the justification offered for not first seeking such relief from the Licensing Board to be insufficient. In essence, the reason assigned by the applicants is that they have no hope of persuading the Licensing Board either that there is a substantial likelihood that they will succeed on their prospective appeal from the initial decision or that the other criteria for the grant of a stay are satisfied.² A similar argument just as easily could be advanced in the vast majority of cases—judicial as well as administrative—in which a stay pending appeal is sought. Yet Rule 8(a) of the Federal Rules of Appellate Procedure requires that “ordinarily” such a stay be first applied for in the trial tribunal. Further, even though doubtless confident of the correctness of the result it reached, the Licensing Board nonetheless may regard the issues which its decision considered and determined to be substantial. It would be of great assistance to us to have the views of the Licensing Board on that question as well as on the other questions bearing upon the warrant for a stay, particularly since it has a close familiarity with the voluminous factual record in this case which we could obviously not acquire in a short period of time.

This being so, we might simply deny the motion out-of-hand, without prejudice to its renewal should a stay of application be filed with and denied by the Licensing Board. See *Public Service Co. of New Hampshire*, ALAB-338; *supra*, fn. 2, NRCI-76/7 at 12. In the interest of the avoidance of unnecessary delay, however, we have elected instead to refer the motion to the Licensing Board, which has been served with copies of it. That Board is instructed to decide the motion as expeditiously as possible following the receipt of responses to it from the other parties (which are to be filed below and not with us). If the motion is denied, the applicants may renew it before us. We will then determine the matter on the basis of the papers considered by the Licensing Board, together with the reasons given by that Board for declining itself to grant stay relief.³

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹ LBP-77-1, 5 NRC 133 (January 6, 1977).

² See *Public Service Co. of New Hampshire*, (Seabrook-Station, Units 1 and 2), ALAB-338, NRCI-76/7 10, 13 (July 14, 1976).

³ Any party may, however, supplement its filing before the Licensing Board for the purpose of commenting on those reasons.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Dr. Lawrence R. Quarles
Richard S. Salzman

In the Matter of

Docket Nos. 50-329
50-330

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 & 2)

January 18, 1977

Upon motion for directed certification by the staff seeking review of Licensing Board rulings which excluded prospective witnesses from the hearing room while other witnesses testify, the Appeal Board asks the Licensing Board for an explanation for the rulings and postpones action on the motion pending receipt of a response.

Motion held in abeyance, pending response from Licensing Board.

Messrs. David J. Rosso and R. Rex Renfrow, III and Miss Caryl A. Bartelman, Chicago, Illinois, for Consumers Power Company.

Mr. Myron M. Cherry, Chicago, Illinois, for the intervenors.

Messrs. Lawrence Brenner, Richard K. Hoefling and Edwin J. Reis for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Pending before us is the staff's request that we exercise our discretionary authority to review and reverse what may be a continuing series of Licensing Board rulings, issued at the behest of the intervenors, excluding certain prospective staff witnesses from the hearing room while other witnesses testify. Consumers Power Company supports the staff's motion and asks that we also set

aside the rulings insofar as they required the exclusion of its prospective witnesses as well.

The Commission has delegated responsibility for the day-to-day conduct of hearings—including the manner in which evidence will be received—to the licensing boards. As we said in *Jamesport*, we are loath to exercise our discretionary review authority to “review interlocutory rulings of licensing boards dealing with garden-variety evidentiary matters.”¹

Sequestering prospective witnesses in Commission hearings is not common, however, perhaps because direct testimony is exchanged in advance in written form or because staff and company witnesses are usually experts testifying in their fields of competence. In this case, the transcript does not make clear the Board’s precise rationale for the unusual rulings objected to. We surmise that they were intended to insure the credibility of subsequent witnesses by preventing them from deliberately fashioning their testimony in such a way as to support the testimony of those who preceded them. If this be the case, however, the fact that the Board permitted the prospective witnesses, before taking the stand themselves, to read the transcribed testimony of the witnesses who preceded them renders the value of their exclusion at best problematical and at worst a nuisance.

The Licensing Board did not enter a blanket exclusionary order but stated that it would decide whether to invoke the rule on a witness-by-witness basis. Accordingly, before deciding whether to review the Board’s actions we request that the Board at its earliest convenience inform us, first, whether it expects to continue this practice with future witnesses, and, if it does intend to do so, second, of its rationale for excluding from the hearing, under the conditions described, witnesses (a) for the company and (b) for the staff.² Pending receipt of a response from that Board, action on the motion to certify is *held in abeyance*.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹ *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-353, NRCI-76/10, 381 (1976).

² With respect to the exclusion of staff witnesses, see the staff’s December 17, 1976, brief to this Board at pp. 10-11, asserting that its witnesses will be giving expert opinions and not testifying as to acts and thus that there is no reason to exclude them. The Licensing Board is in a better position than we are to judge the validity and significance of this assertion in the first instance.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

Docket Nos. 50-443
50-444

PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE et al.

(Seabrook Station, Units 1 and 2)

January 21, 1977

Upon appeal by various parties from the initial decision of the Licensing Board authorizing construction permits (LBP-76-26), and upon request by intervenors for suspension of the permits on the basis of a nonfinal EPA decision on the facility's cooling system, the Appeal Board rules that (1) in view of the lack of an ultimate EPA conclusion on a cooling system and the uncertain effect of various possible conclusions on the cost-benefit analysis of the facility, the initial decision's conclusions on the site's acceptability from an environmental standpoint using once-through cooling cannot be allowed to stand; (2) the Licensing Board's rejection of the Seabrook facility with cooling towers was legally and factually erroneous; (3) the Licensing Board must consider further the possible use of the site with cooling towers; (4) in reevaluating the Seabrook facility with cooling towers and comparing it with alternatives, the Board need not consider sites in southern New England; and (5) construction cannot be allowed to continue (with limited exceptions).

Initial decision vacated in particular respects, proceeding remanded, and construction permits suspended (with specified exceptions).

FWPCA: SECTION 401 CERTIFICATION

The NRC cannot issue a construction permit without having in hand a certificate from the State, under Section 401 of the Federal Water Pollution Control Act (33 U.S.C. 1341). But the Commission may not review the "adequacy" of such a certificate (33 U.S.C. 1371(c)(2)(A)).

NUCLEAR REGULATORY COMMISSION: JURISDICTION

There is not an absolute bar against the award of a construction permit in advance of final EPA action with respect to a cooling system; rather, a number of considerations must be evaluated to determine whether, on balance, the public interest warrants issuing the permit.

NEPA: COST-BENEFIT ANALYSIS

NEPA calls for a balancing of costs and benefits of a reactor, rather than measuring the reactor against absolute environmental standards. A licensing board can therefore disapprove use of a site for a facility with a particular type of cooling system only if (1) on a cost-benefit balance, some alternate site is preferable or (2) the environmental impacts of the proposed facility at the chosen site outweigh the benefit that would be derived from the facility.

NEPA: COST-BENEFIT ANALYSIS

Where some other agency has exclusive authority to evaluate one aspect of a nuclear facility, the NRC's obligation is to weigh the overall project in light of the conclusion reached by that agency on that aspect.

NEPA: CONSIDERATION OF ALTERNATIVES

An alternate-site analysis normally focuses upon territory within or in the vicinity of the service area of the utility which is to build and operate the plant. If an intervenor believes that the staff should have considered alternatives which the Draft Environmental Statement makes clear were not considered, then it must make that belief known at the earliest available opportunity to enable the staff to consider those alternatives in a timely fashion.

NEPA: SUSPENSION OF PERMITS

Where a proceeding has been remanded for further consideration of site alternatives and there remains not just a theoretical but a manifestly real possibility that a chosen site will ultimately be rejected in favor of some alternative, construction should not be allowed to proceed pending such consideration and the ultimate resolution of the site issues. *Hodder v. NRC* (D.C. Cir., October 21, 1976).

Mr. Thomas G. Dignan, Jr., Boston, Massachusetts, (with whom Mr. John A. Ritsher and Ms. Eleanor D. Acheson

were on the briefs), for the applicants, Public Service Company of New Hampshire, *et al.*

Messrs. Anthony Z. Roisman and David S. Fleischaker, Washington, D.C., for the intervenor, New England Coalition on Nuclear Pollution.

Mr. Robert A. Backus, Manchester, New Hampshire, for the intervenors, Seacoast Anti-Pollution League, the Audubon Society of New Hampshire, and the Society for the Protection of New Hampshire Forests.

Mr. Norman C. Ross, Brookline, Massachusetts, filed a brief for the intervenor, Donald B. Ross.

Mr. Donald W. Stever, Jr., Assistant Attorney General of New Hampshire, Concord, New Hampshire, for David H. Souter, Attorney General of New Hampshire.

Ms. Ellyn R. Weiss, Assistant Attorney General of Massachusetts, Boston, Massachusetts, for the Commonwealth of Massachusetts.

Messrs. Michael W. Grainey and Richard C. Browne (with whom Mr. James M. Cutchin, IV, was on the briefs), for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Opinion of the Board by Messrs. Rosenthal and Farrar:

Before this Board are eight separate appeals from the June 29, 1976, initial decision of the Licensing Board which, by a divided vote, authorized the issuance of permits for the construction of Units 1 and 2 of the Seabrook Station. LBP-76-26, NRCI-76/6 857. This nuclear power facility would be sited about two miles from the seacoast in the town of Seabrook, Rockingham County, New Hampshire, approximately eleven miles south of Portsmouth. As proposed, it is to employ a once-through condenser cooling system which would utilize seawater from the ocean (more particularly the Gulf of Maine) by means of intake and outlet tunnels. These tunnels, approximately eighteen feet in diameter, would run from the pumphouse on the station site to points offshore.

The appeals have been extensively briefed and orally argued. In their

totality, they present a wide range of substantive and procedural issues. For reasons that will be developed in this opinion, and without reaching most of those issues, we conclude that construction cannot be allowed to continue at this time and that, therefore, the permits which were issued pursuant to the Licensing Board's authorization must be suspended. As will appear, this result is required in part by the record on which the initial decision rested and in part because of developments occurring during the pendency of the appeals.

I

A. One of the principal areas of environmental controversy below related to whether, assuming a need for the facility, Seabrook should be built at the proposed site or, rather, at some other location. On the evidence before it, the Licensing Board majority concluded that (1) of the nineteen sites considered by the applicants and the NRC staff as possible alternatives to the selected site, the best from an environmental cost-benefit standpoint was Litchfield (located in south-central New Hampshire between Manchester and Nashua on the Merrimack River); (2) there was no necessity to consider still further sites; and (3) the Litchfield site was not, on balance, preferable to the selected site. NRCI-76/6 at 907-11.

The Licensing Board made it clear, however, that its acceptance of the Seabrook site was wholly conditioned on the employment by the applicants of the once-through cooling system called for by their application for construction permits. On the finding that "although a closed-cycle cooling system employing either natural-draft or mechanical-draft cooling towers would result in smaller impact on aquatic biota, other environmental and monetary costs substantially outweigh this advantage," the Board expressly "conclude[d] that the Seabrook site is unsuitable for a closed-cycle cooling system." NRCI-76/6 at 897. Giving effect to this conclusion, the Board ruled that, were the Environmental Protection Agency (EPA) to require closed-cycle cooling for a nuclear facility located at Seabrook, its authorization of the issuance of construction permits was to be regarded as withdrawn. *Id.* at 915.

The reference to EPA was in recognition of the fact that, as will be subsequently discussed in detail (see pp. 48-55, *infra*), by reason of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA)¹ it is that agency's responsibility to determine the acceptability of a proposed cooling system (from the standpoint of both the thermal discharges which would be produced by that system and the location and design of the intake structures associated therewith). In 1975, without first holding an adversary hearing, the EPA Regional Administrator for Region I (which includes New Hampshire) had issued certain "preliminary determinations"² which had dealt with these matters and, in

¹ 33 U.S.C. 1251 *et seq.* (Supp. II).

² On June 24 and October 24, respectively.

essence, had given approval to the use of a once-through cooling system and fixed the precise location and design of the intake structures. As a result of administrative "appeals" from these determinations, however, their effectiveness was automatically stayed pending the holding of an adjudicatory hearing by an administrative law judge and the rendition of an initial decision by the Regional Administrator on the basis of the formal record developed at that hearing. The hearing was held between March 23 and April 2, 1976, and the record was certified to the Regional Administrator on May 21. As of the date of the Licensing Board's initial decision, the matter remained under submission.

For his part, the dissenting member of the Board below agreed with the majority "that cooling towers are not compatible with the Seabrook site." NRCI-76/6 at 939. But, in his view, the application for construction permits should have been denied outright. This was because, *inter alia*, he thought the record to establish (1) that the proposed once-through cooling system would occasion, at the least, significant injury to clams and lobsters; and (2) that there had been an inadequate evaluation of several possible alternative sites (especially Litchfield) which might not have as great an impact upon aquatic resources. *Id.* at 942-47.

B. Immediately upon the issuance of the initial decision, two of the parties to the proceeding (the Seacoast Anti-Pollution League (SAPL) and the Audubon Society of New Hampshire (Audubon)) sought from us a stay of its effectiveness on the basis of the environmental impacts that purportedly would attend construction of the facility. The motion was denied. ALAB-338, NRCI-76/7 10 (July 14, 1976). Thereafter, the movants filed a petition in the Court of Appeals for the First Circuit for review of ALAB-338. *Audubon Society of New Hampshire, et al. v. United States, et al.* No. 76-1347. With leave of that court, we considered and granted a motion for reconsideration of our denial of a stay. Upon such reconsideration, we adhered to the result reached in ALAB-338. ALAB-356, NRCI-76/11 525 (November 8, 1976).³

Neither ALAB-338 nor ALAB-356 rested upon an evaluation of the probability that the Board's findings and ultimate determination would withstand appellate scrutiny. At the time of the rendition of ALAB-338, we had in hand only the limited exceptions filed by the staff; this consideration prompted the observation that it was "virtually impossible at this incipient stage of the appellate process to gauge the likelihood that the Licensing Board's decision will eventually be overturned." NRCI-76/7 at 13. By the time ALAB-356 was rendered, each of the parties had filed both its exceptions and supporting brief—but the responsive briefs were not as yet due. Our examination of the appellants'

³ In ALAB-349, NRCI-76/9 235 (September 30, 1976), a majority of this Board ordered the suspension of the construction permits for reasons not directly related to any matter considered in this opinion. The suspension order was stayed by the Commission before it was to take effect and later was vacated. CLI-76-15, NRCI-76/10 363 (October 5, 1976); CLI-76-17, NRCI-76/11 451 (November 5, 1976).

documents did suggest that "the appeals present [ed] numerous substantial issues of law and fact and that it [was] at least possible that, upon full consideration of those issues following the receipt of [responsive] briefs and the holding of oral argument, SAPL-Audubon will prevail on their position that construction of the facility should not have been licensed." But "it [did] not so clearly appear that the Licensing Board likely [had] committed fatal error" that we could justifiably find "there to be 'a near certainty' that the SAPL-Audubon appeal will succeed without ever having heard the applicants' side of the story." NRCI-76/11 at 540.⁴

Several of the "substantial issues" which we had in mind are in the sphere of the Licensing Board's treatment of the matter of alternate sites. The attacks made on that treatment cover significant territory. Some of the appellants have echoed the view of the dissent below that the impact of a once-through cooling system upon the marine environment had been underestimated and, further, that there had been an insufficient NEPA assessment of those alternate sites which were identified by the applicants and the staff; to this has been added the complaint that the Board erred in implicitly rejecting the thesis that there was an obligation to seek out for comparison purposes sites located in southern New England.⁵ Beyond that, we have been told that in no event should the Board have given even a conditional approval to the construction of the facility at Seabrook until after EPA had made its final determination on the cooling system question;⁶ indeed, the Attorney General of New Hampshire has urged that the initial decision constituted an invasion of EPA's province under the FWPCA. The applicants and the staff defend the initial decision against all these assertions. But those two parties themselves challenge as unsupported by the record the

⁴We added:

In this regard, it must be noted that SAPL-Audubon have made no attempt to single out what they deem to have been the most glaring and significant errors of the Licensing Board. Had they done so, it would have been reasonable to have expected the applicants to have addressed those specific claims of error in responding to the motion for reconsideration. This in turn would have enabled us to evaluate the degree of merit attendant to the claims without awaiting complete briefing and argument of the appeals. But quite plainly it would have imposed an unfair (if not impossible) burden upon the applicants to have required that they include in their response to the reconsideration motion, due within five days after the receipt of that motion, a point-by-point rebuttal of every assertion of Licensing Board error advanced in SAPL-Audubon's 200 page brief (which brief was not filed until several days after the motion for reconsideration had been submitted).

Id. at 540-41.

⁵Most of the nineteen sites considered (apart from Seabrook) were in New Hampshire; the remainder in the coastal region of southern Maine. See p. 59, *infra*.

⁶A SAPL-Audubon motion seeking a deferral of the initial decision pending ultimate EPA action was denied on the same date that decision issued. LBP-76-27, NRCI-76/6.950 (June 29, 1976).

Board's finding that, should EPA require a closed-cycle cooling system, the Seabrook site would not survive a NEPA cost-benefit balance.

C. On November 9, 1976, the day after we issued our ruling (ALAB-356) on the SAPL-Audubon motion for reconsideration of the denial of a stay of the Licensing Board's initial decision; the EPA Regional Administrator rendered his own initial decision. Based on the evidence adduced at the adjudicatory hearing last spring, the Regional Administrator concluded that his earlier preliminary determinations were in error insofar as they (1) sanctioned the use of once-through cooling at the Seabrook site and (2) established the design and location of the intake structures. Accordingly, those determinations were explicitly revoked. The Regional Administrator went on to indicate, however, that he was not now deciding whether a closed-cycle cooling system should be required or what conditions should be set on the design and location of the intake structures. In his view, the record before him contained inadequate information to permit a judgment on these questions.

Under EPA procedures, the applicants were entitled to request review of that decision by the EPA Administrator in Washington. A timely petition for such review was filed and, on December 7, 1976, was granted in an order which set forth a briefing schedule extending into early next month.⁷ Not having been stayed, the Regional Administrator's decision remains in effect pending rendition of the Administrator's decision (presumably still several months in the offing).

In an order issued on November 17, 1976, to the effect that it did not intend to review ALAB-356, the Commission took note of the Regional Administrator's decision and indicated that our Board was free to entertain "any renewed motion for stay [of the Licensing Board's initial decision] which might be based" thereon. CLI-76-24, NRCI-76/11 522, 523.⁸ Despite this invitation, no such motion was immediately forthcoming. The staff did file a motion on November 24, in which it asked us to "consider," in connection with the oral argument on the merits of the appeals then already scheduled for December 10, 1976, whether the construction permits should be suspended in light of the Regional Administrator's decision. That motion, however, did not take a position on whether suspension was warranted. For this reason, on November 26, 1976, we summarily denied it in an unpublished order. In doing so, we stressed that, as authorized by the Commission's November 17 order, any party might affirmatively request that the permits be suspended on the strength of the

⁷The same order denied, however, the applicants' request for summary reversal of the Regional Administrator's decision and the entry of a final decision incorporating the findings and conclusions which the applicants had proposed to the Regional Administrator.

⁸The Commission erroneously stated that the Regional Administrator's decision had been stayed pending review by the Administrator. That error was corrected in a subsequent order. CLI-76-25, NRCI-76/12 607 (December 3, 1976).

Regional Administrator's decision and that motions seeking such relief would be considered and decided as expeditiously as possible following the receipt of responses thereto. A week later, on December 3, the intervenor New England Coalition on Nuclear Pollution (Coalition) filed a motion to reopen the record and to suspend the permits. Although the first ground assigned for entitlement to that remedy was unrelated to the Regional Administrator's decision, the Coalition also argued that "[a]t a minimum, the EPA determinations represent weighty new evidence [on crucial issues] which should be part of the record of this proceeding" and that construction of the facility should not proceed while that evidence was being received and evaluated.

D. On December 9, 1976, the Court of Appeals for the First Circuit held a conference with counsel for the various parties to the matters before that court pertaining to the Seabrook facility. Immediately following the conclusion of the conference, the court issued a short statement in which it called attention to the fact that we were holding oral argument the following day and expressed the view that this would offer "a timely opportunity to ventilate some or all of the issues stemming from the EPA Regional Administrator's decision." We were encouraged to deal with those issues to the extent we thought "appropriate and feasible at this time."

In light of the First Circuit's statement, we announced at the inception of the oral argument that all counsel might "utilize part of their allotted time to discuss the impact, as they see it, of the decision of the Regional Administrator of the Environmental Protection Agency upon the matters that are pending before the Nuclear Regulatory Commission, and more particularly, this Appeal Board" (App. Bd. Tr. p. 4). The result was a relatively intensive treatment of the decision and its implications in terms of the viability of the outstanding construction permits. Not surprisingly, there was little agreement among counsel as to precisely what were those implications. Subsequent thereto, we received written responses to the Coalition's motion to reopen the record and to suspend the permits, which papers also touched upon the present significance of the Regional Administrator's decision.

On December 17, 1976, the First Circuit entered a formal order in *Audubon Society of New Hampshire, et al. v. United States, et al., supra*. After a recitation of much of the history summarized above, the court gave expression to its abiding concern that this "massive nuclear power reactor project continues on its course at the rate of expenditure of at least several million dollars each week" despite the fact that it remained under scrutiny by various judicial and administrative bodies:

We are unable to identify any other field of publicly regulated private activity where momentous decisions to commit funds are made on the strength of preliminary decisions by several agencies which are open to reevaluation and redetermination. The risk of loss to the private investors is necessarily a real and always present one. Perhaps more important to the

public weal, the risk of public agencies and courts accepting less desirable and limited options or, worse, countenancing a fait accompli are also foreboding.

Our own present views are limited but deeply held. We are increasingly concerned over the jeopardy which prolonged delay in decision creates for both the applicant and the integrity of the final governmental decision. We are equally impressed by the necessity, if the drastic action of a stay of construction is to remain a realistic and responsible alternative, of obtaining the best technically informed insights, assessments, and advice from the agency charged in the first instance with making judgments as to the safety and feasibility of nuclear reactors. That agency is also charged with fidelity to the environmental laws and policy of the country, and with assuring that the balance between the public benefits that will flow from projects and the environmental costs is such that the decision to permit construction is justifiable in terms of a cost-benefit analysis. Although it discharges this responsibility in part by relying upon EPA, it does so only in part. Where EPA's approval may have been presently withdrawn, where future EPA approval is now in greater doubt and where EPA's final decision is possibly four or more months away, the agency faces the most serious responsibilities and remains as our chief source of timely assistance.

Here, the target seems to be a moving one. Decisions of key officials have been fast breaking. We now see the issue not merely as the necessary quantum of proof of irreparable harm against the background of presumptively proper construction permits but as one involving a much deeper involvement in the analysis of the probability of success on the part of the applicant.

Order, pp. 7-8. Notwithstanding this concern, the court concluded that it would be "both inappropriate and unfair for [it], without agency insights, to consider the large issues which only recently have [surfaced] and which have implications as to both irreparable harm and probability of success." Accordingly, it elected to stay its own hand until February 18, 1977, to permit both this Board and the Commission to inquire into the issues which the Regional Administrator's decision has raised with respect to the matters within this agency's jurisdiction. A number of those issues were specifically identified by the court, which went on to note that there might be still other appropriate points of inquiry.

E. It is against this background that we move forward with our consideration of what is before us. Once again, the several appeals from the Licensing Board's initial decision traverse extensive ground. But in the totality of circumstances it seems desirable that we factor out for early determination whether, on the record developed below on the question of the suitability of the selection of

the Seabrook site from an environmental standpoint and given the present posture of the EPA proceeding involving the proposed cooling system, the construction permits authorized by the Board below may be left in effect. This exploration is fairly within the scope of several of the appeals and therefore can be made within their bounds. But even were this not so, both the Coalition's motion to suspend (explicitly sanctioned by the Commission) and the First Circuit's recent order would provide ample warrant for not laying the Regional Administrator's decision to one side while we tackled the myriad other — and discrete—issues which have been brought to us. If the required conclusion is that that decision calls for a halt to construction at least until EPA has spoken further, for the reasons set forth by the First Circuit prompt action effectuating that result is mandated. If, on the other hand, the Regional Administrator's decision were found to be compatible with a continuation of construction, it would then be in order to assess the remainder of the attacks leveled against the Licensing Board's decision.

Accordingly, we turn in the next part of this opinion to an examination of the FWPCA; EPA's role in the implementation of that Act; and the interplay between (1) what that agency has decided or has yet to decide with regard to the Seabrook cooling system and (2) the fulfillment of the NEPA responsibilities of this Commission in connection with the choice of the Seabrook site over potential alternate sites. We shall then proceed to determine where that leaves the construction permits at this juncture.

II

A. By virtue of the Federal Water Pollution Control Act and the National Environmental Policy Act, both this Commission and the Environmental Protection Agency have significant roles to play in the overall effort to regulate the impact of nuclear-powered electric generating facilities on the aquatic environment. In this respect, an understanding of how the two agencies' roles are to mesh under the Congressionally imposed regulatory scheme is aided by an appreciation of the historical developments that have contributed to the shaping of that scheme.

1. Prior to the enactment of NEPA, the Atomic Energy Commission asserted that control of the discharge of heat from nuclear power plants — *i.e.*, control of so-called "thermal pollution" — was not within the ambit of its responsibilities. The Commission said that this task fell entirely to other federal and local agencies. It was held to be justified in taking this position. *New Hampshire v. AEC*, 406 F.2d 170 (1st. Cir.), *cert. den.*, 395 U.S. 962(1969).

After NEPA became law, but prior to the enactment of the 1972 amendments to the FWPCA, this Commission was assigned far-ranging tasks and responsibilities insofar as protection of water quality was concerned. Of course, by then it had the duty, under the then-existing version of the FWPCA as

amended by the Water Quality Improvement Act of 1970, to withhold a construction permit until it was furnished a water quality certificate from the state in which the proposed facility was to be located.⁹ That certificate, known as a "21(b) certificate" after the section of the FWPCA which established the need for it, had to indicate that there was "reasonable assurance" that the discharges from the facility would not violate the state's water quality standards.

Insuring that such a certificate was obtained, however, was not all this Commission had to do. Of much greater significance, it was authorized—indeed required—by NEPA (1) to make an independent appraisal of the impact of the discharge on water quality; (2) to require the implementation of any cooling system alternatives that could, at a favorable cost-benefit ratio, reduce the impact of the discharge; and (3) to consider any residual adverse impact in the overall cost-benefit balance. *Calvert Cliffs' Coordinating Committee v. Atomic Energy Commission*, 449 F.2d 1109 (D. C. Cir. 1971).

The 1972 amendments to the FWPCA gave the Environmental Protection Agency, then not yet two years old, a much more expansive role to play with respect to the protection of water quality than federal agencies had previously been assigned.¹⁰ At the same time, in furtherance of policy of reducing "needless duplication and unnecessary delays at all levels of government,"¹¹ it significantly reduced the scope of the obligations otherwise assigned to this Commission under NEPA.¹²

It is this relatively new Congressionally imposed regulatory framework which, in the final analysis, controls what the applicants are permitted to do here. In discussing the present statutory scheme, we do not, of course, need or propose to describe in detail all of EPA's numerous responsibilities. Rather, at the risk of oversimplifying a very complex subject, we will highlight only those which have a direct bearing on the questions now before us.

2. Under Section 402 of the amended FWPCA, 33 U.S.C. 1342, EPA may issue a permit allowing the discharge of a pollutant if the discharge complies with certain standards established pursuant to certain provisions of that Act.¹³ Congress has included heat within the Act's definition of pollutants (section 502(6), 33 U.S.C. 1362(6)), and our basic concern here is, of course, with the cooling system necessary to deal with waste heat.

⁹ 33 U.S.C. 1171(b).

¹⁰ Pub. L. 92-500, 86 Stat. 816 (October 18, 1972), known as the "Federal Water Pollution Control Act Amendments of 1972." Section 2 of that Act completely rewrote the Federal Water Pollution Control Act, which is now codified at 33 U.S.C. 1251, *et seq.* (Supp. II).

¹¹ See Section 101(f) of the FWPCA, as amended, 33 U.S.C. 1251(f).

¹² See Section 511(c)(2) of the FWPCA, as amended, 33 U.S.C. 1371(c)(2), discussed in the text *infra*.

¹³ If those standards have not been established, a permit may be issued under such conditions as EPA determines are necessary on a case-by-case basis.

With respect to the heat which would be generated by Seabrook, perhaps the most important standards which were to be established by EPA and applied by that agency in determining whether to issue a discharge permit are those called for by Section 301 of the FWPCA, 33 U.S.C. 1311.¹⁴ That section directs EPA to establish effluent limitations, to be achieved not later than July 1, 1977, based upon the application of the "best practicable control technology currently available." Section 301(b)(1)(A). Going on, the section mandates that EPA establish, and there be achieved not later than July 1, 1983; effluent limitations based upon the application of the "best available technology economically achievable . . . which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants . . ." Section 301(b)(2)(A). Insofar as cooling systems are concerned, the Act tells EPA not only to deal with the threat of thermal pollution itself but also to insure that the "location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." Section 316(b), 33 U.S.C. 1326(b).

Congress envisioned that, in particular circumstances, EPA's general standards governing the discharge of heat might prove to be more restrictive than necessary. Accordingly, the Act gives a prospective discharger the opportunity to convince EPA that, with respect of the particular body of water into which the discharge is to be made, the generally applicable thermal effluent limitations are "more stringent than necessary to assure the [protection]¹⁵ and propagation of a balanced, indigenous population of shellfish, fish, and wildlife . . ." Section 316(a). If the applicant is successful, EPA may grant a "316(a) exemption" by setting less stringent limitations on the thermal component of the discharge than would otherwise be required. Because such exemptions are site specific, the precise location of the discharge structures, as well as the amount of heat to be emitted, can be an important consideration;¹⁶ thus, the grant of an exemption might be conditioned on the discharge structures being located at a point different from that proposed.

EPA duly promulgated the effluent limitations referred to above, as well as regulations governing 316(a) exemptions.¹⁷ In brief, EPA found that it was not "practicable" to achieve any "additional restraint on heat" by July 1, 1977. 39 FR 36187 (1974). It reached a different result, however, with respect to the

¹⁴ The section 306 "standards of performance" are applicable only to "new sources"; EPA has ruled, and there does not appear to be any dispute on this point, that Seabrook is not a new source as defined by the FWPCA. See section 306(a)(2), (5), 33 U.S.C. 1316(a)(2), (5).

¹⁵ Although the word "projection" appears in the section (at least in the United States Code), it seems quite clear that "protection" is what was intended.

¹⁶ See *Appalachian Power Co. v. Train, Infra*, ___ F.2d at ___, 9 ERC at 1049.

¹⁷ 40 CFR Parts 122 and 423, 39 FR 36176-36207 (1974).

“best available technology” test: it ordered that, by July 1, 1981, there be essentially no discharge of heat from cooling water condensers,¹⁸ thus in effect calling for the installation of closed-cycle cooling for plants such as Seabrook unless a 316(a) exemption were obtained.

3. As we shall see, certain aspects of these regulations were set aside last summer by the Court of Appeals for the Fourth Circuit in *Appalachian Power Co. v. Train*, _____ F.2d _____, 9 ERC 1033 (July 16, 1976), *as modified*, _____ F.2d _____, 9 ERC 1274 (August 31, 1976). Before discussing that decision, we should first conclude our discussion of the other changes in the regulatory framework brought about by the 1972 amendments to the FWPCA, focusing now on the role of this Commission.

For one thing, those amendments altered the nature of the certification which federal licensing agencies are to obtain from the states (EPA must obtain such a certification before issuing a discharge permit; as noted above, this Commission must obtain such a certification before issuing a construction permit). Instead of certifying, as they did under former section 21(b), as to reasonable assurance that state water quality standards will be met, by virtue of Section 401 of the amended Act, 33 U.S.C. 1341, the states are now to certify that the proposed discharge will comply with federal standards; *i.e.*, with “the applicable provisions of” certain sections of the amended FWPCA, among them section 301. In other words, in contrast to the situation that existed before 1972, the certifying state is not now required to make any direct representation concerning compliance with its own water quality standards. It may, however, set forth in its 401 certificate any requirements and limitations necessary to assure that the discharge will comply with any other appropriate requirements of state law (such as water quality standards). The requirements and limitations thus set forth then become conditions on the federal license. Section 401(d).

Insofar as this Commission’s responsibilities are concerned, perhaps the most significant change made by the 1972 amendments was contained in section 511(c)(2), 33 U.S.C. 1371(c)(2). In order to establish a different role for this Commission with respect to water pollution matters than that mandated by *Calvert Cliffs*,¹⁹ Congress provided that nothing in NEPA was to be deemed to authorize this Commission either (1) “to review any effluent limitation or other requirement established pursuant to” the FWPCA or “the adequacy of any certification under Section 401 of” the FWPCA; or (2) “to impose . . . any effluent limitation other than any such limitation established pursuant to” the FWPCA.

4. The meaning of section 511(c)(2) can perhaps best be understood by examining how, in light of it and in ideal circumstances, the responsibilities of the two agencies are to mesh in passing upon an applicant’s proposal. As Senator

¹⁸ 40 CFR 423.13(1), (m).

¹⁹ See p. 49, *supra*, and pp. 51-52, *infra*.

Baker explained in introducing the floor amendment which was the forerunner of section 511(c)(2), duplication was to be avoided by leaving to EPA and the states the decision as to the water pollution control criteria to which a facility's cooling system would be held. This Commission would not then be free to ignore considerations of aquatic impact; it would have to consider them, but only as part of its overall "balancing judgment" on whether "it is in the public interest" to grant the requested permit.²⁰ In other words, this Commission still must consider any adverse environmental impact that would accrue from operation of the facility in compliance with EPA-imposed standards; but it cannot go behind either those standards or the determination by EPA or the state that the facility would comply with them.

In order for this system to work to maximum advantage, of course, it is necessary for EPA to have made its determination relative to the plant's cooling system in advance of this Commission's consideration of the matter. Indeed, as the "Second Memorandum of Understanding" between the two agencies indicates, EPA is to make its "best efforts" to have completed the evaluations related to the 402 discharge permit, 316(a) exemption, and 316(b) analysis of intake structures "as far as possible in advance" of the NRC staff's issuance of its Final Environmental Statement.²¹

Here, the system has not worked that way. Not only has the NRC staff issued its Final Environmental Statement, but the hearing at which that state-

²⁰ See "A Legislative History of the Water Pollution Control Act Amendments of 1972," pp. 1393-95. The conference committee recast Senator Baker's amendment into its present form, indicating that the purpose was to clarify certain relationships between the FWPCA and NEPA. *Id.* at 331-32. In that form, it seems even more clearly to accomplish the purposes about which Senator Baker spoke; indeed, the comments he made were said to remain applicable. See *id.* at 183 (written analysis by Sen. Muskie), 151, 196-99, 236, 239, 256.

²¹ "Second Memorandum of Understanding and Policy Statement Regarding Implementation of Certain NRC and EPA Responsibilities," 40 FR 60115, 60119 (1975) (emphasis supplied). The two agencies had entered into an earlier memorandum of understanding shortly after the 1972 FWPCA amendments became law. 38 FR 2713 (1973). That first memorandum and the accompanying "Interim Policy Statement" were designed to establish a framework for licensing action in the immediate transition period before EPA began to make any significant progress on the responsibilities assigned to it by the new law, which established a timetable for completion of EPA's various tasks. During that period, this Commission was to continue to exercise its full NEPA authority (as set forth in *Calvert Cliffs*) so that there "would be no hiatus in Federal responsibility and authority respecting environmental matters embraced by both NEPA and FWPCA." 38 FR at 2679. Because EPA is now fully involved in deciding the cooling system questions, there is no threat here of any hiatus that should be remedied by reference to the original memorandum of understanding and interim policy statement. (The second memorandum of understanding, which became effective on January 30, 1976, specifically superseded the first memorandum and is to be applied "to the maximum extent practicable" to pending proceedings, such as *Seabrook*. 40 FR at 60120.)

ment must be evaluated has been concluded and the plant has received construction permits. All the while, the question of the cooling system to be approved by EPA is still very much unsettled.²² We do not now know what type of cooling system (*i.e.*, once-through or closed-cycle) will be selected. Nor, assuming that EPA approves once-through cooling, do we know what the economic cost and environmental impact of the operation of the cooling system will be. This is because there remains a substantial controversy as to the location of the associated intake structures and, quite possibly, of the discharge structures as well.²³ Not until that controversy is finally resolved by EPA will it be possible to measure the economic cost and environmental impact involved in building and operating the cooling system—both of which are, of course, ingredients of the cost-benefit balances which this Commission must strike.²⁴ The decision of the EPA Regional Administrator (p. 78) brings the existing uncertainty into sharp focus:

... [A]lthough the offshore location would be somewhat preferable to the inshore location, both are still within the area of high potential adverse impact on coastal populations. It is highly unlikely that either location would minimize adverse environmental impact particularly in view of the alternatives. The identified adverse impact could be minimized by moving the intake location farther offshore. Closed-cycle cooling, which would reduce the capacity by ninety percent also appears to be an available alternative. Whether either of these alternatives or a combination of them should ultimately be selected by PSCNH will depend upon a fuller exposition and examination of the extent of the harm to be avoided, a consideration of the costs and capabilities of alternative technologies available to mitigate such harm and a balancing of these factors against each other.

The controversy over the precise form of any once-through cooling system which might be approved is, of course, a real one. This is illustrated by the sharp dispute between the members of the Board below with respect to the severity of the impact which the operation of such a cooling system would have upon important species of marine life, *i.e.* lobsters and clams.

²²The matters in dispute before EPA stem from the applicants' request for a 402 discharge permit, which was accompanied by a request for a 316(a) exemption from the then-proposed, later-promulgated, and now-remanded (by the Forth Circuit) "no discharge of heat" regulations. The Regional Administrator's initial decision deals with the exemption request and the correlative 316(b) intake structure questions.

²³As earlier noted (p. 50, *supra*), the grant of a section 316(a) exemption might turn on the precise location of the discharge structures. In his initial decision, the EPA Regional Administrator did not focus upon this question—apparently because he found there to be insufficient evidence to evaluate thermal effects at all.

²⁴As will be later discussed, *infra*, pp. 61-62, balancing must be performed, *inter alia*, as part of the analysis of alternate sites.

It need only be added that this uncertainty has been exacerbated by the decision of the Fourth Circuit in *Appalachian Power Co. v. Train, supra*. That decision sent back for further study significant portions of EPA's regulations governing the discharge of heat. Had they been upheld, those regulations would have provided the framework for EPA's evaluation of the applicants' cooling system proposal.

As noted above, under section 402 the absence of valid regulations does not deprive EPA of the authority to pass upon the applicants' proposal; if new regulations are not quickly promulgated, however, *ad hoc* standards will have to be developed in the context of the Seabrook application.²⁵ This, of course, adds to this Commission's difficulties in attempting to coordinate its activities with those of EPA.

5. There is no need to rehearse here all that was said in *Appalachian Power*. There is, however, a thread running through that decision which is worthy of mention. At several points, the Fourth Circuit made clear that it discerned in the terms of the Act no suggestion that the goal of thermally unpolluted water was of such an overriding nature that it had to be achieved regardless of cost. For example, the court insisted that on remand EPA take into account both the incremental environmental benefits gained by achieving particular levels of heat reduction and the cost of achieving those benefits. _____ F.2d at _____, 9 ERC at 1040-43. And the Act says that that cost involves not only money but energy requirements and other nonwater quality environmental impacts. Section 304(b)(2)(B), 33 U.S.C. 1314(b)(2)(B). See also _____ F.2d at _____, 9 ERC at 1039.

In the context of the dispute over EPA's general regulations, the court's comments raise questions concerning EPA's authority to insist on a utility company's utilization of a closed-cycle system against its wishes. Those same comments may have bearing on the converse question about EPA's authority which, as we shall see, may arise here:^{25a} does EPA have the authority to reject a utility company's proposal to utilize a closed-cycle system if EPA believes that the price of such a system, in terms of its economic costs, nonwater-quality-related environmental impacts and additional energy requirements, is just too much to pay for the degree of reduction of the adverse impact on the aquatic environment achieved thereby? Even assuming EPA were to reenact regulations calling generally for closed-cycle cooling, it would seem that a strong argument

²⁵This understanding was confirmed by EPA's General Counsel in the course of responding, on January 11, 1977, to our letter of December 23, 1976. That letter had been sent for the purpose of soliciting EPA's views on certain questions which the First Circuit had posed in its order of December 17, 1976, (see p. 47, *supra*) and about which it had suggested we might wish to seek EPA's guidance. To the extent that it proved necessary to deal with the questions raised by the court in light of our disposition of other questions before us, we provide our answers in the course of this opinion.

^{25a}See fn. 49, *infra*.

could be made that, given the right set of circumstances, EPA might have to reject such a proposal in a particular case in favor of a different system which, on balance, would be more sound.²⁶ If so, an additional uncertainty looms over the question of what cooling system would ultimately be employed at Seabrook.

B. In this setting, we turn to a consideration of two suggestions made during the course of the proceeding, either of which would, if accepted, automatically require the revocation of the construction permits without regard to any other considerations. The first concerns the 401 certificate furnished by New Hampshire to this Commission. As we have seen, that certificate was a necessary prerequisite to the issuance of construction permits. As it turns out, it was expressly "conditioned upon" certain early EPA determinations. Thus, we are told, those determinations having been at least temporarily set aside, the certificate can no longer support the permits.

The second suggestion is that there exists an impenetrable legal barrier to the issuing of an initial decision (and perhaps even to the taking of any evidence of the question of cooling systems) in advance of a final determination by EPA establishing with reasonable precision the nature of the cooling system it will permit to be employed. If this is true, the Licensing Board should not have issued its decision and we should now vacate it.

We accept neither of these suggestions.

1. On May 29, 1975, the applicants received from New Hampshire the 401 certificate which they were then to furnish this Commission with respect to the Seabrook facility.²⁷ That certificate was, by its terms, issued "[i]n light of, and conditioned upon, the provisions of EPA 'Determinations,' relative to Sections 316(a) and 316(b), FWPCA, as regards the condenser cooling system, issued on March 18, 1975, and modified by letter dated May 16, 1975."²⁸ Because those

²⁶To be sure, except with respect to matters not involved here, actions taken by EPA under the FWPCA do not trigger the requirements of NEPA. Section 511(c)(1) of the FWPCA, as amended. But that exemption from NEPA was awarded EPA on the grounds that it already was, by virtue of its fundamental charter and the laws it was to administer, expected to be engaged in environmentally protective assignments. See, e.g., Leg. Hist., *supra* fn. 20, at 179-80. We see no reason why in a particular case it would necessarily be precluded from balancing benefits achieved by reduction of thermal pollution against non-water-related environmental costs; indeed, the FWPCA was said to set out "ground rules for this kind of finely tuned, systematic balancing analysis . . ." which did not need to be complicated by also engrafting on NEPA's requirements. *Id.* at 182.

²⁷Apparently through inadvertence, the 401 certificates which were provided the Licensing Board and duly admitted into evidence were those associated with the proposed EPA discharge permit and not the NRC construction license. Upon learning of this, we located the proper certificate and advised the parties we intended to take official notice of its existence and content in the absence of any objection. No objections were voiced.

²⁸The EPA "determinations" referred to in the certificate were not the "preliminary determinations" issued by the Regional Administrator and later set aside by his initial decision. Rather, they were draft proposals anticipatory of the "preliminary determinations."

EPA determinations, although confirmed by the "preliminary determinations" of June 24 and October 24, 1975, were set aside by the Regional Administrator's recent decision,²⁹ we are told that the 401 certificate is void and can no longer be relied upon by this Commission as a basis for leaving the construction permit in effect.

As noted earlier, this Commission cannot (except in circumstances not relevant here) issue a construction permit without having in hand a 401 certificate. Under Section 511(c)(2)(A) of the Act, however, this Commission is prohibited from reviewing "the adequacy" of a 401 certificate.

During the course of the appeals, there has been much argument over the precise extent of that prohibition. While there seems to be agreement that we cannot inquire into the substantive evaluations which underlie the certificate, some parties argue that we can look into its validity from a procedural or formal standpoint or ascertain whether it is, by its own terms, of no force and effect. The analysis we make of the problem enables us to avoid those uncharted waters. As we understand the language and sparse legislative history of section 401, its purpose—like that of its predecessor section 21(b) of the former law—was to give the affected state the opportunity to exercise independent judgment concerning the acceptability of a proposed federally licensed project. In effect, the state was given a veto over the project; in addition it can require that there be attached to the federal license such water-related conditions as it deems appropriate. Here, however, the critical language of the certificate—*i.e.*, the words which form the basis for the argument that it lacks continuing validity—appears not to reflect any independent state judgment as to the acceptability of the project. To the contrary, the certificate plainly seems to indicate a willingness on the part of the state to defer to EPA's judgment in the matter. In other words, it connotes to us the view that the project is acceptable to the state if it is

²⁹ Under EPA regulations, the filing of an administrative appeal to the Regional Administrator from his preliminary determinations acted automatically to stay their effect. 40 CFR 125.35(d)(2). Thus, whatever may be the consequence of the fact that the EPA Administrator has undertaken review of the Regional Administrator's decision, the EPA preliminary determinations are certainly not in effect at this time. To be sure, as EPA's General Counsel says in response to one of the First Circuit's questions, they may not have been "rendered a nullity," for that appraisal cannot be made until the administrative process is complete. But because they were first automatically stayed by the request for an adjudicatory hearing and then set aside after that hearing by the same person who had issued them originally, the preliminary determinations certainly have too little currency to defeat, of themselves, the argument that the 401 certificate is no longer in force.

acceptable to EPA.³⁰ In short, the state 401 certificate in no way tells us that the state had any negative views of its own about the project.³¹

This being the case, we believe that our decision will not be materially aided by attempting, perhaps in violation of section 511(c)(2), to characterize the present status of the 401 certificate. Whether the certificate be now "valid" or "invalid," the fact remains that the state was willing to leave the matter to EPA. And we have directly before us precisely the question of the impact of EPA's latest decision upon the viability of the project. We should pass upon that question in straightforward fashion, rather than filter it through the 401 mechanism.³²

2. As we understand it, the suggestion that a Licensing Board is barred from issuing an initial decision until EPA has made its final determination with respect to the facility's condenser cooling system is not premised on any specific language in the governing statutes or regulations. Rather, it is said to be a natural corollary to the principles upon which the regulatory framework is founded.

We agree with much of what is said in support of that position. But we nonetheless believe that there is not an *absolute* bar against the award of NRC

³⁰Of course, the proposal which was submitted to the state for certification involved once-through cooling and the state's willingness to defer to EPA's judgment was evinced in that context. Nothing we say here should be taken as reflecting a view that the state will not be entitled to rescind the outstanding 401 certificate if the applicants later propose, or EPA requires, closed-cycle cooling. See discussion in fn. 32, *infra*.

³¹As EPA's General Counsel points out (in the second paragraph of page 2 of his January 11, 1977, response), the state will eventually have the opportunity to decide whether to issue a 401 certificate in connection with any EPA decision to issue a 402 discharge permit.

³²Because we take this approach, we also need not at this juncture pass upon the validity of the applicants' argument that section 401 was intended to give the state a "one-shot" veto over the project at the construction permit stage, and that once that opportunity passes by, the 401 mechanism serves no continuing purpose (other than as a vehicle for attaching state-suggested conditions to the eventual construction permit.) To be sure, the FWPCA provides the state another opportunity to exercise its 401 authority by in effect stating that its previously issued certificate may not be used to obtain an operating license in light of any new developments which have occurred in the interim. Section 401(a)(3). By negative inference, then, the state may indeed have no authority under the statute to withdraw its permit before the operating license stage is reached. Whether or not it could do so at some interim stage, however, by exercising its independent judgment about the acceptability of the project is not a question which we need face. This is because, up to this point, the state has not, in its certificate or otherwise, expressed the view that the certificate might no longer be valid for reasons other than those assigned by EPA. Again, then, we need to confront the impact of the EPA decision directly.

construction permits in advance of final EPA action.³³ Rather, a number of considerations must be carefully evaluated in each case in which EPA's final decision is not in hand to determine whether, on balance, the public interest warrants the Licensing Board in going ahead. Cf. *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-277, 1 NRC 539 (1975).

To be sure, erection of a total bar to the issuance of an initial decision—and perhaps even to the taking of evidence—would avoid any duplication or overlapping of functions between the Commission and EPA. But there will be instances in which the result of EPA's consideration of cooling system alternatives, while not known with certainty, can be fairly well predicted. This will be true, for example, where no real factual or legal controversy has developed during the course of the EPA proceedings. If, at the same time, no serious alternative-side contention has surfaced in the NRC proceeding, the delay involved in having our decision await EPA's would not seem to achieve any real advantage.

On the other hand, the more substantial the controversy before EPA and the alternative site controversy before us, the more difficult it will be for a licensing board to conduct any meaningful analysis in compliance with the mandate which accompanied the adoption of section 511(c)(2)—namely, that the NRC factor into its evaluation of the facility (including comparison with alternatives) the impacts associated with the cooling system selected by EPA. Given the existence of serious dispute, the chance of avoiding delay is minimized, while the possibility of duplicated, even wasted, effort is increased.

In sum, in the absence of a clear mandate that we do so, we are unwilling to erect an absolute bar to NRC action in all circumstances in which EPA's final decision has not been forthcoming. Once again, however, the absence of such a decision is a factor to be weighted in the balance when a Board considers whether it is appropriate to proceed.

III

We now turn to whether, in light of the foregoing analysis, we can endorse the decision below to the extent that it approves, from an environmental standpoint, the use of the Seabrook site for nuclear power reactors. This undertaking involves an examination of the record developed on the comparative desirability

³³ As will be seen, we do not, however, reject the absolute bar theory on the basis of the applicants' argument that the matter was settled by our *Peach Bottom* and *Limerick* decisions. Those decisions dealt with situations sufficiently different from that involved here to prevent them from being controlling. See *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13 (1974); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-262, 1 NRC 163 (1975).

of Seabrook and other potential sites and the determinations of the Licensing Board majority relevant thereto—including its finding (challenged by the applicants and the staff) that Seabrook is an unacceptable site if cooling towers must be employed. More particularly, we must decide whether, contrary to the ruling below, the record firmly establishes that, no matter how EPA might ultimately resolve the cooling system controversy, the Seabrook site would still be an acceptable choice among the various alternatives.

A. The Final Environmental Statement (FES) for this facility reflects that a total of nineteen sites were considered as alternatives to Seabrook. Of these sites, six were located in the coastal region of New Hampshire (either within two miles of the seacoast or in estuarine areas); two were offshore; five were on the southern Maine coast; and the remaining six in inland New Hampshire locations (three in the Merrimack River valley in the southern portion of the State and three in the Connecticut or Androscoggin River valleys to the north). For a variety of reasons, most of the examined sites were rejected either as inherently unsuitable or as less desirable on balance than some other site in the same general region.³⁴ As a consequence, for comparison purposes the FES focused upon three of the examined alternatives: Litchfield, Moore Pond and Gerrish Island. As earlier noted, Litchfield is on the Merrimack River between Manchester and Nashua. Moore Pond and Gerrish Island are on the Connecticut River (approximately 110 miles north of Manchester) and on the Maine seacoast, respectively. None of those sites was found to offer any "obvious superiority to the Seabrook location." FES, pp. 9-4 through 9-10.

The Licensing Board's consideration of alternate sites (NRCI-76/6 at 907-11) also involved an analysis of the advantages and disadvantages of Litchfield, Moore Pond and Gerrish Island. The Board also directed attention, however, to Rollins Farm, an estuarine site on the Piscataqua River northwest of Portsmouth. As earlier noted, its analysis led the Board to conclude that Litchfield was "superior to the other alternative sites that were evaluated," but that "none of the alternatives [is] preferred over the Seabrook site." *Id.* at 911.

In making its site comparison, the FES proceeded on the assumption that, at the Seabrook site, a once-through cooling system would be employed³⁵ —a perhaps understandable assumption in view of the fact that that was the appli-

³⁴In the case of some of the sites, the reasons were economic in large measure. For example, a principal drawback of the northern New Hampshire sites was found to be increased construction and transmission costs. FES, p. 9-9. And the New Hampshire estuarine sites were removed from further consideration by the applicants (even though one of them had been thought by their consultants to be preferable to Seabrook) because of the expense that would be entailed in making "the nuclear containment structure strong enough to meet the stringent licensing criteria which was considered to be applicable to locations near airports." *Id.* at pp. 9-6 and 9-7. Each of those sites was located in the vicinity of a large Air Force installation. *Ibid.*

³⁵See Table 9.2 at p. 9-8.

cants' proposal and the staff concurred in that choice. Consequently, no endeavor was made to compare the Seabrook site with other sites on the different premise that cooling towers would be utilized. The significance of this consideration is manifest. For one thing, the FES made a particular point of the fact that all of the explored inland alternate sites would necessitate resort to closed-cycle cooling and, in its comparison of Seabrook with Litchfield and Moore Pond, it made reference to the aesthetic impact (as well as local fogging and icing) which would be associated with cooling towers at the latter two sites. FES, p. 9-8. Further, in summarizing its conclusions on the alternate site question, the staff noted that although "a nuclear station could probably be located at the Litchfield site with acceptable environmental impacts," construction costs would be greater than at Seabrook in part "because of the necessity for using wet cooling towers" and "[o]perating costs would also be higher at Litchfield because of the need for cooling towers." *Id.* at p. 9-10. With respect to Moore Pond, the summary opined that "[a] nuclear station probably could . . . be located" there but pointed to numerous drawbacks of that site—one of them being that "[a]s compared to Seabrook, station construction [costs] would be significantly higher due to its remote location and to the necessity for using cooling towers." *Ibid.*

For its part, the Licensing Board similarly compared Seabrook to alternate sites on the assumption of the employment of once-through cooling. NRCI-76/6 at 907-11. The basis for its assumption seems, however, to have been quite different from that of the staff in the FES. Although the FES analysis of cooling system alternatives had led to agreement with the applicants' determination to eschew cooling towers in favor of once-through cooling, the staff had not further concluded that the utilization of towers would make the Seabrook site unacceptable.³⁶ But, as we have noted, the Board saw it otherwise. In the portion of its findings concerning aquatic effects of the cooling system (which preceded treatment of the issue of alternate sites), the Board enunciated its view that the Seabrook site would be made unsuitable by an EPA requirement of cooling towers. NRCI-76/6 at 897. From all that appears in either that finding or in Section G of the Board's "Supporting Opinion" to which the reader was referred (*id.* at 926-29), the Board came to this conclusion on the application of some standard of suitability not involving to any extent comparisons with other sites.³⁷ This being so, when the alternate site matter was eventually reached in

³⁶Indeed, the staff had concluded affirmatively that the site would be acceptable if natural-draft towers were used. See p. 63, *infra*.

³⁷Specifically, the Board seems to have rejected closed-cycle cooling on the theory that once-through cooling would be preferable at the Seabrook site; we so infer from the Board's underlying finding that "although a closed-cycle cooling system employing either natural-draft or mechanical-draft cooling towers would result in smaller impact on aquatic biota, other environmental and monetary costs substantially outweigh this advantage." NRCI-76/6

Continued on next page.

the initial decision, the Board doubtless perceived no necessity to balance any of those sites against a plant at Seabrook with cooling towers.

B. By the time the FES issued in December 1974, it had become abundantly clear that it was for EPA—and not this Commission—to decide whether the applicants would be permitted to employ a once-through cooling system at Seabrook. Since then, as now, there was no way of knowing what final disposition would be made of the applicants' pending application to EPA for a discharge permit which would countenance the use of a once-through cooling system, it would appear that the FES should have explored the question of the relative desirability, in the event EPA required towers, of the Seabrook site and potential alternate sites. Be that as it may, the Licensing Board's treatment of the alternate site question was both legally and factually erroneous.

1. To begin with, even were there a firm record foundation for the Board's belief that the use of cooling towers would give rise to environmental and monetary costs which would substantially outweigh the advantage of a smaller impact on aquatic biota, as a matter of law that consideration could not be employed—as it apparently was (see fn. 37, *supra*)—to rule out the Seabrook site. The Board was not called upon to decide whether, on balance, it was more advantageous to have a once-through cooling system, or instead closed-cycle cooling, at the Seabrook site—*i.e.*, to pass its own judgment on a matter committed by the FWPCA to EPA determination. Rather, insofar as the closed-cycle alternative was concerned, the Board's function was to look into whether, assuming resort to that alternative were required by EPA, Seabrook would be less desirable than other potential sites. If that question were answered in the negative, the Board would, of course, have become confronted with the further question whether the environmental costs associated with the Seabrook closed-cycle system were so great as to outweigh the benefits to be derived from building the facility at all.

Put another way, the Licensing Board could disapprove use of the Seabrook site with cooling towers (should that be EPA's requirement) only upon one of

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at 897. This inference is buttressed by the statement in Section G of the Supporting Opinion, entitled "Alternative Plant Designs," to the effect that:

Considering the cost, the major aesthetic impact, and other environmental impacts of the natural-draft towers, and the fact that the Seabrook site was chosen originally because of the availability of the ocean for cooling water, this Board concludes that the use of natural-draft cooling towers is unacceptable. In short, the cost-benefit balance is in the Board's view unfavorable, and closed-cycle cooling of any type should not be employed for the Seabrook Station.

NRCI-76/6 at 929. In context, it is manifest that the cost-benefit balance which the Board had struck was between the Seabrook site with a once-through cooling system and the same site with cooling towers.

We discuss the propriety of this approach in the next section of this opinion.

two findings: (1) that, on a cost/benefit balance, some alternate site was preferable; or (2) that the environmental impacts of construction and operation at Seabrook with towers outweighed the benefits that would be derived from the facility (i.e., the electric power that would be generated by it). That NEPA calls for such balancing of costs and benefits, rather than measuring of a reactor against absolute environmental standards, is beyond doubt. As we said some time ago in *Maine Yankee*.³⁸

NEPA does not impose minimal environmental standards which must be satisfied as a condition precedent to the licensing of any reactor. To the contrary, consistent with the provisions of NEPA, a particular reactor might be licensed even if it were found that its construction and/or operation would have a serious adverse environmental impact. The purpose of the cost-benefit analysis called for by NEPA is to identify each significant environmental cost and to determine whether, all other factors considered, on balance the incurring of that cost is warranted. This determination necessarily involves the scrutiny of many factors; among them, offsetting benefits, available alternatives, and the possible means (and attendant costs) of reducing the environmental harm.³⁹

Where, as here, one aspect of the reactor (e.g., whether cooling towers will be necessary) is for some other agency (e.g., EPA) to evaluate, the obligation of our Commission is to weigh the overall project in the light of the conclusion that is reached by the agency on that aspect. Cf. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-262, 1 NRC 163 (1975), *petition for review denied, sub nom. Environmental Coalition of Nuclear Power v. NRC*, 524 F.2d 1403 (3rd Cir. 1975).

2. In this instance, the findings prerequisite to an outright rejection of the Seabrook site with cooling towers were not made. Once again, no serious attempt was made to compare that site with alternate sites on the assumption that EPA would require cooling towers. Nor did the Board analyze the environmental impacts which would attend utilization of cooling towers in terms of the ultimate cost-benefit balance for the Seabrook facility itself.

³⁸*Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1007 (1973), *remanded on other grounds*, CLI-74-2, 7 AEC 2 (1974), *further statement of Appeal Board views*, ALAB-175, 7 AEC 62 (1974), *affirmed, sub nom. Citizens for Safe Power v. NRC*, 524 F.2d 1291 (D.C. Cir. 1975).

³⁹We went on in *Maine Yankee* to note that the scheme of the Atomic Energy Act is quite different: "[I]n the safety sphere, the evaluation of the risks attendant to reactor operation is not undertaken as an element of a NEPA-type process by which costs may be traded off against benefits. Rather, the function of the evaluation is to ascertain whether the ultimate, unconditional standards of the Atomic Energy Act and the regulations have been met; e.g., whether the public health and safety will be adequately protected." 6 AEC at 1007.

Moreover, our examination of the relatively meagre portions of the evidence which concern the environmental and economic costs of cooling towers at Seabrook leave us unconvinced that there was a sufficient record foundation for the making of findings adverse to the applicants on either of these crucial questions. The FES contains (at pp. 11-36 to 11-41) some basic data bearing upon the environmental effects of cooling tower (natural-draft or mechanical) operation at Seabrook—e.g., noise, land use, ground level fog, salt drift and visual impact. Its assessment of the data led the staff to conclude that (1) “[b]ecause of the drift, noise and, to a lesser extent fog problems, mechanical draft towers [are] unacceptable”; but (2) the impact of natural-draft towers would be “sufficiently minor” that such towers “would be an acceptable alternative, environmentally, to the once-through cooling system.” *Id.* at pp. 11-39 and 11-41. Scrutiny of the totality of the testimony at trial touching upon these matters⁴⁰ satisfies us that, irrespective of whether the magnitude of the natural-draft tower impacts were underestimated by the staff, they have not been shown to be so severe as to rule out perforce the Seabrook site—either on the basis of a comparison with alternate sites or on an ultimate NEPA balance involving all costs and all benefits of a reactor with cooling towers situated at Seabrook. Our conclusion in this regard is not affected by the staff’s estimate in the FES (Table 11.6 at p. 11-37) that two natural-draft towers, coupled with intake and discharge tunnels to the ocean (seven feet in diameter), would cost \$60,000,000 more than a once-through cooling system.⁴¹ Even were this cost differential enough to create a preference at Seabrook for once-through cooling over closed-cycle cooling (a matter not before us), standing alone it does not establish that, if EPA eventually insists upon towers, the facility should either be moved elsewhere or not built at all.

By the same token, however, it is equally plain to us that the evidence would not have enabled the Licensing Board to make findings in favor of the applicants with regard to the acceptability, given the examined alternatives, of using the Seabrook site for a nuclear facility with towers. Not only, as we have seen, was the FES comparison of alternate sites made entirely in the context of a Seabrook once-through cooling system, but also the evidence at trial appears to have been developed essentially within that same framework. Before any informed conclusion could have been reached on the choice between building at Seabrook with towers and selecting some other location for the plant, the Licensing Board would have needed to know much more than was put before it regarding the dimensions of the environmental effects of cooling tower construction and operation. Among other things, there would have had to have been a considerably deeper investigation of not merely the impact of towers upon the

⁴⁰ See principally Tr. 5778, 5793-97, 6199-6206, 10488, 10514-16, 10518-20, 10878, 10908.

⁴¹ The Licensing Board observed that the differential might be less depending upon the placement of the intake structures for a once-through cooling system. NRCI-76/6 at 928.

marine environment but, as well, the various impacts on land. As we have noted, these impacts did receive some attention both in the FES and at trial. Because, however, the principal focus was on the once-through cooling system which the applicants were proposing and against which alternate sites were being compared, the inquiry was a very limited one.

C. There is still an additional matter which warrants mention in our consideration of the state of the existing record. We have noted in Part II above that EPA is called upon to determine not merely whether once-through cooling will be permitted but, as well, the precise location of the offshore structures which would be associated with whatever cooling system might be utilized.⁴² We also have observed that, at least in the case of once-through cooling, until EPA has made the latter determination it will not be possible to measure the economic cost and environmental impact involved in building and operating the cooling system. For where the intake and discharge structures are to be located will have a decided bearing upon the length—and therefore the economic cost—of the required tunnels. Similarly, the likely impact of the cooling system on the marine environment doubtless will vary depending upon where those structures are placed.

In balancing the Seabrook site (with once-through cooling) against other sites, the Licensing Board apparently proceeded on the basis of dual assumptions respecting where the intake locations would be—and a single assumption respecting the placement of the discharge structure. See NRCI-76/6 at 892-96.⁴³ But until EPA definitively rules on the location question (if it approves once-through cooling at all), it cannot be said that these assumptions were warranted. It may turn out that, applying as yet unannounced guidelines (see p. 54, *supra*), EPA will require that the intake and discharge structures be situated at a considerably greater distance offshore—with a corresponding increase in economic cost. And, if large enough, that increase might well have an influence on the alternate site

⁴²With regard to closed-cycle cooling, the discharge structure and its location is not a matter of particular concern because its limited function does not entail thermal discharge. Where once-through cooling is involved, however, the location of both the intake and discharge structures is of importance.

⁴³In the cited portion of the initial decision, the Board dealt with the aquatic impact of a once-through cooling system in terms of the intake structure being located either (1) where the applicants initially proposed to put it; or (2) where, in one of his now-revoked preliminary determinations, the EPA Regional Administrator concluded it should be placed. The discharge structure location was assumed to be one mile east of Hampton Beach. It is a fair inference that the Board factored into its balance on alternative sites the findings it made respecting the effects which, as thus located, the structures would have on the marine environment. See NRCI-76/6 at 907-11. It is less clear to what extent that balance took into account economic costs attributable to the tunneling involved in so locating the intake or discharge structures.

analysis—especially since some of the alternate sites considered were rejected for basically economic reasons.

In sum, on this record and in view of the lack of an ultimate EPA conclusion on the issues committed by law to its determination, the Licensing Board's initial decision cannot be now allowed to stand insofar as it approves, on environmental grounds, use of the seabrook site for these reactors.

IV

The conclusion just reached brings us to the next and final question—that of appropriate relief at this juncture.

A. 1. It is obvious that, so long as there exists a substantial possibility that EPA will ultimately resolve the cooling system controversy in favor of cooling towers, the Seabrook site cannot be approved in the absence of (1) an indepth evaluation of the economic costs and environmental impacts which that option would entail; and then, (2) a comparison of the Seabrook site to alternate sites in light of that evaluation. We think that the Licensing Board should now hold a hearing directed to that end as expeditiously as possible. To be sure, to some extent the Board will be going over ground which is being covered by EPA as well. We have held, however, that there is no insuperable legal barrier to such duplication of effort. See pp. 57-58, *supra*. In the unusual—and hopefully unique—circumstances of this case, the public interest seems to warrant it. At minimum, the Board's determination of the environmental acceptability of the Seabrook site—made on the basis of a proper record and the application of the appropriate criteria—would be of great immediate value were EPA to insist upon closed-cycle cooling.

In the conduct of these further proceedings, there will be no need for the parties and the Board to go beyond, for comparison purposes, the 19 alternate sites in New Hampshire and Maine which were identified in the FES. See p. 59, *supra*. We are mindful of the assertion of SAPL-Audubon and the Coalition that the prior alternate site analysis was deficient for the additional reason that it did not consider, as well, sites in southern New England. But we agree with the applicants that that assertion was concretely advanced far too late in the proceeding below. It apparently first surfaced in October 1975 during cross-examination of witnesses for the applicants and staff at a late stage of the trial itself (Tr. 10313). Long before that time, in mid-1974, SAPL-Audubon and the Coalition received, and took advantage of, the opportunity to comment upon the Draft Environmental Statement. None of their comments contained the slightest suggestion that the staff's alternate site analysis should have included scrutiny of possible southern New England sites. FES, pp. A-52, *et seq.* and A-94, *et seq.*

Thus, this is not a case such as *Aeschliman v. NRC*, ___ F.2d ___, 9 ERC 1289 (D.C. Cir. 1976), upon which intervenors rely. There, the intervenor's comments on the draft environmental statement had raised a "colorable alternative not presently considered therein" in a manner which brought "sufficient attention to the issue to stimulate the Commission's consideration of it." 9 ERC at 1293-94. It was on this basis that the court concluded that it had then become incumbent upon the Commission "to undertake its own preliminary investigation of the proffered alternative sufficient to reach a rational judgment whether it is worthy of detailed consideration in the" FES. *Ibid.* There is no hint in the court's opinion that an intervenor can await the commencement of the actual trial and then come forward with a claim that the staff's environmental review culminating in the FES should have explored specific alternatives beyond those identified in the DES.

We are especially unwilling to countenance such a result on the facts at bar. Normally, the alternate site analysis rightly focuses upon territory within or in the vicinity of the service area of the utility which is to build and operate the plant.⁴⁴ Some of the underlying reasons are outlined in our *Bailly* decision.⁴⁵ To be sure, as recognized in *Bailly*, there may be special considerations in a particular case which warrant looking farther afield. If SAPL-Audubon and the Coalition believed there to be such considerations here, the proper time for bringing them to the fore was clearly the comment period on the DES.⁴⁶ This would have enabled the staff, prior to the commencement of trial, to do what the intervenors complain was not then done: either to broaden the territorial

⁴⁴In this instance, that utility is the Public Service Company of New Hampshire, which is to be the largest single owner (50%) of the facility. Its service area includes most of New Hampshire and extends to the Canadian border. In addition, it supplies electricity to several Vermont and Maine communities bordering upon New Hampshire. FES pp. 8-5, 8-6.

⁴⁵*Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244, 268 (1974) *reversed on other grounds, sub nom. Porter County Chapter, etc. v. AEC*, 515 F.2d 513 (7th Cir.), *reversed and remanded, sub nom. Northern Indiana Public Service Co. v. Porter County Chapter, etc.*, 423 U.S. 12 (1975), *affirmed on remand*, 533 F.2d 1011 (7th Cir. 1976).

⁴⁶In their brief to us, the only specific southern New England sites referred to by SAPL-Audubon (the Coalition mentioned none) were Millstone in Connecticut and Pilgrim in Massachusetts. These sites already are occupied by power reactors; they have been suggested as possible alternate locations for the Seabrook facility because the completion of a partially built third unit at Millstone has been deferred and the construction of a third unit at Pilgrim cancelled. It does not appear, however, that it was asserted below that the Millstone site should be considered as an alternative. Insofar as the Pilgrim site is concerned, the decision to cancel the third unit was made in July 1974, six months before the issuance of the FES and 15 months before the possible availability of that site was first raised during the trial. See *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-238, 8 AEC 656, 657 (1974).

scope of the alternate site inquiry or to explain in the FES why the limitation of the inquiry to New Hampshire and southern Maine sites was appropriate.⁴⁷

2. A determination after additional Licensing Board proceedings that the Seabrook site with cooling towers is environmentally acceptable when compared to other sites will not, of course, provide an adequate foundation for approval of that site if EPA still has not made its determination on the cooling system controversy. This is because the possibility will still remain that EPA will authorize once-through cooling but will direct the placement of the intake and discharge structures at locations farther out in the ocean than the locations assumed by the Licensing Board when it made its cost-benefit analysis of the Seabrook site. There is no way of narrowing appreciably the range of locations which might be selected by EPA.⁴⁸ Thus, little useful purpose would be served in having the Licensing Board do anything further at this time in connection with a comparison of Seabrook (using once-through cooling) and other sites. That must await additional word from EPA.

That word might take the form of a reversal by the Administrator of the Regional Administrator's initial decision and a reinstatement of the latter's earlier preliminary determinations. Should that eventuality materialize, it would then become incumbent upon us to pass immediate judgment upon the cost-benefit analysis already performed by the Licensing Board—which, as previously observed, assumed once-through cooling with the intake and discharge structures located either where the applicants originally proposed to place them or where one of the preliminary determinations decided they should be situated. We do not now go into that matter on an anticipatory basis because we think that the

⁴⁷What has been said above should not be taken to mean that intervenors are precluded from raising in their contentions and litigating at trial the correctness of any substantive conclusions reached in the DES and carried over to the FES unless those conclusions were first attacked in their comments on the DES. All that we hold is that, if an intervenor believes that the staff should have considered alternatives to the facility or its proposed site which the DES makes clear were not considered, it must make that belief known at the earliest available opportunity (after its intervention in the case) to enable the staff to consider it in a timely fashion. In this instance, the comment period on the DES provided that opportunity; the intervenors were then fully aware of the existence of the considerations (principally the alleged regional character of the Seabrook Facility) upon which they predicate their claim that southern New England sites should have been sought out and explored. Although they did not know at that time that the completion of the third unit at Millstone would be deferred, the possibility of using that site for the Seabrook reactors was not raised until the appeal to us. See fn. 46, *supra*. That was plainly too late by any standards.

⁴⁸With regard to the placement of an intake structure for a cooling tower, that range would appear to be much more limited. It should therefore be possible to determine the maximum economic cost and environmental impact which would be associated with the use of towers at Seabrook, even though the precise location of the intake structures for those towers has not been determined.

reasons assigned by the Administrator, were he to reach that result, might be most helpful to us in judging the sufficiency of the Licensing Board's findings.⁴⁹

B. What remains for decision is whether construction may be allowed to continue pending further consideration and ultimate resolution of the alternate site question—a resolution which, as we have just seen, must abide at least the decision of the EPA Administrator on the pending appeal from the initial decision of the Regional Administrator. We conclude that it may not.

1. A closely analogous situation was recently presented in the construction permit proceeding involving Unit No. 2 of the St. Lucie Nuclear Power Plant. In that case, following its consideration of, *inter alia*, all environmental issues, the Licensing Board rendered a partial initial decision which paved the way for the issuance of a limited work authorization. On their appeal from that decision, the intervenors claimed that there had been an inadequate evaluation of alternate sites. Without reaching the merits of that claim, this Board ruled that neither the Licensing Board nor the intervenors had been fairly apprised of the approach which the staff had taken in making its evaluation. For this reason, it was concluded, the intervenors' alternate-site contention had to be reinstated before the Licensing Board. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-335, NRCI-76/6 830 (June 29, 1976).

Although unanimous to that point, this Board was in disagreement respecting whether the outstanding limited work authorization should be left in effect. Noting that there was already one nuclear unit on the St. Lucie site and that the small amount of further site preparation involved in adding a second unit would therefore produce little consequential environmental damage, the majority found it "appropriate" not to disturb the limited work authorization while the Licensing Board undertook the required additional proceedings. *Id.* at 842. In this connection, the majority relied on *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-212, 7 AEC 986, 996-97 (1974), in which we had alluded to our consistent practice of leaving "a construction permit or operating license in effect pending the outcome of a

⁴⁹ As the foregoing discussion suggests, it might prove to the advantage of the applicants to abandon their quest for once-through cooling approval should (1) the Seabrook site with cooling towers be found acceptable following the supplemental proceedings and (2) the EPA Administrator leave the Regional Administrator's initial decision in effect. We do not pass, however, upon whether, as our dissenting colleague believes, the applicants have the right unilaterally to moot the EPA proceeding by withdrawing their request for a section 316(a) exemption. They have not indicated they might pursue that course and, should they do so, it will be for EPA to decide whether the withdrawal must be honored. The EPA General Counsel's January 11, 1977, response to our letter to him (see fn. 25, *supra*) does not address the matter at all and, therefore, offers no clue as to what that agency might conclude were the question to come before it in a concrete context. And, in light of *Appalachian Power Co. v. Train*, it is difficult to forecast the conclusion that would be reached. See discussion, pp. 54-55, *supra*.

remand for further proceedings unless there was reason to believe that the *pendente lite* continuation of the activities in question might pose in itself a threat to health and safety (or to the environment if the remand encompasses environmental issues)." Mr. Salzman saw it differently. In his opinion, the failure of the staff to have provided the Licensing Board with "that 'detailed and careful analysis' of alternatives to the St. Lucie site which the law requires" was enough to warrant lifting the limited work authorization if more than trivial environmental damage might attend further site preparation activities. NRCI-76/6 at 844-46.

The intervenors promptly sought judicial review of the failure of this Board to suspend the limited work authorization. In a *per curiam* unpublished order entered on October 21, 1976, the Court of Appeals for the District of Columbia Circuit directed that the limited work authorization be stayed "in light of [this] Board's decision that alternative sites were not adequately considered by the [Licensing] Board." In a footnote, the court noted its agreement "with the concerns expressed in Mr. Salzman's dissent," adding that it found it "anomalous that construction can be taking place at one site while the [Licensing Board] has been directed by the Appeal Board to hold further proceedings concerning alternative sites." *Hodder v. NRC* (D.C. Cir. No. 76-1709).

The applicants would have us totally disregard *Hodder* and permit construction to proceed on the authority of *San Onofre*, ALAB-212, *supra*. We are told, first, that *Hodder* is "authority or precedent for nothing" in light of the provision in Rule 8(b) of the District of Columbia Circuit to the effect that unpublished orders of that court "are not to be cited in briefs or memoranda of counsel as precedents." That argument does not impress us. To our way of thinking, it makes not the slightest difference whether, were this matter before the District of Columbia Circuit, counsel for those intervenors seeking permit suspension could rely on the *Hodder* result or the reasons assigned for it. In all events, the court's order—entered in a case arising in this agency—reflects a judicial view respecting what is called for on our part in circumstances paralleling those with which we are now confronted. Even though that view may not be binding upon us, it would in our judgment be irresponsible to accept the applicants' invitation simply to ignore it. At minimum, *Hodder* provides guidance which is entitled to be given considerable weight in the absence of a showing that there are good reasons why a different outcome is warranted here.

We find the existence of no such reasons. The applicants assert that Mr. Salzman's dissent in ALAB-335, *supra*, was essentially grounded upon the failure of the staff and the *St. Lucie* applicant to disclose the scope of the former's alternate site analysis and that there is not occasion to invoke a like "unclean hands" doctrine in this case. Even were we to accept that analysis, the applicants are wide of the mark in their further insistence that all that the District of Columbia Circuit did was to adopt that dissent. As we have seen, the court

coupled its concurrence in Mr. Salzman's expressed concerns with an independent observation of its own that it would be anomalous to allow construction to take place at one site while the question of alternate sites remained in adjudication before a Licensing Board. See p 69, *supra*.

If anything, to let construction move forward in the present case would create even more of an anomaly. In *St. Lucie*, just a limited work authorization was involved and the site in question was already occupied by a nuclear power facility. Further, this Board did not there decide that the alternate site analysis made by the staff was inadequate; rather, what we held was merely that the intervenors had not been informed of the essential ingredients of the analysis and therefore had been deprived of an opportunity to contest either the validity of the staff's approach or the manner in which it had been applied.

In contrast, full construction permits are here involved; the Seabrook site does not now host another facility; and there has been a patently inadequate alternate site comparison, a matter of particular significance given the lack of resolution by EPA of the cooling system controversy. Thus, to go on with construction of these reactors *pendente lite* could bring about a much larger additional commitment of resources onsite than was possible in *St. Lucie*, despite the greater room for doubt whether the site will ultimately be found acceptable.

In this regard, it is worthy of passing note that we were recently furnished by counsel for the lead applicant, the Public Service Company of New Hampshire (PSCNH), with a formal resolution adopted by that company's Board of Directors on January 6, 1977. Alluding both to the fact that "construction cash requirements will be very high in the next few months if construction work is continued at the current level" and to the "existing uncertainty" engendered by the EPA Regional Administrator's decision, the resolution directs the officers of the company to reduce construction activity at the construction site to the lowest possible level consistent with the following objectives:

- (1) Substantial reduction of cash expenditures;
- (2) Maintenance and safeguarding of the environment on and in the vicinity of the site;
- (3) Continuation of such work now underway as may be necessary or desirable in order to complete a particular phase or phases of the project or to permit full construction activity to be resumed in an efficient and orderly manner as soon as possible; and
- (4) Maintenance and improvement of security of the site and of property and personnel now or in the future expected to be at the site.

The resolution has, of course, no legal significance on the question before us—it neither constitutes a concession on the permit suspension question nor moots

that question.⁵⁰ But it does tend to suggest a recognition on the part of PSCNH that it would be imprudent to make a large additional investment in the project in the present unsettled state of affairs.

2. In choosing to follow *Hodder*, we have not overlooked the staff's argument (advanced without reference to that case) that *pendente lite* suspension of the construction permits should instead be ordered or withheld on the basis of a number of equitable factors referred to in a General Statement of Policy issued by the Commission on August 13, 1976. 41 FR 34707 (August 16, 1976). The background and terms of that policy statement are detailed in ALAB-349, *supra* fn. 3, and need not be repeated at length here. Suffice it to say that it flowed from the judicial invalidation of a part of the Commission's regulation dealing with the environmental aspects of the uranium fuel cycle and was addressed to, *inter alia*, the status of existing licenses issued in reliance upon that regulation during the interval before a new interim or final regulation were in place. According to the policy statement, whether such licenses would be suspended to await the replacement rule was to be decided on a balancing of such considerations as the likelihood that the activities authorized by the license would have significant adverse impact in the interim; the foreclosure of reasonable alternatives by continued construction or operation; the effect of delay; the possibility that the cost-benefit balance would be tilted through increased investment; and assorted general public policy concerns. See ALAB-349, NRCI-76/9 at 241.

It is far from certain that an application of those factors here would produce a result different from that reached in ALAB-349, in which we concluded that a suspension of the Seabrook permits was in order.⁵¹ But we need not come to grips with that question. For, with all due deference to the contrary view of our dissenting colleague, we believe that the policy statement guidelines do not govern the situation now before us.

The factors set forth in the policy statement were all derived from decisions of the District of Columbia Circuit or the Second Circuit in which it was determined that the environmental review of the particular project in issue was technically deficient in one respect or another, with the consequence that further administrative proceedings were required. See ALAB-349, NRCI-76/9 at 249-52 (majority opinion) and 274-75 (dissenting opinion). In none of those cases did

⁵⁰ Among other things, so long as the construction permits remain in effect it will be open to the PSCNH Board of Directors to withdraw or to modify the resolution and, by doing so, to pave the way for a resumption of substantial construction activity. *Cf. Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-275, 1 NRC 523, 528 fn. 9 (1975).

⁵¹ Although the Commission vacated ALAB-349 (see fn. 3, *supra*) it did so by reason of subsequent events and not because of a stated disagreement with our balancing of the equitable factors.

the found deficiency coalesce with a substantial claim that a proper review would have produced the conclusion that, if built at all, the project should be placed at some other location. Nor did the striking down of segments of the environmental fuel cycle regulation put into serious doubt the most appropriate site choice for either Seabrook or any other reactor which had received construction permits on the strength of that regulation. Still further, alternate site issues were not what prompted the remand either in *San Onofre*, ALAB-212, *supra*, or in any other case coming before this Board (aside from *St. Lucie*) in which construction was allowed to continue while the proceedings on remand were being conducted.

In short, there is to our knowledge neither judicial nor agency precedent (again apart from the now discredited *St. Lucie* ruling in ALAB-335) which would lend support to a broadening of the reach of the policy statement to encompass this case in its current posture. In the absence of such precedent, we are content to treat as decisive a single consideration: namely, that it makes no sense for construction now to proceed at Seabrook when there remains not just a theoretical but a manifestly real possibility that the site will be ultimately rejected in favor of some alternative to it. We have previously made reference to the line of judicial decisions reflecting the reluctance of the courts to give license to the commitment of substantial additional funds and resources to, as yet unapproved project lest the consequence of such commitment be prejudice to the outcome of still pending NEPA reviews. *Allied-General Nuclear Services* (Barnwell Nuclear Fuel Plant Separations Facility), ALAB-296, 2 NRC 671, 678, 679 (1975).⁵² In this very case, the First Circuit already has sounded the same note: it has warned that continuing the commitment of resources poses a threat to "the integrity of the final governmental decision" because it may lead to "public agencies and courts accepting less desirable and limited options or, worse, countenancing a *fait accompli*". . . See pp 46-47, *supra*.

V

For the reasons set forth above:

1. The June 29, 1976, initial decision of the Licensing Board is *vacated* insofar as it (a) finds acceptable from an environmental standpoint the use of the Seabrook site with a once-through cooling system; and (b) finds unacceptable from an environmental standpoint the use of the Seabrook site with cooling towers.

⁵²There was no occasion for us to order a halt to the construction of the Barnwell facility because it was close to completion and, therefore, further construction activity did not threaten "to hamper the effectuation of the policies embodied in NEPA." 2 NRC at 678. In contrast, Seabrook construction is still at an incipient stage.

2. The Licensing Board is *directed* to conduct with all due expedition the further proceedings relating to the use of the Seabrook site with cooling towers which are called for in Part IV of this opinion.

3. The construction permits for the Seabrook facility are *suspended effective 6:00 p.m. (EST) on February 4, 1977*. After that time, no activities shall be undertaken or pursued under the aegis of those permits except to the extent necessary to insure the protection of (1) the environmental integrity of the site, or (2) buildings, materials, or personnel at the site. Cf. ALAB-349, *supra*, NRCI-76/9 at 272.⁵³ The applicants shall furnish a report to this Board on or before February 11, 1977, in which they shall identify with particularity those actions which they are taking or propose to take under this exception. That report shall be thereafter updated monthly as required.

4. The suspension shall remain in effect pending further order of the Commission or of this Board. Whether and when the suspension might be lifted by this Board will depend upon such factors as (a) the decision rendered by the EPA Administrator on the appeal from the initial decision of the Regional Administrator; (b) the outcome of the supplemental proceedings before the Licensing Board in the event that those proceedings are not mooted by the EPA Administrator's decision; and (c) the conclusions which this Board reaches on those other issues presented by the appeals from the Licensing Board's initial decision which bear upon the ultimate question whether the application for permits to build reactors at the Seabrook site should have been granted.⁵⁴

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

⁵³In *Hodder*, by order of October 22, 1976, the District of Columbia Circuit deferred the effective date of the suspension of the limited work authorization for eighteen days in order "to allow for the orderly termination of work at the plant site" and also indicated that the applicant could take "any measures necessary to maintain the environmental quality or integrity of the plant site" during the continuance of the suspension. Since the applicants here have already reduced significantly the level of construction activity, the deferral period we have fixed should prove ample.

⁵⁴Because of the necessity to single out the matters dealt with in this opinion for early disposition, we have not as yet completed our consideration of other issues. We have progressed far enough, however, to say at this point that some of them are troublesome and that our review has been made materially more difficult by the failure of the Licensing Board to explain fully the basis for several of its crucial findings. In this connection, in more than one area of controversy the initial decision does not even allude to the testimony of witnesses for the intervenors, let alone indicate why that testimony was not being credited.

Dissenting Opinion of Dr. Buck:

I fully agree with my colleagues that the Licensing Board's conclusion that "the Seabrook site is unsuitable for a closed-cycle cooling system" is both legally erroneous and factually unsupported by the record. I also agree that the present record is not sufficient for us to authorize licensing of a plant at Seabrook with cooling towers, although I regard the record in this regard as much more adequate than do my colleagues. A further hearing is therefore required to clarify and to some extent supplement the record if the applicants' request for NRC approval of the licensing of the Seabrook facility with cooling towers is to be granted.

I also am of the view that the §401 certificate previously furnished by the State of New Hampshire to this Commission may continue to be relied upon by NRC in licensing determinations involving this facility. That certificate has never been revoked or countermanded by anyone; nor has the basis upon which it rests—EPA's preliminary determinations—been finally rejected (see p. 75, *infra*). Moreover, I tend to agree with the "one-shot" theory advanced by the applicants in support of the certificate's validity (see p. 57, fn. 32, *supra*).

Where I strongly disagree with the majority decision is in its failure to come to grips with the question whether EPA has the authority to reject all cooling-tower proposals, should the applicants elect to seek authority for such a cooling system (see pp. 64-55 and fn. 49 of majority opinion). I do not believe EPA has such authority. Consequently, I cannot subscribe to my colleagues' ruling (premised upon their perception of uncertainties in this regard which they are unwilling to resolve) that the Licensing Board cannot authorize construction permits on the basis of using cooling towers. I find that result to be neither compelled as a matter of law nor warranted by the facts of record. I must therefore respectfully dissent.

The applicants should be permitted to demonstrate, on a "worst case" basis, the most costly cooling-tower cooling system which EPA may legally require. If the "worst case" system survives an environmental balancing vis-a-vis both alternate sites and the need for the plant, construction permits can and should be authorized at that time, subject to normal NRC review procedures.

On the more narrow question of whether suspension should be imposed in the interim, pending the outcome of the limited hearing which I (and my colleagues) are authorizing, I conclude that, upon a balancing of relevant factors, no such suspension need be required or is advisable at this time.

I

As must be apparent from the majority opinion, there is some confusion about both the current and the future status of the Seabrook cooling system. But a close examination of EPA regulations convinces me that such confusion is unwarranted. At this stage, only a brief recapitulation of the situation need be undertaken.

The applicants have proposed a once-through cooling system for the Seabrook facility. Under the Federal Water Pollution Control Act, as amended in 1972 (FWPCA), 33 U.S.C. §1251 *et seq.* (Supp. II), EPA has the exclusive responsibility for approving such a system, from the point of view both of the system itself and of the intake structure (33 U.S.C. §1371(c)(2)).¹ NRC must take the cooling system specified by EPA and factor it into its cost-benefit balance.² The Licensing Board took the once-through system which had been preliminarily accepted by EPA and performed its balance on that basis.

Subsequently, through the Regional Administrator's decision, the EPA withdrew its approval of the once-through system. It did not disapprove of such a system but rather ruled that the applicants' information was both unclear and insufficient for that system to be approved. It also suggested that the intake structures might have to be placed at a different location in order to be approved.

As I read the EPA decision, it appears that that agency might well authorize a once-through cooling system based on a further review calling for no more than a clarification of some information in the record and the possible addition of a minor amount of new information. At this stage, however, I cannot assume that it will do so; for the latest word from EPA—the Regional Administrator's decision—does formally revoke the prior preliminary approval of once-through cooling. For the present, we are bound by that determination.

Since EPA did not absolutely reject a once-through system, it did not perforce invalidate the Board's cost-benefit balance. But since it also did not approve such a system, and suggested that an acceptable once-through system might have different parameters from the one it had reviewed, I recognize that a cloud has been placed over that balance. In sum, the status of the once-through system is in limbo. That being so, it is important to inquire whether there is any form of cooling system which EPA would be required to accept and, if so, whether the facility with such a system can survive an NRC cost-benefit balance.

If that should prove to be the case, the situation would be comparable to what we faced in *Philadelphia Electric Co.* (Limerick Generating Station, Units 1

¹That section reads as follows:

(2) Nothing in the National Environmental Policy Act of 1969 shall be deemed to—

(A) authorize any Federal agency authorized to license or permit the conduct of any activity which may result in the discharge of a pollutant into the navigable waters to review any effluent limitation or other requirement established pursuant to this chapter or the adequacy of any certification under section 1341 of this title; or

(B) authorize any such agency to impose, as a condition precedent to the issuance of any license or permit, any effluent limitation other than any such limitation established pursuant to this chapter.

These provisions have been implemented by an NRC/EPA "Policy Statement on Implementation of Section 511 of the Federal Water Pollution Control Act (FWPCA)," published at 40 Fed. Reg. 60115 (December 31, 1975).

²See Policy Statement, n. 1, *supra*.

and 2), ALAB-262, 1 NRC 163, 200-205 (1975), *pet. for review denied sub nom Environmental Coalition on Nuclear Power v. NRC*, 524 F.2d 1403 (3rd Cir. 1975). There the final form of the water supply had not yet been approved by the authorities having jurisdiction, but one system—not the one primarily sought by the applicant or the most beneficial financially to that applicant—was certain of approval. We balanced on the assumption of such a “worst case” proposal and authorized the plant on that basis, with the understanding that the applicant might later receive authorization for a proposal with more favorable characteristics.

Here, for reasons spelled out in the forthcoming section, I read EPA regulations as affirmatively permitting an applicant to use a closed-cycle cooling system such as natural-draft cooling towers and as specifying with reasonable precision the nature and location of intake structures for such towers. And I believe that, should that system’s balance prove positive, licensing could be authorized on that basis.

II

EPA’s authority over the Seabrook cooling system has two discrete aspects: its control over “point source” discharges; and its regulation of intake structures. Both stem from the requirements of the FWPCA. Both were also dealt with in the EPA Regional Administrator’s decision. I shall treat them *seriatim*.

A. Insofar as here relevant, the FWPCA declares as national goals that “the discharge of pollutants into the navigable waters be eliminated by 1985” and that “wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983” (33 U.S.C. §§1251(a)(1) and (2)). The term “pollutants” is defined to include, *inter alia*, “heat” (33 U.S.C. §1362(6)). A number of means for achieving the statutory goals are set forth, but most important here is the prohibition of “the discharge of any pollutant” (33 U.S.C. §1311(a)), except as specifically authorized by named sections of the Act.

The Act then goes on to specify the degree to which pollutant discharges are permitted at various points in time. Applicable in this case is the statutory requirement that, by not later than July 1, 1983, discharges must satisfy effluent limitations which “require application of the best available technology economically achievable” for particular types of discharges (33 U.S.C. §1311(b)(2)(A)).

The FWPCA standards for pollutant discharges apply to nuclear power plants, including the Seabrook reactors. For such plants, EPA had issued effluent guidelines and standards which specified the use of “recirculated cooling water” (*e.g.*, water cooled through the use of cooling towers or other closed-cycle cooling devices) as the “best available technology economically achievable” (40 CFR §423.13(l)). It advanced the applicability of this standard from the

statutory cutoff date (July 1, 1983) to July 1, 1981 (40 CFR §423.13(m)). Under these guidelines, plants such as Seabrook which are proposed to become operational in the early 1980's could comply with EPA's thermal requirements by using some form of closed-cycle cooling. Since this record demonstrates that cooling towers are the only viable type of closed-cycle cooling which may be used at Seabrook (FES, §9.2.1), and since natural-draft cooling towers appear to be the environmentally preferable form of such towers (FES, §9.2.1.1, 9.2.1.2, 11.9.2.1, and 11.9.2.2), it appears that, if the Seabrook facility were to utilize natural-draft cooling towers for its cooling, the EPA thermal requirements would perforce be satisfied.

FWPCA thermal discharge requirements may, however, be satisfied in another manner. Where it appears that an effluent limitation is "more stringent than necessary to assure the [protection]³ and propagation of a balanced, indigenous population of shellfish, fish, and wildlife" in or on the waters receiving the discharge, EPA may grant an exemption and impose an alternate limitation that will achieve those goals (33 U.S.C. §1326(a)). The applicants here applied for such an exemption from EPA, seeking authority to use once-through cooling. That authority was initially granted but later withdrawn by the Regional Administrator. The plant proposal on which the Licensing Board here ruled was one which was premised upon EPA's preliminary grant of that exemption. And it is significant to note that it is an *exemption* request which is currently bottled up in the EPA litigation and which, as of this point in time, has neither been granted nor denied.

B. As suggested earlier, EPA also possesses regulatory authority over intake structures: the FWPCA provides that any effluent limitations or standards (including those imposed by virtue of the exemption procedure) must "require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact" (33 U.S.C. §1326(b)). In making that determination, EPA requires that information in a named document (which I shall later discuss) be considered (40 CFR §402.12).

The proposed Seabrook intake structures were also challenged before EPA. That agency preliminarily approved the applicants' proposal; later modified its approval to require that the structures be located farther offshore, and subsequently, in the Regional Administrator's decision, determined that the earlier approval was not justified and that the record was not adequate to approve the intake structures (either as initially proposed or as later modified).

C. There is yet another consideration which must be looked at in resolving the questions raised by the EPA Regional Administrator's decision, and that is the recent decisions by the Court of Appeals for the Fourth Circuit in *Appalachian Power Co. v. Train*, ___ F.2d ___, 9 ERC 1033 (July 16, 1976), *as modified*, ___ F.2d ___, 9 ERC 1274 (August 31, 1976). The Court, upon a

³ See fn. 15 in majority opinion.

petition filed primarily by a group of public and private utilities, reversed the EPA's promulgation of effluent limitations guidelines for the steam electric power industry and remanded the case for further hearings by EPA on certain specific (and rather narrow) issues.

Insofar as here relevant, the Court approved in principle EPA's general requirement for closed-cycle cooling (9 ERC at 1043) but held that the statute required, *inter alia*, a more flexible provision for granting variances than had been provided by the regulations (*id.* at 1039). It specifically approved EPA's regulations for granting exemptions (or alternate limitations) under 33 U.S.C. §1326(a) (*id.* at 1050). With respect to the requirement for closed-cycle cooling at plants located along coastlines—the specific matter at issue here—the court declined to rule on the utilities' contention that sea water cooling towers for full-sized power plants were not “currently available” since for other reasons (including the question of variances) it had remanded the particular section for further hearings. It suggested, however, that EPA might want to explore the “availability” question during the hearings on remand (*id.* at 1049).

III

I have analyzed the EPA regulations as interpreted by the court in *Appalachian Power* and as later elaborated by the EPA General Counsel in his letter of January 11, 1977, to the Chairman of this Board (see fn. 25 in majority opinion). I conclude that, for purposes of this proceeding, insofar as those regulations define closed-cycle cooling as an acceptable means of fulfilling the statutory requirement for “the best available technology economically achievable,” they may be accepted by NRC in its deliberations as specifying a cooling system which, if sought, EPA could not reasonably deny. The grounds on which those regulations were remanded for further consideration are not relevant to the factual situation here at hand and hence do not undermine that conclusion as applied in this case.

(1) The court's requirement for a broadening of the variance requirements could only serve to provide another basis for other than a closed-cycle cooling system—*e.g.*, the once-through system being sought by the applicants. If the applicants were not to receive the exemption for which they have applied—and the provisions governing such exemptions were specifically upheld,—the avenue of a variance might still be open to them. Moreover, as the EPA General Counsel pointed out, the technical invalidation of the regulations might serve as a basis for establishing heat limitations for Seabrook on an *ad hoc* basis under §402(a) of the FWPCA, 33 U.S.C. §1342(a) (applicable prior to the establishment of general requirements). But if the applicants elected instead to utilize a closed-cycle system, that path would still be open to them since the provision authorizing such systems was not overturned as a general proposition and the entire thrust of the court decision was to provide *more* flexibility in meeting the statutory standards.

(2) The court's failure to rule on the contention that salt-water towers were not "currently available," coupled with its suggestion that EPA might take a further look at that question, is also not here relevant. For these applicants consistently have sought approval for salt-water towers as an alternative (see their proposed findings of fact W.-46, W.-84, and their September 17, 1976, brief on appeal in support of their exceptions, at pp. 31-47) and neither they nor any other party has suggested that such towers would not be available for use at Seabrook.

In these circumstances, and as applied to this case, it is a fair reading of EPA regulations that they affirmatively permit the applicants to utilize a closed-cycle cooling system. In this regard, it should be noted that the FWPCA is more like the Atomic Energy Act than NEPA: unlike NEPA, its basic infrastructure does not call for a balancing of water quality against other values on a case-by-case basis; rather, the FWPCA sets basic standards which, if met, entitle an applicant to a discharge permit. *Cf. Maine Yankee Atomic Power Co. (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1006-07 (1973)*. Since natural-draft towers are here the environmentally preferable form of closed-cycle system (and since the EPA regulations do not specify any type of closed-cycle system which is unacceptable, save for one not here viable, which the court in any event overturned), the applicants can surely count on virtually *pro forma* EPA approval of a proposal using natural-draft cooling towers.

As for the location of the intake structure, it should be emphasized first that the record reflects that the magnitude of the intake water flow is less for cooling towers than for once-through cooling by a factor of about 7 (FES, §11.9.2, Table 11.6). Wherever those structures are located, the impacts of water intake (particularly plankton entrainment) will clearly be less than with once-through cooling. Moreover, EPA regulations provide a firm foundation for predicting both the technology and the location for such structures. These intake-structure regulations were not covered by the *Appalachian Power* decision and remain in full force.

Those regulations (40 CFR Part 402) require that EPA consider information set forth in a "Development Document for Best Technology Available for the Location, Design, Construction and Capacity of Cooling Water Intake Structures for Minimizing Adverse Environmental Impact" in evaluating proposed structures (40 CFR §402.12). This document first broadly defines the various types of aquatic organisms that may be impacted by offshore intake structures as:

- (1) Benthos—Bottom dwelling organisms mostly nonswimmers but including some larger motile species.
- (2) Plankton—Free-floating microscopic plants and animals including fish eggs and larval stages with limited ability to swim.
- (3) Nekton—Free-swimming organisms (fish).

The document then notes (page 6) that

One of the first steps that should be taken in determining the best technology available for a cooling water intake structure to minimize adverse environmental impact is the designation of the critical aquatic organisms to be protected. This approach has been outlined by the U.S. Atomic Energy Commission in Reference 24.[*] This approach requires the determination of the identity and spatial and temporal distribution of organisms in the area of the intake. A judgment may then be made as to which of the organisms are critical aquatic organisms as defined in the Glossary to this document. The characteristics of these organisms and the nature of the water body should determine the environmental design of the intake structure. The control strategy for minimizing environmental impact may be different for planktonic species than for nektonic species as discussed below.

Damage to aquatic organisms occurs by either *entrapping* or *impinging* larger organisms against the outer parts of the cooling water intake structure or by *entraining* small organisms in the cooling water as it is pumped through the inner plant.

[*]HEDL-TME 73-24, UC-12, "A Review of Thermal Power Plant Intake Structure Designs and Related Environmental Considerations," prepared by Hanford Engineering Development Laboratory for the U.S. Atomic Energy Commission.

The "Document" then goes on to spell out (p.10) a "Control Strategy for Limiting Impacts on Aquatic Organisms." One method which it pinpoints for controlling "entrainment effects where benthic and planktonic organisms are identified as important organisms to be protected" is "to limit the capacity (volume of cooling water withdrawn from a source) to a small percentage of the makeup water to that source" (p. 11). Use of cooling towers is one means for attaining that result.

In this particular case, the benthos are protected by raising the intake structure well above the ocean floor. In turn the impact on the fish is minimized by reducing to the extent feasible the vertical flow⁴ into the intake by use of a large "velocity cap."⁵ This intake design can be used equally effectively with closed-cycle or once-through cooling.

Initially the applicants' research on the location of the plankton offshore at Seabrook led them to conclude that an intake some 3000 feet offshore would sufficiently minimize the impact on the plankton. At the suggestion of the EPA

⁴The applicants note that experience with offshore inlet structures along the coast of California indicates that a horizontal inflow current has much less potential for fish entrapment than a vertical current (Env. Report p. 3.4-4).

⁵A "velocity cap" is a flat plate positioned just above the opening to the vertical inlet shaft.

Regional Administrator it was later proposed that for once-through cooling this intake should be located some 7000 feet offshore. While EPA may or may not decide that this location is satisfactory for once-through cooling, the criticality of this determination is much less if closed-cycle cooling is utilized, because of the reduction in the magnitude of plankton entrainment by a factor of 7. That being so, the applicants should be able to demonstrate to the Licensing Board with reasonable precision the location and type of structure likely to be approved by EPA for closed-cycle cooling.⁶

IV

A. As indicated earlier, my colleagues and I agree both that the Licensing Board's rejection of the Seabrook-with-towers alternative was legally erroneous and factually without support and that a further hearing on that alternative is required if construction permits are to be authorized on that basis. This hearing, in my view, can be relatively limited in scope, for a significant amount of information with respect to cooling towers at Seabrook already exists. All that is needed is clarification and minor supplementation of the record in this regard, together with a balancing of the alternative against alternative sites and against the benefits to be derived from construction of the plant at Seabrook with cooling towers.

More specifically, the hearing should encompass the following matters:

1. To the extent not already in the record, a description of the environmental impacts resulting from the use of natural-draft cooling towers at Seabrook should be presented. Such environmental effects as the amount of land needed for towers, the makeup water requirements, the release of salt spray from towers (both quantity and location), and the noise generated by operation of the towers are already covered to a large extent by the FES and the Environmental Report (including answers to supplemental staff questions). Other impacts (such as aesthetics) were discussed at the hearing (Tr. 5778, 5793-97). But some gaps exist. For example, the record does not show *precisely* where the towers will be located. Consequently, the area of coverage of salt spray is also imprecise. The amount of salt drift deposition within a two-mile radius of the towers is characterized by the FES as "well within the bounds of natural deposition of sea salts" (§11.9.2.2), but no clear statement is given as to the impact which this additional salt would have when added to the salt already in the atmosphere. At the remanded hearing, details such as this should be clarified.

2. The record includes some information about the costs of Seabrook with cooling towers (see, e.g., FES §11.9.2, Table 11.6; ER, Vol. II, Supp. Info., pp.S9-70 through S9-72), but it was prepared more than two years ago. The applicants concede that this cost information may no longer be accurate (App.

⁶My colleagues apparently accord little significance to the tremendous reduction in volume of the water taken in by a closed-cycle system when compared with a once-through system.

Tr. pp. 137-38). Moreover, it is not clear from the record either where (or how far out) tunnels would run if cooling towers were used or how much such tunnels would cost. (Since those tunnels would be smaller than those used with once-through cooling—see FES, §11.9.2, Table 11.6—they presumably would be less expensive than those currently proposed.) At the remanded hearing, additional or supplementary cost information should be supplied.

3. Finally, a proper balancing must be undertaken, involving a weighing of Seabrook with towers against a facility at another site and, in addition, a consideration of whether the benefits of the facility outweigh the costs assuming the use of cooling towers.

4. With respect to the weighing of Seabrook against a facility located at sites outside the New Hampshire-Southern Maine wholesale sales area of the lead applicant (Public Service Co.), I would like to note my agreement with my colleagues in their rejection on procedural grounds of the claims of NECNP and SAPL-Audubon that such sites must routinely be examined. Those claims were raised in such a manner that their consideration could only have disrupted the course of the proceeding.

Beyond that, however, the record reflects a most persuasive reason why consideration of such remote sites (including the Millstone and Pilgrim sites specifically mentioned by SAPL-Audubon in their appellate brief) would here have been inappropriate. As the Licensing Board found, the Seabrook facility will be owned by several New England utilities, each of which is a participant in the New England Power Pool (NEPOOL). The need for Seabrook is related to the requirements both of NEPOOL and of the lead applicant, Public Service Co. (NRCI-76/6 at 899). A NEPOOL witness testified that NEPOOL views it as important, for technical reasons that

the generation and load be fairly evenly distributed so as to minimize the very heavy flows from one end of the grid to another, and to enhance the reliability system by reducing the dependence on long transmission lines which will have the greatest exposure to the kind of problems that led to, for example the 1965 blackout [Tr. 10166].

Accordingly, NEPOOL has divided the New England area into eight sub-areas (Tr. 10168). New Hampshire is one of those sub-areas, and the record indicates that by 1982 it will be deficient in generating capacity absent a new facility such as Seabrook (Applicants' Direct Testimony No. 14, fol. Tr. 10162, pp. 20-23). Furthermore, no nuclear capacity other than Seabrook is planned for that sub-area (*id.* at 23). The NEPOOL witness clearly summed up the reasons for limiting the search for sites to locations in the New Hampshire area:

It's clear that where we really needed the capacity was in this area north of Boston and up in New Hampshire, and so we were definitely encouraging locations in the Seabrook area.

Tr. 10184. Even discounting the accuracy of the need-for-power figures

advanced by the applicants, it appears that the limitation of the area for examination of sites in this case is technically well founded and should be accepted by us as dispositive of the general claim that southern New England sites should have been explored.

5. One additional point about the forthcoming hearing should be made. As I have indicated, while the balancing which must be performed by the hearing board is significant, the factual information which must be developed as a predicate to such balancing is limited in its scope. Although both functions are normally, and properly, within the province of the Licensing Board, the need for expedition suggests to me that the forthcoming hearing might more properly be conducted by us. This is particularly so in light of my views (expressed in section V of this dissent) that suspension of the construction permits *pendente lite* is undesirable.

B. If the result of the cost-benefit balance performed at the "minihearing" which we are authorizing should prove favorable to the Seabrook facility with cooling towers, I would allow construction permits to be authorized on that basis. Were that to happen, the applicants would be permitted to use either the once-through cooling system initially sanctioned by the Licensing Board or the closed-cycle system, depending on the ultimate ruling by EPA. Both systems would have been found acceptable on the basis of a NEPA cost-benefit analysis.⁷ (The applicants would, of course, be well advised not to begin construction of the cooling system itself until after an EPA final decision on the discharge permit, but there is no reason why they could not carry on construction of other portions of the facility.)

Is there not a risk, however, that EPA will approve a system different from either the open-cycle system applied for or the closed-cycle system to be considered at the hearing? Insofar as the open-cycle system is concerned, that risk is real.⁸ But insofar as a closed-cycle system is considered, the "worst case" system which I suggest be reviewed is one which I believe will clearly qualify for a discharge permit under EPA regulations. The risk in my view is thus minimal.

Moreover, NEPA does not require the elimination of all uncertainties as a predicate to the licensing of a facility. As we previously have had occasion to note,

⁷I do not read NEPA as requiring that only one proposal be evaluated in a given proceeding. Consequently, I reject the argument to that effect presented to us by the Attorney General of New Hampshire. In any event, the Seabrook facility with a particular type of cooling is not necessarily a different proposal (in the NEPA sense) from the Seabrook facility with another type of cooling; the proposal is rather for a nuclear facility at the Seabrook site with varying equipment appendages.

⁸Taking a positive approach, there exist a number of possibilities for once-through cooling which EPA may approve. Of course, if EPA were to approve a once-through system substantially different from that previously evaluated by the Licensing Board, and if the applicants elected to use that system, a further NRC balancing might be required.

While [NEPA] in terms requires a "detailed statement" of [environmental] impact, it scarcely follows that every uncertainty must be definitely eliminated. NEPA does not make such demands; it does not "require the impossible." In the words of the Ninth Circuit:

Neither §102(2)(B) nor (C) [the relevant sections of NEPA] can be read as a requirement that complete information concerning the environmental impact of a project must be obtained before action may be taken. If we were to impose a requirement that an impact statement can never be prepared until all relevant environmental effects were known, it is doubtful that any project could ever be initiated.

Long Island Lighting Co. (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 838 (1973), citing *Jicarilla Apache Tribe of Indians v. Morton*, 471 F.2d 1275, 1280 (9th Cir. 1973) (footnotes omitted). Rather, the statute imposes a requirement that those uncertainties be considered and taken into account by a governmental agency faced with a proposed Federal action. As another court has remarked:

... one of the functions of a NEPA statement is to indicate the extent to which environmental effects are essentially unknown. It must be remembered that the basic thrust of an agency's responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA....

Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission, 481 F.2d 1079, 1092 (D.C. Cir. 1973).

My prognostication of what would constitute a permissible "worst case" cooling system under EPA regulations falls well within these parameters. To require more certainty puts an unwarranted premium on the ability of a party to raise identical issues in many forums—in the hope that varying decisions will be produced. Where, as here, such a result has occurred, a project may end up being suspended not because of any demonstrated safety or environmental deficiency but rather from bureaucratic confusion—from the left hand (NRC) not knowing what the right hand (EPA) is doing!

V

The remaining question is the status of the existing construction permits during the forthcoming hearing and prior to the issuance of a new decision by the Licensing Board. I firmly believe that suspension of those permits at this time is neither required nor warranted.

A. As criteria for determining whether suspension *pendente lite* should be

ordered, the staff calls on us to look at the Commission's *General Statement of Policy on the Environmental Effects of the Uranium Fuel Cycle*, 41 Fed. Reg. 34707 (August 16, 1976), where standards for considering suspension during the development of new fuel cycle rules were set forth. The staff reasons that those standards were carefully developed by the Commission on the basis of judicial precedents involving the necessity for suspension as a result of some defect in the NEPA review of a project, and that in ALAB-349⁹ we found those equitable principles to be appropriate for a determination as to whether an already issued and effective permit should be distributed on the basis of circumstances which arose after the permit became effective. The staff also notes that the standards are consistent with "and, in fact, appear to have been selected from" a line of prior Appeal Board opinions.¹⁰

My colleagues eschew resort to these standards, on the ground that they were derived from judicial decisions where it was determined that the environmental review of the project was "technically deficient" (thus requiring further proceedings) and that in none of the decisions "did the found deficiency coalesce with a substantial claim that a proper review would have produced the conclusion that, if built at all, the project should be placed at some other location" (*supra*, pp. 71-72). While that description of the facts involved in the cases mentioned in the policy statement may be accurate, the conclusion drawn by my colleagues from those facts seems far wide of the mark.

To begin with, my colleagues can scarcely characterize the fuel-cycle deficiency for which the Policy Statement was adopted as a mere "technical deficiency." In ALAB-349, they termed it a "NEPA violation of some magnitude" (NRCI-76/9 at 265) and relied to some extent on that characterization in reaching their decision to suspend. And while I regarded the violation as technical and of perhaps less significance (in terms of the overall project) than they did, I also acknowledged that "reprocessing and waste disposal are certainly important parts of the NEPA review of a nuclear facility" (*id.* at 289).

It is true, of course, that the fuel-cycle violation would not result, upon reconsideration, in the transfer of a plant to another site; presumably the best site would already have been selected, and reconsideration would determine only whether the nuclear option at that site was preferable to some alternate energy option. But *Coalition for Safe Nuclear Power v. AEC*, 463 F.2d 954 (D. C. Cir.

⁹*Public Service Company of New Hampshire* (Seabrook Station, Units 1 & 2), ALAB-349, NRCI-76/9 235 (September 30, 1976).

¹⁰Specifically, *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-78, 5 AEC 319, 339-40 (1972); *Cincinnati Gas and Electric Co.* (William H. Zimmer Nuclear Station), ALAB-79, 5 AEC 342, 344 (1972); and *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-212, 7 AEC 986, 996-97 (1974). See "NRC Staff Motion for Consideration of Suspension of Construction Permit in Light of EPA Decision," dated November 24, 1976, incorporated by reference in "NRC Staff Response to NECNP Motion to Reopen Proceedings," dated December 17, 1976.

1972), the lead case involved in the Policy Statement, did involve a situation where the entire environmental review of the Davis-Besse Unit 1 facility had been effectively invalidated by the judicial overturning of the Commission's regulations implementing NEPA. A totally new NEPA review was required, and a consideration of alternate sites is, of course, a central part of any such review.

The circumstance that a substantial alternate-site claim may not have been involved in the cases cited in the Policy Statement does not, in my view, render the standards set forth therein inapplicable to the case at bar. Rather, the existence of a substantial alternate-site question is just one of the facts that must be taken into account under the standards. Accordingly, I agree with the staff that we should look to those standards in determining whether suspension *pendente lite* should be required.

B. My colleagues place principal reliance in their conclusion to suspend upon their reading of the court's recent unpublished *per curiam* order in *Hodder v. NRC* (D.C. Cir. No. 76-1709, October 21, 1976). In my view, even assuming the propriety of relying on such authority (*cf.* Rule 8(b) of the Court of Appeals for the District of Columbia Circuit), that order dictates no such result. For the circumstances in the underlying *St. Lucie* decision were materially different than they are here.

In that case, the alternate site analysis undertaken by the staff was not of the usual type; the staff did not review any particular alternate location but instead compared the *St. Lucie* site with what it regarded as "a composite of characteristics which would typify the best" alternative coastal or inland site. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-335, NRCI-76/6 830, 838-9 (June 29, 1976). As the majority here points out, we did not there decide that this type of alternate-site analysis was necessarily inadequate. What we held was that the failure of the staff to inform the parties and the Licensing Board of this methodology, and its creation of a false impression that actual sites had been looked at, was "cavalier and misleading" and required reversal of the Licensing Board's grant of summary judgment on the intervenors' alternate-site contention. NRCI-76/6 at 840-41.

In dissenting from the majority's failure to suspend the outstanding limited work authorization during the reopened hearing, Mr. Salzman took pains to emphasize the "unclean hands" nature of the applicant's and staff's activities in that proceeding; he advocated suspension on the basis of "our obligation to preserve the integrity of the Commission's hearing procedures and its NEPA processes" (*id.* at 846). The *Hodder* court essentially agreed with that analysis; its additional comment on the anomaly of permitting construction to take place in such circumstances (which my colleagues specifically cite) undoubtedly reflected its reluctance to sanction the continuing effectiveness of a license issued in the face of such a glaring due-process deficiency.

Thus, although the staff's method of analysis was never held invalid *per se*, its actions in that case deprived the intervenors of their procedural rights and

operated to render the site analysis void. In effect, during the remanded hearing in *St. Lucie*, the situation was such that it could forcefully be asserted that no alternate-site analysis at all had been performed. Nor is *St. Lucie* the first occasion on which the deprivation of significant procedural rights to an intervenor has resulted in the suspension of a previously issued license. Denial of cross-examination produced the same result in *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 2), ALAB-53, 4 AEC 899 (1972).

In contrast, the comparison of alternate sites performed here was rendered questionable by an entirely different medium—*i.e.*, an event over which neither the parties nor indeed the Licensing Board had any control: the later rendition of a decision by another agency which challenged a number of the bases on which the Licensing Board's alternate site comparison was premised. The *Hodder* decision thus is distinguishable and cannot properly be regarded as authority *requiring* the suspension of the Seabrook construction permits during the forthcoming hearing.

The circumstance that a new alternate-site analysis is to be performed—while not controlling as to suspension—is, however, a factor which must be considered under the General Policy Statement standards which I view as appropriate for determining the suspension question. I turn now to an application of those standards to the present fact situation.

C. As I point out in my dissent in ALAB-349, “an error or a deficiency in a NEPA environmental review performed by an agency . . . will not necessarily invalidate the underlying federal action during the period when the error is being ameliorated.” NRCI-76/9 at 274. An application of the five equitable factors to the present request for suspension of the construction permits clearly leads to the conclusion that suspension is not called for.

1. The first factor—and, as I opined in ALAB-349, the most important—is the likelihood that significant adverse impact will occur during the period before a new Licensing Board decision is rendered. The short answer is that there is no likelihood whatsoever of that eventuality occurring.

This is so because of the drastic cutback in work which the applicants have advised us they are pursuing (see p. 70, *supra*). The only work which they plan to carry on in the near future is that involving (1) maintenance and safeguarding of the environment; (2) continuation of such work already underway as may be necessary or desirable to complete a particular phase or phases of the project or to permit full construction activity to be resumed in an efficient and orderly manner as soon as possible; and (3) maintenance and improvement of security at the site.

Even before this cutback was announced, the activities which the applicants advised the staff they wished to perform in the next year—far longer than the Licensing Board hearing should take—do not appear to produce any significant environmental impacts. See Affidavit of Richard P. Pizzuti dated December 13, 1976. In particular, I note that no new offsite work was contemplated and that

“construction of the tunnel system [for the once-through cooling system] has been suspended until approval of a cooling system has been obtained . . .”

As for work which the applicants propose to continue, my colleagues appear to have no objection to the continuation of the work relating to protection of the environment or the enhancement of security at the site. But they somehow see some lurking danger if the applicants should be permitted to finish off particular phases of work already started. For example, finishing the roof of a warehouse is presumably impermissible unless in some manner it could be related to the environment or site security. Finishing of the barge landing (assuming that is not already accomplished) would also likely be barred, even though the town of Seabrook might independently be able to use it for recreation or other purposes pending resumption of full construction activities.

In sum, evaluation of the first factor clearly calls for no limitation being placed on the applicants' performance of the work which they now propose to undertake (as well as the onsite activities encompassed within the Pizzuti affidavit). That work will result in no significant adverse environmental impact; indeed, such impact as will result is likely, if anything, to be beneficial. Nonetheless, given the uncertainties which surround the cooling system, and because of circumstances made relevant by the other factors, I would require the applicants to provide the Licensing Board and the parties (with a copy to us) with 15 working days' advance notice of any significant changes in their construction plans. Cf. *Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), ALAB-285, 2 NRC 209, 212 (1975).¹¹

2. The second of the relevant factors is the degree to which continued construction will foreclose (or at least make more difficult) reasonable alternatives. In this context, it is cooling-system alternatives which should be looked at.¹² Since the applicants have stated under oath that they do not plan any work on the cooling system—under either the scope of work set forth in December or the reduced activities which they now plan—continued construction cannot foreclose reasonable alternative cooling systems.

3. The third factor which must be considered is the effect of delay. I pointed out in ALAB-349 that although there were some uncertainties as to the precise amounts, delay could involve some very substantial costs, both social and economic. NRCI-76/9 at 286-87.

¹¹This requirement should effectively answer my colleagues' objection that the applicants' self-imposed work limitation is unenforceable.

¹²Whether construction of a nuclear facility at another site would be foreclosed by continued construction at Seabrook is, of course, a relevant inquiry, but it is more appropriately undertaken in connection with the fourth factor (see p. 89, *infra*).

While the foreclosure criteria might also be read as applying to other energy options, the limited nature of the inquiry which the Licensing Board is to undertake will not bring into focus any other energy options. The validity of the Licensing Board's prior rulings on such options is, of course, still before us. At this time, I express no opinion on this question.

The affidavits of Messrs. Thomas M. Sherry, dated December 14, 1976, and G.F. Cole, dated December 13, 1976, give an updated estimate of these costs. If the scope of work there contemplated had been carried on, suspension would have "reduce[d] present cash flow but would significantly increase the ultimate cost of the project." Moreover, of the 399 architect-engineer personnel and 815 onsite workers in December 1976, "virtually all the site workers and most of the the architect-engineer personnel" would have been laid off because of suspension.

The recent announced cutback in work has undoubtedly reduced the work force and increased the eventual cost of the project. But the further suspension ordered by my colleagues—and particularly the uncertainties engendered thereby—can only exacerbate these effects.

In my view, the delay costs remain significant and far outweigh any benefits which suspension might achieve.

4. The possibility that the cost-benefit balance will be tilted through increased investment is probably the only plausible argument one could put forth to justify suspension. But here the increased investment would be essentially *de minimis* and clearly not sufficient to call for a cessation of work.

Given the scope of work contemplated last December, the amount which the applicants had planned to spend in the next twelve months was approximately 92.9 million dollars more than if work were suspended; for the six-month period through June 1977 (which is probably more than is necessary for the Licensing Board to hold a hearing and render a decision on the cooling-tower alternative at Seabrook), the incremental expenses would be only \$44.5 million (see affidavit of Mr. Thomas M. Sherry).

These figures are small fractions of the total project cost, which is now estimated at over \$2 billion. In my view, they could not effectively tilt the balance against some other option (including alternate-site options). But even they overstate by a large amount the incremental costs which are likely to be incurred, for the announced work cutback will obviate the necessity of spending most of these dollars. The expenses saved by cutting off a portion of the proposed reduced scope of work can only be viewed as *de minimis*.

Indeed, insofar as the suspension being ordered by my colleagues prevents the applicants from performing work which will "permit full construction activity to be resumed in an efficient and orderly manner as soon as possible," it will almost surely add to the overall projects costs, without resulting in any significant concomitant savings in expenditures. I have great difficulty in perceiving any possible advantage from such a tradeoff.

5. Finally, we must look at a number of public policy considerations. Need for the facility is one of them; and, as to that, my views on the propriety of our gambling with the adequacy of the energy supply for the section of the country to be served by the Seabrook facility have previously been set forth in

ALAB-349 and need not again be rehearsed. See NRCI-76/9 at 288-89. Suffice it to say now, as I said there, that

If the plant is needed, and is not available, the environmental and social effects . . . will be almost infinitely greater than the conceivable environmental and other effects of permitting construction of the facility to continue.

Id. at 289.

Caveat actor!

The next public policy concern which the Policy Statement defines is the extent of the NEPA violation. The cooling system is certainly an important part of a nuclear facility; and the alternate-site analysis is one of the more important aspects of the NEPA review of a facility. In the context of the entire NEPA review, these elements are of at least comparable significance to the fuel-cycle matters discussed in ALAB-349. But the NEPA deficiency was not the result of obdurate behavior on the part of the Board or any of the parties; as I previously noted, it was the result of events beyond their control occurring after the initial decision. Thus, while the NEPA deficiency is of some significance, the causative circumstances should serve to some degree to mute that significance. Moreover, there was not a complete lack of consideration of cooling towers at Seabrook and the evidence currently in the record (although not sufficient conclusively to support that alternative) tends to indicate its acceptability.¹³ That circumstance also mitigates the severity of the NEPA deficiency.

As for the final public policy factor, the timeliness of objections, this is not of major significance. I note, however, that even a meagre discussion by various intervenors in their appellate briefs of the applicants' cooling-tower exception might have eased our task in evaluating the Licensing Board's disposition of this issue.

6. Taking into account the various factors which I have discussed, there can in my view be only one conclusion: no restriction on the proposed construction activities should be imposed. Both the costs and impacts of those activities are so trivial as to undercut the significance to be accorded the fact that a new alternate-site evaluation is called for. In these circumstances, the importance of the NEPA violation is far outweighed by the public-policy implications of suspension. Furthermore, the substantial likelihood is that both closed-cycle cooling and one of the several possibilities for once-through cooling of Seabrook will meet EPA requirements, permitting the applicants to select either the "worst case" closed-cycle system or the approved once-through system if it were environmentally preferable. Therefore, subject to the notification requirements

¹³As I previously indicated, I agree with my colleagues that the Licensing Board's contrary conclusion lacks adequate evidentiary support.

which I would impose (see p. 88, *supra*), no bar should be placed on continued construction activities during the course of the forthcoming hearing. After that hearing, further construction should be controlled by whatever decision is rendered by the Licensing Board (subject to our review).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. Lawrence R. Quarles
Jerome E. Sharfman

In the Matter of

Docket Nos. STN 50-518

50-519

TENNESSEE VALLEY AUTHORITY

50-520

50-521

(Hartsville Nuclear Plant
Units 1A, 2A, 1B and 2B)

January 25, 1977

Upon appeals by intervenors from Partial Initial Decision on environmental and site suitability issues (LBP-76-16) and by applicant from condition imposed by that decision requiring installation of a grid on the intake structure or other means of preventing involuntary entrainment of a person, the Appeal Board (1) rejects the intervenors' claims concerning need for power, the consideration of alternative power sources (particularly coal), and other environmental and safety question; (2) affirms some procedural and evidentiary rulings and finds intervenors not to have been prejudiced by certain others; (3) defers decision on the issue of environmental effects of the uranium fuel cycle and its effect on the cost-benefit balance, pending review of the Licensing Board's decision granting summary judgment to the applicant on this issue and a decision by the Commission concerning adoption of an interim fuel cycle regulation; (4) finds no need for requiring that a grid be placed on the intake structure; and (5) finds no other error requiring corrective action.

Licensing Board decision affirmed in part and reversed in part; review of waste management and reprocessing issue deferred.

RULES OF PRACTICE: APPELLATE REVIEW

An appeal board may substitute its judgment for that of the licensing board on factual issues even where the licensing board's decision is supported by substantial evidence. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10 397, 402-05 (October 29, 1976).

NEPA: COST-BENEFIT ANALYSIS

To comply with NEPA, adjudicatory boards must balance the costs and benefits of licensing the construction of the proposed plant; it is not necessary to balance the cost of meeting a loss of load probability standard against the cost of not meeting it.

NEPA: CONSIDERATION OF ALTERNATIVES

A finding that certain alternative methods of producing power, either individually or in combination, are not feasible as a substitute for a proposed facility is an adequate basis for rejecting those technologies as viable alternatives to such facility. *Carolina Environmental Study Group v. United States*, 510 F.2d 796, 800-01 (D.C. Cir. 1975).

NEPA: CONSIDERATION OF ALTERNATIVES

Where intervenors express "only the most generalized concern" about the adequacy of the discussion of an alternative in a Final Environmental Statement and fail to specify the respect in which the discussion was inadequate, and where the weight of the evidence supports a licensing board's conclusion rejecting that alternative, an appeal board should not reverse merely because the FES discussion was not as complete as it might have been. *North Carolina v. FPC*, 533 F.2d 702, 707 (D.C. Cir. 1976).

RULES OF PRACTICE: BRIEFS

Appeal boards need not consider exceptions which have not been briefed.

RULES OF PRACTICE: BURDEN OF GOING FORWARD

Intervenors have no burden of going forward with evidence on NEPA issues. *Aeschliman v. NRC*, 9 ERC 1289 (D.C. Cir. 1976).

TECHNICAL ISSUES DISCUSSED: Need for power; coal as an alternative energy source; hardening to withstand airplane crashes; control of the Asiatic clam.

Messrs. Herbert S. Sanger, Jr., Lewis E. Wallace, David G. Powell and Alvin H. Gutterman, Knoxville, Tennessee, for the Applicant, Tennessee Valley Authority.

Mr. Leroy J. Ellis, Nashville, Tennessee, for William N. Young, et al., Intervenors.

Messrs. William D. Paton and Lawrence Brenner for the Nuclear Regulatory Commission Staff.

PARTIAL DECISION

Intervenors William N. Young, et al., appeal from the Licensing Board's Partial Initial Decision ("PID") of April 20, 1976,¹ concerning environmental and site suitability issues raised by the application of Tennessee Valley Authority ("TVA") to build a power plant consisting of four nuclear reactors and associated electric generating equipment, each with a net electrical output of 1233 megawatts. Safety Evaluation Report, p. 1-4 (April 1976). The plant site is on the Cumberland River, 40 miles northeast of Nashville, Tennessee. The Board's decision permitted the issuance of a limited work authorization ("LWA") pursuant to 10 CFR §50.10(e).² Applicant appeals from the Board's conditioning of any LWA or construction permit on the installation of grids at the openings of the intake pipes "or other means satisfactory to the Staff of physically preventing the involuntary entrainment of a person."³

I. THE NEED FOR POWER

Intervenors take the position that the record does not establish sufficient need for additional electric power generating capacity in the TVA area to justify construction of the Hartsville plant. We disagree.⁴

1. Applicant's load projections indicate that the first three Hartsville units will be needed in order to ensure a sufficient reserve margin on their expected operational dates of December 1981, June 1982, and December 1982.⁵ Its projections also indicate that the fourth unit, although scheduled to go into operation in June of 1983, will not be needed until the winter of 1984-85.⁶ A

¹ LBP-76-16, NRCI-76/4 485.

² An LWA was issued on April 22, 1976. See 41 Fed. Reg. 17980 (April 29, 1976).

³ Partial Initial Decision ("PID") par. 339, NRCI-76/4 at 556.

⁴ The Staff takes the position (Brief at 6-8) that we are compelled to affirm licensing board decisions if they are supported by substantial evidence. Applicant makes the similar argument (Brief at 3-4) that we may not substitute our judgment for that of the Licensing Board on factual findings. As we recently made clear in *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10 397, 402-05 (October 29, 1976), these rules apply to judicial review of decisions of administrative agencies, not to appellate review within administrative agencies.

⁵ Environmental Report ("ER") at pp. 1.1-22 to 1.1-23.

⁶ Compare the table at ER p. 1.1-23 with Table 1.1-1 at ER p. 1.1-24.

Federal Power Commission staff engineer testified that any longer than a one-year delay in putting the Hartsville units into service would jeopardize the reliability of applicant's system.⁷ The Staff concluded that power equivalent to the capability of the four Hartsville units will be needed "within one to two years after the time estimated by TVA."⁸ However, its witness on this subject added: "From a practical standpoint, the possibilities of TVA plant construction delays, possible reratings of existing fossil units depending on implementation methods for meeting air standards, and the opportunity to supply additional power to [the Energy Research and Development Administration] should capacity be available argue for the need of the proposed capability on the applicant's time schedule for commencement of construction."⁹

John Z.C. Thomas, intervenors' witness on need for power, did not offer a different demand forecast of his own.¹⁰ However, he did point out that, according to TVA's own forecast, with the fourth Hartsville unit operating in 1983, TVA will have a much greater reserve margin than it needs.¹¹

Though this may be so, it does not follow that a construction permit should be denied. As we stated in *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347 at 365-66 (1975):

[W]e do not consider the difference in predicted year of need—1979 vs. 1981—a statistically meaningful distinction. If there was one thing agreed upon in the proceeding below, it is that inherent in any forecast of future electric power demands is a substantial margin of uncertainty. As with most methods of predicting the future, load forecasting involves at least as much art as science. The margin of error implicit in such predictions is at least of sufficient magnitude to encompass the two-year difference between the applicant's and the intervenors' forecasts. The applicant's choice of the earliest of the possible "years of need" is readily understandable. Being legally obligated to meet reserve margin requirements, any utility company must be expected to forecast load demands conservatively—i.e., favor the high side of such predictions—to insure that it is always prepared for unexpectedly high demands. We find nothing untoward in that attitude.

And as we said recently in *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10 397, 410-11 (October 29, 1976):

To be sure, if demand does turn out to be less than predicted it can be argued (as intervenor does) that the cost of the unneeded generating capacity may turn up in the customers' electric bills. This is not an

⁷ Written testimony of Erastace Fields, following Tr. 1862, at 14.

⁸ Written testimony of Kenneth Hub following Tr. 1928, at 19.

⁹ *Ibid.*

¹⁰ See his written testimony following Tr. 1737.

¹¹ *Id.* at 6.

ineluctable result, for oft times the surplus can be profitably marketed to other systems or the new capacity can replace older, less efficient units.¹² But should the opposite occur and demand outstrip capacity, the consequences are far more serious. As a Federal Power Commission witness recently explained in another case where this question arose, insufficient generating capacity

... can lead to small scale interruptions or widespread blackouts, affecting a few individuals or leading to situations affecting the health, safety, and economic well-being of large numbers of people. The life of individuals dependent upon iron lungs, artificial kidney machines, and other life-sustaining equipment will be endangered. Manufacturing activities involving electric heating, constant temperature conditions, and electric drive and controls will be interrupted, with possible spoilage of work in process. Other manufacturing activities will be interrupted but may suffer no more than loss of time and the losses that accompany unscheduled stoppages.

2. Intervenors contend that TVA's forecasts are not trustworthy because its annual forecasts have often overestimated demand in the past. The overestimation was most pronounced in 1974 and 1975. However, as the Licensing Board found and the evidence showed,¹³ this was caused by the Arab oil embargo and the economic recession and conservation efforts resulting therefrom. TVA's failure to have predicted these unprecedented events does not in and of itself convince us that any and all of TVA's subsequent forecasts must be deemed unreliable.

3. Assessment of a utility's need for power is dependent in large part on the amount of reserve margin it is assumed to require. The reserve requirement of 23% of system peak load accepted by the Licensing Board in this case for the early 1980's was based on a loss of load probability of one day in ten years.¹⁴ Intervenors complain (1) that there was no justification for the use of the standard and no finding that it was reasonable, (2) that the TVA and FPC witnesses differed as to the definition of the standard and (3) that there was no balancing of the cost of meeting the standard against the cost of not meeting it. These complaints are all lacking in merit.

¹²In the case of Hartsville, there was testimony that TVA would save about \$20 million if the plant began operating a year early, due to lower construction costs and the difference between the cost of electricity generation in old coal plants and its cost in the new nuclear plant (Tr. 1713-16).

¹³Paragraph 54 of the PID, NRCI-76/4 at 497-98; ER at pp. 1.1-6 to 1.1-7; written testimony of Erastace Fields at 6 and 8, following Tr. 1862.

¹⁴PID, par. 65, NRCI-76/4 at 499-500.

There is evidence in the record that the one day in ten years loss of load probability standard is a good method of determining reserve requirements,¹⁵ is accepted by the industry,¹⁶ and has been proven reliable by TVA's own experience.¹⁷ The Licensing Board was therefore entitled to treat it as a valid standard, in the absence of any reasons to think it was not. Intervenors suggested no such reasons, either by way of evidence or argument.

It is true that TVA witness Darling testified that the standard means one occurrence in ten years, not necessarily lasting 24 hours, in which a utility would not be able to meet its peak load,¹⁸ and Federal Power Commission engineer Fields testified that his Commission defines the standard to mean that, "within a ten-year period, the sum of all occurrences of load in excess of available capacity will not exceed 24 hours."¹⁹ We think the latter is a more reasonable definition because, unlike the other, it provides a precise mathematical basis for the determination of a reserve margin. Indeed, there is some reason to believe that TVA did define the standard that way, Mr. Darling's testimony notwithstanding, for its Environmental Report (at pp. 1.1-20 to 1.1-21) states:

TVA's generation planning criterion and method determines the amount of capacity required to provide a reasonable assurance that sufficient capacity will be available at the time of future system peaks so that the probability of risk will not be greater than the acceptable index of reliability (0.1 day per year) for a reliable supply of bulk power.

Mr. Darling's attention was not called to this definition in the Environmental Report while he was on the witness stand. As TVA's load forecast is also contained in the same section of the Environmental Report, it is not unreasonable to assume that the definition of the loss of load probability standard set forth therein was the one actually used in calculating the reserve margin.

Apart from all of this, however, there is independent reason to believe that the 23% reserve margin, against which the need for the Hartsville plant was judged, was a reasonable one. The Federal Power Commission's 1970 national power survey report found that "a reserve margin in the range [of] 15-25% of the anticipated peak load was considered to be adequate for most systems."²⁰ A 23% reserve margin falls within this range.

Finally, intervenors' argument that the Licensing Board was obliged to balance the cost of meeting the loss of load probability standard against the cost of not meeting it is entirely misconceived. What must be balanced are the costs

¹⁵ Written testimony of Erastace Fields at 4, following Tr. 1862; Tr. 1887-88.

¹⁶ Tr. 1535, 1874-76, 1889.

¹⁷ Tr. 1535.

¹⁸ Tr. 1539-41, 1554-56.

¹⁹ Tr. 1874-75.

²⁰ Final Environmental Statement ("FES"), p. 8-7.

and benefits of licensing the construction of the proposed plant, which is the "Federal action" proposed.²¹ In deciding what is to go into that balance, the Licensing Board must take into account how much reserve margin is needed by the applicant to ensure that it will have enough capacity to meet the projected demand. In the method used by the applicant, one of the steps that must be taken to determine the reserve margin is to decide on a standard for loss of load probability. That determination may be questioned by intervenors but only on the basis that it is not a valid standard, e.g., that it provides a greater reserve margin than is actually needed. The environmental cost of meeting the projected demand for power plus a reserve margin to guarantee system reliability will then be weighed against the benefits to be derived from the plant.

4. Intervenors contend that the witnesses offered by the applicant and staff made no estimate of power that could be purchased to help meet the projected load. However, the Environmental Report (at p. 1.1-3) states that applicant has contracts to make winter peak purchases of 2,060 MWe from neighboring utilities and that this power "is considered by TVA to be firm generating capacity during its peak season and is accounted for in that manner in all generation planning studies." As for the possibility of purchasing additional power in lieu of building the Hartsville plant, the Environmental Report also states (at p. 9.1-1):

The power demand and supply situation of neighboring utilities has been reviewed as given in FPC Region IV Reliability Council reports, and it has been concluded that the magnitude of TVA's power demands in the early 1980's could not be supplied by purchased power from neighboring utilities with their currently planned capacity additions.

Discussing this subject at greater length, the FES states (at p. 9-1):

As shown in Table 9.1, all of the SERC^[22] companies anticipate the need for substantial capacity additions during the years 1974-1982. From Table 9.1 it appears that the projected winter 1981-82 reserves for the SERC region would be in the order of 36%. The summer 1982 peak reserves will be about 23.5%. All these calculations include the Hartsville nuclear facility addition to the generating capacity in the SERC Region. A lower reserve margin during winter will still ensure system reliability. However, it is realized that even with the winter power purchase possibility, the summer reserve margin for the SERC region does not permit a TVA power purchase during that period. There is an increasing number of cutbacks in the installation of

²¹See §102(2) (C) of the National Environmental Policy Act ("NEPA"), 42 U.S.C. §4332(2) (C).

²²SERC is an abbreviation for Southeastern Electric Reliability Council and is composed of electric utilities serving the southeastern portion of the United States; its purpose is "to encourage improvement in the coordination of bulk electric power systems." FES, p. 8-4.

generating stations by several of the SERC companies (such as delays and cancellations associated with the Vogtle and Barton projects which are not reflected in Table 9.1). This will result in a downward revision of the region's power generating capability. This analysis of the neighboring utility systems indicates that excess generating capacity of the magnitude required for TVA's needs will not be available in 1981-1982 or immediately thereafter. Furthermore, TVA is the largest electric utility in the U.S. It is unreasonable to expect smaller utilities to build additional generating capacity to sell power for TVA area needs. The staff therefore concludes that the purchase of power is not [a] viable alternative.

As intervenors offered neither contrary evidence nor reasons as to why we should disbelieve the FES and Environmental Report on this question, we are satisfied that the purchase of power is not a feasible alternative to building the plant. We fail to see why any further discussion or evidence on the issue was required.

5. Intervenors assert that conservation was not sufficiently considered. The Staff's discussion of conservation in its FES (at pp. 8-13 to 8-14) fills two pages. It concludes as follows:

The applicant has included some conservation effects in his forecast of power and energy use. The Staff's forecasts are below those of the applicant. The Staff sees no reasonable means of including all possible conservation measures. The present forecast is believed to be responsible to conservation forces in society.

The record shows that TVA has an extensive program for the conservation of electricity.²³ It also appears that, to some extent, TVA has included the effects of projected conservation in its forecast.²⁴ Moreover, Richard Davis, an official in that branch of TVA which is in charge of its conservation program,²⁵ testified that a substantial increase in TVA's efforts to promote conservation would not reduce demand significantly relative to the generating capacity of one of the Hartsville units.²⁶ Intervenors' own load forecast witness, Mr. Thomas, testified that he had no way of knowing whether or not greater conservation efforts would further reduce demand for power.²⁷

²³Tr. 1806, 1810-11, 1815-18, 1831, supporting PID, par. 71, NRCI-76/4 at 501.

²⁴PID, par. 68, NRCI-76/4 at 500; FES, p. 8-14; ER at p. 1.1-10 and pp. 1.1-13 to 1.1-17.

²⁵Tr. 1800-01.

²⁶Tr. 1848.

²⁷Tr. 1786-87. In view of the foregoing testimony of Messrs. Davis and Thomas, we find it difficult to attach any significance to the fact that TVA has not increased the number of people working in its program to promote conservation during the last five years.

Intervenors additionally assert that there was a failure to assess adequately three specific means of conservation—heat pumps, peak load pricing and solar energy. We will consider each of these in turn.

There was a thorough exploration of the subject of heat pumps in the hearings below. The evidence shows that applicant was actively promoting their use and that they would reduce use of electricity for heating by 50% in homes using central forced air heating and by 30% in homes using room-by-room electric heating systems.²⁸ However, heat pumps are relatively expensive²⁹ and their installation in residences often necessitates changing the ductwork.³⁰ Moreover, the extent to which they will be installed during the next ten years depends in large part on the availability of gas and on the price of electricity,³¹ matters that are difficult to predict. The staff's load forecaster, Kenneth Hub, determined upon analysis that the most that can be expected is that 30% of the homes with electric heating in TVA's service area will employ heat pumps.³² He concluded, and the Licensing Board found, that this wider use of heat pumps would not significantly change applicant's peak demand.³³ The reason is that, when TVA has its peak winter load, the temperature is so low that heat pumps have no greater efficiency than conventional electric heating systems.³⁴ Finally, the projected use of heat pumps was factored into the forecasts of both TVA and the Staff.³⁵ For all these reasons, we are satisfied that the increased use of heat pumps will not obviate the need for the Hartsville plant.

TVA witness Cudworth and staff witness Hub both testified that there is no way of judging at present whether and to what extent peak load pricing would reduce the utility's peak load and what its implementation cost would be.³⁶ Even if it were effective in reducing peak load, however, it would increase

²⁸ Tr. 1806-08, 1810-11, 1815, 1849.

²⁹ Tr. 1809-10.

³⁰ Tr. 1802-03.

³¹ Tr. 1846.

³² Tr. 1995-96.

³³ Tr. 1994-96; PID, par. 73, NRCI-76/4 at 501.

³⁴ PID, par. 73, *supra*, at 501.

³⁵ PID, par. 74, *supra*, at 501; Tr. 1485-86, 1993-94, 2134. With respect to the applicant's forecast, this can also be seen from Table 1.1-7 at p. 1.1-30 of the Environmental Report which predicts that the average residential use of electric heat and air conditioning by those who have them will be substantially less in 1985 than it was in 1974. Some of this reduction is attributed to "conservation programs." ER at p. 1.1-10. Since the promotion of heat pumps was part of those programs, *supra* at 100, and was specifically directed to the attainment of greater efficiency in heating and air conditioning, it must be assumed that increased use of heat pumps was a factor in the projected reduction.

³⁶ Written testimony of Kenneth Hub at 18, following Tr. 1928; Tr. 2280. Studies and experiments designed to answer these questions are being conducted. Hub written testimony at 18; Tr. 2282.

baseload requirements.³⁷ We therefore accept Mr. Cudworth's conclusion³⁸ that peak load pricing would not be an alternative to the Hartsville plant.

As for the possibility of using solar energy for home heating, intervenors presented the testimony of Edward Czarnik, a heating contractor who sells a particular type of solar heating system.³⁹ It is only an auxiliary system, with electricity or gas needed to provide heat during very cold or extended cloudy weather.⁴⁰ Thus, as the Licensing Board found,⁴¹ even if widely used it would not reduce TVA's peak winter load. Furthermore, there is little economic incentive to the home owner to install a solar system. Mr. Czarnik testified that the cost for an average home is approximately \$6500.⁴² The amortization over a ten-year period of a \$6500 loan bearing 9.5% interest would entail annual payments of \$1009.32.⁴³ According to Mr. Czarnik's estimate, however, the installation and use of such a system in a typical home in TVA's service area would result in an annual savings of only \$300 in the cost of electricity for heating.⁴⁴ Therefore, it is doubtful that many homeowners would be willing to install the system. While savings would occur after the loan was paid off,⁴⁵ most people are reluctant to incur higher near-term costs in the hope of realizing a long-term gain. Based on the evidence of record, we must agree with the Staff and TVA witnesses who saw no significant impact on electricity demand in TVA's service area as a result of solar heating by the time the Hartsville plant is needed.⁴⁶

In sum, conservation does not appear to be a feasible alternative to the proposed plant.

On the basis of all the evidence, we conclude that the power to be produced by the Hartsville plant will be needed some time between the dates when applicant claims it will be needed and two years thereafter and that TVA has a sufficient need for power to warrant the issuance of a construction permit for the plant.

³⁷ Tr. 2283. TVA already has a fairly high base load. See FES, p. 8-13.

³⁸ Tr. 2283.

³⁹ See his written testimony following Tr. 3903.

⁴⁰ Tr. 3922-24.

⁴¹ PID, par. 72, NRCI-76/4 at 501.

⁴² Tr. 3928, 3935.

⁴³ Tr. 3931-33. Interest rates in Tennessee at the time of the hearing for loans of this type ranged from nine to ten percent. Tr. 3929.

⁴⁴ Tr. 3931. This assumes TVA's present rates. See Tr. 3928, 3931.

⁴⁵ A solar heating system of the type marketed by Mr. Czarnik, using gravel for the heat storage medium, should have a much longer lifetime than ten years. See Tr. 3931-32.

⁴⁶ Tr. 1720, 2140.

II. ALTERNATIVE SOURCES OF ENERGY

Intervenors argued below that certain alternative methods for generating electric power—magnetohydrodynamics, fluidized bed boilers, synthetic fuels, solid waste, and solar power located at the situs of the ultimate user—had not been adequately considered or evaluated by the applicant. The Board found that these methods are not feasible as a substitute for the Hartsville plant, either individually or in combination, within the time span of the plant's projected construction period.⁴⁷ This finding is supported by the evidence and is an adequate basis for rejecting those technologies as viable alternatives to the proposed plant. *Carolina Environmental Study Group v. United States*, 510 F.2d 796, 800-01 (D.C. Cir. 1975); *Long Island Lighting Co. (Shoreham Nuclear Power Station)*, ALAB-156, 6 AEC 831, 855 (1973); see *Sierra Club v. Lynn*, 502 F.2d 43, 62 (5th Cir. 1974), *cert. denied*, 421 U.S. 994 (1975); *Sierra Club v. Stamm*, 507 F.2d 788, 794 (10th Cir. 1974); *Life of the Land v. Brinegar*, 485 F.2d 460, 472 (9th Cir. 1973), *cert. denied*, 416 U.S. 961 (1974); *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837-38 (D.C. Cir. 1972).

In their brief on appeal, intervenors concede that the newer technologies cannot be expected to serve as an immediate substitute for the proposed nuclear plant; instead, argue that these "emerging technologies" can be operational and supply some of the power needed in the middle to late 1980's or early 1990's and that, in the meantime, conventional coal plants should be built to provide needed additional power. Intervenors take the position that the Licensing Board did not adequately consider this course of action and erred in failing to find it an adequate "substitute for the proposed nuclear plants at significantly less economic environmental cost."⁴⁸ The matter thus, in effect, is reduced to a comparison between a nuclear plant and a coal plant.

The Licensing Board found that the proposed nuclear plant would operate and produce electricity at substantially less cost than a coal plant of comparable size.⁴⁹ Intervenors dispute this. We have examined the portions of the record relied upon by the Board, as well as those portions to which intervenors have referred us. This examination satisfies us that the Board's findings are supported by the preponderance of the evidence and therefore should not be disturbed.

It appears to us, however, that a disproportionately large part of the coal versus nuclear analysis in this case⁵⁰ focused on cost comparisons, rather than

⁴⁷ PID, pars. 104 and 105, NRCI-76/4 at 507-08.

⁴⁸ Brief in Support of Exceptions at 12-16.

⁴⁹ See PID, pars. 82-99, NRCI-76/4 at 503-07.

⁵⁰ Unfortunately, this case is not unique in that regard. See, e.g., *Illinois Power Co. (Clinton Power Station, Unit Nos. 1 & 2)*, ALAB-340, NRCI-76/7 27, 51 (1976).

on environmental considerations.⁵¹ To be sure, discharges emitted from both coal and nuclear plants with the capacity of Hartsville are listed in Table 9.5 at p. 9-13 of the FES and discussed briefly at p. 9-11. However, while the effect on human and animal life of the emissions from the proposed nuclear plant are discussed in detail in Chapter 5 of the FES,⁵² there is no corresponding discussion with respect to the postulated alternative coal plant. Moreover, no mention is made of the environmental effects of the coal fuel cycle. Although exact identity in treatment with respect to every aspect of environmental comparison of alternatives may not be required,⁵³ this kind of comparison goes to the heart of this Commission's duty under NEPA, where, as here, coal and nuclear power are shown to be the only two feasible alternatives.

In the circumstances of this case, however, reversal is not required on that ground. There is some evidence in the record on the comparative environmental effects of a coal as opposed to a nuclear plant⁵⁴ and, as the Licensing Board

⁵¹ PID, par. 100, NRCI-76/4 at 507. While cost has some relevance to a NEPA evaluation, it is certainly not the primary factor to be considered. *Sierra Club v. Coleman*, 421 F. Supp. 63, 67 (D.D.C. 1976). The purpose of NEPA was not to ensure that utilities do what best serves their economic self-interest. See *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 AEC 857, 862 (1974). They can be trusted to do that on their own.

⁵² Even this discussion has its shortcomings. The effect of radiation on the human population is treated only in terms of dosage and its relationship to natural background radiation and the Proposed Appendix I Design Objective Doses. See FES, pp. 5-11 to 5-19. In order to make a truly meaningful assessment of the relative effects on human health of the operation of a proposed nuclear plant and a coal plant of like capacity, there must be a common basis for comparison. The FES should therefore have contained an estimate of the incremental incidence of various diseases and genetic effects which would be caused by the operation of each type of plant. In making this estimate, the Staff could have, if it had wished, extracted information as to the effects of a nuclear plant from the Commission's Final Environmental Statement issued in connection with the promulgation of Appendix I to 10 CFR Part 50, *Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low as Practicable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents* (WASH-1258). While we have held that an explicit statement of the risk of diseases and genetic effects from a nuclear plant need not be made in the ordinary cost-benefit analysis which must precede the licensing of a nuclear plant, *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), ALAB-161, 6 AEC 1003, 1012 (1973), remanded on other grounds, CLI-74-2, 7 AEC 2, *further statement of Appeal Board views*, ALAB-175, 7 AEC 62 (1974), *aff'd sub nom. Citizens for Safe Power v. NRC*, 524 F.2d 1291, 1301 (D.C. Cir. 1975), such a statement seems imperative in a case such as this where a plant using a different source of energy is a viable alternative. This is because it is the ultimate consequences to human health of the two types of plants that have to be compared, not the nature and quantity of emissions or their average ingestion by members of the general population.

⁵³ *Illinois Power Co.*, *supra* n. 50, at 51.

⁵⁴ PID, paragraphs 100-02, NRCI-76/4 at 507.

found,⁵⁵ it favors a nuclear plant. Both the FES and the Licensing Board's opinion discussed the question.⁵⁶ Table 9.5, while not explicitly so stating, does suggest that a coal plant would have worse effects on human and animal life than a nuclear plant. Significantly, intervenors have not pointed to anything which might lead us to question that assessment. Their own witness on the subject, a physicist, stated in his written testimony⁵⁷ that coal plants "would have a significantly smaller adverse environmental impact" than the proposed nuclear plant but admitted on cross-examination that he had not done a study comparing the environmental impacts of the proposed nuclear plant with a coal-fired plant of the same size.⁵⁸ Their brief before us simply asserts that the Licensing Board's findings on "economic and environmental costs of the proposed nuclear plants and their alternatives are not supported by the evidence" and that the use of coal and eventually newer technologies as they become feasible was not adequately considered although such use would be purportedly less detrimental to the environment than a nuclear plant.⁵⁹ In view of the facts that an environmental comparison of a nuclear plant with a comparable coal plant was made in the FES and the PID and that the weight of the evidence supports the Licensing Board's conclusion that the selection of a nuclear plant rather than a coal plant "is fully justified on environmental criteria,"⁶⁰ intervenors' expression of "only the most generalized concern" about the problem and their failure to specify the respect in which the discussion of it in the FES was inadequate lead us to conclude that we should not reverse merely because the comparison of the two

⁵⁵ Par. 103, *loc cit supra*.

⁵⁶ See PID, paragraphs 100-103, NRCI-76/4 at 507; FES, pp. 9-11 and 9-13.

⁵⁷ Written testimony at 11, following Tr. 3965.

⁵⁸ Tr. 4002-03.

⁵⁹ See Brief at 12-16. Intervenors refer us to their exceptions citing "numerous other adverse environmental impacts of the proposed nuclear plants" which they say the Licensing Board failed to consider adequately. *Id.* at 15. We need not consider those exceptions because they have not been briefed. *Union Electric Co.* (Callaway Plant, Units 1 and 2), ALAB-347, NRCI-76/9 216, 223 n. 15 (1976); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-226, 8 AEC 381, 382-83 (1974); *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-207, 7 AEC 957 (1974); *Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 832-33 (1973); see *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10 397, 413-14 (1976). As we said in *Shoreham, loc cit supra*, the incorporation by reference in a brief of exceptions

without any supporting record references or other authority—violates both the letter and spirit of revised section 2.762. If a party desires us to entertain a particular exception which it has filed, it should provide us in its brief with the requisite basis for the exception.

Moreover, intervenors characterize these exceptions as raising issues concerning the environmental impact of the nuclear plant and not as comparing that impact with the environmental impact of a comparable coal plant.

⁶⁰ PID, par. 103, NRCI-76/4 at 507.

alternatives was not as complete as it might have been. *North Carolina v. FPC*, 533 F.2d 702, 707 (D.C. Cir. 1976); *Aeschliman v. NRC*, ___ F.2d ___, 9 ERC 1289, 1294 (D.C. Cir. 1976) (dictum).

III. RADIOACTIVE WASTE MANAGEMENT

One of the intervenors' exceptions (no. 58) alleges that the Licensing Board erred "in failing to make a finding as to the cost of disposition and storage of radioactive wastes from the proposed plants." We need not consider this exception because it was not briefed.⁶¹ But actions taken by both the Court of Appeals for the District of Columbia Circuit and the Commission during the pendency of this appeal make it incumbent upon us to address the substantive question of how the environmental cost of waste management should be factored into the NEPA cost-benefit balance in this case.

The environmental effects of the uranium fuel cycle for light water nuclear reactors was evaluated in a 1972 report of the Atomic Energy Commission staff. After a rulemaking proceeding in which comments were received and a hearing was held, and on the basis of a revised and supplemented version of the 1972 report (identified as "WASH-1248"), the Commission in 1974 promulgated what later became 10 CFR §51.20(e). In this regulation, the Commission quantified the adverse environmental effects of uranium fuel cycle activities and set out in tabular form (Table S-3) the portion of those overall environmental consequences attributable to an individual reference nuclear power facility. The regulation directed these values to be factored into the environmental report which each construction permit applicant must submit to the Commission, and specified that "no further discussion of such environmental effects shall be required." 10 CFR §51.23(a) requires the draft environmental impact statement prepared by the Commission staff to "include the matters specified in §51.20(a), (e), and (g) . . .," and section 51.26(a) mandates that the final environmental statement be prepared by the staff "in accordance with the requirements in §51.23 for draft environmental impact statements."

Those regulations were construed in prior decisions, *first*, to limit consideration of the environmental effects of the uranium fuel cycle in individual licensing proceedings to the values set out in Table S-3, and, *second*, to exclude from such proceedings contentions that challenge those values, the Commission having withheld jurisdiction from the licensing boards to entertain attacks on the validity of Commission regulations in individual licensing proceedings except in certain "special circumstances."⁶² In the case at bar, Table S-3 was applied to

⁶¹ See note 59, *supra*.

⁶² See *Potomac Electric Power Company* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 88-89 (1974); *Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2), ALAB-262, 1 NRC 163, 204 (1975); 10 CFR §2.758 (a)-(d). The Commission did provide other avenues by which one seeking to challenge the validity of a Commission rule or regulation may proceed. See *Douglas Point*, *supra*, 8 AEC at 89, and 10 CFR §2.758(e).

assess the environmental effects of the management of radioactive wastes which would result from the proposed Hartsville plant and the staff concluded that "the effects are sufficiently small as not to affect the conclusions [in the environmental cost-benefit analysis] significantly."⁶³ The PID does not discuss this question, presumably because it was not actively litigated.

On July 21, 1976, shortly after this appeal was taken under submission, the District of Columbia Circuit invalidated the Commission's adoption of those parts of §51.20(e) dealing with waste disposal and reprocessing on the grounds that they were unsupported by the record and adopted under unsatisfactory procedures. *Natural Resources Defense Council v. NRC*, ___ F.2d ___, 9 ERC 1149. On August 13, 1976, the Commission issued a General Statement of Policy⁶⁴ in which it announced its intention to reopen the rulemaking proceeding for the purpose of supplementing the record on the reprocessing and waste management issues and determining whether or not Table S-3 of section 51.20(e) should be amended. The Statement disclosed that the Commission had directed its staff to produce on an expedited basis "a revised and adequately documented environmental survey on the probable contribution to the environmental costs of licensing a nuclear power reactor that is attributable to the reprocessing and waste management stages of the uranium fuel cycle."⁶⁵ In a notice of proposed rulemaking dated October 13, 1976,⁶⁶ the Commission announced the completion of the new survey⁶⁷ and proposed a revised table as an interim substitute for Table S-3 pending completion of the rulemaking proceeding and adoption of a final rule.⁶⁸ On that same day, in a letter from its Secretary to parties in all proceedings in which the suspension of licenses on the basis of the District of Columbia Circuit's decision was being considered, the Commission expressed its belief that an interim rule could be promulgated within three months.⁶⁹ On November 5th, it reaffirmed that belief.⁷⁰

On November 5th, the Commission also issued a Supplemental General Statement of Policy⁷¹ conveying its reconsidered views on what should be done with respect to uranium fuel cycle issues in pending proceedings. It announced

⁶³ FES, p. 5-19. See also FES, Table 5.9 at p. 5-20.

⁶⁴ *Environmental Effects of the Uranium Fuel Cycle*, Docket No. RM-50-3, 41 Fed. Reg. 34707 (August 16, 1976).

⁶⁵ *Id.* at 34708.

⁶⁶ 41 Fed. Reg. 45849 (October 18, 1976).

⁶⁷ *Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle*, NUREG-0116.

⁶⁸ 41 Fed. Reg. at 45850-52.

⁶⁹ For a statement of the nature of this letter, see *Union Electric Co.* (Callaway Plant, Units 1 and 2), ALAB-352, NRCI-76/10 371, 374 n. 4 (1976).

⁷⁰ *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-76-17, NRCI-76/11 451, 461 (1976); Supplemental General Statement of Policy, 41 Fed. Reg. 49898, 49899 n. 1 (November 11, 1976).

⁷¹ 41 Fed. Reg. 49898 (November 11, 1976).

the termination of proceedings on motions for the suspension of licenses pursuant to the August 13th General Statement of Policy and stated that the Commission would not initiate any such suspension proceedings on its own motion. The reasons given were the grant by the District of Columbia Circuit of a motion for a stay of its mandate in *NRDC v. NRC, supra*,⁷² the quality of the analysis of the environmental impacts of reprocessing and waste management contained in the new staff survey, "and the relatively short period of time anticipated before the interim rule can be adopted."⁷³ The Supplemental Statement went on to direct that, in a pending proceeding in which a license has not yet been issued, the values in the revised Table S-3 must be examined to see whether they would tilt the cost-benefit balance against the issuance of the license; the license may be issued in advance of the adoption of the interim regulations only if they would not.⁷⁴ If they would so tilt the balance, then the proceeding must be suspended with respect to reprocessing and waste storage issues, pending further action by the Commission.

The Supplemental Statement does not direct us to apply the proposed new Table S-3 in a proceeding such as this, where an LWA has already been issued following a complete environmental review but an appeal is pending. Indeed, it says nothing about what we should do in these circumstances. However, in two previous cases,⁷⁵ we deferred consideration of fuel cycle issues pending further guidance from the Commission. Though these cases were decided prior to the issuance of the Commission's Supplemental General Statement of Policy, the Commission thereafter stated that the course of action we had followed was correct and that fuel cycle issues in cases such as this "should be deferred pending anticipated adoption of a revised interim rule."⁷⁶ In this proceeding, the matter is somewhat complicated by the fact that the applicant moved the Licensing Board for summary judgment on the issue of whether the revised values in the proposed new Table S-3, as applied in this case, would tilt the cost-benefit balance against the issuance of licenses for the Hartsville plant. This motion was granted on December 15, 1976. The Licensing Board issued a Supplement to its December 15th memorandum and order on December 21, 1976. We therefore defer action on all waste management and reprocessing issues pending our review of that decision and a decision by the Commission concerning adoption of an interim fuel cycle regulation.

⁷²This had occurred on October 8, 1976.

⁷³41 Fed. Reg. at 49899.

⁷⁴Such a license must be made subject to the outcome of *NRDC v. NRC, supra*, which is presently before the Supreme Court. *Ibid.*

⁷⁵*Union Electric Co.* (Callaway Plant, Units 1 and 2), ALAB-347, NRCI-76/9 216, 220, 224 (September 16, 1976); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10 397, 417-18 (October 29, 1976).

⁷⁶*Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-76-28, NRCI-76/12 618 (December 27, 1976).

IV. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL IMPACTS

Intervenors complain that TVA and the staff did not adequately evaluate the impacts of the proposed plant on historical, archaeological and cultural resources. They also maintain that the agreement reached between TVA, the Advisory Council on Historic Preservation and the Tennessee Historic Preservation Officer for the mitigation of such impacts⁷⁷ is inadequate.

The facts of record as to this category of impacts are fairly summarized in paragraphs 106 to 118 of the PID.⁷⁸ The Licensing Board found that intervenors did not carry their burden of going forward on this issue.⁷⁹ While this holding was made in reliance on Commission precedent applicable at the time, *Aeschliman v. NRC, supra*, has since made it clear that intervenors have no such burden. Moreover, had that burden been on the intervenors, they would have satisfied it with the testimony of Mr. William M. Young (following Tr. 4197).

Be that as it may, the weight of the evidence supports the conclusion that the adverse historical, archaeological and cultural impacts of the proposed plant are not sufficient to make the sum of its costs outweigh its benefits. In this connection, we think it especially significant that both the Advisory Council on Historic Preservation⁸⁰ and the Tennessee Historic Preservation Officer have agreed that construction of the proposed plant in accordance with a mitigation plan worked out between them and TVA will "satisfactorily mitigate any adverse effect" on the various historic properties on and around the site.⁸¹

V. CLAM CONTROL

The Asiatic clam is a species of mollusk which causes serious problems in circulating water systems. It is often drawn into the system in its larval stage and then attaches itself to surfaces in the system. Once attached, it grows to its adult shell form. The shells form large masses which impede the flow of water and may even stop up the system.⁸² This clam has done damage to industrial water systems throughout the country, including some at other TVA plants.⁸³ Appli-

⁷⁷ Applicant's Exhibit 3.

⁷⁸ NRCI-76/4 at 508-10.

⁷⁹ PID, par. 119, NRCI-76/4 at 510.

⁸⁰ This body is a creature of the Federal Government the views of which must be solicited before any action is taken by a Federal agency which might adversely impact a property listed on the National Register of Historic Places and before Federally-owned property eligible for such listing is transferred, sold, demolished or substantially altered. Section 106 of the National Historic Preservation Act, 16 U.S.C. §470f; §2 of Executive Order No. 11593 (May 13, 1971), following U.S.C.A. §470 at 28-29 (1974).

⁸¹ Applicant's Exhibit 3.

⁸² Tr. 2464.

⁸³ Tr. 2465-66.

cant hopes to prevent the maturation of the larvae by putting chlorine into the water systems of the plant. Other presently employed methods of controlling the clam are the use of ozone, heat treatment, slow release paints and mechanical cleaning.⁸⁴ Applicant has undertaken a three-year research and development program to find an optimum solution to this problem and an industry task force is conducting similar studies.⁸⁵ Thus, by the time the plant is ready to go into operation, much more may be known about methods of controlling this pest.

Intervenors are concerned that the chlorine discharged from the plant might endanger the fish in nearby waters. They point to the fact that staff witness Olsen believed that there was such a danger if releases of chlorine from the plant should exceed 0.2 milligrams per liter of total residual chlorine.⁸⁶ However, applicant's witness William Nicholas testified that it would be possible to keep chlorine releases down to 0.2 milligrams per liter even though, at times, there will be a higher level of chlorine within the plant's water systems.⁸⁷ And it was Dr. Olsen's opinion that, even if chlorine were to be discharged from the plant at the maximum residual chlorine concentration in the holding pond (approximately 0.5 milligrams per liter), there would still not be "substantial mortality to aquatic biota unless discharge at this maximum concentration is sustained for long periods (*i.e.*, greater than 4 or 5 hours per day)."⁸⁸

Intervenors complain further that the chlorine might not in fact control the clams and that the ultimate environmental cost of control measures that may be developed are unknown and might be severe. This assessment is not borne out by the evidence. Applicant's witness Dr. Brooks, who possesses a Ph.D. in environmental engineering, testified that two different types of chlorination treatment have been shown to be effective in controlling the Asiatic clam.⁸⁹ Moreover, even if chlorine should not prove effective, the fact that there are other methods which show promise and that substantial research is being done to perfect a solution to the problem persuades us that the problem is solvable within the next few years without undue environmental cost. We therefore agree with the Licensing Board that a decision as to the precise method of clam control may appropriately be deferred to the operating license stage.⁹⁰ For the present, it is enough that the evidence provides reasonable assurance that applicant will be able to control the clams without any significant adverse effect on fish in the Cumberland River.⁹¹

⁸⁴ Tr. 2489-91, 2493.

⁸⁵ Tr. 2499.

⁸⁶ Written testimony at 1-2, following Tr. 2524.

⁸⁷ Tr. 2459-60; see Tr. 2541-42.

⁸⁸ Written testimony, *supra*, at 3.

⁸⁹ Tr. 2467-71.

⁹⁰ PID, par. 156, NRCI-76/4 at 518.

⁹¹ See PID, par. 157, NRCI-76/4 at 518.

VI. SOCIOECONOMIC IMPACTS

Intervenors assert that the Licensing Board erred in its findings with respect to the adequacy and the cost of mitigating the impacts of the construction of the proposed plant on the local communities. The Licensing Board's discussion of the socioeconomic impacts of construction on the surrounding area is in paragraphs 158 through 205 of the PID.⁹² That discussion deals with the subject in a satisfactory manner and adequately answers the concerns voiced by intervenors on appeal. We affirm the Licensing Board's findings.

VII. AIRPLANE CRASH AND PIPELINE HAZARDS

During the hearings, evidence was introduced as to the hazards presented by the possibility of an airplane crashing into the plant or of gas escaping from a nearby natural gas pipeline. It is possible to protect the plant against both of these dangers--in the case of plane crashes by hardening the containment structure; in the case of a pipeline break, by moving the pipeline far enough away from the plant so that a break would present no danger. All parties to this appeal apparently were in agreement as to that proposition. However, questions arose as to whether structural hardening and pipeline removal would be necessary and, if so, how much they would cost.

Not satisfied with the evidence adduced on these questions at the hearings, the Licensing Board reopened the record *sua sponte* and requested the submission of additional evidence concerning them in the form of affidavits.⁹³ Such affidavits were submitted⁹⁴ and a hearing was tentatively scheduled to permit cross-examination on them.⁹⁵ However, a stipulation was reached in a telephone conference which avoided the necessity for the hearing. The content of that stipulation was described as follows in the Licensing Board's memorandum and order of March 18, 1976:

In a telephone conference, initiated by the Board, on March 16, 1976, the question of the cross-examination of the affiants was discussed. In reliance on the Board's stated determination to preserve the right of cross-examination on the questions of the need for plant hardening and the removal of the gas pipeline until these matters can be taken up subsequently, at the safety phase of the hearings and on the Board's stated intention to include costs, for hardening of the plant and for removal of the gas pipeline, on an upper-bound basis in making the cost-benefit analysis, the Applicant, the Staff and the Intervenors, *i.e.*, the State of Tennessee and Young, *et al.*, all stated that

⁹² NRCI-76/4 at 518-29.

⁹³ Memorandum and Order of February 27, 1976.

⁹⁴ Applicant's Exhibits 16-20, staff's Exhibits 13 and 14, and intervenors' Exhibit 10.

⁹⁵ Memorandum and Order of February 27, 1976.

they would forego cross-examination in regard to these costs. Accordingly, the hearing, tentatively set for March 18, 1976, was cancelled.

Intervenors' counsel felt that the March 18th order did not accurately reflect what had been agreed to in the March 16th conference call. Accordingly, he wrote a letter dated March 24th to the Licensing Board which stated, insofar as is here relevant:

The Board's Memorandum and Order dated March 18, 1976, does not set forth the basis for calculating the costs to be included in making the cost-benefit analysis on account of possible relocation of the gas pipeline and hardening of the proposed plant. It merely recites the Board's intention to include these costs on an upper-bound basis.

It was clearly stated in the March 16, 1976, conference call that the cost increase to be factored into the cost-benefit analysis would be 10% of the previously estimated plant cost, if the parties waived cross-examination on the issue of costs. This 10% included both pipeline relocation and hardening of the plant. This figure was specifically compared with the applicant's figure of a 3.6% increase for additional plant construction costs only, based upon its previous total plant cost estimate of 2.5 billion dollars. The Memorandum and Order of March 18, 1976, leaves the amount of the upper-bound cost increase uncertain.

On behalf of Young, et al., I would not have agreed to waive the privilege of cross-examination, but for the assurance that the figure of 10%, which was volunteered by the members of the Board, would be used.

* * *

Accordingly, I request that the Memorandum and Order entered on March 18, 1976, be rewritten to reflect a cost increase of 10%.

The Board then conducted another conference call on April 1st and sent a letter to counsel for the parties on that same day. It stated, in relevant part:

As stated in the conference, the Board will, in its partial initial decision, increase the cost of plant construction by 10% to account for the possibility of plant hardening and possible removal of the gas pipeline.

In its PID, the Licensing Board discussed the plane crash and pipeline problems.⁹⁶ It said that "the issue of whether the plant structures will need to be strengthened (hardened) against the possible effects of an airplane crash, will be

⁹⁶Pars. 245-52, NRCI-76/4 at 536-38.

decided at the health and safety hearings.”⁹⁷ It found that it is technically feasible to harden the plant and “that reasonable assurance exists that the site is suitable with respect to aircraft operations.”⁹⁸ It noted that “the Applicant is committed to having the pipeline relocated if it is determined that the gas pipeline in its present location constitutes an unacceptable risk to the safety of the plant” and concluded “that this agreement provides a sufficient basis for determining that the site is suitable at this time.”⁹⁹ Although the evidence reflected that structural hardening and pipeline removal should cost, at most, about 4% of the cost of the plant,¹⁰⁰ the Licensing Board, in its balancing of the costs and benefits of the project, assumed a cost of 10% for those tasks, in accordance with the April 1st stipulation of the parties.¹⁰¹

As intervenors admit,¹⁰² their sole exception relative to plane crash hazards is Exception 21, which alleges that the Board erred in deferring the issue of whether the plant should be hardened to the health and safety hearings. The arguments in their Brief, however, are barely relevant to this exception. We are told (at p. 21) that, without knowing the severity of the impact against which the plant is to be hardened, one cannot determine the cost of hardening for NEPA purposes and “so the issue of whether to harden the plants should have been decided, not deferred.” The short and complete answer is that there was no issue in this case as to either the cost of hardening or the correctness of deferring the decision on whether to harden to the health and safety hearings because the parties stipulated to both of those things. Indeed, it comes with ill grace for counsel for intervenors to raise these issues on appeal in disregard of a stipulation for which he exacted such a high price—the assumption (not justified by the evidence) of a hardening and pipeline removal cost of 10% of the total cost of the plant.

Intervenors also contend that the Licensing Board could not determine that it would be feasible to harden the plant, an assumption arguably implicit in the Board’s deferral of the issue, because it did not determine the severity of the impact against which it would have to be hardened. This argument was not encompassed within intervenors’ exceptions and therefore is not properly before us. *Union Electric Co.* (Callaway Plant, Units 1 and 2), ALAB-347, NRCI-76/9 216, 223 n. 15 (1976); *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear-1), ALAB-207, 7 AEC 957 (1974); *Long Island Lighting Co.* (Shoreham Nuclear Power Station), ALAB-156, 6 AEC 831, 832-33 (1973); see 10 CFR §2.762(a). In any event, there was uncontradicted evidence that nuclear

⁹⁷ Par. 246, NRCI-76/4 at 536.

⁹⁸ Pars. 246-47, *id.* at 536-37.

⁹⁹ Pars. 251 and 252, *id.* at 537-38.

¹⁰⁰ Pars. 248 and 250, *id.* at 537.

¹⁰¹ Pars. 357 and 358, *id.* at 560.

¹⁰² Brief, p. 20.

power plants are capable of being hardened to withstand varying levels of plane crash impact.¹⁰³

With respect to the natural gas pipeline, intervenors argue that there is no evidence of the existence of a suitable site for relocation of the pipeline and that, therefore, the Licensing Board could not determine the cost of relocation for NEPA purposes or that the site is suitable for the proposed plant. This argument is without substance. As previously noted, intervenors stipulated to what the cost of relocation would be. Additionally, they have taken no exception to the Licensing Board's holding in footnote 169 of the PID¹⁰⁴ that TVA has the right of eminent domain even against a public utility. Finally, intervenors ignore the following colloquy between their counsel and staff witness Krug, who was responsible for the Site Suitability Report:¹⁰⁵

Q: Mr. Krug, from the physical standpoint, apart from any legal dispute as to the ability of eminent domain, alternate routes are available for this pipeline to serve the same markets that it presently serves; is that correct?

You have encountered no apparent problem as far as geography is concerned in the relocation of this pipeline?

A. That is correct.

In sum, the Licensing Board had ample basis for proceeding on the assumption that the pipeline could be relocated, if necessary, at the stipulated cost.

VIII. CROSS-EXAMINATION ON THE ISSUE OF FOGGING

Intervenors insist that the Licensing Board erred in preventing their cross-examination of the staff on the issue of fogging in the Hartsville area which might be caused by the emission of water vapor from the cooling towers.¹⁰⁶

Intervenors had specifically raised the fogging issue in Contention 26(a)¹⁰⁷ and the Licensing Board had, prior to the hearing, granted applicant's motion for

¹⁰³Tr. 4517, 4531. The propriety of the Licensing Board's deferral of the plane crash hardening issue may now be academic. The Board considered the issue in connection with the applicant's request for an LWA-2 and decided that hardening is not necessary in its Second Supplemental Partial Initial Decision of December 10, 1976. LBP-76-44, NRCI-76/12 637, 639-642. We extended the time for the filing of exceptions to that decision until after the Licensing Board decides the motions for reconsideration.

¹⁰⁴NRCI-76/4 at 538.

¹⁰⁵Tr. 1155.

¹⁰⁶Tr. 883-908.

¹⁰⁷See Special Prehearing Conference Order #2, dated August 8, 1975, at 14.

summary judgment on it.¹⁰⁸ Therefore, one would have thought that the issue was no longer in the case. Surprisingly, though, the Licensing Board Chairman said, in his dialogue with counsel on the objections to cross-examination on this issue, that the Board "is interested in the fogging problem" and "is still interested in testimony regarding it."¹⁰⁹ It is unclear what the Chairman meant by these remarks. To be sure, the Licensing Board had the power to reconsider Contention 26(a) on its own motion or to raise some version of the fogging issue on its own.¹¹⁰ In either case, intervenors would have had the right to cross-examine on the issue.¹¹¹ However, if it wanted to do either of those things, it should have done so clearly and in a more formal fashion. The cryptic statements it did make only contributed to the confusion surrounding the argument of the objection in question.¹¹²

Be that as it may, we need not decide whether the Chairman's enigmatic remarks reopened or raised anew the fogging issue and gave intervenors concomitant rights of cross-examination.¹¹³ The Licensing Board indicated that, while it was disallowing this cross-examination in the portion of the hearing dealing with site suitability from the point of view of radiological health and safety, it was disposed to permit it in the later portion of the hearing concerning environmental issues.¹¹⁴ Intervenors do not allege that they attempted to cross-examine on the fogging issue in the environmental part of the hearing and were not permitted to do so. It is therefore evident that the ruling, even had it been erroneous, was not prejudicial.

¹⁰⁸Memorandum and Order Respecting Applicant's Motion for Summary Disposition or in the Alternative, to Strike Certain Contentions, dated September 22, 1976, at 17. The Board there stated: "It is reasonable to assume that operations of the natural draft cooling towers proposed for the Hartsville plants will not have a significant effect in regard to fogging or icing on the highway, air or river traffic. . . ." Intervenors did not appeal from this grant of summary judgment.

¹⁰⁹Tr. 899, 908.

¹¹⁰*Cf* 10 CFR § 2.718(j); *Consolidated Edison Co.* (Indian Point Nuclear Generating Unit 3), CLI-74-28, 8 AEC 7, 8-9 (1974); 10 CFR § 2.760a.

¹¹¹Section III(a) (3) of Appendix A to 10 CFR Part 2; *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-252, 8 AEC 1175, 1179, *aff'd*, CLI-75-1, 1 NRC 1 (1975).

¹¹²See Tr. 883-908.

¹¹³Especially in view of their contention dealing specifically with fogging, we reject intervenors' argument that the fogging issue was still in the case because it was subsumed under their general contention that selection of the Hartsville site over other sites was not justified.

¹¹⁴Tr. 891, 908. The cross-examination was attempted in the part of the hearing dealing with the issue under 10 CFR § 50.10(e)(2) of whether "there is reasonable assurance that the proposed site is a suitable location for a nuclear power reactor of the general size and type proposed from the standpoint of radiological health and safety considerations under the [Atomic Energy] Act and rules and regulations promulgated by the Commission pursuant thereto" (emphasis added). There was no suggestion that any risk of a radiological character might result from cooling tower-induced fogging.

IX. LIMITATIONS ON THE CROSS-EXAMINATION OF MR. RAMSEY

Intervenors take the position that, on four occasions, the Licensing Board erroneously limited their cross-examination of Mr. Maxwell D. Ramsey, applicant's employee responsible for the evaluation and mitigation of historical and cultural impacts of the proposed plant.

The first instance is recorded at p. 4150 of the Transcript. As noted in Part IV of this opinion, applicant had reached a written understanding with the Advisory Council on Historic Preservation and the Tennessee Historic Preservation Officer that construction of the Hartsville plant in accordance with an agreed-upon mitigation plan worked out between them would "satisfactorily mitigate any adverse effect" on the historic properties on and near the site. This agreement, applicant's Exhibit 3, had been made available to intervenors' counsel two weeks before his cross-examination of Mr. Ramsey and applicant's counsel announced at the outset of the hearing on the day in question that he intended to introduce it into evidence through a witness who would follow Mr. Ramsey.¹¹⁵ Mr. Ramsey had just testified that there had been letters written to applicant by the Advisory Council during the course of the preparation of the environmental statement and environmental report, which was much earlier than the time when the agreement was concluded.¹¹⁶ Intervenors' counsel then asked: "And in the course of those comments, were there recommended mitigation measures?"¹¹⁷ Applicant objected to that question as "wasteful and just not material since we do have, in fact, an approved mitigation plan from the Advisory Council."¹¹⁸ The objection was sustained.

Intervenors argue that the testimony sought was relevant to the issue of the adequacy of the mitigation plan. Whether or not that is so, however, the Advisory Council is entitled to have its considered, formal and final opinion on the matter conveyed to this Commission, rather than any preliminary attitudes contained in correspondence which might have reflected only the opinion of staff members.¹¹⁹ Moreover, counsel for intervenors was subsequently permitted to cross-examine Ernest R. Holz, the primary staff member representing the Advisory Council in the negotiations leading to the execution of applicant's Exhibit 3, concerning the positions that the Council had taken in the course of those negotiations, the reasons underlying those positions and the factors that it had considered in arriving at them.¹²⁰ Mr. Holz answered counsel's questions in a

¹¹⁵ Tr. 4111.

¹¹⁶ Tr. 4149-50.

¹¹⁷ Tr. 4150.

¹¹⁸ *Ibid.*

¹¹⁹ See § 106 of the National Historic Preservation Act, 16 U.S.C. § 470f; *Aeschliman v. NRC*, *supra*, 9 ERC 1289, 1296-97.

¹²⁰ Tr. 4174-82, 4184-85.

forthright manner.¹²¹ Thus, intervenors were not prejudiced by the limitation on their cross-examination of Mr. Ramsey imposed by the Licensing Board at page 4150 of the Transcript.

The second ruling complained of occurs at p. 4155 of the Transcript. Intervenor's counsel, referring to Dixona, a historic home near the edge of the plant site, asked Mr. Ramsey whether Dixona "had a significant part in the early political history and certainly in Smith County." Applicant's counsel objected on the ground that Dixona is listed on the National Register of Historic Places and therefore its historic significance is recognized and there can be no issue about it. The Board sustained the objection.

Intervenors contend that there are many degrees of significance and that the testimony sought to be elicited would have been relevant to a determination of how valuable, from a historical point of view, Dixona is. Intervenor's counsel is correct; the question was a relevant one because NEPA requires a weighing and balancing of benefits and costs and the degree of historical significance is a factor in determining the extent of the cost. However, the historical significance of Dixona had already been described in the record by TVA, the staff and intervenors.¹²² Mr. Young, who owns Dixona, submitted written testimony¹²³ on the historical importance of the entire area on and surrounding the plant site. That testimony¹²⁴ addressed the historical significance of Dixona. Mr. Young, in the biographical sketch he submitted to the Licensing Board,¹²⁵ described himself as a historian, a "life-long resident of Dixon Springs and member of one of the original Caucasian families which early settled that part of the world." We think it fair to assume that Mr. Young included in his testimony all pertinent historical information about Dixona that is currently known or at least as much as Mr. Ramsey would have known. We therefore hold that intervenors were not prejudiced by the sustaining of the objection in question.

The third allegedly erroneous cutoff of cross-examination of Mr. Ramsey is to be found at pp. 4157-62 of the Transcript. There, intervenor's counsel was questioning Mr. Ramsey about the significance of the bibliography annexed to Attachment A of the mitigation plan which is part of applicant's Exhibit 3. The witness had already responded at length on this subject before cross-examination was cut off and the questioning was repetitious. That being so, the Board was justified in sustaining the objection.

The fourth and last ruling in this group which intervenors challenge can be found at pp. 4166-67 of the Transcript. The McGee House is an early 19th

¹²¹ *Ibid.*

¹²² Environmental Report, p. 2.3-3; FES, p. 4-20; Written Testimony of William M. Young at 3-4, fol. Tr. 4197.

¹²³ Following Tr. 4197.

¹²⁴ At 3-4.

¹²⁵ Following Tr. 4191.

century house, located on the plant site, which the Department of the Interior found eligible for inclusion in the National Register of Historic Places.¹²⁶ Mr. Ramsey had just testified as to various modifications that had been made in the house over the years. Intervenors' counsel then asked him whether these modifications were "typical of the type of changes that have been made in structures that do go back to colonial or postcolonial days when they have been occupied for a period of a century or longer." An objection to that question was sustained by the Board on the ground that it did not know whether the witness was qualified to answer the question. If it did not know, it should have asked him; the fact that Mr. Ramsey had investigated in depth (albeit with the assistance of experts) the historical significance of this house and of other historic houses in the area would suggest that he was qualified to answer the question. The question was relevant because its answer might have proven that the modifications did not detract from the house's historical significance. However, the ruling was not prejudicial to intervenors. There is no indication that the Board relied on the modifications at all in reaching its decision; indeed, the fact that the modifications were not even mentioned in the portion of the Board's decision entitled "Impact on Historic Resources"¹²⁷ leads us to conclude that it attached no significance to them.

X. INTRODUCTION OF THE STAFF'S REVISED COMPARATIVE COST EVIDENCE

On the last day of the hearing, the staff attempted to introduce into evidence two tables. One of them, Staff Exhibit 10, was a revision of Table 9.4 of the FES giving the staff's estimate of comparative economic costs for a coal versus a nuclear generating plant of a size slightly smaller than that of the combined four units of the Hartsville plant. The other, Staff Exhibit II, provided the staff's latest estimate of the fuel costs that would be incurred by a 1000 MWe light water reactor. Intervenors' counsel had been served with the exhibits at 5:40 p.m. the previous day. Also, extensive changes were made by the staff in the numbers on Exhibit 10 and those changes were given to intervenors' counsel that very morning.¹²⁸ Intervenors objected strenuously to the introduction of the exhibits at that time and asked for an adjournment of at least two weeks.¹²⁹ The Chairman asked intervenors' counsel what he would be able to do during those two weeks, in connection with the cross-examination of the supporting witnesses, that he could not do then.¹³⁰ Counsel replied:

¹²⁶ PID, par. 108, NRCI-76/4 at 508.

¹²⁷ NRCI-76/4 at 508-11.

¹²⁸ Tr. 4779-80, 4784, 4788.

¹²⁹ Tr. 4788-89.

¹³⁰ Tr. 4791-92.

The situation is such that we will attempt to bring in some additional proof ourselves. Second, we will have the opportunity to go through the mathematics of these various calculations ourselves¹³¹

The Licensing Board admitted both exhibits into evidence and denied the motion for a continuance.¹³²

10 CFR §2.743(b) provides that written testimony shall be served on other parties "at least five (5) days in advance of the session of the hearing at which its testimony is to be presented." It goes on to state, in relevant part: "The presiding officer may permit the introduction of written testimony not so served, either with the consent of all parties present or after they have had a reasonable opportunity to examine it." We hold that, in this case, intervenors did not have the reasonable opportunity for examination of the evidence required by the rule. The evidence was technical in nature. An attorney might not have been able to cross-examine on it adequately without the assistance of an expert to evaluate it, analyze the mathematics and suggest questions. As intervenors' counsel received the exhibits at 5:40 p.m. the evening before, he would probably not have had enough time to obtain the necessary expert assistance before the hearing the next morning, even had he begun to try to obtain it immediately after being handed the documents.¹³³ The fact that extensive changes in the numbers on Exhibit 10 were given to him the following morning only increased his difficulty in being able to cross-examine effectively. Moreover, even had he been able to obtain the immediate services of an expert on the evening when he was given the exhibits for the purpose of preparing cross-examination, he would not have had enough time to prepare rebuttal evidence had he concluded it was necessary.

However, the question of whether the error was prejudicial remains. As we stated in Part II of this opinion,¹³⁴ "while cost has some relevance to a NEPA evaluation, it is certainly not the primary factor to be considered." In this case, applicant sought permission to construct a nuclear plant and the weight of the evidence supported the thesis that a nuclear plant would be environmentally preferable to a coal plant.¹³⁵ Therefore, whether the cost advantage of a nuclear plant over a coal plant was relatively small, as the original Table 9.4 showed, or relatively large, as Staff Exhibit 10 showed, it should not have made any difference in the result reached. Consequently, the error committed in admitting the exhibits without granting the continuance was not prejudicial.

¹³¹ Tr. 4792.

¹³² Tr. 4801.

¹³³ It is unlikely that he would have begun the attempt that early. He would first have had to go over the exhibits carefully in order to appreciate their significance and he might have felt the need to have dinner even before doing that.

¹³⁴ *Supra* at 21 n. 51.

¹³⁵ *Supra* at 103-105.

XI. THE REQUIREMENT OF AN INTAKE GRID

The Licensing Board raised the following question during the hearings: "Will there be potential danger to small boats and/or swimmers in the vicinity of the intake pipes for the plant because intake screens are not proposed?"¹³⁶ Both the staff and the applicant provided the testimony of a witness on the subject. The staff recommended that an intake grid be required; the applicant took the position that it was not necessary.¹³⁷ The Licensing Board conditioned "any limited work authorization or construction permit to be issued upon the installation of appropriate grid structures at the intake structure or other means satisfactory to the Staff of physically preventing the involuntary entrainment of a person."¹³⁸ It acted pursuant to its authority under NEPA.¹³⁹ Applicant appeals from the imposition of this condition. The staff asks that it be affirmed.

The correctness of the decision to condition a license on the installation of a grid depends on a weighing of three factors: the cost of complying with the condition, any adverse effects that its imposition would entail and the extent of the risk to be guarded against. We turn to a consideration of those factors.

The Licensing Board stated that the applicant's witness, Ronald G. Domer, "estimated that protective grids would cost \$10,000."¹⁴⁰ In point of fact, when first asked about it, he testified that he did not know the cost of a grid because he had made no cost analysis.¹⁴¹ Later, when pressed for his opinion as to whether the staff witness's cost estimate of \$4,000 was "in the ball park," he answered: "Well, \$4,000 would be in the right ball park, I would say, or maybe \$10,000 or something like this might be an estimate of the first cost of buying the rod, the steel rods and what not, and having them fabricated."¹⁴² This equivocal, off-the-top-of-the-head remark can hardly be taken as a cost estimate; it thus was not entitled to be given much weight. The only real cost estimate testified to was the one made by staff witness Novick—that a grid would cost less than \$4,000.¹⁴³ Although Mr. Novick was of the opinion that the grid could be designed in such a way as "to prevent the clogging of the intakes under normal operation,"¹⁴⁴ Mr. Domer testified that "any type of a screening device that you would put there would reduce the reliability of the intake due to potential clogging."¹⁴⁵

¹³⁶ PID, par. 336, NRCI-76/4 at 555.

¹³⁷ Written testimony of Meyer Novick at 2, following Tr. 4264; Tr. 4406-07.

¹³⁸ PID, par. 339, NRCI-76/4 at 556.

¹³⁹ *Id.* at par. 340.

¹⁴⁰ PID, par. 337, NRCI-76/4 at 555.

¹⁴¹ Tr. 4409.

¹⁴² Tr. 4422.

¹⁴³ Tr. 4265-66.

¹⁴⁴ Written testimony at 2, following Tr. 4264.

¹⁴⁵ Tr. 4407; see also Tr. 4422.

The cost of installing a grid is very low, measured against the cost of the entire plant, and the problem of clogging is, in our opinion, not a serious one. Therefore, were there any foreseeable possibility of a death occurring due to its absence, we would not have the slightest hesitation in affirming the Licensing Board's requirement that it be installed. But the evidence suggests that, in fact, there is no danger to human life posed by the absence of a grid at the mouth of the water system intake pipes.

The water intake for the plant will be built "by constructing a dike across the mouth of the intake channel and extending six corrugated steel pipes through the dike for approximately 200 feet to near the center of the river."¹⁴⁶ The pipes will be open-ended and 78 inches in diameter and will be anchored to the bottom of the river channel.¹⁴⁷ At normal water level, 23 feet of water will be over the pipes; at the historic minimum level, they will be under 20 feet of water.¹⁴⁸ There will be an open channel extending from the dike to a point 2500 feet inland.¹⁴⁹ At the end of the channel will be intake openings to a pumping station which will be covered by a mesh.¹⁵⁰ The water will be pumped up from the river bottom through the open channel and into the pumping station.

The velocity of the water at the center of the intake will be 1.6 to 1.75 feet per second, which is comparable to the velocity of the water flowing in the river.¹⁵¹ The witnesses agreed that the intake would not cause any vortices to form at the surface and the staff's witness conceded that it is unlikely to create turbulence in the water.¹⁵² It is clear, therefore, that there is no danger posed by the intake to boaters or to swimmers on the surface of the river.¹⁵³ And the Licensing Board's finding that the grid is necessary for "the safety of the boating and swimming public,"¹⁵⁴ if one gives that phrase its normal meaning, is totally unsupported by the evidence.

Whom, then, was the Licensing Board attempting to protect? It defined the class as "persons who might be in the area of the intake entrances."¹⁵⁵ But the intake entrances are at the river bottom, 20 to 23 feet below the surface. Mr. Novick suggested two categories of persons who might be in that vicinity and need protection. He first made reference to "a remote possibility that under-water swimmers, particularly those with contained breathing equipment, could

¹⁴⁶ Environmental Report, p. 3.4-3.

¹⁴⁷ Written testimony of Meyer Novick, *supra*, at 1.

¹⁴⁸ *Ibid.*

¹⁴⁹ Environmental Report, p. 3.4-4.

¹⁵⁰ *Id.* at 3.4-4 to 3.4-5.

¹⁵¹ Tr. 4406-07, 4410. See also Tr. 4273.

¹⁵² Tr. 4406; written testimony of Meyer Novick, *supra*, at 2.

¹⁵³ Tr. 4406.

¹⁵⁴ PID, par. 340, NRCI-76/4 at 556.

¹⁵⁵ *Id.* at par. 339.

be near the intake openings.”¹⁵⁶ Such swimmers are referred to in common parlance as scuba divers. Mr. Novick admitted, however, that he had made no endeavor to ascertain whether any scuba diving takes place in the river near the proposed Hartsville plant.¹⁵⁷ In addition, there are no recreational sites within two miles of the plant¹⁵⁸ and a list in the Environmental Report¹⁵⁹ of recreational activities conducted at the part of the Cumberland River known as Old Hickory Reservoir¹⁶⁰ does not include scuba diving. Most significantly, Mr. Novick admitted on cross-examination that, since the water quality in the river at the Hartsville site does not permit one to see through the water, he sees no reason why there should be any scuba divers there.¹⁶¹ On this evidence, we are forced to conclude that there is no basis for thinking that recreational scuba divers would ever find themselves at the mouths of the intake pipes.

Moreover, we have serious doubts as to whether an intake velocity of 1-1/2 feet per second is enough to suck a scuba diver into the pipe. While we have been unable to find a statement of Mr. Novick’s qualifications in the record, it would seem that he is not an expert on either scuba diving or swimming.¹⁶² For this reason, his testimony as to the hazard presented by the intake is of little value. The Licensing Board also referred to Mr. Novick’s testimony “that a person could swim faster than the intake velocity of one and one-half feet per second but only momentarily, and the chances of being involuntarily entrained are great”¹⁶³ The record reveals that this testimony was based on what an anonymous swimming expert had told Mr. Novick.¹⁶⁴ Expert testimony in hearsay form from someone unknown is most unreliable.¹⁶⁵ Thus, even if a scuba diver were to find himself in the vicinity of the intake, there is not a shred of reliable evidence in the record that it would endanger his life.¹⁶⁶

¹⁵⁶ Written testimony, *supra*, at 2.

¹⁵⁷ Tr. 4270.

¹⁵⁸ See Table 2.2-2 at p. 2.2-11 of the Environmental Report.

¹⁵⁹ At p. 2.2-8.

¹⁶⁰ This is the part of the river adjacent to the plant site.

¹⁶¹ Tr. 4274.

¹⁶² See Tr. 4274-76.

¹⁶³ PID, par. 338, NRCI-76/4 at 556.

¹⁶⁴ Tr. 4275-76.

¹⁶⁵ Only “reliable evidence” may be admitted in our proceedings. 10 CFR § 2.743(c).

¹⁶⁶ The Licensing Board seemed to be significantly influenced by the fact that a scuba diver was entrained in the intake pipes and killed at the Redondo Beach power plant in California. See PID, par. 338, NRCI-76/4 at 556. But, as noted above, the normal velocity of the Hartsville intake at the center is 1.6 to 1.75 feet per second, as opposed to a velocity of 7 feet per second at Redondo Beach. Tr. 4267, 4412. Also, the Redondo Beach intake was in the ocean, a locale attractive to scuba divers. Tr. 4412, 4426-27. Finally, the Redondo Beach intake was located 2,000 feet offshore, where the scuba diver may have had little apparent reason to be wary. Tr. 4412. At Hartsville, the intake pipes are only 200 feet long and discharge into an open channel out of which a conscious person could climb (Env. Report, p. 3.4-3). In addition, there will be warning signs on each bank alerting people that there is an intake in that part of the river. Tr. 4406.

After addressing the "remote possibility" of danger to recreational scuba divers, Mr. Novick testified:

There is a greater probability that divers will be called upon in the future to inspect or maintain the intake structure and foundations. The intakes would therefore present a hazard to them.¹⁶⁷

However, he also testified, presumably on the basis of what he learned from that unidentified swimming expert, that "an expert swimmer, if he realized he was in the intake, could probably get away."¹⁶⁸ A diver employed by TVA to inspect or maintain the intake structure would surely be an expert swimmer (as would anyone who is capable of swimming at the bottom of a river which is 20 to 23 feet deep) and would know the exact location and characteristics of the intake pipes. We find it inconceivable that TVA would not be able to find adequate means to protect such a diver. The most obvious way would be to do the maintenance of inspection when the plant is shut down and, indeed, that is the way that TVA expects to do it.¹⁶⁹ However, that is not the only way. At the Redondo Beach plant of Southern California Edison, where the incident of a recreational scuba diver getting caught in the intake occurred,¹⁷⁰ a diver is periodically sent inside the pipe to inspect it and he is protected by reducing the velocity from 7 feet to 3-1/2 feet per second.¹⁷¹ This is double the 1.75 feet per second which is the maximum velocity for the Hartsville intake. Moreover, to the extent that it is necessary to go into the pipe, a removable grid at its opening will obviously not protect the diver.

For all these reasons, we conclude that the evidence does not support the need for a grid to protect divers employed by the applicant for maintenance or inspection of the intake. Lest this conclusion be misunderstood, it should be emphasized that dangers to human life should be protected against, even at much greater cost than would have to be incurred here. But the danger must be a real one, established by trustworthy evidence of record. There is no end to the number of special devices and improvements that could be added to a nuclear power plant. But the public interest is not served by requiring them to be installed absent a demonstrated need for them.

Of course, should the staff obtain evidence before the issuance of the construction permit or the operating license that any scuba diving is done on the Cumberland River in the general vicinity of the site and that an intake of this type and velocity would present a hazard to such a diver, it should bring this to

¹⁶⁷ Written testimony, *supra*, at 2.

¹⁶⁸ Tr. 4276.

¹⁶⁹ Tr. 4422-23.

¹⁷⁰ See PID, par. 338, NRCI-76/4 at 556.

¹⁷¹ Tr. 4267.

the attention of the Licensing Board and the Board could, at that time, reimpose the condition. Indeed, we think it is the staff's duty to investigate this problem further by obtaining the advice of both someone who knows what activities take place at that part of the river and someone who is an expert on scuba diving.

Part V D6 of the PID, requiring that a grid be placed on the intake structure, is *reversed*. Decision on the environmental cost of disposition and storage of radioactive waste from the proposed plant and its effect on the cost-benefit balance is *deferred* pending our review of the Licensing Board's memorandum and order of December 15, 1976, as amplified by its "supplement" of December 21, 1976, and a decision by the Commission concerning adoption of an interim fuel cycle regulation. In all other aspects, the PID is *affirmed*.¹⁷²

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹⁷²Our review *sua sponte* of those portions of the Licensing Board's decision not involved in the disposition of the appeals has disclosed no error requiring corrective action.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

Docket Nos. 50-443
50-444

**PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.**

(Seabrook Station, Units 1 and 2)

January 27, 1977

The Appeal Board, pursuant to the Commission's request in CLI-77-4, identifies those unresolved issues which it currently believes to be "troublesome" (*i.e.*, substantial and not amenable to resolution without considerable additional study).

MEMORANDUM

Statement of Messrs. Rosenthal and Farrar:

On January 24, 1977, the Commission issued an order¹ in which it announced its intention to review ALAB-366, 5 NRC 39 (January 21, 1977). In the course of its order, the Commission called attention to footnote 54 in the majority opinion in ALAB-366, which reads as follows:

Because of the necessity to single out the matters dealt with in this opinion for early disposition, we have not as yet completed our consideration of other issues. We have progressed far enough, however, to say at this point that some of them are troublesome and that our review has been made materially more difficult by the failure of the Licensing Board to explain fully the basis for several of its crucial findings. In this connection, in more than one area of controversy the initial decision does not even allude to the testimony of witnesses for the intervenors, let alone indicate why that testimony was not being credited.

¹ CLI-77-4, 5 NRC 31.

The Commission then requested us to identify the "troublesome" issues to which the Board majority had reference and to provide it "with a statement of the seriousness of these issues and the competing considerations involved." This memorandum is in response to that request.

A. At the outset, a fuller explanation of the intended message of footnote 54 might be appropriate. All that we meant to convey is what has been said in the footnote explicitly. For reasons stated earlier in the opinion, ALAB-366 focused entirely upon those few issues presented by the numerous appeals before us which were intertwined with the EPA proceeding involving cooling systems—and as to which the Court of Appeals for the First Circuit had asked for a prompt expression of our views (as well as those of the Commission). The purpose of the footnote (coming at the very end of the opinion) was simply to remind the reader that other issues remained for consideration and to note in passing that our scrutiny of those issues had progressed only to the point that we could say that "some of them are troublesome." By "troublesome" we meant "difficult" and that alone. We were not implicitly suggesting that we had already come to an at least tentative conclusion that the applicants were likely to lose on one or all of them. More importantly, it was not our intent to leave the impression that a resolution of one or more of the remaining issues adversely to the applicants necessarily would provide an independent ground for suspension of the construction permits. Indeed, as shall be seen, some of those issues may have little or no bearing upon whether a nuclear facility should be built at Seabrook—*e.g.*, the controversy over the location of certain segments of the transmission lines.

At this juncture, we are still unable to forecast the probable result on the still unresolved questions. Nor are we now in a position to exclude the possibility that, upon further examination, some issues which at first blush appeared to us to be susceptible of easy disposition will turn out to be much closer. We are, of course, moving forward as expeditiously as feasible with our consideration of the balance of what is before us in this proceeding. Each member of the Board must, however, devote at least part of his time to other cases on our docket which likewise are deserving of early disposition. Thus, it is not presently ascertainable precisely when the review process will reach the end point.

B. In light of the foregoing, the most that we can do by way of immediate compliance with the Commission's request is to enumerate those issues not reached in ALAB-366 which we now believe to be "troublesome" (in the sense that they seem to be substantial and not amenable to resolution without considerable additional study on our part).

1. In determining what is the closest population center to the Seabrook site within the meaning of 10 CFR 100.3(c), the Licensing Board (1) utilized population estimates as of 1980; and (2) "weighted" the transient population concentrations in the neighboring beach areas for the reason that transients are

not present during the entire year. NRCI-76/6 at 875-76. Several of the appellants challenge one or both of these actions. The claim is that the population in the vicinity of the site should have been estimated as of a much later date and, further, that the transient beach population should not have been "weighted." We perceive these to be substantial claims. If ultimately held meritorious in whole or in part, the necessary consequence might be the invalidation of the Licensing Board's determination of the "population center distance." This in turn might or might not affect the ultimate findings of the Board on site suitability, depending upon the other evidence of record.

2. Questions pertaining to the seismicity of the site were raised before the Licensing Board and then renewed on appeal. One seemingly serious question is whether "geologic evidence" of seismic activity within the northwest cluster of the Boston-Ottawa seismic trend requires an assumption that an earthquake of an intensity greater than the maximum "historically recorded" near the Seabrook site (*i.e.*, VIII on the Modified Mercalli scale) might reasonably be expected to occur at that site. See 10 CFR Part 100, Appendix A, Section V(a)(1)(i). This question may take on even greater significance in light of the Commission's recent clarification of 10 CFR Part 100, Appendix A. 42 Fed. Reg. 2051 (January 10, 1977).

3. In finding the applicants financially qualified to design and construct the Seabrook facility (NRCI-76/6 at 868 and 936), the Licensing Board made no reference at all to, *inter alia*, the testimony of Dr. James R. Nelson, Charles E. Merrill Professor of Economics at Amherst College, who testified on behalf of the intervenor New England Coalition on Nuclear Pollution. As we understand it, the essence of Dr. Nelson's testimony² was that at the very least the applicants would experience considerably greater difficulty in acquiring (through resort to investment markets) the necessary funds for construction than they had represented to the Board. According to this witness, whose qualifications as an expert on the subject do not seem to have been seriously disputed, this difficulty would result in substantially increased expense being incurred in obtaining the additional money needed to build the facility. The Licensing Board's findings on financial qualifications are sharply contested by at least four of the appellants. In deciding that contest, we will have to consider, *inter alia*, such questions as the relevance of Dr. Nelson's testimony on the financial qualifications issue and whether, if relevant, the Licensing Board was justified in simply ignoring it in the initial decision.³

²NECNP Exhibit No. 1, admitted into evidence at Tr. 1775. The cross-examination of Dr. Nelson commenced at Tr. 1793.

³In addition, we are confronted with the assertion that the Licensing Board erred in denying an intervenor's motion to reopen the record on the issue of financial qualifications to consider, *inter alia*, the implications of the announced intention of two of the participating utilities in the Seabrook project either to withdraw from the project entirely (Connecticut Light and Power) or to reduce its level of participation (United Illuminating). The interest which would thereby be affected would total 21.9%.

4. Need for the power to be generated by the Seabrook facility was another issue heavily pressed below and renewed before us. The complaints raised by the appellants on this issue are far-ranging and embrace such questions as the justification for the refusal of the Licensing Board to issue (at the behest of the Seacoast Anti-Pollution League and the Audubon Society of New Hampshire) a subpoena to David J. Lessels, the Finance Director of the New Hampshire Public Utilities Commission.⁴ Mr. Lessels was willing to testify but, because of his position as a state official, desired to do so under subpoena. Of perhaps larger significance is the attack made upon the unwillingness of the Licensing Board during the reopened hearing on need for power to allow the intervenors to explore the underlying bases of the demand forecasts made by the individual companies comprising the New England Power Pool (NEPOOL), which forecasts were used in the development of the overall NEPOOL forecast relied upon by the applicants. Beyond that, we have been told that there is an inadequate evidentiary foundation for the acceptance of the applicants' thesis relating to the justification for Seabrook as a substitute for existing fossil fuel plants. NRCI-76/6 at 900-902.

5. Finally, the intervenor Society for the Protection of New Hampshire Forests objects to the disposition made by the Licensing Board of the issues it had raised regarding transmission line routing. That objection encompasses such points as the failure of the Licensing Board majority to have discussed two Society-proposed alternate routes in the Cedar Swamp-Pow Wow River region which the dissenting member below thought at least warranted further exploration. NRCI-76/6 at 940-41.

At the risk of undue repetition, we wish to stress again both (1) that the above list is not necessarily all-inclusive insofar as concerns the serious issues which remain undecided; and (2) that we are intimating no opinion at this time as to what ultimate conclusions will be reached on *any* of them once we have had sufficient opportunity to complete our study.⁵

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

⁴ See Tr. 12,220 (reopened hearing).

⁵ As we observed in ALAB-366, 5 NRC 67-68, should the EPA Administrator reinstate the preliminary determination of the Regional Administrator we will then have to pass judgment on the Licensing Board's alternate site findings based upon the assumption that once-through cooling would be used at Seabrook with the intake structures located where the preliminary determinations placed them. These findings are challenged on appeal. Moreover, the dissenting member of the Licensing Board disagreed with the majority of that Board with respect to whether, on the majority's assumption as to the cooling system to be utilized, it was now clear that Seabrook is preferable to each of the alternate sites considered. NRCI-76/6 at 947.

Separate Statement of Dr. Buck:

In my dissenting opinion in ALAB-366, I did not comment upon footnote 54 in the majority opinion. In light of the Commission's request to us, a few words are now in order. I understood the scope of the footnote to be as the majority has explained it, *i.e.* "troublesome" was used to mean difficult or complex. However, while I am in basic agreement with the listing of "difficult" items which we have yet to review fully, I do not necessarily concur in my colleagues' appraisal of the level of difficulty of each of the issues identified. There would appear, however, to be no reason to pursue further at this point any possible differences between us on that score.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Jerome E. Sharfman, Chairman
Dr. John H. Buck
Dr. Lawrence R. Quarles

In the Matter of

Docket No. 50-247
OL No. DPR-26

CONSOLIDATED EDISON COMPANY
OF NEW YORK, INC.

(Indian Point Station,
Unit No. 2)

January 27, 1977

Upon appeal by applicant from Licensing Board's Partial Initial Decision (PID)(LBP-76-43) and Supplemental PID (LBP-76-46), and upon exception to Supplemental PID filed by a nonparty, the Appeal Board dismisses the exception but agrees to accept it as if it were a brief *amicus curiae* and calendars oral argument on the applicant's appeal.

RULES OF PRACTICE: APPELLATE REVIEW

Except for a state participating pursuant to 10 CFR §2.715(c), a nonparty may not appeal from a licensing board decision. *Public Service Gas & Electric Co.* (Hope Creek, Units 1 & 2), ALAB-251, 8 AEC 993, 994 (1974); *Tennessee Valley Authority* (Bellefonte, Units 1 and 2), ALAB-237, 8 AEC 654 (1974); *Gulf States Utilities Co.* (River Bend, Units 1 and 2), ALAB-317, NRCI-76/3 175, 176-80 (1976).

ORDER

Consolidated Edison Company of New York ("Con Ed") has appealed from the Licensing Board's Partial Initial Decision ("PID") of November 30, 1976, LBP-76-43, NRCI-76/11 598, and from its Supplemental PID of December 27, 1976, LBP-76-46, NRCI-76/12 659. The Village of Buchanan has also filed an exception to the Supplemental PID. By letter dated January 17, 1977, Con Ed states that, although the Village of Buchanan is not a party to this proceeding,

the Appeal Board should accept its document denominated "exception" as a brief *amicus curiae*.

The controversy over the cooling system of the Indian Point 2 reactor has engendered more than one proceeding. The Licensing Board, in an attempt to keep them separated, instituted the practice of putting an identifying phrase under the docket number and operating license number which accompany the caption, in each order it issues. Both of the PIDs which are before us on this appeal bear the identifying phrase "Determination of Preferred Alternative Closed-Cycle Cooling System." Although, by order dated November 5, 1976, the Licensing Board granted Buchanan's petition to intervene in one of the Indian Point 2 proceedings, the Board there stated its understanding that the "petition relates only to the extension of interim operation proceeding and not to the proceeding concerning the designation of the preferred closed-cycle cooling system." Accordingly, the ordering paragraph granted Buchanan leave to intervene "solely" in the former proceeding. With one exception not here relevant,¹ a nonparty to a proceeding may not appeal from a licensing board's decision in it. *Public Service Gas & Electric Co.* (Hope Creek Generating Station, Units 1 and 2), ALAB-251, 8 AEC 993, 994 (1974); *Tennessee Valley Authority* (Bellefonte Nuclear Plant, Units 1 and 2), ALAB-237, 8 AEC 654 (1974). For this reason, the exception of Buchanan must be *dismissed*. However, as the Village does have a substantial interest in this proceeding and as it is a party in a closely related proceeding concerning this reactor, we will accept its "exception" as if it were a brief *amicus curiae*.

Oral argument of Con Ed's aforementioned appeal is hereby calendared for 10:00 a.m. on *Wednesday, February 9, 1977*, in the Commission's Hearing Room, 5th Floor, East-West Towers, 4350 East West Highway, Bethesda, Maryland. Con Ed is allotted one hour for argument; the staff and the Hudson River Fishermen's Association are also allotted a total of one hour, to be divided between them as they see fit. The Secretary to this Board is to be notified, by letter mailed no later than February 2, 1977, of the names of counsel intending to participate in the argument.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹ The exception applies to a state which is participating in a proceeding pursuant to 10 CFR §2.715(c). *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-317, NRCI-76/3 175, 176-80 (1976).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of

Docket Nos. STN 50-556
STN 50-557

PUBLIC SERVICE COMPANY OF OKLAHOMA
ASSOCIATED ELECTRIC COOPERATIVE, INC.
WESTERN FARMERS ELECTRIC COOPERATIVE, INC.

(Black Fox Station Units 1 and 2)

January 28, 1977

Appeal by intervenors from certain procedural rulings of Licensing Board dismissed as interlocutory under 10 CFR 2.730(f).

Mr. Paul M. Murphy, Chicago, Illinois, for the applicants,
Public Service Company of Oklahoma, *et al.*

Mr. Andrew T. Dalton, Jr., Tulsa, Oklahoma, for the inter-
venors, Citizens Action for Safe Energy and Ilene Young-
hein.

ORDER

Intervenors Citizens Action for Safe Energy and Ilene Younghein endeavor to appeal from certain interlocutory rulings of the Licensing Board in this construction permit proceeding. The appeal must be dismissed. As we have previously observed:

10 CFR 2.730(f) contains a general prohibition against interlocutory appeals from licensing board rulings made during the course of a proceeding. The single exception to this prohibition is found in 10 CFR 2.714a. Insofar as a petitioner for intervention is concerned, that Section allows an appeal from an order concerning his petition if—but only if—the order denied the petition outright.

Puerto Rico Water Resources Authority (North Coast Nuclear Plant, Unit 1), ALAB-286, 2 NRC 213, 214 (1975) (footnote omitted). See also *Boston Edison*

Co. (Pilgrim Nuclear Generating Station, Unit 2), ALAB-269, 1 NRC 411, 413 (1975) and cases there cited. None of the rulings which these intervenors seek to challenge could possibly be regarded as coming within section 2.714a.¹

Appeal *dismissed*.²

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

This action was taken by the Appeal Panel Chairman under the authority of 10 CFR 2.787(b).

¹ Specifically, intervenors complain that the Licensing Board improperly denied them discovery on certain issues and, further, erroneously refused to compel the joinder as parties to the proceeding of the Bureau of Indian Affairs of the Department of the Interior and the Cherokee Indian Nation. Obviously, neither of these actions by the Board involved a denial of the intervenors' petition for leave to participate in the proceeding themselves. To the contrary, their petition had been earlier granted.

² Should it wish to do so, the Licensing Board is free to treat the appeal as a motion for reconsideration addressed to it.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Douglas V. Rigler, Chairman
John M. Frysiaik
Ivan W. Smith

In the Matter of

THE TOLEDO EDISON COMPANY Docket Nos. 50-346A
THE CLEVELAND ELECTRIC ILLUMINATING 50-500A
COMPANY 50-501A

(Davis-Besse Nuclear Power Station,
Units 1, 2, and 3)

THE CLEVELAND ELECTRIC Docket Nos. 50-440A
ILLUMINATING COMPANY, et al. 50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

January 6, 1977

Upon consideration in consolidated proceeding of antitrust aspects of applications for an operating license for Davis-Besse, Unit 1, and construction permits for Davis-Besse Units 2 and 3 and Perry Units 1 and 2, the Licensing Board concludes, pursuant to Section 105(c) of the Atomic Energy Act, that the unconditioned licensing of the plants would both create and maintain a situation inconsistent with the antitrust laws and the policies underlying those laws.

Conditions imposed on the current and future licenses of the five facilities.

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

A situation inconsistent with the antitrust laws is not limited to a particular anticompetitive act but may be comprised of "patterns of anticompetitive conduct," for the purposes of Section 105(c) of the Atomic Energy Act. *Kansas Gas & Electric Co. and Kansas City Power & Light Co.* (Wolf Creek, Unit 1), ALAB-279, 1 NRC 559, 572 (1975).

ATOMIC ENERGY ACT: ANTITRUST PROVISION

The Commission's antitrust mandate, under Section 105 of the Atomic Energy Act, is not "automatically limited to the construction and operation of the facility to be licensed," but rather includes an evaluation of "the relationship of the specific nuclear facility to the applicant's total system or power pool." *Louisiana Power & Light Co.* (Waterford, Unit 3), CLI-73-25, 6 AEC 619, 620-21 (1973).

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

Where applicants are dominant in an area, any exclusionary conduct exercised by them becomes suspect, within the scope of Section 105 of the Atomic Energy Act. *United States v. Philadelphia National Bank*, 374 U.S. 321, 363, 371 (1973):

Proof concerning the accomplishment of the objectives of a conspiracy may be persuasive evidence of the existence of the conspiracy itself. *American Tobacco Co. v. United States*, 328 U.S. 781, 809 (1946); *Eastern States Retail Lumber Dealers Assn. v. United States*, 234 U.S. 600, 612 (1914).

A direct exchange of words is not required and the essential agreement, combination or conspiracy may be implied from a course of dealing or other circumstances. *Frey & Son, Inc. v. Cudahy Packing Co.*, 256 U.S. 208, 210 (1921).

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

Although a situation inconsistent with the antitrust laws is not limited to violations of those laws, a *per se* violation is clearly covered. Among such *per se* violations of Section 1 of the Sherman Act are territorial and customer allocations among and between competitors, price fixing, and group boycotts or concerted refusals to deal.

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

Acts which do not *per se* violate the antitrust laws may nevertheless do so if, upon analysis, they impose an unreasonable restraint on trade. A contract may do so if its intent is to restrain trade injuriously. Unilateral refusals to deal may violate the Sherman Act if the refusal stems from a predatory purpose and involves coercive tactics with monopolistic ends or if it is the product of joint consultation among competitors.

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

The possession or use of monopoly power may constitute a situation inconsistent with the antitrust laws. “[T]he material consideration in determining whether a monopoly exists is not that prices are raised and that competition actually is excluded but that power exists to raise prices or to exclude competition when it is desired to do so.” *American Tobacco v. United States*, 328 U.S. 781, 811 (1946).

A utility’s use of monopoly power is illegal if it has “a strategic dominance in the transmission of power in most of its service area,” and it uses this dominance “to foreclose potential entrants into the retail area from obtaining electric power from outside sources of supply.” *Otter Tail Power Co. v. United States*, 331 F. Supp. 54, 60 (D. Minn. 1971), aff’d, 410 U.S. 366 (1973). Agreements not to compete, with the aim of preserving or extending a monopoly, are illegal; it is not necessary for the monopoly to be a complete one. *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

Refusals to deal violate Section 2 of the Sherman Act (and hence are situations inconsistent with the antitrust laws) where access is denied to an essential resource which puts the excluded competitor at a “competitive disadvantage.” *Associated Press v. United States*, 326 U.S. 1, 17-18 (1945).

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS

Unfair trade practices may constitute a situation inconsistent with the antitrust laws. A “price squeeze,” such as may result when the differential between wholesale rates and retail rates prevents an entity purchasing electricity at wholesale from competing with its supplier for retail customers, is an unfair trade practice if deliberately imposed. *FPC v. Conway*, 425 U.S. 957 (1976). An unfair trade practice might also occur through refusal to establish a synchronous interconnection with electric entities engaged in the generation and sale of electricity at retail while agreeing to establish such interconnections with self-generating industries not engaged in the retail sale of electricity, as well as through insistence by a wholesale supplier upon ownership and control over connection facilities paid for by the supplier’s customers, where no adequate justification exists. A pricing scheme may be an unfair trade practice even where the only effect is to impose a limit on the profitability of the sale of power by a municipality.

ATOMIC ENERGY ACT: SITUATION INCONSISTENT WITH ANTITRUST LAWS (RELEVANT MARKET)

For antitrust purposes, a relevant product market may be defined in terms of "commodities reasonably interchangeable by consumers for the same purposes which make up that part of the trade or commercial monopolization of which may be relevant." *United States v. duPont*, 351 U.S. 377 (1956).

RULES OF PRACTICE: BURDEN OF PROOF

Where applicants raise a cost-justification defense to justify a pricing scheme alleged to constitute a situation inconsistent with the antitrust laws, they have the burden of establishing that defense. *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 694 (1967).

RULES OF PRACTICE: COLLATERAL ESTOPPEL

Collateral estoppel is not binding where there is a diversity of parties and issues, or where the public interest requires a new judgment on an issue.

ATOMIC ENERGY ACT: SCOPE OF ANTITRUST REVIEW

The NRC is not charged with the responsibility of the general enforcement or administration of the antitrust laws; its interest is limited to considering the effect of granting a nuclear license on the competitive environment in which applicants operate.

ADMINISTRATIVE PROCEDURE ACT: FINDINGS

Findings in the alternative are permissible and are protected by the umbrella of the substantial evidence test. *Gainesville Utilities Corp. v. Florida Power Corp.*, 402 U.S. 515, 526, n. 7 (1971).

ATOMIC ENERGY ACT: RELATIONSHIP BETWEEN LICENSED ACTIVITIES AND SITUATION INCONSISTENT WITH ANTITRUST LAWS

In evaluating the link between the competitive situation and the activities under the license, licensing boards should consider "the relationship of the specific nuclear facilities to the applicant's total system or power pool, e.g., size, type of ownership, physical interconnections." *Louisiana Power & Light Co.* (Waterford, Unit 3), CLI-73-7, 6 AEC 48, 49 (1973).

ATOMIC ENERGY ACT: ANTITRUST PROVISION

Within the meaning of Section 105 of the Atomic Energy Act, the presence and observance of a state regulatory scheme confers no antitrust immunity. *Cantor v. Detroit Edison*, 96 S. Ct. 3110, 3118 (1976); *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973).

RULES OF PRACTICE: DISCIPLINE

Under 10 CFR 2.718, a licensing board has authority for reprimanding an attorney for conduct intended to or with the known effect of evading or failing to comply with a board order.

RULES OF PRACTICE: BURDEN OF PROOF

In an NRC antitrust proceeding, the presiding officer may rationally allocate the burden of proof, and the applicant does not always carry the ultimate burden. 10 CFR 2.732.

INITIAL DECISION (ANTITRUST)

Appearances

Alan P. Buchmann, Esq., Victor F. Greenslade, Jr., Esq., Donald H. Hauser, Esq. (for The Cleveland Electric Illuminating Company); **Michael M. Briley, Esq., Roger P. Klee, Esq.** (for The Toledo Edison Company); **David McN. Olds, Esq., Joseph A. Rieser, Jr., Esq.** (for Duquesne Light Company); **Steven A. Berger, Esq., Steven B. Peri, Esq., Terrence H. Benbow, Esq.** (Ohio Edison Company and Pennsylvania Power Company); **William Bradford Reynolds, Esq., Robert E. Zahler, Esq.**, for the Applicants

Steven M. Charno, Esq., Melvin G. Berger, Esq., Janet R. Urban, Esq., Anthony G. Aiuvalasit, Esq., for the Department of Justice

Reuben Goldberg, Esq., David C. Hjelmfelt, Esq., Robert D. Hart, Esq., for the City of Cleveland, Ohio

Benjamin H. Vogler, Esq., Roy P. Lessy, Jr., Esq., Jack R. Goldberg, Esq., for the U.S. Nuclear Regulatory Commission Staff

This proceeding involves a determination pursuant to Section 105(c) of the Atomic Energy Act of 1954, as amended,¹ as to whether conditions must attach to the licenses of five nuclear facilities in order to prevent activities under these licenses from creating or maintaining a situation inconsistent with the antitrust laws or the policies underlying those laws. We conclude that relief is necessary and appropriate and accordingly set forth the conditions to attach to such licenses.

BACKGROUND

On August 1, 1969, the Toledo Edison Company ("TECO") and the Cleveland Electric Illuminating Company ("CEI") filed a joint application before the Atomic Energy Commission for a license to construct and operate a 906 MW nuclear generation facility designated Davis-Besse Unit 1. The station is to be located in north central Ohio on the shores of Lake Erie, approximately 21 miles east of the City of Toledo. A construction permit, conditioned upon antitrust review pursuant to Section 105(c)(8) of the Atomic Energy Commission Act of 1954, was issued on March 24, 1971.

On July 6, 1971, the City of Cleveland ("Cleveland") filed a Petition to Intervene in the Davis-Besse 1 proceeding and requested an antitrust hearing. On July 9, 1971, the Attorney General advised the AEC that no antitrust hearing would be required provided certain controversies then under negotiation between CEI and Cleveland were resolved satisfactorily. On February 7, 1972, The AEC Regulatory Staff ("Staff") recommended that Cleveland's Petition to Intervene be granted and a hearing held to determine whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws.

On January 21, 1974, the AEC issued an order directing this Licensing Board² to consider Cleveland's Petition to Intervene in light of the Commission's two *Waterford* decisions³ which had been issued since receipt of Cleveland's Petition to Intervene. Concurrently, the Board was directed to consider whether consolidation of two related proceedings, the Perry I and II license application and the Beaver Valley⁴ license application, would be appropriate.

Perry involved the joint application of TECO, CEI, The Ohio Edison Com-

¹ 42 U.S.C. § 2135(c)(1970).

² The membership of the Board has changed since the original appointment by the AEC.

³ *Louisiana Power & Light Company* (Waterford Steam Electric Generating Station, Unit 3) CLI-73-7, 6 AEC 48 (1973) (*Waterford I*); and CLI-73-25, 6 AEC 619 (1973) (*Waterford II*).

⁴ By Order of March 15, 1974, the Petition to Intervene in the Beaver Valley proceeding was denied.

pany ("Ohio Edison"), Pennsylvania Power Company ("Penn Power") and The Duquesne Light Company ("Duquesne") for a permit to construct and operate two nuclear units to be located near Lake Erie, approximately 35 miles north-east of Cleveland, each having a net electrical output of 1205 MW. The Attorney General had advised the AEC on December 17, 1973, that the Perry application raised antitrust questions, the resolution of which required hearing. Petitions to intervene in the Perry proceeding were filed on February 13, 1974, by Cleveland and by AMP-O (American Municipal Power-Ohio). In addition, the State of Ohio petitioned to participate pursuant to provisions of 10 CFR Section 2.715(c).

On March 15, 1974, the Board granted the petitions of Cleveland to intervene in the Davis-Besse 1 and Perry proceedings and, with the support of all parties, ordered the consolidation of those proceedings.

On June 25, 1974, the second prehearing conference in the consolidated Davis-Besse 1 and Perry proceeding was held to discuss the issues and matters in controversy and the scope of discovery pursuant to them. After consideration of the Joint Statement of the Staff, Justice and Intervenors, and the Applicants' Response and Objections, the Board, on July 25, 1974, issued Prehearing Conference Order No. 2. This Order established Issues and Matters in Controversy which, although formulated by the Board, were based in part upon certain joint stipulations. These issues were admitted for purposes of discovery notwithstanding Applicants' objection that the issues as set forth in Prehearing Conference Order No. 2 were too broad in nature to enable them to prepare adequately to respond to the allegations being made.

On August 9, 1974, an application was filed on behalf of Applicants Ohio Edison, CEI, TECO, Duquesne and Penn Power for a license to construct and operate two additional units, designated Davis-Besse 2 and 3, each rated at 906 MW, to be located at the Davis-Besse site. On February 14, 1975, the Attorney General responded to this application by requesting that an antitrust hearing be held. Separate petitions to intervene were filed by the State of Ohio and Cleveland on March 13, 1975. On May 6, 1975, Cleveland was granted leave to intervene and Ohio was recognized as a participant.

On September 10, 1975, AMP-O moved for leave to withdraw its petition to intervene in the Davis-Besse and Perry proceedings. This motion was granted on September 18, 1975.

At the initial prehearing conference on the Davis-Besse II and III applications held on May 14, 1975, the subject of consolidation of those proceedings with the pending Davis-Besse 1 and Perry 1 and 2 proceedings was considered. All parties favored consolidation, although Applicants indicated a continuing reservation with respect to the statement of Issues and Matters in Controversy which had been formulated by the Board in Davis-Besse 1 and Perry. It was Applicants' position that although an objection of record should be noted with respect to their contention that the Issues in Controversy were framed too

broadly, they were ready to proceed on the basis of those issues. Tr. of Davis-Besse 2 and 3, p. 10, 1.13-15; Tr. p. 12, 1.16-21.⁵

On July 30, 1975, the NRC ordered consolidation of the Davis-Besse 2 and 3 proceeding with the Davis-Besse 1 and Perry 1 and 2 proceeding.

Notwithstanding our conclusion that Applicants, through Petitions to Intervene, advice letters, and prehearing conferences, were well aware of the allegations to which they must respond, the Board took action to insure that Applicants were specifically apprised not only of the dimensions of the case against them, but in addition, were informed as to how the product of the discovery process would relate to these charges. By its Fourth Prehearing Conference Order of April 29, 1975, the Board required all opposition parties to file no later than September 5, 1975, a Statement of the Case to be Presented. Such a statement is not required by the procedural rules of the Commission but was ordered pursuant to the specific requests of Applicants for this additional concession.⁶ Applicants were given until September 12 to respond to their opponents' September 5 filing. A prehearing conference was held on September 18, 1975, to consider Applicants' objections and comments to the opposition parties' September 5 filing. The Board indicated that opposition parties should conform the introduction of evidence to the allegations of the September 5 filing and that attempts to introduce evidence not encompassed within these filings would be conditioned upon a showing of good cause.⁷

⁵ During this prehearing conference, the Board canvassed the parties to ascertain what additional discovery, if any, would be required by the adoption of the Issues and Matters in Controversy established for the Davis-Besse 1 proceeding in the Davis-Besse 2 and 3 proceeding. Tr. of Davis-Besse 2 and 3, p. 3-16. Based upon the response of the parties, it was the Board's conclusion that only limited additional discovery would be required and that adjustments to the discovery schedule then in effect in the Davis-Besse 1 proceeding would provide satisfactory opportunity for the parties to prepare for hearing while at the same time avoiding delay. Davis-Besse 2 and 3 Tr. p. 19. We are satisfied that ample opportunity was provided Applicants to consider the effect on the issues of the limited and carefully controlled additional discovery which we permitted.

⁶ For a comprehensive discussion of Applicants' request for this filing, see the Memorandum and Order of the Board Amending Schedule for Commencement of Hearing and Filing of Briefs dated November 21, 1975.

⁷ On a limited basis, the Board did grant permission to opposition parties to enlarge some of the specific charges made in the September 5 filing or to present additional evidence relating to certain of the basic issues set forth in Prehearing Conference Order No. 2. On each such occasion, the Board considered Applicants' objections and the good cause showing of the amending party and made a determination as to whether and to what extent it would permit such amendments. Permission to amend was granted in instances where Applicants produced additional documents contemplated by prior discovery orders but which Applicants had failed to produce timely; or where opposition parties only recently developed specific evidence supporting charges of unlawful conduct. In each such instance, the Board considered the question of prejudice to the Applicants, if any, and whether the public

Continued on next page

Citations to the Record

Throughout this decision, the Board has used symbols and abbreviations to refer to exhibits, proposed findings of fact and the transcript. Staff papers are identified by "NRC," The Department of Justice (Justice) by "DJ," Cleveland by "C," the Applicants by "App.," Transcript as "Tr.," proposed findings of fact, "ff," and Applicants' main brief as "App. Brief."

For convenience, the name of the witness or deponent sometimes has been listed before a reference to the transcript or exhibit; e.g., "Pandy Tr. 4896," and "Mansfield DJ 287." We frequently refer to the Staff, Justice and City together as "opposition parties."

PREAMBLE

The principal issue in these proceedings is whether dominant electric companies in a relevant market area which do not compete with one another may make competitive benefits, including coordination and pooling, available to each other while denying these benefits to smaller actual or potential competitive entities within the market. This issue becomes of statutory concern to the Nuclear Regulatory Commission when the benefits to be shared or denied include power generated from proposed nuclear stations which power will have a substantial competitive impact upon the delivery and sale of electric energy in the relevant market.

Continued from previous page

interest would be adversely affected by excluding evidence relevant to the proper decision of the Issues in Controversy. On each occasion in which we permitted the amendment of the September 5 filing, we were convinced that no prejudice or, at the least, no material prejudice would result from our ruling and that there was a clear public interest requirement that the amendment be allowed. Many of these amendments related to Ohio Edison (which was one of the Applicants producing relevant discovery materials subsequent to the expiration of its discovery deadlines), and even in the case of Ohio Edison the overall effect of the evidence introduced as a result of these amendments was not material to the overall result reached by this Board.

See DJ 617, a February 26, 1976, response by Applicant disclosing the existence of certain maps setting forth territorial allocation agreements between TECO and its competitors and indicating the destruction of certain relevant files in 1970 and 1971 by direction of a vice president of TECO. Obviously, Applicants could not be allowed to limit the proofs against them by failing to produce, timely, documents clearly within opposition parties' discovery requests.

In each limited instance in which an amendment was permitted, Applicants were granted, upon request, additional discovery and time to prepare a response to the amendment.

SYNOPSIS

As set forth in Prehearing Conference Order No. 2, the hearing addressed the maintenance or creation of a situation inconsistent with the antitrust laws arising from the structure of the electric power industry in relevant areas of Ohio and Pennsylvania, and how the conduct of the parties affects that structure. Thus, Broad Issue "A" addressed the question of whether the structure of the relevant market and Applicants' position in that market gives them the ability, acting individually or jointly, to hinder or prevent other electric entities from achieving access to the benefits of coordinated operation and access to the benefits of economy of size of large electric generating units. If the answer to the structural question was determined to be affirmative, Broad Issue "B" then addressed the question of whether Applicants' ability has been used, is being used, or might be used to create and maintain a situation inconsistent with the antitrust laws or their underlying policies.

The Board then set forth eleven Matters in Controversy bearing upon the resolution of Broad Issues "A" and "B" including the definition of appropriate geographic and product markets in which to consider the questions posed in the two broad issues, and the extent, if any, to which Applicants stipulated dominance of bulk power transmission facilities and bulk power generation in their combined service areas gave rise to the ability and exercise of ability to hinder competition. Matter in Controversy 10 addressed Applicants' policies with respect to providing or denying access to nuclear facilities to other electric entities and whether those policies deprived such other entities from realizing the benefits of nuclear power. Matter in Controversy 11 considered the connection between activities under the proposed licenses and the other ten Matters in Controversy.

The first Matter in Controversy was whether the combined CAPCO Company Territories (CCCT) constitute an appropriate geographic market for antitrust analysis in these proceedings.⁸ As amplified in our discussions under finding of fact 24, we hold the CCCT area to meet the test of relevant geographic market and it is within the confines of that market that we discuss the principal issues herein. Within that market, there was stipulation, subsequently supported by the evidence, as to Applicants' dominance (market share in excess of 90%) over both bulk power transmission and bulk power generation. See finding 5, *infra*.

⁸The Combined CAPCO (Central Area Power Coordination Group) Company Territories (CCCT) refers to the region bounded by the outer perimeters of the present service areas of the five CAPCO members (Applicants), as shown on the map submitted by CEI as Exhibit F to *Information Requested by the Attorney General for Antitrust Review* in connection with the Perry Nuclear Power Plant, Units 1 and 2. (The map is entitled "Principal Facilities of CAPCO as of October 31, 1969," and was prepared by Duquesne.)

We also have concluded (finding 21, *infra*) that bulk power services, regional power exchange transactions and retail power transactions constitute relevant product markets.

The existence of a situation inconsistent with the antitrust laws turns largely upon the fashion in which Applicants deal with one another in comparison to their treatment of other electric entities in the CCCT area. The five Applicants are the sole parties to a comprehensive power pooling arrangement, the CAPCO agreement, which provides that operation and development of their systems be conducted to the maximum extent possible as a unified system. CAPCO companies are signators to a broad Memorandum of Understanding which has been supplemented by a series of individual agreements relating to transmission and operation of the respective systems of individual Applicants. The five nuclear stations involved in this license proceeding all are being constructed pursuant to the master CAPCO plan which calls for joint planning, construction and ownership of a series of new generating stations. Applicants also jointly are planning the construction of a series of high voltage transmission lines to add to the extensive network which now provide the only means of transmitting large quantities of electricity within the CCCT.

The combined generating capacity of the Applicant companies is approximately 13,000 megawatts. The addition of the five nuclear units involved in this proceeding will add another 4,500 MW to overall generating capacity within the area; and, notwithstanding the extensive capital outlays associated with the construction of these units, Applicants are of the opinion that these units will produce economies of scale and will provide for long term generation costs well under average system costs which could be obtained either compared to the cost of operating their present generating equipment or in comparison to new generation relying upon fossil fueled units. Thus, the operation of the Davis-Besse and Perry stations will have a substantial effect upon both the supply and the cost of electricity within the CCCT area.

In connection with their joint participation in the CAPCO pool, Applicants have agreed to and have extended to one another extensive benefits resulting from reserve sharing, emergency power interconnection and sales, staggered construction, economy interchanges, firm power sales and third party wheeling. Either by agreement or inaction, Applicants have not engaged in competition with one another in the sale of electric energy in the State of Ohio and have relied upon provisions of Pennsylvania law designating service territories for utility companies in following a policy of noncompetition among and between electric entities in the State of Pennsylvania. Thus, the benefits of the CAPCO pool have been shared by companies which, in any meaningful sense, do not compete with one another, and some of which have avoided competition pursuant to agreement and understanding between themselves.

Applicants individually and through their combination as the CAPCO group, with minor exceptions, have refused to make available to other electric entities

in actual or potential competition with individual Applicant companies the benefits achieved through membership in CAPCO.⁹ During the period immediately preceding the formation of CAPCO (1967), and continuing thereafter, Applicants' dominance of electrical generation in the CCCT area has continued to grow. This increase in market share has not been passive or accidental but has been the result, at least in part, of policies such as refusing to engage in third party wheeling, emergency interconnection or reserve sharing with non-CAPCO entities in the CCCT. These policies caused, or contributed substantially to the decision of certain isolated generating systems within the CCCT to abandon electric generation.¹⁰

Certain of the actions employed by Applicants to increase their dominance in and of themselves constitute violations of the antitrust laws. These include territorial allocations, attempts to fix prices, refusals to deal and group boycotts. Applicants' mutually supporting actions have increased the dominance of each individual Applicant within its own service territory and their reinforcing actions thus may constitute monopolization, attempted monopolization and a combination to monopolize. Dominant companies whose increased dominance in relevant markets is not thrust upon them but results from a continuing series of collective and individual actions may be said, within the context of the issues in controversy, to be using their dominance to hinder or impede the ability of other electric entities in those markets to compete.

The situation as described above is inconsistent with the antitrust laws; and, where the plant construction of a series of nuclear generating stations is undertaken in a fashion calculated to further increase that dominance, activities under the license can be said to maintain a situation inconsistent with those laws. Even were we to find that despite Applicants' dominance they had undertaken no anticompetitive acts so that no present situation inconsistent with the antitrust laws exists, there would be concern if the proposed nuclear construction suddenly reduced or hindered the ability of lesser entities to compete with Applicants. Artificial barriers imposed by Applicants to prevent competitors from gaining access to or the same type of benefits from the nuclear plants as they

⁹ Certain Applicants refused to make available to competing electric entities many of these benefits such as third party wheeling, reserve sharing and emergency or economy interchanges, even prior to the formation of CAPCO, while at the same time extending these benefits to each other.

¹⁰ We do not find that Applicants' policies were *solely* responsible for the demise of many of these isolated systems. Some of these systems may have been too small to operate efficiently and economically. Other systems may have succumbed to the prolonged effects of management inefficiency or failure to maintain and service their electric plants. The problem raised by the antitrust laws, however, arises from evidence of several activities of Applicants which hastened or contributed in a substantial manner to the elimination of these electricity generating competitors.

contemplate for themselves would result in the creation of a situation inconsistent with the antitrust laws.

This synopsis sets forth succinctly the considerations which apply to our resolution of the Issues and Matters in Controversy. Our conclusion that Applicants have a prolonged history, both individually and collectively, of misuse of their dominant position within the CCCT and their respective service areas to achieve anticompetitive results and what to us is a clear nexus between activities under the license and the anticompetitive situation Applicants have nurtured within the CCCT convinces us that the imposition of license conditions is necessary to effect the statutory purpose of Section 105(c).

LEGAL STANDARDS

As we commence our review of the record and findings of fact, we shall enumerate briefly the legal standards to be applied in resolving the Issues in Controversy. Our charter, of course, is derived from Section 105(c) of the Atomic Energy Act of 1954 as amended ("the Act").¹¹ Section 105(c) requires the Commission "to make a finding as to whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws." A situation is not limited to a particular anticompetitive act but may be comprised of "patterns of anticompetitive conduct." *Kansas Gas & Electric Co. and Kansas City Power & Light Co.* (Wolf Creek Generating Station, Unit No. 1), ALAB-279, 1 NRC 559, 572 (1975).¹² Thus, in *Waterford II*, *supra*, note p. 138, the Commission noted that its statutory mandate to consider antitrust issues is not "automatically limited to the construction and operation of the facility to be licensed." Rather, "the relationship of the specific nuclear facility to the applicant's total system or power pool should be evaluated in every case."¹³ It is within this framework that we approach our task of deciding whether activities under the license will create or maintain the prohibited situation.¹⁴

¹¹ 42 U.S.C. Section 2135(c)(1970).

¹² See also *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), LPB-73-5, 6 AEC, 85, 86 (1973) holding that it is the competitive situation as a whole with emphasis on the structure of the market rather than isolated individual acts which determines whether a situation inconsistent with the antitrust laws exists.

¹³ *Waterford II* at 620-21.

¹⁴ The Congressional intent not to grant the valuable asset of nuclear licenses where they would further inhibit competition is not contingent upon proof of actual violation. The antitrust laws encompass Section 5 of the FTC Act and its prohibition on unfair trade practices. See Joint Committee Report, S. Rep. No. 91-1247, 91st Cong., 2nd Sess. (1970) (hereinafter "Joint Committee Report"), p. 14; *FTC v. Cement Institute*, 333 U.S. 683 (1948); *FTC v. Motion Picture Advertising Service Co.*, 344 U.S. 392 (1953); *FTC v. Brown Shoe Co.*, 384 U.S. 316 (1966); *Atlantic Refining Co. v. FTC*, 381 U.S. 357 (1965).

The Issues in Controversy focus upon the exclusionary activities of Applicants. The stipulation of their dominance renders any exclusionary conduct suspect. *United States v. Philadelphia National Bank*, 374 U.S. 321, 363, 371 (1963). Joint activities to restrain or limit competition or to exclude competitors and would-be competitors violate Section 1 of the Sherman Act. *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224-25, n. 59 (1940); *Northern Pacific Railroad v. United States*, 356 U.S. 1 (1958). When companies possessing the dominant share of a relevant market act jointly in these respects, Section 2 of the Sherman Act is violated. *American Tobacco Co. v. United States*, 328 U.S. 781 (1946); *United States v. Griffith*, 334 U.S. 100, 104-108 (1948); *United States v. Paramount Pictures*, 334 U.S. 131, 154, 155, 160, 165, 167-73 (1948). The demise of competition in the affected market need not be accomplished instantaneously or as a result of any particular act. "Monopoly can as surely thrive by the elimination of such small businessmen, one at a time, as it can by driving them out in large groups." *Klor's v. Broadway-Hale Stores*, 359 U.S. 207, 213 (1959).

Section 1 Activities

With respect to conspiracies prohibited by Section 1 of the Sherman Act, it is established that the agreement or understanding to accomplish the act in restraint of trade itself constitutes a complete violation and that no overt acts in furtherance of the conspiracy need be alleged or proved. *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150, 224-25, n. 59 (1940); *United States v. Trenton Potteries*, 273 U.S. 392, 402 (1927); *Nash v. United States*, 229 U.S. 373, 378 (1913). Since the creation of potential power to injure competition standing alone may act to restrain competition, it is no defense to assert that no steps were taken to carry out the illegal agreement. *United States v. Central States Theatres Corp.*, 187 F. Supp. 114, 147 (D. Neb. 1960). However, proof concerning the accomplishment of the objectives of a conspiracy may be persuasive evidence of the existence of the conspiracy itself. *American Tobacco Co. v. United States*, 328 U.S. 781, 809 (1946); *Eastern States Retail Lumber Dealers Assn. v. United States*, 234 U.S. 600, 612 (1914).

Uniting in support of the anticompetitive purpose rather than entry into a formal agreement is the measure by which conspiracies and combinations are to be analyzed. *Interstate Circuit v. United States*, 306 U.S. 208, 227 (1939); *United States v. Masonite*, 316 U.S. 265, 275 (1942). Consultation between and among the conspirators with respect to particular acts is not a necessary element to establish a conspiracy. A direct exchange of words is not required and the essential agreement, combination or conspiracy may be implied from a course of dealing or other circumstances. *Frey & Son, Inc. v. Cudahy Packing Co.*, 256 U.S. 208, 210 (1921).

Per Se Offenses

Although not only violations of the antitrust laws are encompassed within the Commission's mandate on antitrust review (which includes activities of Applicants which are inconsistent with the policies underlying the antitrust laws), our task is made easier by reference to certain activities which, if found to have occurred, constitute *per se* violations of the antitrust laws. These include practices:

... which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use.

Northern Pacific Ry. v. United States, 356 U.S. 1, 5 (1958). A specific intent to restrain trade is not an element of a *per se* offense. The objectives or motives of the conspirators are not relevant or material if the actions undertaken constitute *per se* violations of the Sherman Act.

Among the activities condemned as *per se* violations are territorial and customer allocations among and between competitors. *United States v. Topco Associates*, 405 U.S. 596 (1972); *United States v. Sealy, Inc.*, 388 U.S. 350 (1967); *Northern Pacific Ry. v. United States*, 356 U.S. 1 (1958); *Otter Tail Power Co. v. United States*, 410 U.S. 366, 378 (1973).

Another activity deemed *per se* illegal is that of price fixing, *United States v. Socony-Vacuum Oil Co.*, 310 U.S. 150 (1940); *Northern Pacific Ry. v. United States*, 356 U.S. 1.

Group boycotts or concerted refusals to deal also are forbidden and are not "saved by allegations that they were reasonable in the specific circumstances." *Klor's, Inc. v. Broadway-Hale Stores, Inc.*, 359 U.S. 207, 212 (1959).

Rule of Reason

In addition to those activities deemed *per se* unreasonable and therefore in violation of the antitrust laws, other agreements and combinations may be found to violate the Sherman Act if, upon analysis, it is determined that the agreement imposes an unreasonable restraint on trade. *Standard Oil Co. of New Jersey v. United States*, 221 U.S. 1 (1911). In circumstances where the challenged activity does not fall into the category of a *per se* offense, we are required to determine whether the activities are intended to effect some legitimate business purpose of whether the primary thrust of the agreement is to produce an adverse effect upon competition.¹⁵ The "inherent nature or effect" of a contract, agreement

¹⁵ In our findings, we hold certain of Applicants' activities to be in the nature of *per se* violations of the antitrust laws. In other instances we have held that the anticompetitive purpose and result of particular activities is unreasonable and therefore violative of the Sherman Act notwithstanding the existence of certain neutral or not anticompetitive aspects of these activities.

or combination or its "evident purpose" to restrain trade injuriously may violate the statute. *United States v. American Tobacco Co.*, 221 U.S. 106, 179 (1911). Illustrative of unreasonable agreements are restraints in alienation, *United States v. Arnold Schwinn & Co.*, 388 U.S. 365, 379 (1967), and refusals to deal.

We note also that activities, each reasonable in isolation, may violate the Sherman Act if their collective or bundled effect is to work an unreasonable restraint on trade. *United States v. International Business Machines*, 1975 Tr. Cas. ¶60,445 (S.D.N.Y. 1975).

Even unilateral refusals to deal may violate the Sherman Act if the refusal stems from a predatory purpose and involves coercive tactics with monopolistic ends. *Lorain Journal v. United States*, 342 U.S. 143 (1951). Where the refusal to deal is made by only one party, that refusal may be outlawed if it is the product of joint consultation among competitors or if it involves the exchange of information by like-minded companies to achieve a particular exclusionary result. *United States v. General Motors Corp.*, 384 U.S. 127 (1966); *United States v. Parke, Davis & Co.*, 362 U.S. 29 (1960); *United States v. Griffith*, 344 U.S. 100 (1948).

Section 2 Offenses - Monopolization

The offense of monopoly under Section 2 of the Sherman Act has two elements:

- (1) The possession of monopoly power in the relevant market.
- (2) The willful acquisition or maintenance of that power as distinguished from the growth or development of a superior product, business acumen, or historic accident.

United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966). In *Grinnell*, the Court reiterated¹⁶ its definition of monopoly power as "the power to control prices or exclude competition" and "the existence of such power ordinarily may be inferred from the predominant share of the market." *Id* at 571.

In situations where the existence of market power may be ascertained, the use of that monopoly power to foreclose competition or gain a competitive advantage violates the antitrust laws. *Otter Tail v. United States*, 410 U.S. 366, 377. Of vital importance with respect to the Issues in Controversy in this proceeding is the Court's affirmance in *Otter Tail* of the District Court determination that a utility was engaged in the illegal use of monopoly power where it had . . . a strategic dominance in the transmission of power in most of its service area and that it used this dominance to foreclose potential entrants into the

¹⁶ See *United States v. duPont & Co.*, 351 U.S. 377, 391 (1956).

retail area from obtaining electric power from outside sources of supply. 331 F. Supp. 54, 60 (D. Minn. 1971)

The use of monopoly power to destroy threatened competition also violates the "attempt to monopolize" clause of Section 2 of the Sherman Act.¹⁷ *Otter Tail* at 377. Also important is our consideration in this proceeding of the Court's holding in *Otter Tail* that agreements not to compete with the aim of preserving or extending a monopoly are illegal.¹⁸

In finding that a particular practice violates Section 2 of the Sherman Act, it is not necessary for the transgressor to have achieved complete monopoly. *Otter Tail v. United States*, *supra*; *Associated Press v. United States*, 326 U.S. 1 (1945).

Moreover, an actual effect on prices or exclusion of competition need not be proved.

... [T]he material consideration in determining whether a monopoly exists is not that prices are raised and that competition actually is excluded but that power exists to raise prices or to exclude competition when it is desired to do so.

American Tobacco v. United States, 328 U.S. 781, 811 (1946).

A company possessing monopoly power cannot willfully act to maintain or expand that power without violating the antitrust laws. The willful maintenance of monopoly power can be established merely by showing that "transactions neutral on their face" have an exclusionary effect on the market, without a specific showing of anticompetitive motivation. *United States v. Aluminum Company of America*, 148 F.2d 416, 432 (2nd Cir. 1945);¹⁹ *United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295, 346 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954). Thus, a monopoly which results from a party's conduct is sufficient for a finding of monopolistic intent. *United States v. Griffith*, 334 U.S. 100, 105-106 (1948).

The existence of a business motivation or justification cannot legitimate the misuse of monopoly power. *United States v. Arnold, Schwinn & Co.*, *supra* at 375; *Otter Tail Power Co. v. United States*, *supra*, at 380 (1973). None of the transactions engaged in by a defendant need be illegal in and of themselves if they are part of a course of conduct which maintains a monopoly. See *American Tobacco v. United States*, *supra*; *Aluminum Company of America*, 148 F.2d at 431-32; *United Shoe*, 110 F. Supp. at 342.

¹⁷ *Lorain Journal v. United States*, 342 U.S. 143, 154 (1951); *Eastman Kodak Co. v. Southern Photo Materials Co.*, 273 U.S. 359, 375 (1927).

¹⁸ Citing *Schine Chain Theatres v. United States*, 344 U.S. 110, 119.

¹⁹ See Joint Committee on Atomic Energy, Hearings on S. 3323 and H.R. 8862 to Amend the Atomic Energy Act of 1946, 83rd Cong. 2d Sess., Part 2, at 441-443, 495-498, 629, 641-642 (1954).

Section 2 of the Sherman Act also prohibits conspiracies and combinations to monopolize. *American Tobacco Co. v. United States*, 147 F.2d 93, 111 (6th Cir. 1944), *aff'd*, 328 U.S. 781 (1946). A combination or conspiracy to monopolize would include an agreement or understanding which was intended to, or by its inherent nature would, control prices or exclude competitors in any relevant market.²⁰ It is not necessary that the agreement was intended to, or by its inherent nature would, exclude all possible competition. *American Tobacco v. United States*, 328 U.S. 781, 788-789 (1946); *United States v. Consolidated Laundries Corp.*, 291 F.2d 563 (2d Cir. 1961). An intent to exclude competition or control prices can be inferred from the conspirators' course of conduct if they possess a predominant share of a market in relation to their competitors. *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966); *United States v. Paramount Pictures*, 334 U.S. 131, 174 (1948); *United States v. Griffith*, 334 U.S. at 107, n. 10 (1948); *American Tobacco v. United States*, 328 U.S. at 796-97. Selective refusals to deal can be exclusionary and therefore violate Section 2 of the Sherman Act if the nondealing firm possesses monopoly power. A company with a lawful monopoly in one market may not expand that monopoly in another market by a selective refusal to deal. *Lorain Journal v. United States*, 342 U.S. 143; *Eastman Kodak Co. v. Southern Photo Materials Co.*, 273 U.S. 359 (1927).

Refusals to deal whether unilateral or group imposed violate Section 2 of the Sherman Act where the refusing company(s) denies access to a "bottleneck" resource. "Bottleneck" resources are those to which access is essential if the utilizing party is to function as an effective competitor. When combinations of companies give each other access to these facilities and deny access to their lesser rivals, a Sherman Act Section 2 violation may occur. *Associated Press v. United States*, 326 U.S. 1 (1945); *United States v. Terminal Railroad Association*, 224 U.S. 383 (1912); *Gamco, Inc. v. Providence Fruit & Produce Building, Inc.*, 194 F.2d 484 (1st Cir. 1952), *cert. denied*, 344 U.S. 817 (1952); *Otter Tail Power Co. v. United States*, 410 U.S. 366, 380 (1973).

The competitive advantage afforded by the "bottleneck" service need not be indispensably necessary to competitive survival; it is sufficient that without it the excluded competitor is at a "competitive disadvantage." *Associated Press v. United States*, 326 U.S. at 17-18. This was stressed by Judge Learned Hand for the three-judge District Court in *Associated Press*, in a passage quoted with approval by the Supreme Court:

Most monopolies, like most patents, give control over only some of the means of production for which there is a substitute; the possessor enjoys an

²⁰An agreement or conspiracy which violates Section 1 may also violate Section 2. See *United States v. Socony-Vacuum Oil Co.*, 310 U.S. at 220, n. 59; *United States v. Griffith*, 334 U.S. at 106.

advantage over his competitors, but he can seldom shut them out altogether; his monopoly is measured by the handicap he can impose And yet that advantage alone may make a monopoly unlawful. 326 U.S. at 17, n. 17.

Unfair Trade Practices

Unfair trade practices may result from the imposition of a "price squeeze" on competitors. A price squeeze occurs when the differential between wholesale rates and retail rates prevents an entity purchasing electricity at wholesale from competing with its supplier for retail customers. The retail competitor most often affected is the competitor for industrial consumers. Deliberate imposition of a "price squeeze" may be classified as an unfair trade practice. *FPC v. Conway*, 425 U.S. 957, 99 S. Ct. 1999 (1976); *City of Mishawaka, Indiana v. Indiana & Michigan Electric Co.*, 1975 CCH Tr. Cas. ¶60,318 (N.D. Ind. 1975).

An unfair trade practice might occur through a refusal to establish a synchronous interconnection with electric entities engaged in the generation and sale of electricity at retail while agreeing to establish such interconnections with self-generating industries not engaged in the retail sale of electricity. Likewise, insistence by a wholesale supplier upon ownership and control over connection facilities paid for by the seller's customers may constitute an unfair trade practice in circumstances where the integrity of the selling system's facility would not be adversely affected by customer ownership or where operational safety reasons offered in support of the ownership demand are found to be artificial, contrived or unreasonable.

The imposition of unfair or unworkable conditions in a contract also may constitute a refusal to deal and render such conditional "offers" to deal mere sham.

FINDINGS OF FACT

1. Applicants involved in this proceeding are five investor-owned electric utilities:

a) **The Toledo Edison Company (TECO)**—The Toledo Edison Company is a vertically integrated utility serving an area of 2,500 square miles in northwest Ohio. Its 1973 electric operating revenues were \$126,415,000 and its net income exceeded \$23,500,000. Its 1973 net generating capacity was 1045 MW served by 493 pole-miles of company-owned transmission line of 66 KV and above. NRC 207, p. 26-27; NRC 157.

b) **The Cleveland Electric Illuminating Company (CEI)**—The Cleveland Electric Illuminating Company is a vertically integrated utility serving an area of 1700 square miles in northeastern Ohio. Its 1973 electric operating revenues were \$293,000,000 and its net income exceeded \$49,000,000. Its 1973 net

generating capacity was 3896 MW served by 632 pole-miles of company-owned transmission line of 66 KV and above. NRC 207; NRC 157.

c) **Duquesne Light Company (Duquesne)**—The Duquesne Light Company is a vertically integrated utility serving an area of 800 square miles in the Pittsburgh area. Its 1973 electric operating revenues were in excess of \$241,753,000 and net income exceeded \$51,800,000. Its 1973 net generating capacity was 2518 MW served by 380 pole-miles of company-owned transmission line of 66 KV and above. NRC 207; NRC 157.

d) **The Ohio Edison Company (Ohio Edison)**—The Ohio Edison Company is a vertically integrated utility serving an area of 7463 square miles in central and northeastern Ohio. Its 1973 electric operating revenues were in excess of \$383,238,000 and its net income exceeded \$16,135,000. Its 1973 net generating capacity was 3650 MW served by 2795 pole-miles of company-owned transmission line of 66 KV and above. NRC 207; NRC 157.

e) **Pennsylvania Power Company (Penn Power)**—The Pennsylvania Power Company is a vertically integrated utility serving an area of 1515 square miles in northwestern Pennsylvania. Its 1973 electric operating revenues were \$53,742,000 and its net income exceeded \$8,600,000. Its 1973 net generating capacity was in excess of 608 MW served by 453 pole-miles of company-owned transmission line of 66 KV and above. NRC 157.

Penn Power is a wholly owned subsidiary of Ohio Edison and for many years has been operated with Ohio Edison as a single integrated system. App. 214; White, Tr. 9495-96. There would be only one company were it not for the fact that both Ohio and Pennsylvania required utility service at retail to be provided by domestic corporations. White, Tr. 9496-9650. The two companies are operated without any significant policy differences other than those required by state law. White, Tr. 9650.

CAPCO

2. Since September 14, 1967, the five Applicant companies have been parties to a pooling and coordination agreement entitled CAPCO²¹ Memorandum of Understanding. NRC 184. In 1973 the total CAPCO net dependable capacity was 11,735 MW transmitted over a system consisting of 4,753 pole-miles of transmission line 69 KV and above. CAPCO structure and organization is set forth in NRC 214.

3. The CAPCO pool was formed to enable Applicants to coordinate installation of generation and transmission in order to further reliability and to take advantage of scale economies. NRC 184, p. 1; Flegler, Tr. 8617; Schaffer, Tr.

²¹ Central Area Power Coordination (Group).

8537; White, Tr. 9498, 9712-14; Williams, Tr. 10351-52; App. 122, p. 9. (Firestone); App. ff 33.11.

4. To achieve these goals, Applicants engage in a construction program of jointly committed generating units under a one-system planning concept. NRC 184, Section 2.2; Schaffer, Tr. 8535; App. 122, p. 9-10 (Firestone); NRC 205, p. 11-12 (Mozer); App. ff 33.12, in part. The five nuclear facilities which are the subject of this proceeding are part of a larger 14-facility construction program implementing the CAPCO planning guidelines. NRC 158, question 12; App. 122, p. 13-14; App. ff 33.13. Complementing the generation construction program is another joint program, again making use of the one-system concept to construct sufficient transmission facilities to permit performance of the arrangements described in the CAPCO Memorandum of Understanding.²² NRC 184, section 4.3; NRC 185, section 1.01; Schaffer, Tr. 8550; App. 122, p. 11; Applicants Proposed Finding of Fact 33.14, in part.²³

5. Within their respective service areas, each individual Applicant is dominant with respect to generation, transmission, and sale of electric energy.

a) **Generation.** In 1973, CEI controlled 94.11% of all generating capacity in its service area (DJ 587, p. 65(a)); Duquesne 99.90% (DJ 587, p. 74); Ohio Edison 96.61% (DJ 587, p. 69, NRC 164, pp. 4-5); Penn Power 100% (DJ 587, p. 69, NRC 166, pp. 4-5); Ohio Edison and Penn Power 97.08% (DJ 587, p. 69); TECO 95.68% (DJ 587, p. 73).²⁴ In 1973, Applicants controlled 95% or more of all existing generating capacity in the CCCT (DJ 587, p. 76).²⁵

b) **Transmission.** CEI controls 96.8% of all transmission facilities 66 KV and above within its service area; Duquesne 100%; Ohio Edison and Penn Power 99.8%; TECO 99.2%. On a combined basis, Applicants control 99.3% of transmission facilities 69 KV and above in the CCCT (1973 figures)(Guy, NRC 133, p. 27; Hughes, NRC 207, pp. 26-27).

c) **Retail Sales.** In 1973, CEI accounted for 96.41% of the retail sales of firm power in its service area (DJ 587, p. 65 (a)); Duquesne 99.93% (DJ 587, p. 74); Ohio Edison 94.17% (DJ 587, p. 69, NRC 164, p. 22); Penn Power 96.95% (DJ

²² Applicant Ohio Edison has described these transmission facilities as the "backbone" of the CAPCO system. NRC 157, Ohio Edison Annual Report 1973.

²³ Prior to January 1, 1975, Applicants coordinated their operations by means of previously executed bilateral agreements between or among Applicants. App. 122, p. 15-16; NRC 205. Subsequent to January 1, 1975, the CAPCO basic operating agreement, NRC 202, became effective and governs relevant operations of the Applicants. App. 122, p. 11-12, 16; NRC 202, section 1.01, 20.01; Firestone Tr. 9234-38; App. ff 33.16, in part.

²⁴ The exhibits upon which these figures are based exclude sales and generating capacity of Buckeye Power in the service areas of Ohio Edison and TECO.

²⁵ There is evidence of record concerning Applicants percentage of generation which differs slightly, though insignificantly, from the percentages set forth above; CEI controlled 94.4%; Duquesne 100%; Ohio Edison 97.9%; Penn Power 100%; TECO 96.1% and the CAPCO collectively 97.1% (Hughes, NRC 207, pp. 26-27; Guy, NRC 133, p. 28).

587, p. 69, NRC 166, p. 22) and TECO 94.55% (DJ 587, p. 73).²⁶ Collectively, Applicants accounted for 95% of retail sales of firm power in the CCCT in 1973 (DJ 587, p. 76).²⁷

d) Wholesale Sales. In 1973, CEI accounted for 96.41% of firm power sales at wholesale for resale within its service area (DJ 587, p. 65 (a)); Duquesne 100% (DJ 587, p. 69; NRC 162, p. 22); Ohio Edison and Penn Power 99.03% (DJ 587, p. 69); and TECO 98.60% (DJ 587, p. 73).²⁸ Applicants' combined sales of wholesale sales for resale accounted for 97.06% of all such sales made in the CCCT in 1973 (DJ 587, p. 76).

Thus, there is ample support in the record for the stipulation of Applicants' counsel that:

[E]ach of the applicants dominate [sic] the generation of bulk power in their service areas . . . Each of the applicants is dominant as to the generation of power in their service areas . . . I don't think we could dispute that even if we wanted to. Tr. 440-41,

and

Each of the applicants is clearly the largest in its service area in terms of miles of transmission line and in terms of capacity of its transmission lines. Tr. 448.

6. Pooling carries with it benefits of coordinated operation and coordinated development.²⁹ Slemmer, App. 121, p. 8. All Applicants recognized that the financial viability and the reliability of each of their individual systems would be enhanced through pooling arrangements. Williams, Tr. 10,351-52. Moreover, the Northeast electrical blackout of 1960 served as an impetus for electric utilities to enter into at least limited pooling arrangements which would provide for emergency interconnection. These efforts were encouraged by the Federal Power Commission. Firestone, App. 122, p. 4-5; Slemmer, App. 121, p. 20-21.

7. The pooling arrangements contemplated by the CAPCO group, however, were more comprehensive in nature and intended effect than merely to provide

²⁶ See footnote 24.

²⁷ This percentage figure does include Buckeye Power sales and generating capacity.

²⁸ See footnote 24.

²⁹ By coordinated operation is meant:

. . . such activities as interconnection, reserve sharing, transmission services, integration of generation resources, and the exchange of sale of firm power and energy, deficiency power and energy, emergency power and energy, surplus power and energy, economy power and energy, maintenance power and energy, and seasonal and diversity power and energy. Kampmeier DJ 450, pp. 10-13; Mayben C 161, p. 17; Slemmer App. 121, pp. 8, 15-16. "Coordinated development" includes but is not limited to joint planning and development of generation and transmission facilities. Kampmeier DJ 450, pp. 9, 14-15; Mayben C 161, p. 18.

for emergency service. Among the principal objectives were arrangements for the sale of partial firm power from one entity to another during periods of shortage, or maintenance outages or to permit staggered construction. Williams, Tr. 10,352; Firestone, App. 122, p. 11, 12, 15-17. Staggered construction permits individual utilities to purchase unit output or fractional shares of large generating stations with the remaining output assigned to other pool members so that each company can obtain the benefits of economies of scale associated with the construction of large units even though its anticipated needs and load growth would not permit or require the construction of a large scale unit. Williams Tr. 10, 351-52; Hughes, NRC 207, p. 12-13. Nuclear units which Applicants expect to provide low cost base load power offer special opportunities for CAPCO member companies to achieve the benefits of economies of scale. As Dr. Hughes testified:

Nuclear power has different economic characteristics from other generating sources, characteristics which give nuclear units an advantage in particular situations. For instance, nuclear units have particularly low operating costs making them highly suitable for base load operation. Nuclear units also differ from other generating modes with respect to their environmental effects, safety features, the reliability of fuel supply and other factors.

The fact that applicants are adding these units rather than alternative generating sources is an indication that the nuclear units were viewed by the applicants as superior to the alternatives available at the time of decision. Otherwise, the alternatives would have been chosen. Indeed, applicants' own documents³⁰ indicate they have believed nuclear generation to be a distinctly superior choice for expanding base load capacity over the fossil-fueled alternatives. To the extent that this belief is correct, the nuclear units will contribute to the effectiveness of the applicants' bulk power supply systems and enhance the economic advantage these systems enjoy over alternative sources, thus enhancing their market power.

In the absence of the CAPCO agreement, these CAPCO member companies could not achieve the same economies of scale as they are able to by virtue of the CAPCO staggered construction agreements.

8. An integral part of the plan to provide economies of scale in the generation of electric energy is the agreement among CAPCO members to transmit power between and among their respective systems.³¹ This transmission is neces-

³⁰CEI Annual Report for 1972, p. 11, and "CAPCO Base Load Generating Capacity Requirements Following Perry #2, 1981-1984," Planning Committee Report #5, June 14, 1973.

³¹Of course, the establishment of a physical interconnection is an essential first step in providing access to other sources of power. Williams, Tr. 10,353. Conversely, refusal to interconnect denies generating entities of the opportunity to obtain the benefits of coordinated development and operation.

sary in order to make available to co-owners the output of the various CAPCO generating stations including the Davis-Besse and Perry nuclear units. Without the construction of extra high voltage transmission and without the commitment to make transmission over these lines available to the other members of the CAPCO pool, the advantage of utilizing nuclear units for low cost base load power would be reduced. This in turn would affect the overall cost of production of electric energy to the respective CAPCO member companies which in turn would affect the rates at which these companies sell power to their customers. Thus, there is a discernable relationship between the CAPCO agreement for joint ownership of nuclear facilities and use of high voltage transmission lines and the competitive stance of the individual members of CAPCO. These advantages were known to and recognized by Applicants. NRC 157, Ohio Edison Annual Report 1973.

9. Although access to transmission facilities is a necessary concomitant of reliable and economic energy production, Kampmeier, DJ 450, p. 51; Mozer, NRC 205, p. 78, small systems frequently find it infeasible to construct duplicative transmission facilities. Both economic and environmental considerations prevent such construction. Applicants' construction of the high voltage transmission grid necessitated in large part by the Davis-Besse and Perry plant additions, together with the existence of excess capacity on their present systems, DJ 358, render the construction of duplicative transmission lines essentially impossible. Kampmeier, DJ 450, p. 38; Mozer, NRC 205, p. 57-61, 65-68; Tr. 3271, 3356-57; Caruso, Tr. 10943-10956. Both Ohio³² and Pennsylvania³³ require environmental review with respect to the construction of new transmission facilities.

10. The inability to obtain access to the benefits of coordinated operation and coordinated development because transmission is not available for purposes of power exchange can serve as a severe competitive impediment to entities lacking that access. As the Staff's economic expert Dr. Hughes noted:

Control over transmission is important because transmission is an essential resource that can constitute a bottleneck limiting the ability of affected power systems to achieve the potential economies of scale, integration, and coordination of bulk power networks.

Hughes, NRC 207, p. 13.

11. In addition to the utilization of individual company transmission lines as part of the CAPCO arrangement for the production and transmission of low cost nuclear energy, the CAPCO companies also utilized their high voltage transmission to afford each other additional benefits such as the sale of economy

³² Ohio Revised Code Section 4906.01, 4906.04, 4906.10.

³³ *Department of Environmental Resources v. Public Utility Commission*, 335 A.2d 860 (1975).

energy.³⁴ Further, CAPCO member companies were willing to and by contract are committed to engage in wheeling³⁵ for one another.³⁶ NRC 194, p. 18; NRC 185, Art. 1, 5; Rudolph, DJ 558, p. 213-14; Masters, DJ 567, p. 37-38; p. 44-45; Sullivan, DJ 578; p. 238-40; Schaffer, Tr. 8552, 8580-82; 8604-06; Frederickson, DJ 573, p. 177-78; Masters, DJ 567, p. 37-38; 42-43; Lindseth, DJ 568, p. 25; Keck, DJ 576, p. 105-06. If low cost energy is available outside of the CAPCO system, a CAPCO member company desiring to purchase such energy can request other members of the CAPCO pool to make available transmission facilities necessary to complete the transaction.³⁷

12. Transmission facilities of CAPCO member companies also may be made available to assist or provide for the flow of energy between systems outside of CAPCO. Interconnections with outside systems and pools are operated in a closed switch and synchronized fashion so that energy continually is flowing into and out of the CAPCO system depending upon the generation and load occurring in neighboring systems. Power flows throughout the CAPCO system are monitored, and this information is available for billing purposes to compensate for sales of electrical energy and the use of transmission services. Bingham, Tr. 8211-14.

13. Operation of substantial power pools through closed switch interconnections provides an opportunity to absorb instantaneous load shifts caused by the introduction of a new load or the sudden outage of a generating facility by dispersing the additional power requirement among several systems.³⁸ The ability of interconnected systems to absorb instantaneously large increases in

³⁴Economy energy reflects the purchase by one system from another of electrical energy in circumstances in which the generating system's incremental cost of production is less than that of the purchasing system. The usual manner in which such sales of economic energy are made is on a "split the savings" basis in which the price represents the average of the cost of production to the selling system and the cost of production of the purchasing system. Thus, each party to the transaction realizes a financial benefit.

³⁵Although different witnesses defined third party wheeling using different words, we found there to be no substantial difference in concept. We may utilize the definition set forth in the 1970 National Power Survey of the FPC which defines wheeling as "Transportation of electricity by a utility over its lines for another utility."

³⁶At least two Applicants, CEI and Duquesne, are dependent upon transmission services from adjacent utilities to obtain power generated from their own plants which are located beyond their services areas. Dempler, Tr. 8807; Bingham, Tr. 8232-33.

³⁷This assumes that capacity is available on the lines of the member company being asked to provide the transmission service. In point of fact, CAPCO companies have engaged in this type of wheeling for one another. Masters, DJ 567, p. 44, 45; Schaffer, Tr. 8552.

³⁸CEI's engineering witness, Mr. Bingham, testified to an instance in which the nationally famous 1000 MW "Big Alice" generating unit of Con Ed went off line and the effect was felt for sizable distances. Mr. Bingham recalled an immediate 200 MW change in flow on one of the CEI lines with which it was interconnected with other systems. Tr. 8262-63.

load detracts from Applicants argument that engineering and safety reasons preclude operating a closed switch interconnection with small generating entities in the CCCT. Bingham, Tr. 8261-65.

14. There is no evidence that since at least as early as 1965 any Applicant company:

a) has engaged in any program of staggered construction with any competitive electric entity within its service area;

b) has engaged in any form of third party wheeling to provide power to any electric entity within its service area.

c) has engaged in any sale or purchase of economy energy with any electric entity within its service area.

15. At the time of formation of CAPCO, the advantages of coordinated development and coordinated operation were known to and anticipated as benefits of association by the CAPCO member companies. Further, the existence of competitive systems within the CCCT also was known during CAPCO's formative period. The difficulties of operating in isolation and the reduction in competitive potential also were understood by Applicants. White, DJ 572, p. 168.³⁹

16. For virtually all non-CAPCO systems in the CCCT area which wish to acquire bulk power and energy from non-CAPCO sources that would compete with supplies from CAPCO systems, cooperation of one or more Applicants is a prerequisite to such competition. Hughes NRC 207, p. 39-40.

17. In practice, coordination does not rule out a useful role for competition. Power systems can and do choose between different alternatives in putting together the overall power supply package on which they rely. For a large area, there are often many ways of developing an efficient overall bulk power supply plan or pattern of development. The existence of a diversity of approaches and the freedom to shop for options provide a degree of competitive stimulus to search for new and better power supply alternatives. Hughes NRC 207, p. 40.⁴⁰

18. There has been a substantial contrast and discrepancy between the bulk power services and pooling arrangements Applicants have been willing to make available to one another either as a result of the CAPCO agreement or as a result of prior understandings and agreements between individual Applicant companies and what they have been willing to make available to other electric entities within the CCCT.

19. The dominant companies within the CCCT are the five CAPCO companies and each is dominant within its own service area. These companies have been willing to deal with each other in a more favorable basis than they have

³⁹ Q: In terms of being able to serve new loads coming in quickly, would it be fair to say that an isolated system is at a disadvantage, particularly if it is a small isolated system?

A: Sure.

Schwalbert DJ 577, p. 19.

⁴⁰ See also *Id* at 41.

with competitive electric entities within the CCCT and/or their respective service areas.

RELEVANT MARKETS

20. Matter in Controversy No. 3 set by the Board in Prehearing Conference Order No. 2 of July 25, 1974, asked whether a relevant product market for purposes of analyzing a cognizable antitrust situation might consist of (1) *regional power exchange transactions* within power pooling arrangements involving exchanges and/or sales of electric power for resale; (2) *bulk power transactions* involving individual contracts for sale for resale of firm electric power or for emergency, deficiency or other types of wholesale power; (3) *retail power transactions* involving sales of electricity to ultimate consumers. Matter in Controversy No. 1 inquired as to whether the Combined CAPCO Company Territories (CCCT) constituted an appropriate geographic market within which to analyze a cognizable antitrust situation, and Matter in Controversy No. 2 inquired with respect to the presence and boundaries of any relevant geographic submarkets.

In their post hearing proposed Findings of Fact and Conclusions of Law, each of the opposition parties⁴¹ has urged upon us the establishment of relevant geographic markets consistent with those postulated in Matter in Controversy No. 1—the CCCT—and submarkets under Matter in Controversy No. 2 consisting of the individual service territories of each Applicant. Applicants contend that for purposes of analyzing allegations relating to monopolization and violations of Section 2 of the Sherman Act, the record is insufficient to determine the geographic boundaries of any wholesale or bulk power supply market. App. ff 31.11.

With respect to Matter in Controversy No. 3, Justice and the City requested a finding that regional power exchanges constitute the relevant product market as does the retail distribution market while the Staff suggests that an appropriate product market of bulk power services be utilized. Applicants contend that there are no relevant retail markets in this proceeding, App. ff 31.02, and that there is but a single bulk power or wholesale market relevant to this proceeding which is composed of two distinct submarkets: (1) short-term support power consisting of emergency power, maintenance power, economy power, etc., and (2) long-term dependable capacity consisting of dependable or firm capacity, staggered construction, etc. App. ff 31.10.

All parties have cited a relevant product market as one which may be defined in terms of "commodities reasonably interchangeable by consumers for

⁴¹ Justice ff 4.04-07; City ff 41.0; Staff ff 1.001-12.

the same purposes which make up that part of the trade or commercial monopolization of which may be relevant." *United States v. duPont*, 351 U.S. 377 (1956). Market definitions must "correspond to commercial realities," *Brown Shoe Co. v. United States*, 370 U.S. 294, 336, 337 (1962), and the analysis of market composition must be "pragmatic" and factual rather than "formal" or legalistic. *Id* at 336.

The area of effective competition in the known line of commerce must be charted by careful selection of the market area in which the seller operates, and which the purchaser can practicably turn for supplies.

United States v. Philadelphia National Bank, 374 U.S. 321, 359 (1963). As Applicants point out, functional interchangeability does not require complete identity of use, *United States v. Chas. Pfizer & Co.*, 246 F. Supp. 464, 469 (E.D.N.Y. 1965) and there is "no barrier to combining in a single market a number of different products or services when that combination reflects reality." *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).⁴²

Although no opposition party has urged verbatim acceptance of the markets postulated in Matters in Controversy No. 3, their proposed definitions either encompass substantial portions of the markets propounded therein or suggest definitions without appreciable substantive differences. Applicants alone among the parties reject the substance of the definitions although even their proposed "bulk power market" approach in many respects adopts concepts set forth under Matter in Controversy No. 3(a)(regional power exchange transactions) and 3(b)(bulk power transactions).⁴³ With respect to the bulk power or wholesale power market which includes elements of both the regional power exchange transactions market and bulk power transactions market, Applicants' proposed market definition appears to turn on the duration of the contemplated sales. They ask us to consider as separate submarkets short-term and long-term power supply contracts and services.

Product Markets

21. The Board concludes that relevant product markets for purposes of this proceeding exist with respect to bulk power services, regional power exchange transactions and retail power transactions. Regional power exchange transactions are essentially the equivalent of the regional power exchange market as described

⁴² The proposed findings and conclusions of all parties indicate a common recognition as to what cases set forth appropriate standards for considering the establishment of relevant markets. The parties' differences arise over whether those standards have been met.

⁴³ Applicants at least consider the possibility that retail power markets exist but concentrate on arguing that for reasons of regulatory law and economic reality as well as a lack of nexus, such markets should not be recognized.

in the testimony of Dr. Wein, an expert sponsored by Justice whose testimony on relevant markets was adopted by Cleveland. Similarly; retail power transactions are essentially the same as the retail distribution of firm power market described by Dr. Wein.⁴⁴

We have chosen to utilize "bulk power services" as an appropriate product market rather than the "bulk power transactions involving individual contracts for sale-for-retail of firm electric power or for emergency, deficiency or other types of wholesale power" as originally set forth in Matter in Controversy 3(b).⁴⁵ In reaching this conclusion, we have focused upon the prefiled written testimony of the Staff expert economic witness, Dr. Hughes, (NRC 207) whose analysis we find to be persuasive,⁴⁶ cogent in presentation and consistent with the market concepts developed by witnesses (including many of Applicants witnesses⁴⁷) during the hearing.

⁴⁴The Board considers Dr. Wein's proposed market definitions to have been enumerated rationally and in accordance with applicable legal guidelines. Our analysis of the situation inconsistent and our findings would not be different had we adopted without change the definitions suggested by Justice.

⁴⁵No party may claim surprise at the Board's consideration of a "bulk power services market" rather than a "bulk power transaction market" since the bulk power services market described by Staff expert witness Hughes was set forth in prefiled expert testimony. All parties were aware more than 7 weeks prior to the commencement of the hearing exactly what the relevant product market contentions of the Staff would be as well as the rationale behind these contentions. As the direct and cross-examination of Dr. Hughes confirms, the scope and rationale of his testimony was well understood.

⁴⁶Dr. Hughes was examined during a four-day period with respect to this direct written testimony. Our conclusion that bulk power services is an appropriate defined market was reinforced by his testimony taken as a whole.

⁴⁷In App. 121, the prepared testimony of Wilbur Slemmer, p. 5, this witness *sua sponte* discussed the concept of optimizing "bulk power supply." His testimony queried whether options such as interconnections and pooling arrangements can have a direct and immediate effect on costs and benefits. He then discussed various transactions which should be included for the proper coordination of "bulk power supply." Included are "emergency support, economy interchange, coordinated maintenance schedule, coordinated planning and various other arrangements such as diversity interchange and short-term firm power sales as elements affecting a broader group of services which he characterizes as bulk power supply. This is consistent with the Board's finding that a relevant market in these proceedings is "bulk power services."

Mr. Slemmer's testimony further supports the Board's previous finding that it is not essential that each element or option in the bundle of services which make up a bulk power service be available simultaneously. He states that pool arrangements involve a number of different types of transactions and that:

... all of these transactions should be considered as part of an overall package. It is misleading to consider the operation of a pool arrangement on the basis of only one of the many transactions.

App. 12, p. 16. Moreover, pools vary considerably in the types of transactions which are provided and the utilization of the transactions by members of the pool. *Id.*

We agree with the Staff contention that bulk power services consist of various intermediate outputs, not all of which have some impact on the effectiveness of delivered bulk power services. Indeed, it is the assimilation of various competitive alternatives that lends credence to the selection of various combinations of power transactions components into one product market. NRC 207, p. 19.⁴⁸ The grouping together of discrete but related services into one comprehensive market comports with the recent holding of the Supreme Court that:

In short, the cluster of products and services termed commercial banking has economic significance well beyond the various products and services involved.⁴⁹

The proper mix of the various elements (or inputs as described in the language of Dr. Hughes) will have a vital effect upon the form and cost of bulk power services offered. At the same time, it is not necessary for a competitor in that market to utilize each input possibility. Rather, it is important that competitors within that market have available a panoply of options in order to design bulk power services responsive to the needs and budgets of their customers and potential customers.

22. With respect to regional power exchange transactions, there is ample evidence that these large scale transactions play an important role in terms of bulk power supply within a given service area and in terms of the price of power for customers of that area. Regional power exchanges play an essential role in providing reliability to subregional systems and may affect cost and prices of other services since the regional exchanges effect reserve carrying requirements and costs of system operation.⁵⁰ We therefore find that there is a relevant product market consisting of regional power exchanges, but for purposes of our analysis of situations inconsistent, their market is deemed less important than the bulk power service market. Conclusions reached with respect to that market are in no sense inconsistent with our recognition of the regional power exchange market.

23. The Board concludes that retail power transactions also constitute a relevant product market. Here, the product or service is discrete and easily identified. It is a product market in which there are no competitive alterna-

⁴⁸Our conclusion that bulk power services constitute a relevant product market for purposes of these proceedings is consistent with that of the licensing board in *Midland* in which the board defined the market as that of "coordination services." *Consumers Power Co.* (Midland Plant, Units 1 and 2), 2 NRC 29, 45 (July 18, 1975).

⁴⁹*United States v. Phillipsburg National Bank*, 399 U.S. 350, 361 (1970).

⁵⁰Regional power transactions have the ability to permit utilities to obtain economy or low cost energy in preference to operating their own generating facilities during peaking periods.

tives.⁵¹ Moreover, the market is peculiarly susceptible to identification and accurate measurement. Service will be supplied to a large but fixed number of customers, each of whose consumption may be measured accurately.

Carefully analyzed, Applicants' attack on the establishment of a retail power transaction market will be seen as a contention that retail sales cannot meet the standards necessary to define either a relevant geographic or product market. Applicants further argue that we should hesitate to hold that there is a retail power transaction market because even if such a market exists, there would be a lack of nexus between activities under the license and anticompetitive acts on the part of Applicants designed to affect the retail market. Although we discuss nexus in more detail in findings 215 through 221, *infra*, we need not pause for long to dispose of the nexus contention as it is directed to the relevant market issue. There are several instances of record in which power to be generated at the Davis-Besse and Perry sites itself is the subject of attempted retail restraints. For example, Joseph Pandey, Director of Utilities of Painesville, Ohio, indicated that CEI has attempted to require Painesville to relinquish the right to serve retail customers in Perry Township—the very site of the Perry plant. According to Mr. Pandey, the grant of an unconditioned license at Perry could result in a situation where power from those units is marketed only through CEI which situation will arise not through any superior efficiency on behalf of CEI but because of activities in which it engaged for the purpose of forcing Painesville out of the Perry retail market. Pandey, Tr. 3134-35.

Another example of a direct relationship between the generation of the nuclear power at issue and retail sales is found in the testimony of William Lyren, the City Engineer of the City of Wadsworth, Ohio, a community of 14,500 people with a service area covering a population of 18,500. According to Mr. Lyren, Ohio Edison has refused to make available base load power including power from Davis-Besse and Perry, if that power is to be resold by the City of Wadsworth or other members of an association of municipalities known as WCOE (Wholesale Customers of Ohio Edison) to present industrial customers of Ohio Edison. The effect of this prohibition by Ohio Edison would be to eliminate or restrain competition in the retail market by municipalities which otherwise are permitted under the Ohio statutory scheme to compete for industrial customers on the basis of cost or superior service. This restriction relates directly to Applicants' activities under the license. Lyren, Tr. 2014, 2030-31, 2338.

⁵¹ It may be argued that there is a degree of competition between gas and electric for heating, cooking and a few other purposes. Nonetheless, customers rely on gas for partial fulfillment of energy needs but must also purchase electricity to supply the remainder of their energy needs. Accordingly, retail electric power transactions remain in the unusual category of services for which there is no effective substitute.

In concluding that retail power transactions constitute a relevant product market for purposes of this proceeding, we have not focused upon individual sales to specific customers except in special instances where the particular sale was illustrative of a policy or reflected some special importance. We have not considered it to be within the mandate of this Commission pursuant to Section 105(c) to act as the arbiter of individual retail customer disputes nor to attempt to resolve all charges of unfair competition in the retail market. Thus, we imposed some restrictions on the introduction of evidence relating to capture and recapture of retail customers in the City of Cleveland. The parties were informed that the Board was not concerned with individual incidents; but we did accept evidence relating to plans to dominate the retail market or to eliminate competition in that market generally. CEI's long range planning forecasts setting targets for the capture of competitor's customers were received as evidence of the company's policy with respect to retail power transaction market.⁵²

GEOGRAPHIC MARKETS

24. We find that the relevant geographic market for purposes of these proceedings is the CCCT. All parties including Applicants recognize the CCCT to be a cohesive area within which to operate a regional power pool and interconnection network which functions on the single-system concept.⁵³ Williams Tr. 10,353-56.⁵⁴ Applicants argue that the regional power exchange market should take into account areas where Applicants and their neighboring systems can seek alternative sources of bulk power supply services. App. ff 31.10. Thus, Appli-

⁵²We emphasized to the parties at the time of receipt of this evidence that we did not condemn fair and open competition between CEI and the City of Cleveland. The mere fact that CEI hoped to induce customers of the City to become CEI customers for reason of better service or lower price seems to us not to involve the creation or maintenance of a situation inconsistent with the antitrust laws. After all, the objective of those laws is to foster competition. Our concentration has been on instances in which this competition is conducted unfairly or in furtherance of an attempt to monopolize retail power transactions. See DJ 188.

⁵³Although we have made a determination that the CCCT constitutes an appropriate and relevant geographic market, we did not rest upon that finding but kept before us throughout the Hearing the possibility of competitive alternatives feasibly available to Applicants' competitors. The evidence demonstrated conclusively that feasible alternatives are not present and that when Applicants' competitors attempted to achieve coordination with non-Applicant companies, Applicants frustrated such attempts.

⁵⁴Mr. Williams testified both in terms of proximity of prospective pool members and the need for interconnection which will appear repeatedly in our discussion of individual Applicant activities.

The obvious thing, of course, is to deal with companies close by. If you are going to have coordinated operation, you need to have interconnections so that you can bring power in and out of the system.

cants' expert Dr. Pace contends that a regional power exchange market is an artificial formulation. App. 190, Pace p. 30-31, 14-26, 1-9. Because individual entities within the CCCT area may turn to suppliers outside of that area such as Ohio Power (Ohio), the PJM pool (Pennsylvania, New Jersey, Maryland), Consumers Power (Michigan), Applicants argue and Dr. Pace concludes that it is impossible to identify a separate regional geographic market. However, according to Dr. Pace, a particular system's alternatives are limited geographically by the distance such a system could reach without incurring transmission costs so great as to eliminate the alternative sources from practical consideration. App. 190, p. 35.

We have no difficulty in the proposition that a regional power exchange market larger than the CCCT may exist in which utilities within the CCCT are participants. The presence of a larger regional market, however, does not preclude recognition of a market consisting of the CCCT which is relevant for purposes of this proceeding. The "one-system" concept suggests that the CAPCO pool or its present members may be regarded by adjacent buyers and sellers as a separate regional market. As to Dr. Pace's observation that alternatives are limited only by the cost of transmission, there is ample evidence that smaller entities within the CCCT already are affected by an inability to obtain transmission from alternate sources. See finding 9, *supra*. The City of Cleveland, for example, contends that the alternative of obtaining PASNY power is nullified by the cost of constructing high voltage transmission lines to a pickup beyond the territory of CEI at which another utility, PENELEC, is willing to deliver power. Likewise, the City of Napoleon was limited in its option to utilize Buckeye Power because it was dependent upon the transmission facilities of TECO.

25. We also find that the individual service territories of each Applicant constituted a relevant geographic market. The same considerations of denial of alternate sources of bulk power services which we observe within the CCCT as a whole apply to the acts of individual Applicants within their service territories and they have the same effect of requiring competitive entities to operate in isolation.

INDIVIDUAL APPLICANT ACTIVITIES

Having described the CAPCO setting, and defined the relevant markets for purposes of this proceeding, we now turn to an analysis of the acts and practices of each of the Applicants which are alleged to result in the creation or maintenance of the situation inconsistent within those markets.

The Cleveland Electric Illuminating Company

26. Within CEI's 1,700 square mile service area there are only two municipal electric systems, Cleveland and Painesville. Both municipal systems distribute

electric power to retail customers and both also own generation facilities, App. 111; DJ 587, p. 64.

Prior to 1965, CEI acquired a number of municipal electric systems, Rudolph, DJ 558, p. 31. Such acquisitions were the result, in part, of CEI's seeking "economies of central station generation," Besse, DJ 559, p. 64.

27. Over the years it has been a CEI company objective to acquire Cleveland, DJ 509; DJ 510; DJ 558, p. 31; DJ 560, p. 11; DJ 329; DJ 331; NRC 143. This corporate desire is further evidenced by the repeated detailed studies made by CEI concerning Cleveland's acquisition, DJ 354; DJ 355; DJ 560, p. 10; C 74, p. 25; C 134; C 135.⁵⁵

28. The acquisition of the Painesville municipal system was also a CEI company objective, DJ 361; DJ 363; DJ 364; DJ 371; DJ 509; DJ 510; DJ 600; C 73; NRC 143.

29. In the City of Cleveland, Cleveland Municipal Electric System (MELP) serves approximately 20% of the electric customers. The remaining electric customers are serviced by CEI, Tr. 2783.

30. Historically, CEI and MELP have competed on a door-to-door basis in a sizeable portion of the city, NRC 70, for residential and industrial customers, Tr. 2783. See also DJ 340; DJ 341; DJ 346; DJ 558, pp. 58-59; pp. 120-122; DJ 560, p. 14; DJ 563, pp. 36-37; DJ 604; DJ 605; C11; C12, C13; C14; C19; C 90; C 160.

31. Rates and quality of service were and are the principal elements of competition between these utilities, with Cleveland traditionally offering lower rates and CEI greater reliability, DJ 558, pp. 121-124; DJ 559, pp. 57-60; DJ 565, pp. 21-23; DJ 566, p. 62.

32. To counter MELP's advantage of lower rates CEI provided promotional considerations such as free internal wiring or free upgrading of electric facilities in areas where it is in competition with MELP while not giving such allowances in areas where there is no competition, DJ 558, pp. 16-17; Tr. 10,323-10,325. Such practice is a form of cutthroat competition, Wein, Tr. 6622-6623.

33. CEI's competitive edge of greater reliability stemmed from the benefits of coordinated operation and development made available through CEI's parallel interconnections with other utilities and through participation in CAPCO, DJ

⁵⁵ Since the close of the record in this proceeding CEI has made a proposal to Cleveland for acquisition of the municipal system which the City Administration has accepted and forwarded to the City Council for consideration. Upon learning of this development the Board issued an Order on September 20, 1976, directing the parties to indicate how, if at all, their proposed findings would be affected by the acquisition, if consummated. Each party responded and indicated that no change in proposed findings would be made. Accordingly, we have not reopened the hearing to receive any evidence on the effect of the proposed acquisition. The Board is of the opinion that consummation of the acquisition would not alter in any material fashion its findings nor would it eliminate the need for relief.

329; DJ 352; Rudolph, 558, pp. 124-127, pp. 150-151; C 11; C 12; C 13; C 14; C 154; C 155; C 156; Tr. 10,351; Tr. 10,369-10,370. In competing with MELP for retail customers CEI has stressed the factor of reliability and economies from interconnections and CAPCO participation in nuclear units made possible through its membership in CAPCO. Wyman, DJ 566, pp. 151-152; C 154; C 155; C 158; C 13; C 14; C 15.

Refusal to Interconnect Except Upon Unfair Terms

34. MELP having its service area completely surrounded by CEI is electrically isolated from utilities other than CEI, Tr. 2726-2727. Access to power supply sources outside its own system is possible only over CEI's transmission system. Similarly disposition of any excess capacity is possible only through the use of CEI's transmission system. See Staff ff 1.094.

35. CEI was aware that a parallel interconnection between CEI and MELP would improve the reliability of the MELP system and make it more competitive. Rudolph, DJ 558, p. 177; Lindseth, DJ 568, p. 62; Gould, DJ 569, p. 24. CEI also knew that MELP could not feasibly interconnect with any other utility, DJ 295.

36. Earlier, in the 1960's CEI did offer to interconnect with MELP but only on the condition that MELP would fix its rates at the level of rates set by CEI and that Cleveland would reduce its charges to the City for street lighting service. Lindseth, DJ 568, p. 14; DJ 293; DJ 294; DJ 295; DJ 330.⁵⁶ Though CEI protests as in the words of then President Lindseth, DJ 568, p. 14, that CEI acted from a desire to utilize

the tax exemption of the Municipal Light Plant for the benefit of all the taxpayers of the City of Cleveland instead of those who were the customers of the Municipal Light Plant, which we proposed could be achieved by the equalization of rates and a corresponding reduction of street lighting charges, which were against the general fund

nonetheless, its larger motivation was clear. CEI considered an increase in the rates charged by MELP as essential to a successful acquisition of MELP, DJ 599.

37. CEI also believed that if MELP would fix its rates at CEI's level, this not only would eliminate the major reason for customers leaving CEI to take service from MELP, DJ 558, pp. 128-130; DJ 560, p. 132; DJ 565, p. 67; DJ 569, p. 97; C 110, but also would result in customers switching from MELP to CEI, DJ 560, p. 22.

38. CEI's attempt to fix MELP's rates and street lighting charges in ex-

⁵⁶Such conditional offers to interconnect were made on a number of occasions, beginning in 1962. See DJ 293-299; DJ 341; DJ 560, p. 24, pp. 233-234; DJ 568, pp. 13-15; DJ 621; C 6; C 71; C 96; C 99; C 100; C 111.

change for interconnection constitutes a *per se* violation of the antitrust laws. CEI's assertion (with which we do not agree) that it acted only from a desire to benefit the public is immaterial to our finding. See our discussion on Legal Standards, p. 147, *infra*.

39. These conditional offers to interconnect, had they been accepted by Cleveland, would have worked to forestall expansions of MELP's generating plant. In 1962, Cleveland proposed to construct a 75 mw boiler and an 85 mw steam turbine generating unit. In 1968, Cleveland proposed to install three dual-fired turbine generating units. On each occasion CEI offered to interconnect and sell firm power to Cleveland to obviate the need for expansion. DJ 293; DJ 295; DJ 297; Tr. 10,659; Tr. 10,863. CEI's attempt to forestall MELP's expansion is a form of destructive competition for had the plan been effected, CEI would have preempted Cleveland's opportunities to increase its productive capacity to supply final markets,⁵⁷ DJ 587, pp. 32-34.

40. In 1963, CEI also acted to forestall a proposed interconnection between the Cleveland electric system and the municipal electric systems of Painesville and Orrville. Reacting to a public announcement of the proposal, CEI renewed its earlier offers to interconnect with Cleveland making both the proposed three-city interconnections and expansion of the municipal system unnecessary, DJ 295. This offer, made to forestall construction of competing transmission lines by Cleveland, Tr. 10,864; DJ 568, pp. 58-60; C 94, was anticompetitive in purpose and intent. DJ 587, pp. 32-34.

41. Though Cleveland had "long desired an interconnection between (MELP) and CEI," it could not accept CEI's interconnection offers "with this coercive limitation" (rate equalization) but remained interested "in an interconnection of the two systems in the interest of public welfare and the mutual benefit of the two systems" and was "willing to consider an interconnection on a business basis without unfair strings attached," DJ 297.⁵⁸

Despite Cleveland's announced desire to interconnect "without unfair strings attached,"⁵⁹ CEI did not modify its policy of requiring rate-fixing as a precondition to interconnection. DJ 330; DJ 568, p. 61.

42. In 1969, by letter dated August 14, Cleveland requested that CEI

⁵⁷With this finding CEI might argue that it has been placed in the proverbial position of "being damned if it does and damned if it doesn't." Certainly not every offer to interconnect can be said to be anticompetitive, but here we do not have a benign situation. CEI's offer to interconnect was motivated by a desire to forestall construction of greater generating capacity by the City. The record is replete with references to CEI's avowed policy to eliminate MELP as a competitor. The offer here constituted a means toward that end.

⁵⁸This February 17, 1965, letter of Mayor Locher to Mr. Besse, President of CEI, also pointed out that rate equalization was unrelated to interconnection and could be effected, as CEI was aware, by councilmanic and Board of Control action.

⁵⁹See C 49, p. 7; C 50, p. 5, for further evidence of CEI's awareness that Cleveland desired an interconnection with CEI.

furnish MELP with a minimum of 30,000 kw standby power starting March 1, 1970, through July 1, 1970. DJ 333. MELP needed the standby power to shut down one of its generators to install pollution control equipment, DJ 331; DJ 561, p. 25. This formal request was preceded by discussions between representatives of the two utilities. From these discussions CEI knew that Cleveland wanted a permanent, synchronous interconnection in order to achieve the full benefits of coordinated operation and development. DJ 331; C 127; DJ 561, p. 27. CEI also knew that an offer which was inadequate to solve MELP's problem might force Cleveland "to pursue some other approach which likely would be most distasteful" to CEI, DJ 334. What CEI was concerned about was that FPC might step in and order an interconnection, DJ 560, p. 137. Studies concerning the ramifications of interconnecting were made and the findings were summarized in an in-house memorandum dated June 17, 1969, DJ 331.

CEI understood that a strong permanent interconnection would give MELP the system reliability it sorely needed. CEI also learned that with a proper standby charge⁶⁰ attached to the backup capacity, MELP would not get any financial relief, but rather would incur higher expenses. This would increase the pressure on Cleveland to obtain rate relief and improve CEI's relative rate competitive picture. However, should the FPC impose a mutual standby, pay-only-when used interconnection, or should CEI settle for less than a proper standby charge, MELP would enjoy system reliability and also realize substantial reductions in operating expenses. This would deprive CEI of both of the necessary factors (financial and reliability) in order to purchase the Cleveland system, DJ 331, p. 4.

These facts left CEI with three possible courses of action:

1. Avoid an interconnection and run the risk of FPC dictated interconnection hoping that the financial and service problems will eliminate MELP as a competitive threat;
2. Take the initiative in establishing an interconnection with proper standby charges, to give Cleveland reliability but increase the financial pressure on them; and,
3. Make an all out effort to purchase the Cleveland system while reliability and financial pressure are present, DJ 331, p. 4.

⁶⁰The term "proper standby charge" as used is innovative and unique. CEI wanted to sell only emergency power but at greater than traditionally industry prices. The June 17, 1969, memo from Loshing to Howley (DJ 331, p. 3) cautions "The charge for emergency standby service is a most vital point and one that may be difficult to obtain. Although such a capacity reservation charge is quite common between private utilities for short-term reservations, it is not common for emergency service. The typical emergency provision is for mutual support and there is generally no charge except for out-of-pocket costs plus 10%. This, of course, is based on the premise that there is, in fact, something approaching mutual standby."

The bottom line of these findings was the observation that CEI would assume an indefensible position⁶¹ if it refused to cooperate with Cleveland, DJ 331, p. 4.

43. CEI offered Cleveland an 11 kv load transfer arrangement which was temporary help without parallel operation. DJ 331, May 29, 1969, memo; C 82.

No action was taken until the holiday season of December 1969, when Cleveland experienced a major generating outage. Hauser Tr. 10,539.⁶²

In January of 1970, CEI and Cleveland agreed to participate in a three-phase plan in which the first two phases related to a load transfer service and the third phase would provide a permanent parallel⁶³ tie in, NRC-195; App. 198.⁶⁴

44. However, it was CEI's private intention to avoid a permanent parallel interconnection, C 82; DJ 334.⁶⁵ CEI studies showed that this could be accomplished if a 69 kv overhead tie limited to 40 mva was proposed. It was thought that this number was low enough so that parallel operation would not be feasible when MELP's 80 mva unit was on line. Agreeing in principle on a 69 kv interconnection would place CEI in a position of being hard put to avoid future demands to increase capacity. CEI believed that this risk would be minimized if the capacity was limited to 40 mva. The greater risk to CEI was in proposing a solution which could be proven inadequate with relative ease, DJ 334, December 29, 1969, memo.

45. CEI delayed in reaching a mutual agreement on an intertie. In July of 1970 Cleveland requested a meeting, reminding CEI that a preliminary report on the tie was due by September 1, 1970, and that construction of the tie would take eighteen months. On the advice of CEI's legal officer, Mr. Hauser, the meeting was not scheduled, DJ 337.

Some nine months later, upon being hired as Cleveland's Commissioner of Light and Power, Mr. Hinchee requested a meeting with CEI's engineers to determine what progress had been made concerning the synchronous interconnection. At the meeting he was advised that "no real engineering investigation"

⁶¹ In the case of FPC intervention.

⁶² "Then toward the fall of 1968 (*sic*), really not much happened until the holidays in 1969, Christmas, New Year's time, the municipal system had a serious system outage and then these plans that were developed for the period in which precipitators and other air pollution control equipment was to be installed were dusted off to provide in the shortest possible time, some assistance to the customers of the municipal light plant."

⁶³ Phase III clearly contemplated a parallel interconnection, DJ 336.

⁶⁴ "The City understands further that . . . CEI has pledged its good faith and has committed itself to effect such a permanent tie-in between our respective facilities."

⁶⁵ "From our standpoint, the important factors are limited capacity (preclude parallel operation) and if possible a temporary tie." And again "a permanent underground tie (to be avoided like the plague) . . ."

was undertaken and was supplied with some vague sketches, then just drawn, as to what might possibly be done, Tr. 2567. As a result, Cleveland filed a complaint with the FPC requesting that an interconnection be ordered, App. 18; Tr. 2568-2569. CEI countered by filing a notice of termination of the load transfer service, App. 18.

46. On July 8, 1971, CEI agreed to begin a study of a permanent synchronous interconnection, DJ 6. With the permanent, synchronous intertie now being inevitable, CEI sought to maximize Cleveland's economic burden, Rudolph, DJ 558, p. 93; C 138. A CEI brainstorming session concluded that a two-step approach would accomplish this, *i.e.*, first install a 69 kv, 40 mva, temporary tie,⁶⁶ followed by a 138 kv permanent interconnection, C 138. When Cleveland experienced an outage in February of 1972, CEI proposed the 69 kv nonsynchronous connection to the FPC, Tr. 10,566; Tr. 10,865. On March 8, 1972, the FPC ordered the 69 kv temporary interconnection to be followed by a 138 kv synchronous interconnection.

47. Originally, the 11 kv load transfer arrangement was set up to supply Cleveland with maintenance power while MELP installed environmental control equipment on its boilers, Tr. 2525-2526; Tr. 2801. After this was accomplished, CEI refused to supply MELP anything other than emergency power, Tr. 2801.⁶⁷ When Cleveland needed power from CEI, the load transfer was operated in such a way as to cause an outage on MELP's system. Titas, DJ 564, pp. 90-93; Mayben, C 161, p. 10; C 82; App. 134; App. 159; Tr. 10,649-10,651; Tr. 2626; Tr. 2665; Tr. 2761-2763. From an operational viewpoint no outage need have occurred. See Firestone, DJ 575, p. 54. The load transfer points (five in number) were electrical connections with substation feeders that could be switched either to Cleveland's system or the CEI system, but could not be served by both systems, Tr. 2523-2524. CEI imposed severe operating problems, unnecessary restrictions and administrative delays on MELP before it could utilize the transfer system, Tr. 2526-2761. Whenever MELP realized the need for emergency power and the necessary activation of a load transfer point, MELP was required to contact CEI and obtain the necessary clearance. CEI personnel in turn would have to obtain clearances from higher ups within the organization before entering the field. After all clearances were secured, a single crew would be dispatched (instead of two crews to coordinate the dual switching operation) to the designated substation to switch over the system manually. Tr. 2561; Tr. 2566; Tr. 2760-2761. As a result of this procedure delays of various lengths were

⁶⁶Such an interconnection was recommended by Mr. Bingham in the December 29, 1969, memo, DJ 334 *supra*.

⁶⁷Applicants' assertion that Cleveland could have used this service to enable it to correct its operating deficiencies *and generating problems*, App. ff 34.34 is not correct.

frequent.⁶⁸ The resultant loss of power proved damaging to MELP's relationship with its customers, Tr. 2526; Tr. 2566. CEI was aware that MELP outages resulted in the conversion of customers from Cleveland to CEI, DJ 344-350; DJ 352; DJ 559, p. 60; DJ 560, pp. 132-133; DJ 563, pp. 36-37; DJ 566, p. 62; DJ 569, pp. 24, 94-95; C 11-12; C 14-15; C 19; C 159, p. 59, and solicited the affected MELP's customers after these outages, DJ 352; Tr. 2691-2695.

CEI's load transfer procedures were arbitrary, cumbersome and not in keeping with modern prudent engineering practices, Tr. 2565. The administrative delays were not necessitated by the actual operation of the system and a more efficient way to operate the load transfer system was available, Tr. 2565. The switching operation could have been accomplished with only a three to five second service interruption without jeopardy to either system, Tr. 2565.

48. On occasions when CEI lacked sufficient generation⁶⁹ to supply Cleveland, Tr. 10,698; App. 134, it did not attempt to reach any other bulk power supplies nor did it offer to transport power to Cleveland from some other source with which it was interconnected, Tr. 10,703-10,704.

49. A further onerous feature of CEI's operation of the 11 kv load transfer was the requirement that a block of load be transferred at one time. Cleveland was required to pay for an entire block of load regardless of the fact that it had the capacity to supply a portion of the load needed, Tr. 2763. The evidence does not establish whether the requirement was unreasonable.

50. MELP efforts to improve the load transfer system and make it more efficient were rejected by CEI. For example, when MELP suggested that radio be used rather than telephone to expedite clearances, CEI rejected this time-saving proposal without explanation, Tr. 2761-2762; Tr. 2565; Tr. 2567.

51. Although the 69 kv was constructed to operate synchronously, CEI required that it be operated as an additional transfer point, Lester, DJ 561, pp. 27-28; C 140; App. 45. The FPC order required only a nonsynchronous tie-in but did not prevent synchronous operation, Tr. 2569-2570; App. 19; App. 20. After the FPC order, CEI unilaterally adopted a policy that required all of the load transfer points on the 11 kv system to be energized before Cleveland could receive any electric service over the 69 kv interconnection, Tr. 2570; Tr. 2803-2804. This requirement reduced MELP's flexibility in operating its generating equipment, Tr. 2803-2804.

52. Administrative delays by CEI in energizing the 69 kv were worse than

⁶⁸ CEI required the approval of each load transfer by its legal officer, Mr. Hauser. This requirement obviously caused delays, at times as much as two hours, DJ 564, pp. 52-62. It was CEI's policy to provide load transfer service to Cleveland only when required by the terms of the FPC order, DJ 558, p. 118.

⁶⁹ It would seem that not every CEI's declination to supply Cleveland with power was on the grounds that it lacked power. At least on one occasion Mr. Hauser requested CEI's operating people to come up with justification for terminating service at a load transfer point, C 79.

the delays encountered with the 11 kv system. Connection at 69 kv required CEI executive clearance and would at times require up to 12 hours notice before CEI would take any action on MELP's request, Tr. 2570-2571. MELP's system would experience brownouts, blackouts, or voltage reductions while awaiting CEI approval of a request for power over the 69 kv tie, Tr. 2669-2670.

53: In December of 1972, Cleveland experienced a major outage which lasted several hours. CEI refused to sell emergency power to MELP over the 69 kv tie unless it also agreed to a tie-in sale by executing a contract for the purchase for street lighting service, Tr. 7496-7498; Tr. 10,572-573.

54: Cleveland was forced to take power over the 11 kv and 69 kv load transfer points on conditions that prevented the municipal system from performing necessary maintenance on its generating units. The 11 kv load was not energized until Cleveland was utilizing all of its capacity, Tr. 2670; Tr. 10,688. The 69 kv load transfer point was not energized until all 11 kv load transfer points had been energized, C 145; Tr. 2670. MELP was thus prevented from taking units out of service for maintenance. This lack of maintenance care caused a deterioration of the municipal system, which affected its reliability, thereby causing it severe competitive injury. C 161, pp. 13-14; Tr. 2666; Tr. 2692-2693.

55. There is evidence in the record that some lack of maintenance and delay in achieving interconnection was due also to MELP's own ineptness and negligence, App. ff 34.29; App. ff 34.35; App. 65; App. 66; App. 67; App. 69; App. 70; App. 143; App. 144; DJ 315; Hauser, Tr. 10,573-10,587. But we do not (nor are we required to) apportion the blame for the deterioration of the city's system. MELP's negligence does not redeem CEI's anticompetitive motivation and conduct.

56. CEI and Cleveland reached an agreement for a permanent interconnection, NRC 204, only after over five years of negotiation under "Phase III" of the plan adopted in January of 1970. This agreement requires Cleveland to carry a reserve margin of 70 per cent which places an "unusual and unjustifiable burden" on Cleveland, NRC 205, pp. 50-52. This agreement also makes it possible for CEI to supply emergency power to Cleveland without seeking lower cost alternatives through the company's interconnections, Kampmeier, DJ 450, pp. 45-46. The extremely limited coordination provided for in this agreement effectively denies Cleveland the full benefits of coordinated operation and development, DJ 450, pp. 45-46; NRC 205, pp. 50-57.

Refusal to Wheel

57. Because MELP was isolated electrically from utilities other than CEI, Tr. 2726-2727, and because it was able to obtain only emergency power from CEI, Tr. 2797-2798, it was essential in order for it to remain a viable competitor of

CEI that Cleveland have power wheeled to it over CEI's transmission system, Tr. 2621-2622.

58. In 1973, AMP-O obtained a commitment for 22.7 mw of relatively inexpensive hydroelectric power from the Power Authority of the State of New York (PASNY) which had been allocated to the State of Ohio. DJ 8; DJ 11; DJ 393; DJ 396; Tr. 2677; Tr. 4694-4708. This power was to be made available to the City of Cleveland by AMP-O. DJ 8; DJ 11; C 167. PASNY would wheel power to the New York State border and AMP-O would arrange wheeling over the lines of Pennsylvania Electric Company (PENELEC) and CEI. PENELEC agreed to wheel the power for AMP-O, Tr. 2568-2579; Tr. 2679. CEI refused to wheel the PASNY power for AMP-O from PENELEC to Cleveland, NRC 70; Tr. 2579; Tr. 2580, stating:

As you know, the Illuminating Company competes with the Cleveland Municipal Electric Light Plant on a customer-to-customer and street-to-street basis in a sizeable portion of the City. This competitive situation is clearly unique. Economic studies indicate an arrangement to transmit PASNY power would provide the municipal system electric energy at a cost which would be injurious to the Illuminating Company's position.⁷⁰

PASNY power could have been purchased and delivered to Cleveland for less than the cost of Cleveland's own generation, DJ 8. CEI also has advised Cleveland that it would not consent to third-party wheeling on any terms, DJ 291. CEI does not dispute that sufficient transmission capacity is available for the proposed wheeling of PASNY power, Tr. 4702-4703.

59. Although CEI claims that it modified certain aspects of its antiwheeling policy⁷¹ after the proceeding herein began, Tr. 10,768, it appears that CEI's new wheeling policy retains certain elements of its earlier policy.

During the spring of 1975, Cleveland ascertained that seasonal power was available for sale by Buckeye Power, Inc., Tr. 4703-4704. Cleveland also located bulk power supplies from the cities of Orrville, Ohio and Richmond, Indiana, Tr. 4690-4691. Richmond had available 50 mw of capacity and associated energy which it was willing to sell to Cleveland. Ohio Power Company agreed to wheel the power through its territory and Indiana and Michigan Power Company agreed to wheel the power through its territory if CEI would agree to wheel the power, Tr. 4709-4711; DJ 193. The City of Orrville had power which it was willing to sell to Cleveland as soon as it perfected its interconnection with Ohio Power Company, Tr. 4712. CEI has not agreed to wheel this power. Tr.

⁷⁰Pursuant to an agreement between AMP-O and Allegheny Electric Cooperative, the Cooperative will receive AMP-O's PASNY allocation until transmission can be arranged to Cleveland, C 166. Allegheny has defended this agreement in the FPC successfully, C 167.

⁷¹CEI's position with respect to wheeling PASNY power for Cleveland has never changed, Tr. 10,780-10,781.

4707-4709; Tr. 4713-4714; Tr. 4924. CEI's announced policy was that it would wheel any power for Cleveland "as to which there is no legal or conspiratorial impediment which would prevent this company making a like purchase at a like price," App. 75.

60. CEI contends that for the past ten years it has been feasible for Cleveland to construct a transmission facility from its Lake Road Generating Plant to any one of four interconnection points with utilities other than CEI, App. ff 34.25. This contention is based on the testimony of witness Mr. Caruso, Applicants' expert. In the 1960's CEI took the position that it would be economically unsound for Cleveland to construct a transmission line to Orrville and Painsville, Lindseth, DJ 568; pp. 58-60, pp. 155-158; DJ 295.

Cleveland did study the problem. Its studies showed that Cleveland was completely surrounded by high density residential and commercial areas and that construction of separate transmission lines from Cleveland was simply not feasible, particularly in view of the fact that it would duplicate already existing and operating CEI facilities, Tr. 2594-2595. Existing CEI transmission facilities have surplus capacity available, DJ 358.

It would be impractical for Cleveland to construct transmission lines across CEI territory because of (1) cost,⁷² (2) environmental problems, and (3) the unlikelihood of obtaining siting approval for what would be duplicating transmission facilities, NRC 205, pp. 57-58.

Access to Nuclear Power

61. Commencing March 1971, Cleveland requested participation in nuclear generation available to CEI through its CAPCO membership. For CEI's response see Finding 202 *infra*. For purposes of immediate discussion we note the conditions CEI attached to its limited offer of access. This offer, made two and one-half years after Cleveland's initial request, included the following anti-competitive provisions: (1) CEI was to have a "right of first refusal" on nuclear power which was surplus to Cleveland's immediate needs. DJ 188; DJ 291, pp. 18-22—(this would have prevented Cleveland from selling this surplus or using it to engage in coordinated operation with any other utility, Tr. 7612, Tr. 7618); (2) Cleveland could not sell power to retail or wholesale customers "below cost," DJ 188; DJ 291, pp. 18-21, which would give CEI control over Cleveland's rates, Tr. 4884-4885, since CEI would be the one to determine what constituted "cost," Tr. 5408; (see Tr. 10,762-10,763); (3) prior to beginning

⁷²Mr. Caruso compared the cost of construction with the high cost of emergency power sold to Cleveland by CEI, C 161, p. 14; Tr. 7715-7716, rather than with the cost of a bulk power supply available through coordinated operation and development or even the cost of wholesale firm power. He stated that the factor of greatest uncertainty in his study was the cost of right of way, Tr. 10,929-10,930.

negotiations over access, Cleveland had to withdraw all formal and informal requests for antitrust review of CEI's conduct, as well as drop its opposition to CEI's practices and policies in all administrative hearings and proceedings, DJ 188; DJ 291, pp. 18-22. These conditions were rejected by Cleveland, DJ 189. In spite of repeated proposals between February 1974 and July 1975, DJ 192; App. 63; App. 66; App. 68; App. 71-72; App. 74, nuclear access remained conditioned on a "right of first refusal" by CEI. Even if a "right of first refusal" had not been insisted upon,⁷³ Cleveland would not have been able to sell surplus nuclear power due to CEI's rejection, App. 97, of Cleveland's proposal, DJ 177; NRC 141A, Schedule A; App. 79, that the company "wheel out" power (i.e. transmit power from the nuclear units to an entity other than Cleveland). To date, no meaningful offer of access has been made by CEI.

62. These present conditions to nuclear access are an outrageous affront to the policies underlying the antitrust laws. On the basis of these attempts to stifle competition in the use of power from the plants involved in these proceedings we would be delinquent in our responsibility were we not to impose license conditions. There is no doubt that activities under the license would be directed to the maintenance and creation of situations wholly antagonistic to the policies of the antitrust laws.

63. In order to remain or to become a viable competitor Cleveland must have both access to nuclear power and third party wheeling, Tr. 2708-2711; NRC 207. The availability to Cleveland of alternate power supply sources would permit Cleveland to make more effective use of its power.

Painesville

64. The Painesville Municipal Electric System has 38 mw of coal-fired generation to serve a peak load of 25 mw. Painesville serves electric customers in the City of Painesville and in nine other communities around Painesville, Tr. 3096-3097. The system is electrically isolated, Tr. 3097-3098, and could not engage in transactions with other electric entities without the use of CEI's transmission network, Tr. 3099-3100.

65. Painesville and CEI compete for industrial and residential customers outside the Painesville municipal limits, Tr. 3097.

66. Painesville has markets and customers for excess capacity, Tr. 3102. Those markets include the Cities of Cleveland and Orrville in Ohio and the Diamond Shamrock Corporation, Tr. 3101, and all three have expressed interest in purchasing power from Painesville, Tr. 3103. Painesville could not build its own transmission lines to either sell power to or purchase power from Cleveland

⁷³ Applicants' proposed license conditions, App. 44, which purport to set forth Applicants' offer of nuclear participation to non-CAPCO entities within the CCCT, provide an unfettered right of resale of surplus nuclear power, App. 44, p. 5.

or Orrville. In disposing of excess capacity Painesville would require an interconnection with CEI, Tr. 3103-3104.

Territorial Allocation Proposals

67. As early as 1962, CEI sought to prevent future competition with Painesville by offering Painesville a territorial allocation agreement which would have eliminated competition and foreclosed the growth of the municipal system by allotting to CEI those areas where Painesville had the greatest potential load growth. Tr. 3623-3624A; NRC 144. The offer was renewed by Mr. Howley, CEI's General Counsel, in 1964 or 1965. Tr. 3625; 3627-3629. Again in 1974, CEI made a proposal for the exchange of customers and territory, NRC 144:

It is still our thinking that we would build the line up to your property in exchange for certain described territory and customers.

This offer was, as were the previous ones, rejected by Painesville, Tr. 3177-3178; Tr. 3193.

Refusal To Interconnect Except Upon Unfair Terms

68. Reliability of service is a factor in competition between Painesville and CEI. After each outage, Painesville loses customers to CEI, Tr. 3179-3180. Since 1971, Painesville has experienced one or two serious outages each year and has experienced voltage reductions one or two times each year, Tr. 3099. Lack of an interconnection reduces Painesville's reliability, Tr. 3181. As a result of an agreement with the Ohio Environmental Protection Agency limiting operation of certain of Painesville's generating units, Painesville will have no firm power without an interconnection, Tr. 3180. Painesville does not carry generating reserves typical of industry practice because the cost would be too great. An interconnection would provide adequate reserves, Tr. 3181.

69. Beginning in at least July 1971, Painesville requested an interconnection from CEI. NRC 134; DJ 365. At that time, CEI was aware of Painesville's need for coordinated operation and development, and believed that Painesville would press the request for an interconnection before the FPC. DJ 364; DJ 509; DJ 510; DJ 600. CEI therefore planned to structure its "negotiations" for an interconnection to further the company's goal of acquiring the Painesville electric system load, DJ 364. Once negotiations began, CEI considered conditioning the interconnection on customer trading, territorial allocation, limiting the municipal systems' service area, and an agreement not to compete, DJ 371.

70. CEI offered an interconnection to Painesville on anticompetitive terms for the specific purpose of eliminating competition. The company proposed that

it supply an interconnection in consideration for CEI taking over Painesville's greatest load growth area, DJ 370; NRC 141, together with Painesville's promise not to seek to serve that area in the future, Tr. 3624A; Tr. 3133-3135. In addition, CEI explicitly conditioned interconnection on rate equalization, Tr. 3152-3153. Subsequent to Mr. Howley's insistence on rate equalization, but prior to execution of the interconnection agreement, Painesville raised its rates to the level of CEI rates. Tr. 3175; Tr. 3203; NRC 203.

71. CEI misused its dominance and monopoly power to secure an anti-competitive and oppressive interconnection agreement with Painesville. This contract contained a "special provision" whereby either party could cancel the contract on 90 days' notice on the grounds that the contract was not in the party's "best interests." NRC 203; Tr. 3123-3125. This contract does not provide for the parties to achieve the large benefits that can be gained by sharing reserves, nor does it provide for any of the benefits of coordinated development, DJ 450, p. 47. In addition, the 25 mw maximum for maintenance power is a "serious burden" on Painesville, but only of negligible consequence to CEI. DJ 450, p. 46; NRC 205, pp. 53-54. Painesville entered the interconnection agreement because the City's power needs made it "desperate" for an interconnection, Tr. 3124-3125. These unconscionable terms deprive Painesville of most of the benefits of coordinated operation and development.

72. CEI delayed construction of the interconnection, further depriving Painesville of the benefits of coordinated operation and development. A dispute arose in September 1975, as to which party would bear certain costs of the interconnection, Tr. 3157-3158. All areas in this dispute involved construction to be done by CEI, Tr. 3158. The construction of the interconnection could be completed four to six months after the dispute is resolved, Tr. 3157.

Refusal to Wheel

73. In June of 1974, CEI refused a general request by Painesville to wheel third party power, NRC 141, thereby preventing its competitor from obtaining access to the full benefits of coordinated operation and development. The interconnection agreement, NRC 140, provides only that, should CEI find it necessary to secure power for Painesville from an outside source, Painesville will reimburse CEI 110 per cent for its out-of-pocket costs; CEI alone determines this necessity, Tr. 3176-3177. This anticompetitive provision effectively prevents Painesville from reaching relatively inexpensive sources of power outside the CEI system and precludes "wheeling out" and resale of power to customers outside the Painesville service area, Tr. 3176-3177.

Access to Nuclear Power

74. Painesville cannot construct or finance a nuclear generating unit by

itself. It must have the cooperation of CEI if it is to participate in nuclear generation, Tr. 3120. Painesville cannot build its own transmission lines to other utilities because it is in a highly urbanized area and the cost would be prohibitive. Moreover, it may be difficult to obtain approval of the Ohio Power Siting Commission because such lines would duplicate CEI's existing transmission facilities, Tr. 3174.

By letter of April 11, 1973, Painesville wrote to CEI expressing its interest in participating in the recently announced Perry nuclear units, NRC 136A. CEI responded on April 24, 1973, with an offer to discuss Painesville's request, NRC 136B. Subsequently CEI's representative advised Painesville that a simple inter-connection agreement would provide Painesville with the same things it would get through participation. NRC 138; Tr. 3116; App. 195, pp. 22-24. At the time of Mr. Pandy's testimony in these proceedings, CEI had not made available to Painesville any terms or conditions for access to the Perry units including Applicants' policy commitments, Tr. 3162; Tr. 10,869. In the spring of 1976, Painesville renewed its request for participation and in return received from CEI a copy of the obviously insufficient participation agreement offered to the City of Cleveland over two years earlier which admittedly did not even reflect what CEI asserts to be its current wheeling policy, Tr. 10,718. Painesville is still interested in participating in the Perry nuclear units, Tr. 3158.

Duquesne

75. Since its incorporation in Pennsylvania in 1912, Duquesne Light has become the dominant, and in terms of generation and transmission, the only electric utility within its 800 square mile service area. NRC 157, Appendix N, p. 2-3. The present size and service area of Duquesne is a product, in part, of a series of mergers and acquisitions which have lead to a situation in which only one other distribution system, Pitcairn, has any retail customers within the Duquesne service area. DJ 587, p. 74.

76. Duquesne Light has regarded its municipal competitors as "a potential threat to the well being of the Company . . ." DJ 321, p. 2. For that reason, it was the Company philosophy "to try to purchase municipal systems." *Id.*

77. Since 1960, Duquesne has acquired three (Aetna, Sharpsburg and Aspinwall) of the then four remaining municipal systems located within its service area, NRC 158, p. 13, 27, 28; DJ 587, p. 74, and has attempted to acquire Pitcairn, the fourth and last municipal system. In July 1966, Duquesne representatives, with the knowledge of the Company's chief executive, indicated to officials of Pitcairn an intent to acquire its municipal system. DJ 242; DJ 243. In December 1966, Duquesne's President, Mr. Fleger, was informed by Mr. Gilfillan, vice president of marketing and customer services, that acquisition of the Pitcairn system, "would clean up the remaining municipal electric system in

our service area." DJ 245. The following day, Mr. Fleger agreed that Duquesne should attempt to acquire Pitcairn, suggesting that the same procedure followed in Duquesne's acquisition of the Aspinwall system be utilized. DJ 246.

78. Subsequently, Duquesne employees, on numerous occasions, brought up the subject of acquiring the Pitcairn system in conversations with the village solicitor, Mr. McCabe. McCabe Tr. 1684-85, 1751; NRC 13. Duquesne officials suggested to Mr. McCabe that the sale of the Pitcairn system would involve a large legal fee for Mr. McCabe. McCabe Tr. 1684-85, 1751. Duquesne also approached members of the Pitcairn City Council and other Borough representatives to solicit the acquisition of the Pitcairn system. McCabe Tr. 1686; NRC 57; DJ 248; DJ 251.

79. Despite Duquesne's contention in this proceeding that there is no competition within its service area, Mr. O'Nan's prepared remarks relating to the acquisition of small municipal electric systems directly controverts the company's argument. Referring to the Borough of Aspinwall, which Duquesne attempts to dismiss in its Proposed Findings of fact as of no competitive significance,⁷⁴ Mr. O'Nan said:

∴ [T]he diversity of the load and *growth potential* would indicate that the allocation of full generation and transmission facilities was conservative and *some value be assigned to the fact that we got rid of a municipal system with all of its future potential implications.*

DJ 321, p. 4 (emphasis added).

Refusal to Provide Bulk Power Services

80. Concurrent with the acquisition policy of Duquesne which commenced at least as early as the summer of 1966,⁷⁵ Duquesne, between 1966 and 1968,

⁷⁴"The Aspinwall and Pitcairn municipal electric systems could not have been competitors of Duquesne because of their size and because of other reasons." App. ff 37.28. The contradictions between Applicants' proposed findings in the course of a contested license proceeding and Duquesne's policy memorandums and pronouncements made prior to these proceedings is apparent. In addition, we should note that Duquesne's argument that the Pennsylvania regulatory scheme inhibits competition does not take into sufficient account the possibility of potential competition nor the effects of yardstick competition. Despite Duquesne's utterances to the contrary, it is abundantly clear that Duquesne was looking over its shoulder to see if the rate structure or load growth potential of the municipalities represented a competitive threat to its interests.

⁷⁵The specifics of earlier attempts to acquire either the Pitcairn or other municipal electric systems within its service territory were not reachable through the discovery process since the Board had established a September 1965 limit on discovery except upon good cause shown. With respect to the acquisition policy of Duquesne, it has not been deemed necessary to make an exception to that policy.

denied requests by Pitcairn that Duquesne sell electric power on a wholesale basis or that Duquesne enter into some form of coordinated operation (e.g., an interchange agreement). DJ 242; DJ 245; McCabe, Tr. 1616; NRC 13; NRC 14; McCabe, Tr. 1619, 1622-23; NRC 16.

81. The refusal to sell wholesale electric power to the Borough of Pitcairn was consistent with Duquesne's refusal in 1966 to sell either full or partial requirements firm power to Aspinwall. DJ 170. Mr. Fleger, Duquesne's president, indicated that:

[W]e should reply to Donaldson (the solicitor of Aspinwall) emphatically that we will not sell power to Aspinwall for resale to their residents by the Boro. It should be an unequivocal "no" so there is no misunderstanding.

DJ 171. See also DJ 173; DJ 172; DJ 174. Another request for wholesale sales by Aspinwall in August of 1966 also was refused. DJ 201.

82. During the period when Duquesne refused to make wholesale sales to Aspinwall and Pitcairn, it was aware that prolonged litigation was an effective weapon in situations involving charges of inconsistency of the antitrust laws. DJ 254; DJ 169.

We should make clear at all times that we will not provide electricity for resale. We will use whatever means are possible to resist this including court action, if necessary . . .

DJ 169; DJ 171; see also DJ 245.

83. Duquesne's decision not to sell wholesale power to municipalities within its service area represented the policy position of the company. NRC 13;⁷⁶ McCabe, Tr. 1616; NRC 16. This policy which was in effect until Pitcairn commenced antitrust litigation against Duquesne in 1968, see Findings 88-90, *infra*, applied throughout the history of the Company.⁷⁷

84. There is a direct relationship between Duquesne's policy decision not to supply electricity at wholesale to municipalities within its service area and the intent of Duquesne to acquire these systems. For example, in an internal memorandum of November 30, 1966, Mr. Gilfillan stated:

It is our belief that with careful handling it is possible that the Borough can be induced to sell their distribution facilities to our Company. In our discussions, our representatives made it very plain that we will not sell the Borough power for redistribution and that we would resist any effort forcing us to do so with all the resources at our command.

DJ 245; see also DJ 242; NRC 13. Also see DJ 321, the Duquesne description of its "game plan" for the acquisition of small municipal systems featuring

⁷⁶" . . . Duquesne Light Company has not in the past nor does it intend to in the future supply power to Municipalities on a wholesale basis." NRC 13.

⁷⁷"Duquesne has never furnished wholesale baseload service to any municipality." NRC 19.

Aspinwall as the example. Page 4 of DJ 321 indicates that part of the negotiating strategy employed by Duquesne in inducing Aspinwall to sell its system was a consistent refusal to sell power on a wholesale basis to Aspinwall.

Refusal to Interconnect

85. In addition to its policy of refusing to sell electricity at wholesale to municipalities, Duquesne also refused to establish interconnections with municipalities. Pitcairn requested a discussion relating to interconnecting and pooling in July of 1966, DJ 239. A meeting to discuss this request was held in August 1966, but at that meeting Duquesne informed Pitcairn that it would not sell power at wholesale and suggested the sale of the Pitcairn system to Duquesne. DJ 242. On November 20, 1967, Pitcairn wrote to Duquesne requesting an interconnection to provide emergency backup. DJ 1, McCabe, Tr. 1730. Duquesne offered only to sell power at Duquesne's rate "M," DJ 203, notwithstanding Pitcairn's request for a different schedule. Pitcairn declined to purchase power under rate "M" because it was too expensive⁷⁸ and because it was not available for base load. It was Mr. McCabe's observation that other municipalities which had purchased power under rate "M" had incurred excessive costs which costs became a factor in negotiating the sale of these systems to Duquesne. McCabe, Tr. 1827.

On January 23, 1968, Mr. McCabe met with Duquesne representatives and requested an interchange agreement with Pitcairn similar to the agreement which Duquesne had with other electric utilities. McCabe, Tr. 1627-28. This request was refused, *Id.* Pitcairn then made a written request of Duquesne for an interconnection, App. 114; which also was refused. NRC 16; McCabe, Tr. 1627-28.

86. Duquesne contends that it "repeatedly offered to supply Pitcairn with emergency service for resale under rate M of its tariff filed with the PaPuc," App. ff 37.45; that Pitcairn's objections to emergency service under rate M went only to price; App. ff 37.46, and that the record does not establish the price charge under rate M was unreasonable, App. ff 37.47.⁷⁹

The parties are in disagreement with respect to whether rate M is reasonable

⁷⁸The average cost of power under rate M would have been 30 mills per KW, Gilfillan, Tr. 8464.

⁷⁹Certain portions of the above referenced proposed findings of Applicants are inaccurate and contrary to the record. *E.g.*, the representation that such service satisfied Pitcairn's requests and needs and that Pitcairn itself treated this offer as responsive to its request. Thus, states Duquesne, it did not refuse to deal with Pitcairn. Exhibit NRC 18, a February 27, 1968, letter from Mr. Merriman, Director of Governmental Sales of Duquesne, to Mr. McCabe explicitly rebuts this contention:

... I must advise you that the Company cannot undertake any responsibilities to meet an emergency except in a situation in which a contract under Rate "M" has been previously executed.

or prohibitive in its terms. Rate M involved a minimal annual demand charge to Pitcairn of \$23,400 at a demand rate of 1600 kva and \$10,200 at 500 kva. The minimum term for which service could be obtained under rate M was three years, however, NRC 211, NRC 15, so that at a 1600 kva demand, Pitcairn would have had to pay Duquesne \$70,200 for the use of any energy whatsoever in emergency situations. Gilfillan, Tr. 8472.⁸⁰ The energy charge under rate M is three cents per kilowatt hour, NRC 211, or 30 mils. Duquesne's cost of energy production at the time rate M was offered was 2-5 mils. Dempler Tr. 8684. Thus, the Staff contends that energy offered under rate M was being sold at up to fifteen times its cost of production, Staff ff 1.058.

Applicants argue that the rate M rate was not unreasonable because:

If Pitcairn had agreed to take Rate M with the contract demand of 1600 kva (or 1600 KW if power factors are ignored), the Borough would have been able to recoup the minimal annual charge of \$23,409 merely by taking 90 KW on a round-the-clock basis [footnote omitted]. This would certainly be above Pitcairn's lowest hourly demand.

App. Joint Reply Brief, p. 43. This argument is untenable and frivolous. Rate M by its very title is characterized as "emergency service" and is not intended to be provided on a long-term round-the-clock basis. Duquesne never conceived of rate M service as equivalent to a firm power sale but rather took the position that it would offer only emergency service and not base load electric power, NRC 19. Duquesne's vice president, Mr. Gilfillan testified that the rate M service would be available only for emergency purposes. Gilfillan, Tr. 8466, 8486.

Duquesne also argues that what they acknowledge to be a "comparatively high energy charge," App. Reply Brief, p. 43, of three cents per KWH was justified. According to Duquesne, under rate M it would have been obligated to provide Pitcairn up to 1600 KW of capacity on short-term notice. Since rate M contained no capacity charge, Duquesne's investment costs in providing this capacity necessarily would have to be recovered through the energy charge. Duquesne then argues that investment costs associated with any unused capacity would not be recovered. What strikes us as astounding about this argument is its clear implication that 1600 KW represents a significant amount of capacity.⁸¹ If this is so, then Duquesne's arguments that it would achieve *no* benefit through interconnection and that there was no mutuality because Pitcairn had nothing to supply fails. Duquesne cannot have it both ways. It cannot regard 1600 KW of capacity (assuming an emergency on the Pitcairn system would require the full entitlement under rate M) as important when it is the supplier but inconsequential when it is the taker.

⁸⁰ Additional charges would be made for contract demands in excess of 1600 kva; NRC 211.

⁸¹ Duquesne's 1968 net generating capacity was 1778 MW.

Finally, we find Duquesne's concern over the obligation to provide additional capacity of 1600 KW to be artificial and overstated since Duquesne had call on its CAPCO partners for substantial additional capacity.

87. Duquesne was not prohibited from selling wholesale firm power by State law.

(A) The Federal Power Commission and not the State of Pennsylvania has exclusive regulatory jurisdiction over wholesale sales to municipal systems.⁸² *FPC v. Southern California Edison Co.*, 376 U.S. 205 (1964).

(B) Duquesne was aware that the FPC had asserted jurisdiction over such wholesale sales during the period when Duquesne was refusing to make such sales to Pitcairn. App. 263, p. 3-4.

(C) Wholesale firm power sales for resale are not prohibited by any Pennsylvania law or regulation of general applicability. See Justice ff law 6; law 9. Duquesne was aware that at least one Pennsylvania utility sold power to a municipal system for resale. DJ 168. The only arguable restriction on such sales by the company has been Rule 18 of Duquesne's own tariff which rule apparently does not prohibit such sales under Duquesne's rate M for emergency service. See Gilfillan, Tr. 8474-75. It is clear that Rule 18 was sponsored by or a product of a Duquesne filing which could have been amended to provide for firm power sales had Duquesne wished to do so. Gilfillan, Tr. 8476-77, 8507-09. As set forth in *Cantor v. Detroit Edison Co.*, ___ U.S. ___ (1976), no defense is provided nor antitrust immunity obtained by anticompetitive acts initiated by electric utilities when these acts are not compelled by a state agency nor necessary to the survival of a valid regulatory purpose.

The refusal by Duquesne to sell wholesale electric power other than emergency power pursuant to rate schedule "M" and its refusal to establish an interconnection left Pitcairn in a completely isolated generating position. Mr. McCabe testified:

Pitcairn is geographically located completely within the bounds of Duquesne Light's service area. Consequently, Duquesne Light was the logical place to turn to to attempt to acquire purchase power on some sort of a basis.

The fact that the Borough of Pitcairn had to continue on an isolated basis detracted from the reliability of the borough system and deprived the Borough of being able to take advantage of the economies of scale which were being used by the electrical utility industry in general. Tr. 1652, 1653.

88. In reaction to what Pitcairn conceived to be Duquesne's refusal to deal with the Borough coupled with Duquesne's frequent requests to purchase the

⁸²Duquesne concedes this point. See prehearing fact brief of Duquesne Light Company at 49.

Borough's electrical system, Pitcairn initiated an antitrust action on July 23, 1968, in the United States District Court in Pennsylvania against the Duquesne Light Company. McCabe, Tr. 1647; NRC 20.

89. As a result of its operation on an isolated basis, the reliability of the Pitcairn electric system was affected adversely. In the autumn of 1970, while its largest generation unit was down for scheduled maintenance, a broken crank shaft on another generator made it necessary for the Borough to request customers to reduce the amount of electric power being utilized. Pitcairn then instigated proceedings before the FPC and an informal basis with a request for emergency temporary interconnection. McCabe, Tr. 1654.

Wholesale Sales - Terms and Conditions

90. On October 13, 1971, Pitcairn and Duquesne entered into a settlement agreement which included *inter alia* an obligation of Pitcairn to dismiss with prejudice its antitrust action and to withdraw and discontinue with prejudice of the FPC proceedings (Docket D-7547). NRC 21. Duquesne agreed to file with the FPC a tariff for "municipal resale service for Pitcairn." Subsequently, Pitcairn ceased generation of electric power and has fulfilled energy requirements for its distribution system by purchase from Duquesne.⁸³

91. Although the settlement agreement required Duquesne to sell firm power to wholesale to Pitcairn, Duquesne refused to operate in parallel with the municipal system. NRC 21, McCabe, Tr. 1658, 4169, 4176.

Denial of Access

92. In early 1968, Mr. McCabe and Mr. Meyers, Secretary of the Borough of Pitcairn, met with Mr. Munsch, the General Counsel, and Mr. Dempler of Duquesne for the purpose of exploring the feasibility of the Borough's becoming a party to the CAPCO power pool. In addition, the Pitcairn representatives made a request for access to CAPCO nuclear units specifically mentioning the Beaver Valley Station as a possibility. Mr. Dempler, on behalf of Duquesne, gave a negative answer to the concept of permitting non-CAPCO entities access to any individual generation unit owned by the parties to the CAPCO pool. Although this denial of access to nuclear power was specific as to Beaver Valley, the denial by its plain terms would be equally applicable to the Davis-Besse and Perry stations. Mr. Munsch stated that future pool facilities would be considered on a group basis. NRC 17.

⁸³ Documents were received into evidence reflecting Duquesne's assessment that Pitcairn had "a very good chance" of winning in the FPC and a 50-50 chance of prevailing in the antitrust action. DJ 254; DJ 260. The Board has not relied upon these documents nor attempted to assess the probabilities of Pitcairn's prevailing in either forum.

93. Since the February 1968 meeting at which Duquesne expressed its interest in obtaining a joint ownership or unit shares in contemplated CAPCO nuclear units, Pitcairn never has been advised that access to nuclear units would be made available by CAPCO or any of the CAPCO member companies. McCabe, Tr. 1717-19. Pitcairn's interest in nuclear units continues unabated to the present. McCabe, Tr. 1716.

Mr. McCabe testified that:

... participation in a [CAPCO] nuclear unit would involve Pitcairn actually buying a portion of that unit and taking power from that unit at the production cost subject to certain wheeling charges.

I would anticipate that those charges would be less than the price which we currently pay Duquesne Light for power supply. I therefore would envision an economic benefit. McCabe, Tr. 1738.

94. There is a direct nexus between the refusal of Duquesne and the CAPCO group to make available access to CAPCO nuclear units and the issues in controversy in these proceedings.

95. Although Duquesne has refused to enter into interconnection agreements with municipalities located within its service area nor will it engage in wholesale power transactions with such municipalities, Duquesne has interconnections and does sell power to other private utilities in Pennsylvania. For example, Duquesne, through an interchange agreement with Penn Power (another Applicant), sells power to Penn Power. Gilfillan, Tr. 8438.

96. The actions of Duquesne in refusing to sell wholesale power at wholesale to municipalities, in refusing to interconnect and in refusing to supply emergency energy except pursuant to rate M^{B4} contributed substantially to the elimination of municipal electric systems, including Pitcairn and Aspinwall, as generating entities within the Duquesne service area. The actions of Duquesne in denying the foregoing bulk power services and in refusing to make available benefits of membership in the CAPCO pool including access to nuclear generating stations constructed to supply substantial quantities of base load power for that pool have deprived municipal entities in the Duquesne service area including Pitcairn of alternate sources of electrical supply. Duquesne's actions have induced and were intended to induce municipal generating entities within the Duquesne service area to abandon generation and to sell distribution facilities to Duquesne.

The refusal of Duquesne to entertain requests by a municipal system within its service area for membership in the CAPCO pool has had the effect of depriving that municipality of the opportunity to consider self-owned nuclear power as a competitive alternative to the purchase of bulk power requirements

^{B4}This particular event is not material to our overall conclusion.

exclusively from Duquesne. The desire of Pitcairn to obtain access to nuclear power was known to Duquesne at the time its refusal to permit membership in CAPCO was made.

97. Although the discovery cutoff date of September 1965 did not permit or require examination into the circumstances of Duquesne's acquisition of other previously acquired generating entities within its service area until it reached its present position of 100% dominance over all electric generation and high voltage transmission within its service area, we find that its actions in refusing to sell wholesale power to Aspinwall as part of a plan to achieve its intended objective of acquisition of the Aspinwall system and its refusals to deal with Pitcairn coupled with its desire to acquire that system constitute abuse of a dominant position and an anticompetitive use of monopoly power.

98. We find that Duquesne's refusal to permit Pitcairn to obtain membership (even on some modified basis) into CAPCO and the denial in the alternative of any other reasonable or bulk power services options taken together constitute a refusal to deal and denial of an essential resource the effect of which is to maintain a situation inconsistent with the antitrust laws.⁸⁵

Ohio Edison and Pennsylvania Power

99. In this decision, we have regarded Ohio Edison and Penn Power as a single entity except where differences in state law are relevant. As noted above in Finding 5, Ohio Edison and Penn Power own or control virtually all of the generation and high voltage transmission in their service areas. They account for 94% of retail sales and 99% of firm wholesale sales in their service areas.

Such overwhelming share of the relevant market permits the inference of monopoly power, *Grinnell, supra*, and these market shares may be the primary factor in measuring monopoly power, *Griffith, supra*.

Applicants urge, with particular reference to Ohio Edison, App. ff 31.19, 31.20, that market power may not be inferred from statistical high market shares where industrial, economic and legal barriers restrict the power to control prices or exclude competition.

The record of this case permits an examination of the validity of the market share inference. The record, as a whole, with respect to Penn Power and Ohio Edison demonstrates redundantly that the two companies possessed and used the power to control prices and other conditions of sale, the power to refuse to engage in transactions which would otherwise be economically beneficial and to exclude competition. This power was used to increase their monopoly positions once the threshold of monopoly had been obtained and to consolidate and to

⁸⁵ Denial of membership in CAPCO, standing alone, need not necessarily have brought us to this conclusion. Duquesne coupled denial of CAPCO membership with a refusal to provide other essential bulk power services.

maintain it. The use of their market power demonstrates that the power, in fact, exists and, within the context of the issues of this case, demonstrates that Ohio Edison and Penn Power's position in its service area has enabled them to prevent and they have prevented other entities within their service areas from achieving the benefits of coordination and economies of scale.

The opposition parties urge that Ohio Edison and Penn Power may not escape liability as monopolists and that they have maintained and exacerbated a situation inconsistent with the antitrust laws by activities falling within three major categories: (1) anticompetitive acquisitions consolidating their service areas; (2) exclusionary practices insulating their service areas from competition from outside, such as territorial agreements and refusals to wheel outside power (in addition to the CAPCO boycott); and (3) repressive practices eliminating and preventing the growth of potential competition from within their service areas; for example, refusals to wheel, refusals to interconnect, refusals to sell power and price squeezes.

Acquisitions and Consolidation

100. Ohio Edison was incorporated in 1930 as a consolidation of five private utilities which also were formed from previous mergers and acquisitions. This consolidation predates the period under examination. With respect to the earlier mergers, the Board accepts the testimony of Dr. Gerber, App. 189, pp. 8-10, that the consolidation experience within the Ohio Edison service area is attributable, at least in part, to natural scale economies, technological advances such as alternating current, and improved transmission techniques. Therefore, the Board draws no anticompetitive inference from the trend toward concentration prior to 1965 in Ohio Edison's service area.

Since that date, Ohio Edison has acquired the municipal systems of Lowellville, Norwalk, Hiram and East Palestine, Ohio.

101. In 1970, Norwalk, Ohio, had a self-generating municipal electric system. Beginning in 1970, it began to consider several options to fill its electric power needs including (1) selling its generation station to the only potential buyer, Ohio Edison; but keeping its distribution system; (2) selling both the generating and distribution system; and (3) purchasing supplemental and standby power, DJ 422. Norwalk was at that time a viable electric utility. In a free competitive environment, many options would have been open to it for survival.⁸⁶

⁸⁶ Applicants state (App. ff 36.90), that the Norwalk system was a failing system. Applicants' citation to the record for this proposed finding, App. 221, p. 9 and App. 240, simply does not support that claim. In fact, App. 240 suggests that generating problems may be temporary and remediable without "any severe problems" and, while sufficient for immediate and limited future needs, the generation would not be adequate for long range purposes.

102. Ohio Edison refused to buy Norwalk's generation unless the distribution system was included, DJ 422. This, of course, would eliminate Norwalk as a potential customer for any other utility and would eliminate the possibility of resuming self-generation by Norwalk. Applicants assert that the generation was not useful to Ohio Edison. But Ohio Edison ultimately bought it and uses and credits this generation in fulfilling its own and CAPCO responsibilities, Firestone, Tr. 11180, App. 172. Ohio Edison states that it ultimately purchased this generation with the distribution system simply because Norwalk desired to sell it, App. ff 36.91. Ohio Edison's reasonable business justification for the rationale for the transaction fails.

In mid-1970, Ohio Edison had its "newest program" in progress to acquire the Norwalk system, DJ 423. In 1971, Ohio Edison refused to discuss rates for a parallel operation with Norwalk and discouraged the investment of capital for paralleling equipment, DJ 428, but instead redirected the negotiations to Norwalk purchasing total power requirements from Ohio Edison, DJ 431.

In December 1971 when Norwalk officials met with representatives of Ohio Edison to discuss Norwalk's power supply problems, Norwalk's representative pursued several alternatives to the sale of its system, DJ 434. Norwalk's attorney inquired about the operating locations and titles of Ohio Edison's power pools. He was given the names of CAPCO and ECAR but told that Ohio Edison representatives were not familiar with the pertinent rules and regulations.⁸⁷ Norwalk inquired again if it could retain its distribution system but was again refused. Norwalk was again frustrated in its inquiries to enter into a partial requirements power contract and, when Norwalk asked about the policy for wheeling power, perhaps from Buckeye Power, it was advised that Ohio Edison representatives, (although high ranking) were unable to provide wheeling information. Norwalk's representative inquired about the situation with respect to Orrville, Ohio, (Orrville was able to interconnect with another utility) and was denied information. He was again denied any opportunity to discuss a parallel operation with Ohio Edison. In an apparent effort to determine whether purchases from the adjoining Ohio Power Company would be feasible, Norwalk inquired whether there were territorial allocation agreements between Ohio Edison and Ohio Power, recognizing that such matters were not generally discussed. Efforts to purchase power from Buckeye from the Cardinal plant through Ohio Edison's transmission were frustrated. Norwalk's representative stressed the importance of being assured that no better alternative to sale of the entire system was available but, repeatedly, sale of the system with full requirement contracts was the only course held out to Norwalk. *Id.*

There was indeed a territorial agreement between Ohio Edison and Ohio

⁸⁷ Applicants' refusals to reveal basic CAPCO information and policies to interested potential members is unreasonable and inconsistent with the defense urged by Applicants of the "legitimate business justification," for refusing membership.

Power. Ohio Power could not have been a supplier to whom Norwalk could turn, even if Ohio Edison had not had a policy of refusing to wheel outside power. Norwalk's hope of purchasing power from Buckeye Power was doomed from the start because of restrictive conditions by Ohio Edison. There was never the slightest possibility that Norwalk could have participated in the CAPCO pool.

Norwalk then sold its system to Ohio Edison. The Board finds that the Norwalk, Ohio, electric system had several reasonable opportunities to survive including purchases of supplemental power; access to the benefits of pooling including the benefits of nuclear power; purchases from Buckeye Power or Ohio Power; and, in each instance, none of those options were available to it because of a situation inconsistent with the antitrust laws. The ultimate acquisition itself exacerbated that situation.⁸⁸

103. In 1965, Ohio Edison acquired the system of Lowellville, in 1973 it acquired the system of Hiram and later it acquired the system of East Palestine, Ohio. The record does not demonstrate the circumstances surrounding the acquisitions of these municipal systems, DJ 587, p. 66. They indicate only that Ohio Edison had acquired three potential direct horizontal competitors, eliminated any possibility of supplier competition for their loads, and that the pattern of consolidation by acquisition in its service area continues.

Territorial Allocation Agreements With Outside Utilities

104. In the years following 1965, Ohio Edison entered into, and complied with the terms of territorial allocation agreements with several utilities abutting its service area. Applicants do not admit to these agreements. Ohio Edison's president, Mr. White, suggests that signed maps delineating territorial boundaries were not agreements but efforts by investor-owned utilities to test the feasibility of drafting a territorial integrity law, Tr. 9750. We are not persuaded.

105. Since at least 1965, Ohio Edison and TECO had been parties to a territorial agreement, DJ 513-17; 519; 533-35; 537-40. These territorial agreements took the form of "confidential" but formal territorial maps which were signed by the highest officials of the companies, DJ 516, frequently updated, DJ 517, and used in day-to-day operations of Ohio Edison, DJ 519.

With respect to Mr. White's testimony that these maps may have been no more than study material for legislative purposes, his testimony is inconsistent with the November 1965 letter of Mr. Dreisbach, Ohio Edison's Coordinator of its Division of Distribution Practices, who advised TECO's president, DJ 517:

We want to thank you, Ken Birch and the other people in your organization for their cooperation in solving this territorial matter and feel that it should

⁸⁸ Even if the demise of the Norwalk system had been inevitable because of the natural economic forces described by Dr. Gerber, App. 189, this does not save it from the reach of the antitrust laws. Whatever its natural economic fate might have been, Norwalk was entitled to it without being hurried along by the anticompetitive practices of Ohio Edison.

make for smoother *operations* in both of our companies. (Emphasis supplied.)

Moreover, in March 1966, Mr. Dreisbach indicated, DJ 519:

It was during this discussion that I was able to get the point across that Dayton Power and Light Company, Ohio Power Company and Toledo Edison Company had definitely signed confidential maps which we use in our day-to-day operations.

106. Ohio Edison's territorial agreement with Ohio Power Company (abutting its service area to the south) was in effect at least as early as March 7, 1966, DJ 519. Ohio Edison and Ohio Power officials recognized a functional dividing line which was used to allocate customers, DJ 521, 523-527, 530.

107. Subsequent to the drafting of the territorial maps of 1965, DJ 527, several errors were discovered. Ohio Edison and Ohio Power officials began meeting as early as June 1966 to trade customers in order to resolve some of the questionable areas where competition might arise, DJ 520-30. For example, officials of the two companies met in November 1967 for a general meeting to discuss fringe area problems, DJ 523, where Ohio Edison officials agreed:

[W]e would take a hard look at territory that we might consider exchanging for the Madisonburg area in lieu of the error made in the construction of this recent line. In connection with the Madisonburg area, we will also have to decide as to our recommendations for correcting this line and as to how we want to correct the line on the signed maps, DJ 523.

108. In connection with the discussion of allocating fringe areas between Ohio Power and Ohio Edison, there were several discussions concerning the possibility of adjusting rates to avoid, directly or indirectly, rate competition between the two utilities, or to facilitate the trading of customers in the program to adjust the territory boundaries, DJ 520, 523, 525, 527 and 530. Rate differences between adjoining utilities create problems exchanging customers. Ohio Power initially sought to deal with this problem by equalizing rates at the fringes, DJ 520, 523 and 525, but was advised by Ohio Edison that similar suggestions made before had been declined by Ohio Edison, DJ 525. Ohio Edison preferred to exchange customers notwithstanding the fact that some customers would be compelled to pay increased rates.⁸⁹ However, in a territorial allocation adjustment meeting in 1969, when Ohio Power again recommended a rate freeze, Ohio Edison's president agreed that his firm would look at all possibilities, DJ 527. The record does not disclose whether Ohio

⁸⁹ An additional indication of the helplessness of the customers and the power of the utility.

Power and Ohio Edison ever successfully incorporated a price-fixing scheme into their territory allocation program.

109. In January 1966, Ohio Edison officials met with officials of the Columbus and Southern Ohio Electric Company to discuss fringe area mapping but were advised that Columbus and Southern did not want to do any mapping; that they wished to avoid embarrassing their company at a later date. After trying to impress upon Columbus and Southern the advantages of making such a map with a practical example of the avoidance of competition, Columbus and Southern agreed to exchange distribution maps showing their lines, DJ 518. However, at a later meeting in March 1966, Columbus and Southern again declined to agree on territory allocation and Mr. Grueser of that utility stated, DJ 519:

... [T]hat they felt any such agreement on territory was illegal and that he had talked to some members of the P.U.C.O. [Public Utilities Commission of Ohio] and they felt the same way

110. The customer exchange program between Ohio Edison and Ohio Power does not comport with Applicants' argument that the Ohio's Utilities Commission provides an adequate substitute for competition. Aside from the fact that the Public Utilities Commission of Ohio does not require or even favor exclusive service areas, there is evidence of record that the conspiring utilities even avoided submitting to the regulation of the Ohio commission, DJ 513 and 527.

In a 1967 meeting on fringe area problems, Ohio Power did not want to take a chance on getting the matter before the Ohio commission and Ohio Edison regretted that the application (by a customer for power) had not been previously "ironed out," DJ 523.

In 1969, Ohio Edison and Ohio Power agreed in a meeting to approach the Ohio commission to determine its reaction to a switch of customers. The minutes of the meeting recorded that the companies thought, DJ 527:

... that revenue would probably be the basis for any exchange. However, this would not be the basis for any presentation to the Commission. Any presentation to the Commission would be based on the logical aspect of more efficient service areas. Rates were discussed briefly.

111. An agreement to recognize territorial boundaries between CEI and Ohio Edison has been in effect since as early as 1964, DJ 488. In April 1974, Ohio Edison agreed with CEI to regard Boston Road as CEI's area in a territorial allocation agreement, *Id.* With respect to that agreement, Mr. Davidson, a vice president of CEI, stated that:

Ten years or more ago the two companies had had difficulty at certain boundaries and it was concluded that the company with the lowest cost should serve; and if this was not agreeable to both parties, it was to be

referred to the respective V.P.'s. Mr. Davidson stated his concern for Ohio Edison paralleling their existing facilities.

In connection with Mr. Davidson's statement, Ohio Edison representatives assured him that Ohio Edison had no intention of serving any customers that they were presently serving or, for that matter, any open lots in the area in question. To this, Applicants state, App. Brief p. 620, that DJ 488, the memorandum of Mr. Davidson's statement, merely refers to an understanding between Ohio Edison and CEI that the utility with the lowest cost would serve. Applicants interpretation of this document, however, overlooks the fact that if the standard of lowest cost was not agreeable to both parties, it was to be referred to the respective vice presidents, *Id.*

112. Mr. Rudolph, then president of CEI, testified that the failure to compete with Ohio Edison was predicated upon his understanding "... that the company that is closest and can serve with the least cost, they get the business," DJ 558, p. 53, 1. 17-18. Mr. Rudolph testified further that his company followed this practice because he had been advised by counsel that that is the law of Ohio, *Id.*

As noted elsewhere in this decision, it is not Ohio law that adjoining utilities should not compete for new customers. Applicants do not argue to the contrary.⁹⁰ At least one utility, Columbus and Southern, considers agreements not to compete to be illegal. Whatever the basis, the fact that Ohio Edison agreed with CEI not to compete at the fringes for new customers is a *per se* violation which requires no analysis. It cannot be defended under *Parker v. Brown*, 317 U.S. 341 (1943). Even though an analysis of intent and effect is not required in a *per se* violation of this nature, Applicants' justification for this agreement is instructive. They appear, App. Brief p. 621, to feel comfortable with the explanation that the utility with the least cost would serve (by agreement, not by advantage of efficiency) thus demonstrating how far from the real world of antitrust they have strayed. Dividing territories, and business, upon the asserted basis of least cost is a mutually beneficial, self-serving, and profit-maximizing consideration. It fails entirely to differentiate between cost to producer and price to consumer.

Rates are set upon the widely based cost of utilities. As Applicants concede, ff 23.03, "yardstick competition" is not a factor in the regulatory scheme in Ohio. Thus, the hapless customers located on the fringe are allocated between the two utilities depending upon which utility will benefit more. The customers are denied a free choice based upon price and service. If the utility to which they are assigned has higher system costs and higher rates, they have no recourse,

⁹⁰Section 4905.261 of the Ohio Revised Code, cited by Applicants, provides for limiting competition for *existing* customers, App. Brief p. 137, *et seq.*

particularly since the companies, not the Utilities Commission, made the decisions.

113. The Board does not attach the same relevance and importance as do Applicants to the argument that the territorial agreements affected only retail accounts. Even assuming this to be true, the methodical gathering of retail loads, embracing each new opportunity to serve areas at retail as it arises, effectively precludes the emergence of any competition among investor-owned utilities.

However, the Board has examined each of the exhibits pertaining to the territorial allocation agreements and even Applicants' claim as to the impact upon wholesale business is not supported by the evidence in almost each instance. The territorial allocation was determined on the basis of geography without regard to the functional level of sales. In some instances the territorial allocations were single parcels and would undoubtedly be retail accounts. Then in other instances there were rather substantial areas such as the Madisonburg area, State Route 19 between Galion and Bucyrus, Myers Lake, and Savannah, DJ 523, and the territory southwest of Fairfield, DJ 529, which could ultimately have its impact upon wholesale business.

114. Ohio Edison defends against the territorial allocation charge, in part, by asserting that, if such agreements did exist, Mr. White, the president of the company, ordered that they cease in 1972 or 1973. In this regard, the Board is troubled by several considerations. One is that in 1972 or 1973, Mr. White arranged for the collection and disposal of documents relating to territorial agreements between Ohio Edison and other utilities, White, Tr. 9747. His explanation for this runs counter to logic, Tr. 9750-52. Mr. White orally ordered division managers to cease adhering to such agreements. Thus we must compare the formally signed territorial agreements and maps with oral instructions to disregard them. At the least, Mr. White's instructions to his division managers lacked emphasis.

Moreover, Mr. White admits that the other utility partners in the territorial agreements were not advised of Ohio Edison's unilateral decision to cease adhering to them, Tr. 9752-53. We are concerned that, in some instances, the practice, once begun, has been continued by the other utilities.

Assuming, however, that Ohio Edison has, in fact, discontinued on its part territorial allocation practices and, assuming further, that Ohio Power and the other partners have somehow learned of Ohio Edison's forbearance, we cannot accept Applicant's arguments that, once the territorial allocation agreements end, their effects are negated. Applicants recognize the phenomenon in the electric industry of "one time competition;" that once acquired, utilities "serve forever a new customer," App. ff 23.05. It requires no analysis, it is axiomatic, that, with this factor in the industry, territorial and customer allocation agreements cause rigidity in the market. The longer they are in force, the less they are needed. As Ohio Edison expanded its transmission and distribution lines under

unlawful protection from competition, it irreversibly carved out for itself strong competitive advantages tending to exclude entry into its market by outsiders. Applicants point to two instances where Ohio Power very recently has agreed to sell on a limited basis in Ohio Edison's service area as evidence that such agreements have had no effect. We disagree. These instances simply establish that the potential for competition always existed but was thwarted because of illegal territorial agreements and other barriers to competition.

The Board finds that there is insufficient evidence that the territorial allocation agreements have terminated. We find that the effects of such agreements continue and contribute to a situation inconsistent with the antitrust laws within Ohio Edison's service area.

115. The Board finds further that Ohio Edison's successful, effective participation in territorial allocation agreements is directed evidence of its power to exclude competition and abuse of its monopoly power. It has been used to consolidate and maintain its monopoly position and this has been done by *per se* unlawful means.

Refusals to Wheel

116. The wholesale customers of Ohio Edison (WCOE), a group of municipal electric systems having wholesale power contracts with Ohio Edison organized themselves to fight a wholesale rate increase filed with the Federal Power Commission by Ohio Edison in 1972, Lyren, Tr. 1885-88. In August 1972, WCOE's representative wrote to Ohio Edison's president and, among other things, asked if Ohio Edison would be willing to wheel power from generating sources outside of its service area to each of municipal wholesale customers connected to the Ohio Edison system, NRC 30. WCOE received no answer. At a meeting thereafter to discuss this request and other matters, Mr. White, Ohio Edison's president, again refused to answer but, according to Mr. White, Ohio Edison was not refusing to wheel:

Mr. Mayben said two or three times in two or three different ways, you're refusing to wheel. In each case I said, no, we are not refusing to wheel, we are simply telling you that we have no answer for you to these questions, yes, no or maybe. Tr. 9593, 1. 5-9.

And finally, in 1974, Ohio Edison flatly refused to provide any form of wheeling to the wholesale customers, Cheesman, Tr. 12,162, Lyren, Tr. 2021,⁹¹ and the refusal continues, Firestone, 11,306-08.

117. Buckeye Power, Inc. is a nonprofit corporation owned by 27 rural

⁹¹This refusal to wheel also applies to transmitting power among wholesalers within Ohio Edison's service area, Cheesman, Tr. 12,167.

electric cooperatives in Ohio, App. 284. The Delaware, Firelands, Holmes-Wayne, Lake Erie, Loraine-Medina, Marion and Morrow Cooperatives are located within the Ohio Edison territory and are members of Buckeye Power, NRC 190. On behalf of its member cooperatives, Buckeye contracted for a large block of power from Ohio Power's Cardinal Plant, NRC 188.

118. The Buckeye member cooperatives located in the Ohio Edison service territory had purchased their power requirements from the Ohio Edison Company but wished to substitute Buckeye's Cardinal source, DJ 616. The problem facing the cooperatives was how to transmit the Buckeye Cardinal power to the member cooperatives when the only available transmission was owned and controlled by Ohio Edison.

When the Buckeye program was in the planning stage in September 1965, officials of the rural cooperatives served by Ohio Edison made their fifth request for wheeling services from Ohio Edison. To complete their financing needs, the rural cooperatives had to specify how they would be served. Ohio Edison proposed that, instead of wheeling, a buy/sell arrangement be implemented, DJ 532. By January 1968, the Buckeye Cardinal power was ready for delivery, NRC 188. On January 1, 1968, Buckeye Power entered into a wheeling contract with six investor-owned utilities providing for the transmission of power to the other Ohio rural electric cooperatives, NRC 188. However, Ohio Edison refused to enter into the power delivery agreement for the delivery of power to the seven rural cooperatives located within its service area, *Id.*

119. It was not until June 20, 1968, that Ohio Edison agreed to a means by which Buckeye Cardinal power could be provided to the seven rural electric cooperatives located in Ohio Edison's service area, NRC 190. This was by a buy/sell agreement, *Id.*, under which Ohio Edison would purchase power (at Ohio Edison's border) for resale to the seven rural electric cooperatives. This was power which otherwise would have been wheeled by Ohio Edison if the Buckeye request had been honored. The fact that Ohio Edison had transmission capacity to wheel the Buckeye power is demonstrated by the fact that the buy/sell agreement accomplishes the same functional result, White, Tr. 9556, DJ 572, p. 119.

Mr. Mansfield, who was then the chief executive of Ohio Edison, explained in a deposition why Ohio Edison preferred a buy/sell agreement over providing wheeling services and why Ohio Edison agreed to any plan by which outside power would be provided to the rural electric cooperatives in its service area:

Well, in the first place, I don't like wheeling *per se*. I don't think it is a good concept in our business at all. In the second place, this was a method by which we could avoid wheeling; No. 2, it was also a method by which we could keep our revenues up by including the amounts that we sold to Ohio Power with respect to growth revenue, whereas, had we agreed to wheel, then our growth revenue would have taken a loss of the aggregate sales to

the co-ops, in addition to the fact that we would have been wheeling *per se*.
DJ 572, p. 120.

The record establishes that Ohio Edison joined in the Buckeye buy/sell arrangement because it preferred that the co-ops not have their own transmission, DJ 572, p. 118 and 119; see also DJ 479.

120. The record as a whole with respect to the Buckeye program establishes that, even where Ohio Edison reluctantly lowered the barriers to outside power, it did so to avoid the construction of competing transmission within its service area.⁹²

121. As noted above, Ohio Edison's refusal to wheel Buckeye Power foreclosed that possibility when Norwalk was seeking alternatives to the sale of its system. Another effect of the refusal to wheel Buckeye Power may have been to prevent Newton Falls from purchasing wholesale from Buckeye in 1973, Craig Tr. 2927-28, NRC 210, 84.

122. In 1973, Orrville, Ohio, requested wheeling services from Ohio Edison and was specifically refused, Lewis Tr. 7958-59, 7980, 8003, 11341-42 and 11444, *supra*.

123. With respect to Orrville and the WCOE requests for wheeling findings, Applicants defend the refusals on the grounds that, without the specifics of size, identity and duration of the proposed load, Ohio Edison would be unable to evaluate and respond to the requests, App. ff 36.103, 36.104.

The request for wheeling services were sufficiently specific as to identity and size to indicate to Ohio Edison that the municipalities were not idly inquiring in a vacuum; and that power was available to import, and, in the case of Orrville, to export, Lewis, Tr. 7980-84, 7997-8003; Cheesman, 12250, 12268-69, DJ 628.

124. In viewing the record with respect to Ohio Edison's refusals to wheel, the Board finds that the refusals were threshold in nature, so negative and final in tenor as to discourage further efforts by municipalities to develop the engineering details which now are asserted by Ohio Edison to be needed in considering such a request, White 9707-08. There is no record that Ohio Edison ever advised the municipalities concerning their lack of specificity, nor that detailed requests would be considered. Such advice definitely was not provided

⁹² Applicants' argument that the Buckeye buy/sell arrangement disproves the existence of a territorial allocation agreement between Ohio Edison and Ohio Power, App. ff 149, p. 119, is unpersuasive in view of the compelling evidence that such an agreement did exist. First, the Buckeye buy/sell arrangement did not introduce Ohio Power as a competitive force in Ohio Edison's service area. The power involved was essentially that of Buckeye Power, Inc., App. ff 36.139, p. 117. Second, both companies were acting to exclude new transmission into the territories they had divided between them. They could be expected to depart from a territorial allocation agreement toward this end, DJ 572, pp. 118-120.

in the WCOE negotiations, White, Tr. 9606-07: The record as a whole established that Ohio Edison's refusal to wheel was a product of company policy, and perhaps even a matter of principle, DJ 572, p. 120, see also findings with respect to wheeling Buckeye Power, *supra*. Additional specificity would have been fruitless.

125. Added to Ohio Edison's territorial agreements, and standing alone, the refusals to wheel effectively insulate Ohio Edison from competition from outside sources of power. They denied the entities within its service area the advantages of coordination in development and operations, and significantly contribute to a situation inconsistent with the antitrust laws.

Activities Within Ohio Edison's Service Area—WCOE Negotiations

126. WCOE, comprising the 21 municipal wholesale customers of Ohio Edison, was formed to oppose the wholesale rate increase filed by Ohio Edison with the Federal Power Commission. As a part of the settlement of that case, Ohio Edison and WCOE agreed to study a new form of power supply arrangement for the municipalities, Lyren Tr. 1883-86.

127. The electrical engineering firm of R. W. Beck and Associates was engaged to make the study which was completed in July 1975, NRC 44, Cheesman, Tr. 12149. The Beck "power supply study" was conducted under the supervision of Mr. Cheesman who testified at the hearing that this firm was not free to study all of the possible alternatives which otherwise might have been available to WCOE; that these restrictions were imposed upon Beck through a series of meetings by Ohio Edison, Cheesman, Tr. 12,151. Therefore, the study contains recommendations which are not necessarily the best for WCOE but only those which met the initial test of acceptability by Ohio Edison. Eliminated from the study at the instance of Ohio Edison were the following possibilities which would affect the power supply for WCOE:

1. Ohio Edison would not consider any third party wheeling including wheeling among municipalities; wheeling from municipalities to other sources outside the Ohio Edison service area; and, as discussed above, wheeling from outside the Ohio Edison service area to the municipalities located within, Cheesman, Tr. 12152, 12167; Lyren, Tr. 2022. Third party wheeling was not excluded from the settlement approved by the Federal Power Commission. In fact, WCOE settled in the belief wheeling should have been included in the subsequent negotiations, Mayben, Tr. 12530; Cheesman, Tr. 12191.

2. WCOE would not have access to existing generation. With respect to future generation, only those units selected by Ohio Edison would be available, Cheesman, Tr. 12152, 12167.

3. Even with regard to new units, Ohio Edison initially limited the

availability to 10% of WCOE's estimated peak load annually, Cheesman, Tr. 12170-71. This would have required more than 30 years for WCOE to achieve self-sufficiency in generation, Cheesman, Tr. 12170.

4. The 10% of peak load limitation was abandoned and a new restriction substituted in June 1975, NRC 44, Appendix letter dated June 17, 1975, from Firestone. The new proposal required that WCOE participate to the extent of 50 megawatts each in 11 CAPCO units.⁹³ Although WCOE would pay for all constructing, owning and maintenance costs, only Ohio Edison had the right to determine the scheduling of capacity and energy from the WCOE portions.⁹⁴

Moreover, the proposal provides that:

The WCOE entitlement to energy from its ownership portions of CAPCO units is based on the ratio determined by the energy delivered to WCOE customers and the energy delivered to Ohio Edison customers (including WCOE), *Id.*

Under this plan, if Ohio Edison decided to schedule less than full capacity, the output of the capacity owned by WCOE would be proportionally reduced. To make up the deficiency in power, WCOE would be compelled to convert back to being wholesale customers of Ohio Edison for the energy deficit, Mayben, Tr. 12570. Rather than reducing the cost of energy to WCOE, the proposal could encumber WCOE with ownership and capacity that it was unable to use, Mayben, 12573.

5. Ohio Edison also would impose restrictions on the resale of WCOE's power from the units it owned (including nuclear). Excess base load capacity would have to be resold to Ohio Edison and would not be available for export by WCOE to an outside source, Cheesman, Tr. 12155; Lyren, Tr. 2014. This restraint on alienation is even greater than that condemned by the Supreme Court in *Arnold Schwinn, supra*, p. 22, because, in this instance, WCOE would be the owner of the generating capacity and not a purchaser for resale as in *Schwinn*. Of course this restriction upon the resale of excess capacity is redundant, because without the opportunity to wheel power among municipalities or to outside sources, excess capacity could not be resold to anyone except Ohio Edison.

6. WCOE would have reserve responsibilities based upon the reliability formula known as "P/N." As we note hereafter, the Board finds that this formula was adopted by CAPCO companies predicated upon their own belief of how Applicants could best work out their reserve problems among

⁹³ Including the nuclear units involved in this proceeding.

⁹⁴ This is one of several situations where Ohio Edison has made unacceptable proposals to its customers which would require the customer to pay for facilities which facilities would be controlled by Ohio Edison. See Findings 149-150, *infra*.

themselves. But it is inherently unworkable for small utilities, see Findings 212-213 *infra*. In this instance, the unworkability is demonstrated by the fact that WCOE would be required to carry 280% reserves under the P/N formula, Cheesman, Tr. 12158.

7. A final requirement imposed by Ohio Edison would provide that the WCOE power not supplied from WCOE generation would be supplied exclusively from the Ohio Edison System, NRC 44, Appendix Firestone letter February 28, 1975, p. 2. Here again in view of the refusal to wheel from outside sources together with territorial allocation agreements the exclusive supply proposal by Ohio Edison arises from a surfeit of caution. WCOE has no other power available to it.

128. Beck Associates did not consider any alternatives that had been excluded by Ohio Edison, White, Tr. 9782, since this was a preliminary understanding to the scope of the study, NRC 44, Appendix I. Accordingly, Beck Associates narrowed their efforts to seven alternative methods of power supply, including the *status quo*, and concluded that a plan for the prepayment of power purchases, considering all the factors, is the best plan available to WCOE, NRC 44, p. VII, 1-2.

129. At an August 1975 meeting, WCOE and Ohio Edison agreed in principle to the "prepayment of power purchases" plan, App. 15, but subsequently WCOE reconsidered the suitability of this approach where the matter rested at the close of the record, *Id.*

130. In approving the 1972 rate hike, the Federal Power Commission understood that the parties agreed to undertake a joint study and effort to realign their long-term power supply relationships including studies of the feasibility of joint ownership or other contractual agreements relating to generating capacity, App. 9 (Order approving rate settlement). However, the Applicant, Ohio Edison, has not yet been required to release its hold upon the WCOE members as full-requirement wholesale customers and it enjoys this rate hike meanwhile.

131. With respect to the WCOE negotiations, the Board finds that Ohio Edison has failed to act reasonably and in a manner consistent with the antitrust laws. As a result, Ohio Edison has denied to the members of WCOE the benefits of coordinated operation and development, has hindered competition with these systems, has denied WCOE members the benefits of competition among Ohio Edison and electric utilities outside the Ohio Edison service area, and has denied WCOE reasonable and practical access to nuclear generation. In the process, Ohio Edison has acted affirmatively and deliberately to preserve its monopoly position in bulk power service in its service area.

Restraints Upon Wholesale Customers

132. In each of the power supply contracts with rural cooperatives in effect

during the relevant period until superseded by the Buckeye Power buy/sell agreements, DJ 17-23, Ohio Edison placed the following restrictive clause in substantially identical form, DJ 17:

3. Cooperative agrees that all of the electric energy purchases hereunder is for resale direct to consumers and that the energy will not be sold by cooperative for resale.

Two years later when the power supply contracts with the seven cooperatives were replaced under the provisions of the June 1968 Buckeye power agreement (NRC 190) there was a prohibition against reselling the Buckeye Power handled by Ohio Edison, *Id.*

133. By these restrictions, Ohio Edison has eliminated wholesale competition between it and the rural electric cooperatives within its service area.

In addition, at least until 1967, Ohio Edison had a territorial agreement with Holmes-Wayne Cooperative which eliminated retail competition between those two utilities, DJ 522.

134. Prior to 1965, Ohio Edison restricted its municipal wholesale customers in reselling power to industrial customers except in relatively small amounts controlled by Ohio Edison, DJ 24-43. These restrictions reserved to Ohio Edison the right to serve new industrial accounts whose peaks ranged from 50 to 150 kVA depending upon the particular municipality involved, *Id.* Ohio Edison thereby eliminated competition between it and its municipal wholesale customers for these desirable industrial accounts. These contracts also reserved to Ohio Edison the right to continue to serve any account within the municipality already served by the company thus eliminating retail competition to that extent, *e.g.*, DJ 26 and 27.

135. These contracts are relevant to our proceeding because they enabled Ohio Edison to acquire industrial loads which it held beginning in 1965 when new contracts were issued to the wholesale customers, DJ 44-62. The new contracts provided that Ohio Edison, unless waived by written consent, shall continue to serve accounts it was then serving (thus freezing its previously acquired industrial loads). Ohio Edison retained exclusive right to serve any premises within the corporate limits that could be reached by its secondary distribution lines and any business outside of the municipality not then being served by the municipality or which could not be reached by the municipalities' secondary distribution facilities, DJ 44-62.

136. The effect of these restrictions was to maintain Ohio Edison's position with the municipalities and to eliminate competition for virtually all new industrial loads located outside the boundaries of the municipality although, under Ohio law, municipalities were entitled to compete for such business. Comparable restraints were imposed upon the Company, *Id.*, see also DJ 63-65.

137. On occasion Ohio Edison denied permission to the municipalities to extend their primary distribution system. For example: with respect to Wads-

worth, Lyren, Tr. 2246-47, 1926; and with respect to Niles, DJ 406-09. These denials, of course, foreclosed competition for the retail accounts involved.

Sometimes the Ohio Edison Company granted permission to municipalities to extend their primary system but, when this was done, it led to a curious practice known as "banking," Lyren, Tr. 1926. Banking is a system of credits and debits where the condition of consent is that the municipality trade to Ohio Edison a like customer at a future date, e.g., NRC 63-64. The banking conditions were enforced, Lyren, Tr. 1940. Sometimes the banking exchanges would involve an entire development, e.g., NRC 39-40, but most often single customers, Lyren, Tr. 1940. When there was an accumulation of customers in the bank, the parties would meet and make adjustments to equalize the credits, Lyren, *Id.* There was no provision for consulting the customers involved. They were traded back and forth for the convenience of the utilities without regard to whether their rates would increase or decrease without consideration of any competitive factor.

There is probative evidence that this banking practice was followed with respect to the municipalities of Wadsworth, *supra*, see also NRC 65-66; DJ 59-60; DJ 63; DJ 466, Hudson, DJ 474; DJ 475; and Cuyahoga Falls, DJ 481-2.

138. The banking practice discouraged the City of Wadsworth from seeking new customers because the problem of exchanging these new customers for old customers eliminated the incentive to compete. This tended to restrict the growth of the municipal systems, Lyren, Tr. 2264; Tr. 2267.

139. Ohio Edison eliminated the customer and territorial allocation provisions of its municipal power supply contracts unilaterally when it filed a 1972 request for a rate increase with the Federal Power Commission, App. 10; App. 11. Applicants maintain that the deletion of the anticompetitive provisions of the contract was as a result of Ohio Edison's growing sensitivity to the application of the antitrust laws to the electric utility industry, App. ff 36.41, p. 92. This may have been one of the factors entering into Ohio Edison's decision to eliminate restrictive provisions, but another consideration by Ohio Edison's general counsel was a concern that the provisions restricting municipalities were located in the rate schedules controlling the contracts, thus subject to change in a proceeding before the Federal Power Commission. The restraints upon the company were located in the main body of the contract which would remain unchanged, DJ 613. This was apparently an error in planning by Ohio Edison whose idea was to have the terms that bind municipalities live on beyond the ten-year period of the contract, while Ohio Edison would be freed from its restrictions at the conclusion of that term, DJ 613. Thus, there were very practical business considerations for Ohio Edison to drop the customer and territorial allocation restrictions from its filing with the Federal Power Commission.

In any event, regardless of the motivation for dropping restrictive provi-

sions, the damage had been done. Areas served by Ohio Edison were permanently preempted by the extension of their primary systems under the anticompetitive terms of these ten-year contracts.

140. From 1965 until about June 1976, Pennsylvania Power's municipal wholesale contracts contained restrictions on the resale of the power, DJ 67-76. The restrictions contained in Grove City's contract, DJ 76, are typical:

Except with the written consent of the company, service furnished hereunder shall not be resold for use at any premises now or hereafter being furnished electric service directly by the company. Except with a written consent of the municipality or upon the order of a public authority having jurisdiction, the company will provide no direct service for use at any premises now or hereafter being furnished electric service directly by the municipality.⁹⁵

A practical application of this restriction can be seen in Grove City's situation. Although it has the capacity, and would otherwise have the right to serve an industrial customer in its distribution area, it would be unable to serve that customer because of Penn Power's preexisting service, Allen, Tr. 4765-66.

141. In Elwood City, Penn Power serves all of the industrial customers, Urian, Tr. 4967. Although Elwood City would like to negotiate for industrial business, the restrictive contract (DJ 75, para. 4) prohibits Elwood City from serving the industrial customers presently served by Penn Power, Tr. 4970-71. Elwood City has the capacity to serve industrial customers, Tr. 4972. Penn Power officials advised Elwood City that consent to serve industries within Elwood City would not be granted, Luxenberg, Tr. 6400, Urian, Tr. 4986.⁹⁶

142. In this and in other cases of restrictive agreements, Applicants contend that there must first be some evidence of enforcement of the restrictive provisions before the Board can find that they were, in fact, restrictive in effect, *e.g.*, App. ff 36.168. We have throughout rejected this argument. Not only is the argument sometimes factually inaccurate as in the case of Elwood City, but it fails as a matter of logic. First, a void of evidence does not prove that there was no enforcement. Second, it assumes without foundation that parties do not comply with the terms of their contracts.

Long-Term Contracts

143. The evidence does not support the findings proposed by the opposition parties that the ten-year terms of Ohio Edison's municipal wholesale contracts

⁹⁵ Beginning in May and June of 1976, Penn Power has proposed new contract forms eliminating the restrictive provisions, App. 243-App. 247.

⁹⁶ The restrictive provisions of Elwood City's contract were relaxed somewhat with respect to certain specifically named commercial and residential customers, DJ 71.

are unreasonably long, DJ ff 8.11; NRC ff 1.253; C ff 1306. This does not abrogate, however, the Board's observations that the length of these contracts must be considered in light of other restrictive provisions.

Capacity Limitations

144. In 1974, Ohio Edison attempted to impose upon Newton Falls a municipal wholesale contract (NRC 73) with the following provisions:

1. No more than 6,250 kVA would be provided without written consent of Ohio Edison, *Id.*
2. The municipality must buy all of its power from Ohio Edison, NRC 86-104 (current FTC Rate Schedule).

The contract was for 10 years.⁹⁷ Newton Falls' City Manager testified that 6,250 kVA would be barely adequate, or would result in a slight shortfall under the 10-year projected need of 6,330 kVA, NRC 44; Craig, Tr. 2876. Since the capacity limitation would barely provide for Newton Falls' normal load growth, it would be a certain bar to the addition of new industrial loads, or an extension of the City's system, Craig, Tr. 2926a. Any new business lost by Newton Falls would go, of course, to Ohio Edison. Considering the full-requirements provision of the proposal, which was redundantly backed by Ohio Edison's refusal to wheel⁹⁸ and the continuing effect of its territorial agreements with other investor-owned utilities, the contract would eliminate competition between Ohio Edison and Newton Falls as effectively as did the recently abandoned customer allocation clauses.

145. Ohio Edison defends against this charge by stating that the restrictions were no more than reasonable safeguards against unplanned demands upon generating and delivery capacity. The Board considers this asserted justification in light of three factors:

1. The proposed limitation of about six megawatts constitutes only about 15/100 of 1% of the combined Ohio Edison/Pennsylvania Power generating capacity of 4,266 megawatts, NRC 207, p. 26.

2. Mr. Firestone's testimony that the 6,250 kVA limitation was due to the limited capacity of Newton Falls transformer is not persuasive, Firestone Tr. 11201. This appears to be an after-the-fact justification. We were unable to find any reference to this problem in the negotiations leading to the final contract. Nor do we understand why sufficient transformer

⁹⁷ Staff urges a finding that this period was unreasonably long considering the repressive effect of the proposal. Nowhere does the Staff, nor the Applicant for that matter, analyze the fact that the contract executed provides for cancellation at the end of five years with two years notice prior to cancellation.

⁹⁸ A very real restriction. Newton Falls was unable to buy Buckeye Power partly because Ohio Edison refused to wheel it, NRC 84.

capacity could not be a condition of sale if it was not already an obvious implicit condition.

3. The limitation does not account for the ultimate need of Ohio Edison to serve any loads from which Newton Falls would be foreclosed:

146. The Board finds that the initial power supply proposals by Ohio Edison to Newton Falls were attempts to restrict competition between them. They manifest Ohio Edison's intent and attempts to preserve its monopoly in its service area.

147. Following FPC mediation and the commencement of hearings in this proceeding, Ohio Edison proposed terms accepted by Newton Falls which provide for additional capacity when required by the city if there is sufficient notice, Craig, Tr. 2917, App. 34 (December 1975 contract).

Refusals to Deal

148. For the purpose of maintaining and extending its monopoly position, Ohio Edison has refused to sell bulk power. Sometimes these refusals have been in the form of a sham offer to interconnect upon conditions which municipal systems found to be burdensome or impossible. In other cases Ohio Edison has refused to make power available in higher voltages thus preventing municipalities from competing for industrial loads or denying them the economies of taking at higher voltages and breaking load for resale. Also as noted *supra*, Ohio Edison initially refused to provide sufficient power to Newton Falls to enable it to extend its service.

Although none of the proposed transactions analyzed in this regard would have been unprofitable for Ohio Edison, the advantages of the refusals are obvious. Ohio Edison having secured its service area against competition from without is the only available supplier for business denied to the municipalities by the refusals.

149. In July 1973, to ease its dependency upon its own oil and gas fired generators, Newton Falls began negotiations for purchasing power from Ohio Edison, Craig, Tr. 2846-47. Studies by Ohio Edison demonstrated that a 69 kV interconnection would be required, Craig, Tr. 2915-16. Ohio Edison proposed that Newton Falls pay the cost of an interconnecting line in advance but that Ohio Edison would own and operate the interconnection and serve other customers on the line. Ohio Edison would later refund the cost to Newton Falls, NRC 77. This was a departure from usual industry practice (NRC 77) but, according to Applicants, was necessary because of a "financial crunch," App. ff 36.45.

Because the cost of the line was estimated to be very substantial and for other reasons, it would have been necessary for Newton Falls to issue bonds to finance the project, NRC 79.

Provisions of the Ohio constitution prohibit municipalities from raising money to loan to a private corporation by issuing bonds, NRC 74, and limits the purpose of mortgage revenue bonds to constructing or extending the municipality's own facility, NRC 77. This was the advice of the law firm of Squire, Sanders and Dempsey, NRC 74 and 77, and the correctness of this counselling is not contested by Applicants.⁹⁹ As a result, Newton Falls was unable to raise the necessary funds for the interconnection. The effect of this constitutional prohibition upon Newton Falls was made known to Ohio Edison in connection with the Federal Power Commission efforts to resolve the impasse, NRC 79. But Ohio Edison insisted upon these terms, NRC 79, Craig, Tr. 2856-57 and 2876. It was not until the eve of this hearing in November 1975 that Ohio Edison agreed to a plan permitting Newton Falls to own the line for which it must pay, *Id.* and NRC 83.

150. Proposals of this same nature were made by Ohio Edison to the Municipality of Niles, NRC 216-17, Orrville, Lewis, Tr. 7960, and Norwalk, NRC 82. Niles accepted these terms, App. 268. Orrville found the terms to be impossible to accept, Lewis, Tr. 7960, 7980. The City of Norwalk, unable to borrow money, financed a temporary interconnection with "on-hand monies," NRC 82, then sold its system to Ohio Edison.

151. Applicants defend against the allegation that the financing and ownership conditions constituted a refusal to deal with the argument that the plan places the burden of the cost upon those who would most benefit, App. ff 36.50, 36.52.¹⁰⁰ This misses the thrust of the charge. It is not the allocation of costs to the municipalities which is the essence of the charge. It was the coupling of financing responsibilities with the requirement that Ohio Edison own the facility and receive prepayment for the construction, which made the proposal functionally useless to Newton Falls and Orrville and of dubious and temporary benefit to Norwalk. The arrangement with Niles, was consummated after June 28, 1976, (App. 268) near the end of this hearing and its impact upon that municipality does not appear in the record.

⁹⁹As it happens, Squire, Sanders and Dempsey represents CEI in this proceeding. As we learned in the attorney disqualification phase, favorable advice of this firm is desirable to a municipality seeking to issue bonds due to the firms' longstanding preeminence in the field, NRCI-76/3, 236 at 239, 254.

¹⁰⁰During the negotiations with Newton Falls, Ohio Edison justified its position by asserting that these conditions were applied to all municipalities uniformly as a requirement of the Federal Power Commission, Craig Tr. 2913-15, NRC 81. Aside from the point that the assertion of an FPC requirement does not comport with the facts, NRC 79, the argument that regulatory agencies restrained the utilities from free dealing with municipalities is incompatible with the major theme of Applicants' defense that the regulatory scheme is an effective substitute for the antitrust laws.

High Voltage Power Supply

152. Ohio Edison and Penn Power are charged with refusing to sell high voltage power for the purpose and with the effect of restraining competition with municipalities, particularly for industrial loads, DJ ff 8.24, 8.25 and C ff 14.01.

Electricity at higher voltages is more efficient to deliver and is therefore cheaper, Tr. 4978. For this reason, the availability of power at higher voltages would better enable municipalities to compete. Moreover, some industrial customers require that their service be at higher voltages, Urian, Tr. 4978. In 1972, The Cities of Cuyahoga Falls and Niles, Ohio, were seriously considering service at 138 kV for the "fairly near future," DJ 421, and requested Ohio Edison to file a rate for such service. None was on file at that time, *Id.* Niles was at an advanced stage of planning for high voltage facilities, DJ 418. Ohio Edison refused to file a wholesale rate at 138 kV, DJ 419, 421.

153. Ohio Edison justifies its unwillingness to file a rate for service at 138 kV on the basis that it believes that in doing so, it would be violating the FPC rules, requiring that a rate schedule not be filed more than 90 days before the date on which the expected service is to begin, App. ff 36.76, White, Tr. 9735-36. A problem arises with this restriction because the municipality faced with upgrading its voltage will be required to make a substantial investment in order to receive service at that voltage. But it is difficult to determine the financial feasibility of going to higher voltage without knowing the rate, White Tr. 9734.

Applicants do not contend that the Federal Power Commission rules prohibit the utility from advising the municipality in advance what its higher voltage rates will be when filed. They contend that Ohio Edison gave interested cities every indication short of filing as to what the 138 kV rate would be, App. ff 36.78.

It is, therefore, appropriate to evaluate the adequacy of Ohio Edison's indications to Cuyahoga Falls and Niles to determine whether these indications were made in good faith. Applicants state that Ohio Edison was prepared to employ its 5% industrial discount (from 23 kV service) for estimating purposes and that municipalities were so advised, App. 36.79. It is true that Ohio Edison did advise Niles and Cuyahoga Falls of the industrial rate, DJ 419 and DJ 421. In informal discussions, DJ 417, Ohio Edison suggested that the 5% discount would apply, but in the formal written answers to the requests by Niles and Cuyahoga Falls, Ohio Edison specifically indicated that the industrial 5% discount may not apply, DJ 419, 421. In view of the fact that Ohio Edison traditionally maintains a difference between its industrial rates and municipal rates (see Price Squeeze, *infra.*), the Board finds that Ohio Edison did not make sufficient information available to the inquiring municipalities to provide them with dependable bases to proceed with the construction of high voltage facilities.

154. In 1973, Elwood City requested Penn Power to file a rate for 69 kV service, *Urian*, Tr. 4977. Elwood City was interested in competing for the business of some industrial customers and 69 kV service was necessary in order to be competitive, *Id.* 4978. Penn Power refused to file a rate with the Federal Power Commission and gave no indication whatever to Elwood City what the rate for 69 kV service might be, *Urian*, Tr. 5002, *Luxemberg*, Tr. 6410. Finally, in April 1975, the Federal Power Commission ordered Penn Power to file a rate increase consistent with FPC regulations; DJ 626. At the FPC hearing, for the first time, the formula upon which the rates would be based was determined by the administrative law judge, *Urian*, Tr. 5003 and DJ 626, 627. The effect upon Elwood City of Penn Power's refusal to indicate a rate is even greater than the effect upon the Ohio municipalities because Pennsylvania cities must demonstrate that they can afford an expansion program before they may issue bonds, Tr. 4979. The effect of Penn Power's refusal has been to deny Elwood City the opportunity to compete for industrial customers within its borough, *Urian*, Tr. 4978, *Luxemberg*, Tr. 6410. The failure and refusal of Ohio Edison and Penn Power to indicate the basis upon which they would file rates for high voltage power with the FPC constitutes an unlawful refusal to deal which restrains competition between these utilities and municipalities served by it.

The opposition parties have not proved that Penn Power's failure to provide maintenance power to Grove City was an unlawful refusal to deal, DJ ff 8.12.

Price Squeeze

155. Ohio Edison charges municipalities purchasing at wholesale significantly higher rates than comparable sales to industry, *Kampmeier*, DJ 450, p. 34. The difference between the municipal and industrial rate in the Penn Power rate structure is even greater, *Id.* p. 35. This price discrimination is an important factor limiting the abilities of municipalities to compete for industrial loads, *Lyren*, Tr. 2047, *Wein*, Tr. 6974, DJ 587, p. 158. The parties discuss the charge of price squeeze in terms somewhat parallel with the elements of §205(b) and 206(a) of the Federal Power Commission Act (16 U.S.C. §824) and §2 of the amended Clayton Act, 15 U.S.C. §13. The Clayton Act is one of the antitrust statutes named in §105(a) of the Atomic Energy Act. The pertinent provisions of the Federal Power Commission Act proscribe unduly discriminatory preferential, prejudicial or disadvantageous rates. Section 2 of the amended Clayton Act is the basic price discrimination statute.

Applicants defend against the price squeeze charge App. ff 36.59, *et seq.* in four basic ways:

1. The comparative price analyses involved in this charge is beyond the competence of this Board and should be left to the FPC, App. Brief, p. 571.
2. The retail industrial rate has been found to be reasonable by the state utilities commissions and the wholesale rate has been found to be reasonable

by the FPC, therefore both rates are reasonable and may not be challenged by this agency, App. ff 36.59-36.73.

3. By adding the industrial load to its own load, a municipality can profitably compete for industrial customers because it would thereby qualify for a lower rate block, App. ff 36.72.

4. Since the FPC and the State Utilities Commission each use a cost factor in establishing or approving rates we must therefore infer that the difference between the municipal and industrial rates is cost justified, App. ff 36.62, 36.68. Cost justification is a recognized economic justification and is an affirmative defense to a charge of price discrimination.

We address Applicants' first two arguments jointly. While the FPC and the states have the responsibility and competence to establish rates, and we do not, price squeeze is a concept founded in antitrust. We are constituted to discharge the strong antitrust mandate of §105 of the Atomic Energy Act.

Moreover, we consider, as did the Supreme Court in *FPC v. Conway Corp.* *supra*, p. 151, that ratemaking is not an exact science; that two rates each may fall within a zone of reasonableness, yet together they may have anticompetitive impact and antitrust significance. We do not undertake to make or approve rates; rather we evaluate the anticompetitive effects of the rate differences. *City of Mishawaka v. Indiana and Michigan Power Company*, *supra*, p. 151.

In evaluating the price squeeze charges, the Board also observes that the rates, despite the opportunity for review and hearing before the state commissions and the FPC, were initiated by Ohio Edison and Penn Power. There is no grant of immunity from the application of the antitrust laws by virtue of state and FPC regulation of the activity under examination. *Cantor v. Detroit Edison*, ___ U.S. ___ 96 S. Cr. 3110 (1976) and *Otter Tail Power Company v. U.S.*, *supra*, p. 148.

156. Applicants presented Mr. Wilson and Applicants' Exhibits 167 and 168 to demonstrate that municipalities can profitably compete for industrial loads by adding the industrial customer to its own load thereby taking advantage of a lower rate block for the increased total load, App. ff 36.70. Using the Cities of Wadsworth, Galion and Cuyahoga Falls as examples, Applicants hypothesized the effects of the price of power to those Cities by adding industrial accounts under various conditions, App. 167, App. 168, Wilson, *e.g.*, Tr. 11060, *et seq.*

City, C ff 17.01, and Justice, DJ ff 8.26, 8.27, dispute the validity of Mr. Wilson's study by arguing that certain variables are not accurately and uniformly applied and that certain cost factors were omitted. The Board recognizes that the study does contain flaws such as omitting the municipalities' redistribution costs, using off-peak test periods, and failing to analyze the effect of multiple delivery points. But the study does establish that sometimes, under certain circumstances, a municipality could sell power to a retail industrial customer at a

price less than that charged by Ohio Edison by adding the industrial customer's load to that of the municipality.

This may not always be true, but even if it were, antitrust analysis must not end there. The municipalities are entitled to operate free from the restraints of discriminatory and prejudicial rates even if the differing rates would permit some level of gross profit to the municipality. As Dr. Wein testified, the price squeeze may still result in an unacceptable rate of return forcing the competitor out of the market, DJ 587, p. 158; see also Kampmeier, Tr. 6021-22.

In a classic price discrimination case, *Utah Pie Company v. Continental Baking Company*, 386 U.S. 685 (1967) the Supreme Court recognized that injury to competition may be found even when competitors of the discriminating seller continue to operate at a profit, *Id.* at 702. The Board finds that the pricing scheme employed by Ohio Edison and Penn Power is a price squeeze even where the only effect is to impose upon the municipalities a limit in the amount of profits they may realize.

However, if the lower price to industrial customers is cost justified, any impediment upon the ability of the municipalities to compete would be attributed to their economic position in the channel of electric power distribution and not to anticompetitive pricing. Cost justification negates a price squeeze, Wein and Kampmeier, *supra*.

157. Applicants urge that the differing rates are cost justified because the municipalities follow the peaking patterns of the system as a whole while the industrial customers have peaks different than the system peak, App. ff 36.68, Wilson Tr. 11046-65. Mr. Kampmeier, the consulting engineer appearing for the Department of Justice, squarely disputes this contention as being out-of-date, DJ 450, pp. 35, 36. He testified:

Therefore diversity among the times of peak demands is at least as likely as not to be an added reason for lower rates to distribution systems than to industries, *Id.*, p. 36.

Neither Applicants nor opposing parties present cost studies.¹⁰¹ Applicants arrive at the conclusion that the industrial rate is cost justified by a syllogistic route. The retail industrial rate is approved, or set, by the state utility commission based, in part, upon cost of service. The municipal rate is approved or set by the FPC in part because of cost of service. The states have approved a lower rate for industrial customers than the rate the FPC has approved for municipal customers. *Ergo*, the difference is cost justified.

Applicants reasoning is faulty. They concede "Ohio Edison does not even look to its wholesale rate in designing its retail rates," App. ff 36.63. Therefore,

¹⁰¹ The burden rests upon Applicants to establish a cost justification defense. See *Utah Pie, supra*, 386 U.S. 685, 694, where the court recognized a statutory burden. We have a practical consideration for assigning the burden to Applicants. Only they have the data by which cost justification may be proved or disproved.

it is apparent that Ohio Edison does not know if there is a justified cost difference between the two rates. If the respective "zones of reasonableness" encompassing the respective rates are broad, there would be no bases to infer any differences in the costs of service from the rates approved. Indeed, if the zones of reasonableness are very broad, the cost may be higher to serve at the lower rate. The basic defect in Applicants' logic is that they are failing to analyze rate *differences*. They admit that they have not done so, App. ff 36.63. Within the concept of a price squeeze, it is not the high rate nor the low rate but the *difference* between the rates which injure competition. There has been in this case a totally inadequate showing that the differences are cost justified.

Toledo Edison Company

158. The present system configuration of TECO was achieved through the merger and acquisition of 190 different systems into the present corporate organization. DJ 587, p. 70. By 1973, all municipal systems in its service area purchased their full bulk power requirements from TECO with the exception of Bryan and Napoleon which were partial requirements customers of Toledo Edison and the Village of Tontagony which purchase from Bowling Green (itself a full-requirements customer of TECO). DJ 587, pp. 71-72. In 1975, both Bryan and Napoleon ceased self-generation of electric power and no self-generating municipals remain in the TECO service area. DJ 576, p. 128; Dorsey, Tr. 5251.

159. Although the absorption of many smaller systems into the TECO corporate structure in part may be attributable to operating inefficiencies and financial constraints, see App. ff 35.03, the demise of these small independent systems also is a product of a considered and deliberate acquisition policy of TECO. Municipals were recognized as competitors vulnerable to acquisition despite the fact that many of them were profitable even though their rates were lower than those of TECO.

(a) Mr. Schwalbert, TECO's Vice President in Charge of Districts from 1972-74, detailed the acquisition policy. In a July 1974 memorandum, DJ 541, to a newly appointed eastern district manager of the Company, Mr. Schwalbert states:

I have attached a list of long-term objectives I put together and some ways to implement them.

.....

Acquisition of municipals is an objective high on our list.

Continuing, under an outline entitled "Long-Term Objectives":

Convert our wholesale towns to retail by purchasing their electrical systems.

This goal description is followed under Part II.B by specific directives related to its attainment.

(b) Although TECO has argued that its municipal competitors are weak and inefficient and that opportunities for competition are limited, the Schwalbert memorandum, DJ 541, indicates otherwise. He urges company personnel to:

... try to counteract the factors which prevent conversion to Toledo Edison retail service. These are:

a. Their rates are satisfactory—all lower than ours.

f. They feel that they have an asset that will continue to grow in value.

g. They operate in the black and transfer money to other nonelectric operations (by court action)

(c) TECO was aware that denial of bulk power services could be a means of forcing the conversion of self-generating or distributing municipal systems to TECO customer status. For example, Mr. Schwalbert specifically commented that on the occasion of a major storm inflicting damage on a municipal system, an intolerable situation would be presented if the municipality found it difficult to get sufficient help (*i.e.*, lacked an interconnection or opportunity to obtain emergency power). Further, with respect to access to nuclear facilities, Schwalbert took note that the technology of the electric power business is changing rapidly. Also, in contradiction to the company's argument that competitive factors were *de minimis*, Schwalbert considered arguments relating to whether industry would rather be served by a municipal system or by an investor-owned company. Finally, the Schwalbert memorandum destroys Applicants' argument that acquisition of municipal systems by TECO occurred as a result of unsponsored deliberations by elected officials of the acquired municipalities. TECO promoted the sale of these systems through continuing contracts, both direct and indirect, with elected officials.¹⁰²

160. Mr. Moran, TECO Vice President for Corporate Planning and a member

¹⁰² Compare App. ff 3503 which asks us to hold that:

with respect to both of these acquisitions [Waterville and Liberty Center], the Toledo Edison Company submitted a proposal only after it had been approached by the municipality and formally requested to do so and, moreover, an election was held in which these acquisitions were directly approved by a majority of the municipal voters

with Schwalbert's statement that:

We arrange for counsel to officially ask us to look into the possibility of sale. a) if we don't do it this way it looks as if we are pushing too hard . . . b) when Counsel asks for this study proposal, then we send our people *openly* into the town to study the system. DJ 541. (Emphasis added.)

of the board of directors, testified with respect to the last five or ten years that:
We were interested in acquiring municipalities during that period of time.

DJ 583, p. 55. Of similar effect is the testimony of Mr. Schwalbert, DJ 577, pp. 7-8; Kozac, TECO Vice President for Operations Analysis, DJ 579, pp. 24-25; Cloer, TECO Southern District Manager, DJ 582, pp. 34-35; DJ 161.¹⁰³

161. Since 1965, TECO has acquired two self-generating systems, Clyde and Waterville, Wein DJ 587, p. 71; NRC 158, p. TE-37; DJ 137, pp. 4-5, and the distribution system of Libertyville, Wein 587, p. 71; DJ 137; DJ 139; DJ 139(a).

Anticompetitive Practices

(A) Awareness of Competition.

162. TECO regarded municipal systems within its service area as competitors. A June 1974 document entitled "Municipalities' Competitive Positions" begins its discussion entitled "Summary" with the statement:

It is conceded that municipalities can be a competitor as well as customer of Toledo Edison. DJ 166, p. 2.

TECO's contracts to supply wholesale power to municipalities within its service area contained customer allocations and restrictions which not only were anti-competitive agreements in restraint of trade, see Finding 166, *infra*, but were intended to prevent customer transfers from TECO to the municipalities. Moran DJ 583, pp. 82-83. Moreover, Mr. Moran admitted during deposition the presence of competition both for new loads and existing customers. Moran, DJ 583, p. 23.

163. There is a relationship between solicitation of large loads and the availability of low-cost, bulk power services. TECO officers were aware of this relationship. For example, Mr. Moran testified:

Q: Well in suggesting that you didn't actively solicit customers within the service areas of the other Ohio utilities, you didn't have in mind that they had low-cost and reliable bulk power supply from an integrated system?

A: Yes, we did consider them.

Q: Was that one of the factors that you consider?

A: It always is.

¹⁰³This 1974 TECO memorandum refers to continuation of the Company's "practice of purchasing municipal systems" and indicates that the Company "should concentrate on those systems that have generating capabilities."

Territorial Allocations

164. Toledo Edison has been a party to territorial allocation agreements with neighboring utilities including Ohio Edison, a member company of the CAPCO group. Such agreements constitute *per se* violations of the antitrust law. Such agreements have not been submitted to or approved by any regulatory agency nor does the Ohio regulatory plan for electric utilities provide for the elimination of competition by intercompany territorial allocations.

(A) Since at least 1965, TECO and Ohio Edison have been parties to a territorial agreement. DJ 513-17; DJ 519; DJ 533-35; DJ 537-40. These territorial agreements took the form of "confidential" territorial maps which were signed by the highest officers of the company, DJ 516, frequently updated, DJ 517, and used in the day-to-day operations of Ohio Edison, DJ 519. See Finding 104, *supra*.

(B) TECO and Ohio Power Company have had a territorial agreement since at least the early 1960s. DJ 536; Tr. 8123.

(C) There is evidence that TECO also had entered into or observed a territorial allocation agreement with its Michigan neighbor, Consumers Power Company. These two systems operate in territories adjacent to one another along the Ohio/Michigan border. Another distribution system, the Southeastern Michigan Electric Cooperative (Southeastern), also provides electric service in southeast Michigan and in the TECO service area in northwest Ohio. Commencing at least as early as 1966, Southeastern approached TECO with a request that it provide power to service the Ohio portion of its load. In September 1966, Mr. Schwalbert of TECO advised a field engineer of the REA that TECO did not want to provide service to Southeastern because TECO did not want to cross the state line. When officials of the REA indicated that TECO would not be expected to serve in Michigan since the Cooperative would provide the necessary transmission and substation facilities to accept load in Ohio, Mr. Schwalbert stated:

... indicated that his company did not want to invade the Consumer Power Company territory regardless who provided the facilities.

After some discussion, Mr. Schwalbert admitted neither FPC or Buckeye ... would interfere with service to the cooperative's Michigan load. He indicated that the only reason his company did not want to provide service in Michigan was because of the agreement between his company and the Consumer Power Company. DJ 108, September 12-14, 1966, Report.

TECO has denied the existence of any such agreement and has relied upon the testimony of Mr. Moran to support its contention that the refusal to supply

service to Southeastern was predicated solely upon business reasons. Although there is a conflict in the evidence, we find the report of REA official Badner, made contemporaneously with the events, DJ 108, to be inherently more credible evidence. First, Mr. Badner is a neutral party, an official of a government agency whose field report was made in the routine course of his duties. Second, there is no indication of record that Mr. Moran necessarily would have been informed as to the terms of any agreement, particularly an informal agreement negotiated by the top officers of his company concerning a topic which at least in the case of the territorial maps in Ohio had been treated as "confidential." Finally, Mr. Moran's testimony has been unreliable in certain other instances, thus, reducing our willingness to accept it as probative evidence as to the nonexistence of a territorial agreement with Consumers.

165. It should be noted that the legitimate business considerations which TECO claims served as the basis for its refusal to offer service themselves are suspect. First, TECO claims to have wanted to avoid the possibility of FPC jurisdiction which would attach to transactions of an interstate nature. We note that the decision in *FPC v. Southern California Edison*, 376 U.S. 205 (1964), should have caused TECO to consider whether it could in fact avoid such jurisdiction in view of the substantial number of wholesale contracts to which it was party during 1966. Second, its reference to a desire not to operate in a fashion impermissible under the Buckeye agreement is unpersuasive since those agreements were not signed by TECO until 1968. Third, we note that in 1971, TECO refused to provide electric service to the Michigan portion of Southeastern's distribution system and that although in response to a 1974 request by Southeastern, TECO agreed to negotiate a power supply agreement, no such agreement has been signed as of this time.¹⁰⁴

On balance, we find that TECO and Consumers were parties to a territorial agreement or understanding in 1966, the terms of which were observed by TECO.¹⁰⁵ The existence of a territorial agreement between Consumers and TECO, however, is established by evidence of lesser weight than the uncontroverted evidence of the Ohio Edison and Ohio Power agreements. Accordingly, we should state that in the sum of our deliberations, our finding that TECO and

¹⁰⁴ Counsel for TECO indicates a willingness to sell power to Southeastern and states that a "commitment" to establish a delivery point has been made. Tr. 11,919.

¹⁰⁵ TECO also has argued that this Board is collaterally estopped from making a finding contrary to that of the Atomic Safety and Licensing Board appointed to consider antitrust allegations in *Midland*. We earlier have explained our conclusion that we are not collaterally estopped from inquiring into this matter due to a diversity of parties, issues, and the receipt of evidence relating to TECO's proclivity to enter into such agreements as established by the Ohio Edison and Ohio Power territorial maps. Moreover, collateral estoppel cannot be binding where the public interest in assessing whether an unconditioned license should be granted in these proceedings would be disaccommodated through closing our eyes to the facts.

Consumers Power engaged in an illegal territorial allocation is not material to our overall findings. We regard the TECO/Consumers agreement as additional support for our finding of widespread territorial allocations by TECO, but if the allegations relating to Consumers had not been accepted, it would not alter our basic conclusion.

166. TECO has a substantial number of full-requirements, wholesale-power, municipal customers. Its contract to provide services to these customers contains a paragraph entitled "Provision 8" which allocates customers between TECO and the municipal distribution systems.¹⁰⁶ The terms of Provision 8 constitute a restraint of trade that violates Section 1 of the Sherman Act. Moreover, Provision 8 is unreasonable on its face and no credible evidence has been presented to persuade us that such a clause is necessary for the proper operation of any regulatory scheme of the FPC or the State of Ohio. Indeed, it might be noted that both the FPC and the State of Ohio have accepted substantial numbers of rate and service contracts which do not include territorial allocation provisions.

167. At the instigation of certain TECO municipal customers, Provision 8 has been deleted from many municipal contracts in the past few years.¹⁰⁷ Hillwig, Tr. 2378-84; NRC 46-47; Dorsey, Tr. 5279-80; App. 35-36; App. 38-42; App. 259-60; DJ 311; DJ 147. Provision 8 has not been deleted from all of the TECO wholesale firm power contracts with municipalities in its service area since at least one present contract, Genoa, contains such a provision at this time. App. ff 35.39.

168. The provisions of paragraph 8 had an actual rather than theoretical effect in limiting the extent of competition offered by municipalities within the TECO service area. Hillwig, Tr. 2370-72; 2375; 2417; 2422-24.¹⁰⁸ An example of specific enforcement of the anticompetitive provisions contained in TECO's

¹⁰⁶ Bowling Green (NRC 45, 111), Bradner (NRC 112), Haskins (NRC 118), Liberty Center (NRC 119), Montpelier (NRC 120), Pemberville (NRC 123) and Woodville (NRC 125), Custer (NRC 114), Edgerton (NRC 115), Elmore (NRC 116), Genoa (NRC 117), Oak Harbor (NRC 122), and Pioneer (NRC 124). The fact that these contracts have been accepted by the FPC would seem to negate TECO's argument that the Commission has provided an "adequate remedy" for such restraints.

¹⁰⁷ The effects of the situation created by this restraint would not be dissipated in a short period of time. Thus, a situation inconsistent with the antitrust laws is maintained even for municipalities no longer prohibited by contract from competition with TECO.

¹⁰⁸ Mr. Hillwig conceded at Tr. 2422-23 that Bowling Green in fact never made a request of TECO to extend its services into TECO territory. He also acknowledged that no substantial opportunity was presented for Bowling Green to "infringe" on TECO's "so-called territory." At the same time, he stated that he was restricted from taking advantage of such opportunities as did exist and he indicated that Bowling Green has sought to expand its customer base within the City limits and is without specific policy direction relating to the acquisition of customers outside of the City limits. Very importantly, he stated that if Bowling Green had had access to alternative sources of bulk power through wheeling, they gladly would have tried to service additional customers. Tr. 2424.

municipal wholesale contracts is set forth in DJ 551. TECO relied upon and asserted territorial restrictions in its contract with the Village of Edgerton in an attempt to prevent that municipality from extending lines to serve new industry on land outside of the corporate limits.

Denial of Bulk Power Services

169. TECO has refused to wheel power for municipalities located within its service area. Both Bowling Green and Napoleon made requests to TECO for wheeling. Such requests either have been denied or have been subject to deferral equivalent to denial.

170. The City of Bowling Green has made several requests for wheeling including a request made at a meeting on June 2, 1972. Hillwig, Tr. 2386-88: At that meeting, TECO officials (Moran and Wendall Johnson) gave a negative response to the wheeling request relating the refusal, at least in part, to a "bad feeling for wheeling power because of an existing contract with the Ohio Power Company for wheeling Buckeye power." Tr. 2388. At another meeting held on August 27, 1975, attended by Mr. Smart, now Vice President and General Counsel of TECO and other company officials and representatives of four municipalities in the TECO service area, another request was made that TECO wheel power to Bowling Green. The response of TECO to the request was negative. Moreover, there was a direct tie made by Mr. Smart between the future financing of nuclear plants in CAPCO and the Company's refusal to wheel. TECO's position appeared to be that wheeling would impose a burden in connection with future planning of loads and financing of CAPCO nuclear stations (which would include the Davis-Besse and Perry stations) Tr. 2402. Accordingly, there is direct nexus between the refusal to provide bulk power services and the construction and operation of the nuclear units involved in this proceeding.

171. At the time TECO gave a negative response to the 1975 Bowling Green request for wheeling, Bowling Green had an expression of interest from the Ohio Power Company to supply wholesale firm power to the Village of Bowling Green.

The presence of alternative sources of bulk power is procompetitive and would tend to act as a check on TECO applications for wholesale rate increases. If alternate suppliers were available, TECO would have a concern that its higher rates would cause some of its customers to shift to another utility to obtain a portion of their electric power requirements. Ohio Power, however, had no transmission linking it to Bowling Green and the City of Bowling Green was unable to sustain the financial burden of constructing transmission necessary to reach the Ohio Power system.¹⁰⁹ If TECO had agreed to wheel power, then Bowling Green would have had access to an alternate power source.

An important factor in TECO's decision not to wheel power for municipi-

¹⁰⁹Hillwig, Tr. 2405-07.

palities is the competitive effect that decision has upon the requesting entity. Moran, Tr. 10021-28. In the case of the Bowling Green request for wheeling, a study of the competitive effect of TECO's response was made at the TECO home office. Moran, Tr. 10029.

172. On several occasions, TECO has refused to wheel power for the City of Napoleon. In July 1971, Mr. Lewis, a consulting engineer for Napoleon, was assigned the task of conducting a bulk power supply survey to determine the most economic means of meeting the City's bulk power requirements. Lewis, Tr. 5605-07. After studying a number of alternatives, Mr. Lewis recommended that Napoleon purchase seasonal power from Buckeye (through TriCounty Cooperatives). Lewis, Tr. 5612-14. The Buckeye power could be delivered to Napoleon either by TECO wheeling the power to the existing TECO-Napoleon interconnection which would be designated a Buckeye delivery point or by having Napoleon build a ten-mile 69 kV transmission line to an existing substation owned by TriCounty. Lewis, Tr. 5614; NRC 127. In furtherance of this plan, Mr. Lewis met with TECO representatives and was informed on at least three occasions that TECO would not wheel Buckeye power and would oppose efforts by Napoleon to obtain such power. NRC 127. Mr. Moran testified to a concern that if Napoleon constructed a ten-mile line to the TriCounty Cooperative, Napoleon might serve customers along the route of that line. Moran, Tr. 10065-66.¹¹⁰

¹¹⁰ Mr. Moran did not dispute the accuracy of the Lewis affidavit, NRC 127, during his deposition, but attempted to qualify his position during his oral testimony at the hearing. As noted, the Board had some difficulty in accepting all of Mr. Moran's testimony at face value due to certain inconsistencies or attempted qualifications.

Mr. Lewis has been an important witness in these proceedings since he was involved in engineering studies on behalf of many municipalities in the CAPCO area and since he negotiated on their behalf with various of the Applicant companies. Mr. Lewis was recalled for extensive cross-examination on several occasions so that the Board has had an opportunity to form an opinion as to his veracity and his recollection of events important to the resolution of some matters in controversy. We have concluded that Mr. Lewis' testimony is generally reliable and we tend to give credence to his answers in instances where his testimony is not fully supported by the testimony of officials of the Applicant companies.

As to the Napoleon/TECO negotiations, we note that NRC 127 was prepared on January 19, 1973, and not in contemplation of these proceedings. Accordingly, we assign Mr. Lewis' testimony supported by NRC 127 greater weight than that of Mr. Moran in his later attempts to suggest that the Lewis testimony and affidavit are incomplete or inaccurate.

An example of our difficulty with the Moran testimony occurs on Tr. 10018-19 in which he indicates first that TECO has not changed in its policy with respect to wheeling but then states that his deposition testimony reflecting a change merely means "crystallization." That is followed by reference to App. 17, a summary of a meeting between representatives of Bowling Green and TECO, which summary was prepared by officials of TECO and which Mr. Moran had just testified was a fair representation. When asked about the first sentence of this TECO document which states "Mr. Hillwig then asked whether TECO would be willing to wheel," Mr. Moran denied that he regarded the Hillwig question as a request to wheel.

173. Although TECO was obligated to transmit power on behalf of Buckeye pursuant to the terms of the Buckeye transmission agreement, that agreement contained a provision that before a municipal wholesale customer of an investor-owned utility can obtain Buckeye power, it must disconnect from the investor-owned utility and operate as an isolated power system for 90 days. NRC 188, p. 3; NRC 190, p. 1. This restrictive provision makes it impractical for municipal systems to obtain Buckeye power,¹¹¹ Schwalbert DJ 577, p. 46. TECO has insisted upon strict adherence to this restriction, DJ 581, and TECO denied requests for waiver of this provision by Napoleon so that Napoleon could complete its proposed interconnection with TriCounty. In conformity with the Buckeye agreements, Napoleon was required to disconnect its system from that of TECO and operate in isolation before it could secure power from Buckeye. Dorsey, Tr. 5262, 5282, 5284; NRC 128. TECO indicated that it would not wheel Buckeye power unless Napoleon completed a 90-day period of isolated operation. DJ 145; DJ 148; NRC 128-129; NRC 131. Napoleon agreed to do so, Dorsey, Tr. 5264; DJ 149, though such operation would result in a serious reduction in the municipal system's reliability and leave it totally without reserves during peak loads. Dorsey, Tr. 5264-66. Napoleon informed its customers of the impending isolated operation and received numerous complaints. Dorsey, Tr. 5266-68; DJ 302-07.

The risks of isolated operation were such that Napoleon made a written request that TECO waive the 90-day cutoff requirement, NRC 130; Tr. 5269, but such a waiver was refused. NRC 131; Tr. 5269. TECO took the position that it would emphatically resist any such waiver in Napoleon's case, DJ 150. Napoleon was therefore very concerned about the possible need to reconnect with TECO if an emergency arose on the municipal system during the 90-day cutoff. Dorsey, Tr. 5270; Moran, Tr. 9861. Napoleon suggested a simple method of disconnecting the systems which would require only 15 minutes to reconnect

¹¹¹The Buckeye contract also contained a provision prohibiting Buckeye from furnishing service to any present customers of other electric entities (the Department of Justice contends that this clause should be read as relating only to retail sales since the State of Ohio has no authority to regulate that aspect of wholesale sales which is subject to FPC jurisdiction). This means in effect that a municipal system which obtains part of its power requirements through self-generation supplemented by the purchase of wholesale firm power from another system will never be in a position to obtain Buckeye power because the system is precluded even from requesting interconnection with Buckeye after a 90-day isolation period since it would have inadequate power during that period. Thus, only systems capable of generating 100% of their power needs even have the option of considering Buckeye as an alternative source for firm power requirements. See Eppard, Tr. 5453, 5455-57. See also arguments of counsel, Tr. pp. 5469-74. There is no evidence of record that TECO was responsible for the insertion in the Buckeye agreement of the clauses prohibiting service to present customers of other entities. Justice argues, however, that TECO was a knowing beneficiary of what it contends to be an inherently anticompetitive provision.

in case of an emergency, but TECO insisted on a cumbersome method which would require at least four to five hours to reconnect. Dorsey, Tr. 5273; Moran, Tr. 9861, 9947; DJ 309-10.¹¹²

174. At this point, Napoleon concluded that the risks of operating in isolation for a period of 90 days compounded by the additional risks imposed by the cumbersome procedure to reconnect with TECO in the event of an emergency required abandonment of its efforts to obtain an alternate source of bulk power. Accordingly, it accepted a new rate schedule offered by TECO which included a reduction in ratchet charges. Dorsey, Tr. 5274-75; 5292-97.

175. TECO added additional obstacles to Napoleon's plan to purchase a portion of its power requirements from Buckeye through TriCounty by a refusal to operate with continuous synchronism with Napoleon if its arrangement with Buckeye were consummated. On three occasions between September 1971 and March 1972, TECO representatives made this refusal but gave no technical or engineering reasons in support of these refusals, Lewis, Tr. 5635-39.¹¹³

176. TECO has argued that its denials of requests for wheeling should not be considered absolute, but merely as preliminary pending receipt of specific requests. The Board rejects this argument. We believe that the record establishes TECO's refusals would not be understood by the requesting parties as a negotiating tactic but would be understood as denials of the request. Our finding is buttressed by the admission of TECO's General Counsel that it is possible for TECO to agree in principle to wheel subject to negotiation of specific details. Smart, Tr. 10105; 10121-22; 10150. In fact, TECO did not agree in principle to wheel for Bowling Green, subject to negotiation of details, upon the specific request of Bowling Green. We note that since Bowling Green had in mind a particular supplier—Ohio Power—the request was not made in a theoretical or abstract capacity. Hillwig, Tr. 2386, 2388, 2390, 2394, 2402-04; NRC 49; App. 17; Moran, Tr. 10015-18; Smart, Tr. 10100-02, 10150.

177. TECO's actions in refusing to wheel power for Napoleon, in refusing to waive the 90-day disconnect provision in the Buckeye contract and in refusing to operate in continuous synchronism if Napoleon did conclude an arrangement with Buckeye should be seen in the light of the purpose of the original Buckeye agreement. At least one of the private utilities involved in the negotiation of the

¹¹²Mr. Moran's attempt to justify TECO's position by citing "safety" considerations, Moran, Tr. 9861, 9945-55, is belied by his inadequately reasoned rejection of less cumbersome alternative methods of resolving TECO's purported concern. Tr. 9946, 9948-49, 9954. He finally admitted that TECO could have obtained protection simply by Napoleon's assurance that no city employee would enter the substation—an alternative never mentioned to Napoleon. Moran, Tr. 9954.

¹¹³TECO's representative at these discussions, Mr. Moran, was unclear with respect to what he had stated at these meetings. Moran, Tr. 9849, 9937, 10091-92. There is a discrepancy between his live testimony, Tr. 10009-12, and his deposition testimony, DJ 622, pp.50-51.

Buckeye agreement, Ohio Power, did so for the purpose of forestalling construction of an independent G&T (generation and transmission) system. In a February 1962 memorandum, Ohio Power stated:

[w]e might forestall the construction of an independent G & T system by offering to cooperate to the extent of allowing the cooperatives to install a generating unit or units in one of our own stations and then delivering the power to the cooperatives over our own facilities, with either Buckeye providing the transmission to load centers which we do not reach or the other utilities in Ohio which now supply cooperatives agreeing also to wheel power. DJ 200, Attachment 12, p. 5.

Mr. Keck, TECO's Vice President of System Planning, testified that TECO entered into the Buckeye contract on an involuntary basis at the persuasion principally of American Electric Power (Ohio Power). He admitted to a knowledge that the co-ops were planning to build a statewide transmission network and that "the effect of entering into the arrangement for Buckeye would obviate the need for co-ops to own and control their own transmission network across the State of Ohio."

178. We find that the action of TECO in refusing to wheel for municipalities within its service area is anticompetitive not only due to the structure of the market and the refusal of TECO to make available other bulk power services, but in addition because TECO had joined in an agreement designed to insure that its municipal competitors would be unable to obtain access to an alternate transmission network. Thus, our conclusion as to the anticompetitive effects and motives of the various TECO refusals is buttressed by the evidence of TECO's understanding of the consequences attendant upon execution of the Buckeye transmission agreement.

179. In 1966, TECO was aware that Waterville was an isolated self-generating municipal system which was having problems with reliability and voltage variations. Cloer, DJ 582, p. 12. TECO also knew that Waterville was unable to supply all of its industrial customers with power on certain occasions. DJ 615. Waterville informed TECO that it was interested in negotiating for bulk power supply on a long-term basis. DJ 615. Exhibit DJ 504, a report from Cloer to Schwalbert on Cloer's meeting with Mr. Bucher, president of the Waterville BPA, is significant in many respects. First, it indicates that Waterville was seeking some form of interconnection because its system was "in trouble" when its large generator was down. This demonstrates TECO's awareness of the problems imposed by isolated operation. Second, the memorandum sets forth TECO's reluctance to sell wholesale power "since this makes their system more reliable." Thus, there is a direct relationship between the refusal to sell at wholesale and the knowledge that this refusal would place this small competitor in an untenable position. TECO's motive for placing its competitor in this position is

further disclosed by Cloer's statement that the reason he wants to make this system unreliable is TECO's desire to purchase the light plant. Third, and extremely significant as we examine the arguments and representations advanced by TECO to justify a series of denials of requests to obtain bulk power service, is Cloer's statement that TECO did not want to state its actual position as its public position but rather devised a phony or secondary justification for the refusal to furnish wholesale power. Fourth, Cloer notes his awareness that a rejection could be made in such a manner as to avoid a complete "no" answer. Nonetheless, it is clear that TECO had no intent of furnishing such service. In other words, it was dissembling with officials of the municipality. This is significant in view of TECO's protestations with respect to wheeling that it never gave a final negative answer but occasionally was willing to entertain the concept. Our confidence in TECO's articulated reasons for denial of bulk power services is not enhanced by careful reading of DJ 504. Finally, 504 again undercuts TECO's argument that its acquisition program came about not through its own initiative but through requests by village officials for TECO to acquire their facilities. As DJ 504 illustrates, such requests, in fact, often were the product of deliberately staged charades which masked the role of TECO as a moving party.

180. In June 1967, TECO again responded to a request by Waterville's consulting engineers that TECO sell either full or partial requirements firm wholesale power, DJ 505. TECO refused, DJ 506.

Denial of Joint Ownership in Large Scale Generating Facilities

181. In 1971-72, the City of Napoleon engaged a consulting engineer, Mr. Lewis, to conduct a study of future bulk power supply alternatives. Mr. Lewis met with TECO representatives Moran and Cloer (also present was Napoleon's City Manager, Mr. Wagner) to inquire as to whether TECO would consider joint ownership of large scale generating facilities by Napoleon and other municipal electric systems in the State of Ohio. Mr. Moran:

... responded by saying that Toledo Edison considers its municipal electric wholesale customers as nothing more than industrial customers purchasing power under a retail rate schedule and it intends to adopt rates for the municipal systems in the future that will be on the same level as its retail rates to industrial customers; therefore, there would be no feasible arrangement whereby Toledo Edison could enter into such a joint ownership-type arrangement. NRC 127, p. 7.

At another meeting on March 6, 1972, Mr. Lewis renewed the request for joint ownership of large scale generating facilities by Napoleon and other municipal systems to Mr. Moran and Mr. Cloer. Mr. Cloer stated that this was "impossible."

Id. Large scale electric generating facilities would include nuclear stations and it is reasonable to conclude that TECO's denial of access to large scale generating facilities to Napoleon and other municipalities effectively precluded these entities from obtaining access to the Davis-Besse and Perry stations. With respect to any asserted proposed change of attitude by TECO, we observe first that there is no evidence of record suggesting that any new policy of Applicants has been communicated to municipalities in the TECO service area; furthermore, the 1971-72 refusals would have had a discouraging effect upon any planning necessary for these municipalities to utilize the output of the Davis-Besse or Perry stations.

182. Since commencement of these proceedings, TECO has agreed to consider joint construction with Napoleon, Bryan and Buckeye of a refuse-burning generating unit. Moran, Tr. 9858-59. However, TECO's witness was unaware of any notification by TECO to its CAPCO partners of its proposal to engage in coordinated development of a generating facility with non-CAPCO entities. Moran, Tr. 10666-67. TECO is aware that such an arrangement would be inconsistent with CAPCO understandings. See Sullivan, DJ 578, p. 117.¹¹⁴

CAPCO ANTITRUST VIOLATIONS

A. Denial of Membership

183. At the time of formation of CAPCO in 1967, each of the member companies had participated in actions intended or having the foreseeable effect of reducing the reliability and the economic viability of competing electric generating and distribution entities within their respective service areas. As has been noted in findings 7, 8, 111, 141, *infra*, Applicants provided bulk power services to each other even as they avoided competition in the retail and wholesale power transaction market. This avoidance was not passive since several Applicants were parties to affirmative agreements or understandings not to compete with one another. Moreover, each Applicant took actions intended or with the foreseeable effect of eliminating competition with non-Applicants in retail power transactions.¹¹⁵ These restraints took the form of agreements in

¹¹⁴ The president of one CAPCO member, Duquesne, has testified that approval by a member company's CAPCO partners would be required before the member company would be free to engage in coordinated development with non-CAPCO entities. Schaffer, Tr. 8557.

¹¹⁵ As noted, we are aware of the Pennsylvania Applicants' arguments that Pennsylvania law does not permit direct retail competition between electric entities in that state. Nonetheless, Pennsylvania Applicants in their own internal documents have conceded the awareness of competition offered by the mere presence of other generating and distribution entities within their service areas, and Duquesne engaged in conscious campaigns or actions designed to eliminate such entities. See Duquesne ff. 76, 79, *infra*. Further, the possibility that such electric entities could obtain access to economies of scale which would be reflected in their retail rate schedules must have had some restraining influence on the Pennsylvania Applicants notwithstanding their protestations to the contrary.

restraint of trade with municipal generating and distribution systems including territorial or customer allocations, attempts to fix prices for retail power transactions, and refusals to provide bulk power services where the refusals had the known effect of reducing the reliability and the economic competitive potential of these rival systems. Thus, each Applicant has entered into agreements and understandings the effect of which is to create and maintain a situation inconsistent with the antitrust laws within its own service territories. These actions or policies have continued over a period of years and their cumulative effect has been to reduce the level of competition within the CCCT or to prevent such competition from being as vigorous as it otherwise might have been.

184. Finding 183 describes the atmosphere and situation prevailing at the time of CAPCO formation in 1967.¹¹⁶ Although a primary purpose for the formation of CAPCO was to secure certain lawful advantages to Applicants themselves, Fleger, Tr. 8617-20, a collateral and well understood result of the formation of CAPCO was to deny to competitive entities in the CCCT access to coordinated operation and development. During the CAPCO formation meetings, specific consideration was given to the inclusion of municipal systems in the CAPCO group. After considerable discussion among the prospective CAPCO members, they collectively decided that only investor-owned utilities should be permitted to join CAPCO and that municipals or cooperatively owned systems should be excluded. Lindseth,¹¹⁷ DJ 568, p. 26-29.¹¹⁸ The record contains numerous references to formation meetings of CAPCO in which the possibility of municipal participation was considered and rejected. C 50; C 51; C 52. At one point, Applicants went so far as to consider the effect of including a municipal system specifically modeled after Cleveland in the allocation of CAPCO generating capacity. Interestingly, the resulting installed reserve of each Applicant company would decline with the inclusion of Cleveland in the CAPCO pool by using the CAPCO allocation formula while the installed reserve of Cleveland would have risen markedly. The author of the study recognized that the proposed approach was at variance with what the FPC might consider equitable. DJ 278. Finally, we note that Applicants expressed considerable concern that their presentation to the FPC be as limited as possible in order to avoid the risk of

¹¹⁶ The acts and practices described above continued well beyond the 1967 inception date and many are in effect today.

¹¹⁷ Mr. Lindseth was Chairman of the Board of CEI from 1960 until his retirement in 1967, and he served as a director of CEI until 1974.

¹¹⁸ Another CAPCO company executive, Mr. Fleger, Chief Executive Officer and President of the Duquesne Light Company from 1958 to 1967, testified that he never gave consideration to the inclusion of other parties to the pool. He indicated that this was due, in part, to Duquesne's desire to complete the CAPCO arrangement before it was required to make the decision with respect to the installation of its next large scale generating unit. Thus, Mr. Fleger decided it would not be worthwhile even to give thought to permitting any other party to share in the benefits of CAPCO. Fleger, Tr. 8617-20.

municipal intervention in the FPC review. DJ 279; DJ 280. The record reflects a continuing determination on behalf of Applicants that CAPCO be structured so as to avoid to the maximum extent possible FPC supervision and the possibility that the FPC might consider membership requests from municipal systems in deciding whether to approve any of the CAPCO agreements submitted for its review.¹¹⁹ C 52, p. 2.

185. Having reached the consensus opinion that public power bodies not be included in CAPCO, Applicants then devised arguments to be advanced to the FPC staff as to why such membership was undesirable. The first reason cited was that:

... The most appropriate means for the public power bodies to participate in the economic and other benefits of the Pool would be through the sale of capacity and energy by Parties of the Pool to these public power bodies under FPC approved rates. C 52.

This rationale was a sham since in the same time frame Duquesne was refusing to sell power at wholesale to Pitcairn and had indicated an intent not to make such sales in the future. NRC 13 dated January 23, 1968. CEI had refused to interconnect with the Cities of Cleveland and Painesville except upon an illegal price fixing condition. See C 99; C 111; C 128; C 132, Tr. 2569, 3152-53. TECO also refused to sell wholesale power to a municipal system which it hoped to acquire. DJ 504; DJ 506.

186. Mr. Greenslade, counsel for CEI, submitted to his counterparts at TECO, Duquesne, and Ohio Edison a memorandum dealing with the ability of the regulatory agencies to cope with new concepts in interconnection through the formation of power pools. He notes, in C 55, p. 2, that:

Whether by accident or design, one of the effects of the tenancy in common concept [the proposed CAPCO method of ownership of generating facilities] has been, to date at least, removal of regulatory supervision.

.....

Similarly, the FPC is denied regulatory control except over minor facets of the arrangement . . .¹²⁰

¹¹⁹ In fact, at least some Applicants were concerned about FPC efforts in 1967 "to give capacity value to small units in municipal systems when pool arrangements are being considered." C 54, p. 1. The evidence shows that Ohio Edison was interested in rigging the CAPCO arrangements so that Pennsylvania Power would receive favorable treatment with respect to pool allocations of initial capacity while municipal systems seeking membership would not receive the same benefit. C 54.

¹²⁰ An interesting argument from the very Applicants who argue that the NRC essentially is ousted from jurisdiction in these proceedings because of the pervasive regulation of the FPC over all aspects of Applicants' operation.

Mr. Greenslade concludes that:

I have seen no current efforts by the various agencies to assume additional jurisdiction over power pools and tenancy in common arrangements by utilization of the entities approach.

However, he expresses his concern that regulatory bodies may become more active in an effort to fill what CEI's counsel describes as a "substantial regulatory gap." *Id.*, p. 3. Finally Mr. Greenslade notes increasing attempts by municipalities to become pool members and to participate in ownership of joint units¹²¹ as a factor stimulating FPC interests. He concludes, however:

The FPC is seemingly sympathetic with these efforts, but its legal powers in the area are limited.

187. At the same time as Applicants were combining to exclude their municipal competitors in the CCCT from CAPCO membership, they were discussing the possibility of including additional utility members outside of their service areas as CAPCO members. Williams, Tr. 10354. This is further confirmation of Applicants' policy of isolating competitors within the CCCT and denying them the benefits of coordination which Applicants received and made available to outside systems.

188. We find that Applicants, from the very inception of CAPCO, were aware of and held mutual discussions concerning the possibility of applications for membership by other entities in the CCCT. It was the consensus opinion of Applicants reached as a result of these discussions that municipals not be included in the CAPCO structure and that allocation formulas making it difficult for municipalities to join be accepted notwithstanding adjustments in the formula made to favor each other with respect to initial capacity allocations. C 50.¹²² Applicants also deliberately sought to minimize FPC supervision over the CAPCO arrangement because of their concern that the FPC might deem it appropriate to make provision for municipal membership. All of these factors considered individually and collectively cause us to find that Applicants consciously denied and intended to deny the benefits of CAPCO membership to competitors in the CCCT.

¹²¹ Once again, we observe early identification of the nexus between joint ownership nuclear units (CAPCO had already decided to go nuclear) and the desirability or necessity of participating in a pool as a vital adjunct of this ownership.

¹²² C. 50 consists of Ohio Edison's Mr. Firestone's notes of an August 20, 1967, meeting of CAPCO principals. C. 49 consists of notes of the same meeting prepared by Duquesne's Mr. Munsch. These two sets of notes confirm the joint notion of the understanding reached and destroy Applicants' argument that each set of notes be received as evidence only against the individual Applicant in whose file it was found. We hold that at least from August 20, 1967, forward Applicants were a party to a joint plan or combination, one facet of which was to exclude CAPCO participation by municipals.

189. We find that there is a relationship between the collective denial or lack of provision for membership in CAPCO and the individual intent and practices of the Applicants in creating and maintaining a noncompetitive situation within their individual services areas. Although we do not hold that the primary motivation for the instigation of the CAPCO arrangement was to affect adversely Applicants' competitors, we do hold that this inevitable result was recognized by Applicants as a corollary effect of the arrangement and that they took no effort to alleviate the consequences of the agreement. We further hold that the CAPCO agreement was an agreement in restraint of trade in that it extended services and benefits to parties to agreements not to compete which it denied to their would-be competitors. We hold that these denials were not accidental or unintended but were the result of consideration of the consequences of these actions. Given the stipulated dominance of Applicants' generation and transmission within their service areas and their collective dominance within the CCCT, the denial of membership opportunities was an act of monopolization and also constituted a group boycott. Thus, we hold that there were violations of both Section 1 and Section 2 of the Sherman Act resulting from the form of CAPCO agreement which Applicants adopted knowingly.¹²³

190. After the inception of the CAPCO agreement, Applicants continued their maintenance of an anticompetitive situation by refusals to approve membership requests in CAPCO from competing entities. These refusals were the result of collective action and this collective action was contemplated from the very outset of the CAPCO agreements.

191. On December 5, 1967, Mr. McCabe, the Solicitor of Pitcairn, wrote to each of the Applicants with a request to discuss membership affiliation of Pitcairn in CAPCO. McCabe, Tr. 1555, 1557-58; NRC 1-5.¹²⁴ A CAPCO drafting committee met on December 11, 1967, and discussed Pitcairn's request. DJ 130; DJ 131. TECO, CEI and Duquesne each prepared draft responses to the Pitcairn request during December, and these requests were circulated to and found in the files of the various CAPCO member companies. DJ 237;¹²⁵ DJ 202; DJ 204; DJ 205. A copy of one of Duquesne's draft responses was located

¹²³ It should be obvious that we do not hold that the formation of an areawide power pool founded on fair and nondiscriminatory principles either creates or maintains an anticompetitive situation. Our concern is not that CAPCO was formed, it is how it was formed and managed that gives rise to antitrust consequences.

¹²⁴ Although McCabe did not send any of the CAPCO companies copies of his letters to the other CAPCO members, the Applicants circulated the McCabe letters among themselves. McCabe, Tr. 1723; NRC 3, Tr. 5223; DJ 224, Tr. 5111.

¹²⁵ An Ohio Edison and Pennsylvania Power acknowledgement of the inquiry was mailed to Pitcairn, NRC 8, McCabe, Tr. 1571, and copies were found in the files of CEI (Stipulation Tr. 5223) and Duquesne, DJ 225, Tr. 5144.

in TECO's files, NRC 53; NRC 54, with a cover memorandum¹²⁶ from Mr. Henry, Counsel for TECO, who attended the December 11 meeting, DJ 130, to TECO's president in which he stated:

This [the Duquesne draft letter] goes into detail contrary to consensus at the last meeting. It is to be discussed at Thursday's meeting . . .
NRC 53.

The reference to a consensus reinforces our holding that the CAPCO companies acted collectively and jointly in discussing and agreeing upon a common stand in refusing the Pitcairn membership request.

192. On December 18, 1967, CEI sent a letter to Pitcairn refusing its request for CAPCO membership. NRC 10; McCabe, Tr. 1573-75.¹²⁷ On December 19, TECO sent a refusal letter to Duquesne. NRC 7; McCabe, Tr. 1566-67. A comparison of the CEI and TECO responses indicated that they are essentially identical.¹²⁸ On January 2, 1968, Duquesne refused Pitcairn's request, DJ 167, p. 9, in a letter that was shorter than the initial Duquesne draft and was similar in content to the TECO and CEI responses. NRC 6.¹²⁹

193. On January 9, Ohio Edison and Pennsylvania Power also refused Pitcairn's request for pool membership, NRC 9.¹³⁰ Although Mr. White testified that when Ohio Edison made its response to the Pitcairn request, Ohio Edison was not aware of the response of the other Applicants, White, Tr. 9817, and the record shows that CEI, DJ 218, and TECO, DJ 124, supplied the president of each Applicant company with copies of their responses prior to the date of the Ohio Edison response.

194. Despite the refusals of CEI and TECO to its request for CAPCO membership, Pitcairn again wrote to CEI and TECO on January 2, 1968, DJ 110; DJ 125, to request further consideration of its request for pool membership. A similar request was sent to Ohio Edison and Duquesne on January 11, 1968. App. 52; NRC 11.¹³¹ On January 17, 1968, the CAPCO drafting committee

¹²⁶ Applicants have indicated that NRC 53 and NRC 54 are the same document. Tr. 2579; Tr. 2580.

¹²⁷ CEI forwarded copies of its letter to other Applicants, DJ 218, although the letter to Pitcairn did not show any copies. NRC 10.

¹²⁸ TECO also sent blind copies of its refusal letter to other Applicants, DJ 124. Moreover, TECO's Vice President for System Planning, Mr. Keck, testified on deposition that TECO conducted no study in response to the Pitcairn request but that a study was conducted by Duquesne. This contradicts Duquesne's scenario of companies acting unilaterally and without reliance on the actions of each other. Keck, DJ 576, p. 225.

¹²⁹ Copies of Duquesne's response were distributed to other Applicants on January 3, 1968. DJ 207; DJ 209.

¹³⁰ Ohio Edison also sent blind copies to other Applicants. DJ 115; NRC 9.

¹³¹ Although no copies were sent to the other Applicants by Mr. McCabe, McCabe, Tr. 1723, his letter to CEI was located in the files of TECO, Tr. 4652-53, and Duquesne, DJ 211, Tr. 5111, and was dictated by a Duquesne employee to Mr. Greenslade, counsel for

Continued on next page.

scheduled a meeting to discuss Pitcairn's request for additional consideration. DJ 288; White, Tr. 9509-10. On January 22, 1968, Duquesne wrote to Pitcairn stating that it was not aware of any reason to modify its earlier refusal but that if Mr. McCabe wished to discuss the matter further, he should contact one of Duquesne's attorneys, NRC 12. A notation on Duquesne's file copy (but not on the copy sent to Mr. McCabe) stated:

This reply represents the consensus of the attorneys for the CAPCO companies.¹³²

Once again, we conclude that notwithstanding the fact that individual Applicants responded directly to the Pitcairn request (albeit in similar terms), the responses were a result of mutual discussions and a joint decision to deny CAPCO membership to Pitcairn.

195. Shortly after receipt of the Duquesne response, Pitcairn informed Duquesne that it wished to meet and discuss its desire for CAPCO membership. DJ 213; DJ 214. Simultaneously, Pitcairn wrote to each Applicant requesting a copy of the CAPCO agreement. DJ 127; DJ 215; DJ 222; DJ 229.¹³³ Each of the Applicants in very similar language declined to supply a copy of the agreement. DJ 112; DJ 128; DJ 217; DJ 230. The refusal to supply copies of the CAPCO agreements or memorandums of understanding was unreasonable and undercuts Applicants' argument that the decision to exclude Pitcairn was a result of a mature exchange of information between Applicants and Pitcairn relating to the feasibility of Pitcairn participation. See App. ff 33.33-36. Plainly, Pitcairn was disadvantaged in any discussions with Applicants in demonstrating how, if at all, it could make a contribution to CAPCO¹³⁴ since it was not supplied with the most basic information relating to the structure and operation of CAPCO. Moreover, we can discern no need for secrecy as to the terms of the CAPCO agreements and memorandum and even Applicants have not advanced such an argument. It seems obvious that the refusal to provide copies of the agreement was a deliberate attempt to frustrate negotiations. If Applicants were sincere in their contention that they were motivated solely by business reasons in denying the Pitcairn membership application, they should at least have been willing to create a record which would allow for discussion on the merits.

196. On February 21, 1968, Mr. McCabe met with representatives of

Continued from previous page.

CEI. DJ 220. In addition, Pitcairn's letter to TECO was mailed to Duquesne by TECO's President Mr. Davis. DJ 233.

¹³² Copies bearing this notation were sent to other Applicants. DJ 211.

¹³³ The CEI, DJ 222, and Ohio Edison, DJ 229, letters were found in the files of Duquesne, Tr. 5111.

¹³⁴ Assuming, arguendo, that this is the relevant criteria. The "mutual benefit" theory espoused by Applicants conveniently overlooks any obligations imposed by virtue of their stipulated dominance.

Duquesne and again made an oral request for membership in CAPCO and again asked for a copy of the CAPCO agreement. Both requests were refused.¹³⁵ McCabe, Tr. 1630-36; NRC 17. McCabe wrote to Duquesne memorializing the reasons Duquesne had given for the most recent refusal of Pitcairn membership in CAPCO, McCabe, Tr. 1633; DJ 121.¹³⁶ Duquesne prepared a draft response, DJ 122,¹³⁷ and then sent a revised reply to Duquesne, App. 5. McCabe then concluded that Duquesne's adamant stance made it useless for Pitcairn to continue its quest for CAPCO membership, McCabe, Tr. 1725.

197. A second request for municipal membership in CAPCO occurred in April of 1973 when Cleveland's Municipal Electric Light Plant (MELP) sent a letter to CEI requesting admission to and participation in the CAPCO power pool. In its request letter, Cleveland noted that it was then the ninth largest electric power utility in the State of Ohio, DJ 97. Cleveland's letter of April 4, 1973, also requested an opportunity to participate in joint development of power generation and transmission facilities in the northeast Ohio area. CEI's President, Karl Rudolph, responded to the City's request by letter of April 17, 1973, by noting first that ownership of the Perry nuclear plant raised essentially the same question as membership in CAPCO. Thus, it is clear that a direct nexus between access to Perry and membership in CAPCO was perceived by the President of one of the Applicant companies. Mr. Rudolph suggested that Cleveland representatives meet with Lee C. Howley, CEI's general counsel, and that "[i]f it appears that further discussion would be appropriate, we will pursue the subject with representatives from all of the CAPCO companies." DJ 97. Also on April 17, Mr. Rudolph forwarded copies of his response to Cleveland and to the Chief Executive Officer of the other CAPCO members together with his request that the subject be discussed at an April 27 meeting of CAPCO executives. DJ 97. It is plain that Mr. Rudolph regarded the request for municipal membership as a matter of joint interest for resolution among the CAPCO partners. The subject of CAPCO membership was made a part of the agenda of the April 27 meeting. DJ 98, p. 9; White, Tr. 9512.

198. On August 3, 1973, MELP again wrote to each of the Applicants, this time with a comprehensive proposal for membership in CAPCO and participa-

¹³⁵We make no finding as to whether Pitcairn's request for membership in CAPCO necessarily should have been approved at the time the request first was made. Although provision for small system membership is not incompatible with the formation and operation of an areawide pool, *e.g.*, New England Power Pool, the desirability in the context of the CAPCO pool was not established. Our concern is that the refusal was unreasonable and anticompetitive in the fashion in which it was effected. The refusal also is consistent with the prior decision of the CAPCO companies not to make provision for the participation of rival systems within the CAPCO pool irrespective of the size of these rivals.

¹³⁶A copy of DJ 121 was found in the files of TECO. Tr. 4652-53.

¹³⁷The draft response also was found in the TECO files, Tr. 4652-53.

tion in nuclear units. DJ 100.¹³⁸ At an August 8 meeting of CEI's top management, "[I]t was decided that the company should refuse to agree to Cleveland becoming a member of CAPCO." DJ 291, p. 3. Since each CAPCO member-company had veto rights over the decision of the group, this essentially eliminated any prospect that Cleveland would be admitted to CAPCO. By letter of August 17, 1973, CEI communicated its intent to exclude the City from CAPCO membership to the other Applicant companies. This decision was not made known to Cleveland, however, and on September 10, 1973, the City, once again wrote to CEI and other CAPCO companies with a request for nuclear participation. App. 61. CEI and Cleveland representatives met on October 25 to discuss the City's request for membership in CAPCO and for participation in CAPCO generating units. At that meeting, CEI refused to give Cleveland a definite response to its request notwithstanding its prior decision to deny CAPCO membership to Cleveland.¹³⁹ A special meeting of the CAPCO executive committee was convened on December 7, 1973, to discuss Cleveland's dual request for membership in CAPCO and participation in CAPCO nuclear units. At the December 7, 1973, meeting, it was decided jointly that Cleveland would not be permitted membership in CAPCO. Deposition of Karl Rudolph, DJ 558, p. 245.

199. Following discussion of the Cleveland request for membership, Applicants agreed at their December 7 meeting to communicate their responses to Cleveland prior to the next MELP-CEI meeting, DJ 104. Each of the Applicants then communicated to CEI its rejection of the Cleveland request. White, Tr. 9515; C. 61; DJ 581, p. 18; C. 63; Stipulation, Tr. 7433. Duquesne informed CEI of its decision, and in addition mailed a direct copy of its response to MELP. DJ 105; DJ 187.

200. On December 13, 1973, CEI officials (general counsel Howley) met with Cleveland officials and informed them of the jointly formulated negative

¹³⁸ Although DJ 100 contained separate (though not inconsistent) suggestions relating to Perry participation and to CAPCO membership, we concentrated here only on that part of the request relating to CAPCO membership.

¹³⁹ In fact, CEI also consulted its CAPCO partners prior to responding to Cleveland's August 3 request for CAPCO membership although CEI was aware that under CAPCO rules requiring unanimous consent, CEI alone could have vetoed Cleveland's request. Williams, Tr. 10436-37. Moreover, Cleveland was informed by CEI that "... we have talked with the other members of the CAPCO group, all of whom feel that these discussions can best be initiated by the Illuminating Company and the City of Cleveland." App. 25. Applicants have disputed whether the requirement that Cleveland deal exclusively with CEI as representative of the CAPCO group created an agency relationship. Although we find that such a relationship was created in this and other instances, this finding is not crucial to our holding that the rejection of Cleveland's application for membership was the result of joint action among Applicants. Nor does the fact that each Applicant individually may have wished to reject Cleveland for its own reasons overcome a finding that Applicants combined to resist the entry of any municipal, including Cleveland, to CAPCO.

response to the membership request. Rudolph, DJ 558, p. 245. CEI's Mr. Howley, both orally and in writing, denied Cleveland's request on behalf of the CAPCO companies.¹⁴⁰ DJ 188; DJ 291, p. 18-22; Hart, Tr. 4795.¹⁴¹

B. Denial of Nuclear Access

201. As indicated in preceding findings dealing with individual Applicant activities, certain Applicants have denied access to nuclear facilities (including Davis-Besse or Perry) to other electric entities in their respective service areas or have conditioned access upon agreement to restraints in alienation of the nuclear power by the purchasing entity. With reference to our preceding findings, it now should be apparent that at the time of these denials Applicants already had been acting in concert to deny these entities access to bulk power services which would include products of low cost base load electricity from nuclear generating stations. Accordingly, we make two findings. First, we hold that the various denials to nuclear access by individual Applicant companies were inconsistent with the antitrust laws.¹⁴² Second, we find that the individual denials, whether or not cleared with other Applicants in advance, were made pursuant to common objectives and understandings among Applicants to limit the availability of bulk power services to non-Applicant entities within the CCCT. We should indicate that in the absence of the second finding above, the other related findings of joint action have an impact on the outcome of these proceedings sufficient to require that no unconditioned licenses be granted. Our first finding, standing alone, also justifies relief.

202. In support of our finding that Applicants had a collective and concerted interest in the denial of access to nuclear facilities to rival entities, we now examine Applicants' response to a request by the City of Cleveland for access to CAPCO units, specifically including the Perry unit.¹⁴³ Exhibit DJ 97, cited earlier with respect to Cleveland's application for CAPCO membership, also contained an April 13, 1973, letter from Cleveland to CEI's Karl Rudolph re-

¹⁴⁰The December 13 notes in DJ 291 state expressly that the turndown letter of Duquesne reflected the reasons of the CAPCO companies. We reject Applicants' assertion that no joint action was involved in this boycott and refusal to deal.

¹⁴¹ Mr. Arthur, Chairman of the Board of Duquesne, testified that he was influenced in his decision to turn down Cleveland's request by the fact that MELP's generation, transmission and distribution were dissimilar to those of CAPCO companies. In fact, the systems of the CAPCO companies were not compatible in all respects. More importantly, Mr. Arthur conceded during his cross-examination that he lacked relevant information and was unable to support his contentions of system dissimilarity. Arthur, Tr. 8378-85.

¹⁴²These denials also were inconsistent with the Congressional policy of assuring access to nuclear facilities to more than a few dominant entities.

¹⁴³We also make this finding, independent of prior determination of collective exclusionary acts.

questing access to the Perry nuclear plant. By reply of April 17, 1973, Mr. Rudolph informed Cleveland of the joint ownership of CAPCO units by Applicants and stated that if after preliminary meetings with CEI's Mr. Howley, it appeared that further discussion would be appropriate, CEI would pursue the subject of nuclear access with representatives from all CAPCO companies. Mr. Rudolph then communicated with the president of each of the CAPCO companies to inform them of the Cleveland request.

203. On August 3, 1973, Cleveland renewed its request for access to the Perry plant and included a more comprehensive proposal listing participation in the Davis-Besse and Beaver Valley plants as additional items for discussion. This communication also was sent by Cleveland to the president of each CAPCO company. On August 8, 1973, CEI executives met to discuss Cleveland's request and Mr. Hauser's minutes state that CEI made a determination to deny Cleveland membership in CAPCO and access to Davis-Besse and Beaver Valley Unit 2. DJ 291, p. 3. The Hauser notes further provide:

On the other hand it was agreed that the lawyers should advise the Justice Department, *after it was cleared with the other CAPCO companies*, that the City of Cleveland would be allowed to participate in the Company's allocated portion of the Perry units. (Emphasis added.)

It is apparent that collective approval of this approach was contemplated and that "clearance" by other CAPCO companies was considered important.¹⁴⁴

204. On September 10, 1973, Cleveland once again communicated with the president of each CAPCO company with the request that it be permitted to participate in the "planning, construction and power delivery agreements and other coordinated aspects of power generation and transmission" relating to the five additional electric generating facilities which the CAPCO companies publicized an intent to build.

¹⁴⁴ Applicants do have an argument that in a wide area power pool it is essential that each participant be apprised of the commitments of the other. On the other hand, we have seen that Applicants deliberately structured the CAPCO arrangement so that they would own shares in nuclear power plants as tenants in common—this in an attempt to avoid to the maximum extent possible Federal agency jurisdiction. Finding 186 *supra*. Therefore, according to the legal structure selected by Applicants for their own purposes, CEI would own, in essence, outright a block of power with which it should have been free to do as it wished. Of course, it was not relieved of the obligation to meet its other CAPCO commitments. However, so long as Cleveland met its CAPCO commitments, it theoretically was no business of the other Applicants what collateral arrangements CEI might make for the disposal of any portion of the nuclear output of the Davis-Besse or Perry plants. Thus, we are inclined to give little weight to any argument that the so-called clearance procedure among other CAPCO companies was nothing more than a courtesy notification. In fact, DJ 291, p. 00014326 (Mr. Hauser's chronological record of events) reflects that "K. H. Rudolph did receive approval of the chief executives of the other CAPCO Companies for the Company to proceed with proposing [sic] participation in the Company's allocated portion of Perry."

205. On October 25, 1973, management representatives of Cleveland and CEI met to discuss the City's pending requests. Notwithstanding CEI's prior decision that Cleveland would be denied access to Beaver Valley and Davis-Besse, no response was made to Cleveland's request for nuclear access.

206. At the special CAPCO executive committee meeting held on December 7, 1973, all Applicant companies jointly considered Cleveland's request for nuclear access. It was agreed that other Applicants would communicate their position to CEI prior to a scheduled meeting between Cleveland and CEI to be held on December 13. The other CAPCO companies did communicate their positions to CEI prior to that meeting. C. 61 (Ohio Edison); DJ 581, p. 18 (TECO); C. 63, Stipulation Tr. 7433 (Duquesne).

207. At the December 13 meeting between Cleveland and CEI representatives, Mr. Howley spoke for CAPCO and communicated the position that CAPCO took with respect to Cleveland's request for access to nuclear units. DJ 558, p. 245.¹⁴⁵ A response dated December 10, 1973, DJ 187, signed by John Arthur of Duquesne had been sent to Cleveland refusing the City's request for participation in the Perry 1 and 2, Davis-Besse and Beaver Valley 2 nuclear units. That letter reflected the CAPCO joint position. DJ 291, p. 00014340.

208. CEI distributed a letter at the December 13 meeting, DJ 188, in which it agreed to enter into negotiations with the City for participation in the nuclear units from CEI's entitlement in those units on the condition precedent, *inter alia*, that Cleveland withdraw its petition for antitrust review in any administrative or court proceeding. DJ 188; see also DJ 291, p. 00014340-43. The condition that Cleveland not approach the AEC in connection with pending license applications as a prior condition even of negotiating access to nuclear power was unreasonable and had the effect of maintaining a situation inconsistent with the antitrust laws.¹⁴⁶

209. Exhibit 291, a memo from V.F. Greenslade, counsel for CEI, to D.H. Hauser, another counsel for CEI, on the subject of the Perry antitrust review is particularly destructive to certain arguments raised by Applicants. First, Mr. Greenslade recognizes that Cleveland officials may be distrustful of receiving a

¹⁴⁵Mr. Rudolph specifically was asked during his testimony if a group position by CAPCO was formulated at that meeting. His unequivocal answer was that the position taken at that meeting was a CAPCO joint position rather than a CEI position.

Q: Now when you said the position that "we took," did you mean the position C.E.I. took? Or are you speaking of the position CAPCO took?

A: I am talking about the position that CAPCO took at that meeting.

¹⁴⁶We note that the CEI proposal was not that the petitions to intervene before the AEC be withdrawn upon satisfactory conclusion of an agreement giving Cleveland access to nuclear power; rather, it was the position of CEI that the City would have to withdraw any informal or formal petition or request for antitrust review even prior to the commencement of negotiations with CEI. DJ 291, p. 00014342-43.

“fair shake” from the FPC, particularly in view of the recent FPC action involving CEI rates for low displacement service. Mr. Greenslade concludes that:

MELP officials may feel more comfortable with back-up arrangements under which they will be paying the same rates and be subject to the same conditions as other utilities in the CAPCO Group.

Plainly, this undercuts Applicants’ argument that extensive NRC review is unwarranted because the FPC is in a position to adjudicate and resolve all of Cleveland’s charges and complaints relating to denial of bulk power services.

Second, the Greenslade memo underscores CEI’s direct awareness that the denial of bulk power services has the inevitable effect of reducing an entity’s competitive viability. Further, the Greenslade memo supports our view of the relevant product market and is at odds with the proposals of Applicants’ experts taking exception to this definition. Mr. Greenslade states:

CAPCO membership by MELP would allow MELP to participate in economy interchange transactions, and allow them to participate in coordinated maintenance scheduling. Presumably there would be more opportunity to participate in the economy interchanges as a member of the CAPCO Group than simply under a two-party contract with CEI. Finally, membership in CAPCO by MELP would provide them with access to transmission to all of the CAPCO Companies, rather than simply transmission from the particular plants where they have an ownership interest or are buying unit power, to the City’s load center. Access to this CAPCO transaction would, in turn, better provide access to alternate bulk power sources for the City, such as Niagara, Cardinal, or AEP. It could also, perhaps, better provide access to bulk power from new generation which might be planned by the municipal systems of Ohio, similar to the Cardinal generating facilities which have been constructed by the co-ops.

210. We hold that Applicants’ joint and separate denials of access to nuclear units, including Davis-Besse and Perry, either in absolute terms or with unreasonable conditions creates and maintains a situation inconsistent with the antitrust laws. The proposals set forth in App. 44 maintain the situation because it does not provide the same range of bulk power services and regional power exchange transactions as Applicants make available to each other.

C. The P/N Formula

211. The CAPCO pool differs from many other wide area power pools in that member obligations to maintain reserves are calculated on the basis of a P/N allocation of responsibility rather than a more conventional equal percentage of

reserves¹⁴⁷ or largest single unit down standard. Applicants' description of their jointly adopted P/N formula indicates that it utilizes probability analysis by viewing each member system as an isolated system and describing resources by a probability model on a unit-by-unit basis. The system load is described by another probability model in which 252 daily peak-hour loads are included.¹⁴⁸ The capacity model is then merged with the system load model to compute the array of daily capacity margins and a probability number associated with every margin is determined. A margin can be positive, zero or negative. The positive margin (P) portion represents ability to provide help and the negative (N) margin represents the potential need for help. Prepared testimony of Lynn Firestone, App. 122, p. 21-24. See also App. 124. The objective of the CAPCO companies was to arrive at a negative margin of one day per year on the system.

212. Although the P/N formula was developed by employees of Ohio Edison and CEI in an attempt to apply probability techniques to system operations in order to determine proper reserve responsibilities, the P/N method had the recognized effect of applying extraordinary reserve requirements to small systems, thus penalizing small systems in attempts to join pools using the P/N reserve allocation method. Small systems are victims of a dilemma (assuming that the P/N allocation type pool is an open membership pool) in that they would be required to sacrifice economies of scale in the production of electricity in order to qualify for pool membership without carrying excessive reserves. Firestone, Tr. p. 9324-36; Kampmeier, Tr. p. 5702-08; See generally, NRC ff 1.309-1.324.¹⁴⁹

213. There is no question that CAPCO members were aware that the P/N formula had the effect of discriminating against municipal Applicants and indeed recognized that the formula would be desirable as an exclusionary tool. C. 48, p. 7. Moreover, the record is abundantly clear that Applicants did not apply the P/N formula to themselves at the time of entrance, but made arbitrary allocations in order to avoid dislocations among member companies for the first few years of CAPCO operation. Schaffer, Tr. p. 8602-03; C. 30; C. 31; C. 44; C. 48; C. 49; Firestone, Tr. p. 9424.

¹⁴⁷ Applicants' Mr. Firestone, Vice President of Ohio Edison Company, defined equal percentage of peak load method of reserve sharing as composed of the specification of an installed reserve criterion consisting of some stated percentage value which, when applied to the system's annual peak-hour load, determines the required number of megawatts of installed reserve for that system. App. 122, p. 19.

¹⁴⁸ 252 days were selected to allow for low peak days such as weekends and holidays.

¹⁴⁹ The Board has considered carefully the transcript and documentary references set forth in the Staff's proposed findings relating to the P/N method. Although we do not adopt these findings *in toto*, we are satisfied that we could do so and that the record is more than sufficient to support the Staff's contention that the CAPCO P/N reserve method of allocating responsibility is exclusionary and serves as a barrier to entry into CAPCO of municipal systems.

In 1973-74, further changes were made in the CAPCO formula shifting the method of representing units from pro rata to an investment responsibility context. C. 57, p. 5. The change in formula was made with the intent and purpose of raising entrance barriers to other potential CAPCO members.

214. If membership in the CAPCO pool is regarded as necessary to the competitive viability of electric entities in the CCCT, then the knowing erection of entry barriers through the imposition of the P/N formula violates the antitrust laws. This conclusion follows in light of our earlier findings with respect to Applicants' dominance over generation and transmission and the furnishing of bulk power services and bulk sales at wholesale within the CCCT.

It should be understood that we do not condemn the P/N formula as inherently anticompetitive nor do we hold that the principal purpose of its design was to exclude competitors. We are persuaded by Applicants' testimony that the formula represented an attempt to distribute in a rational fashion individual reserve requirements necessary for the operation of a wide area pool. What we condemn is Applicants' deliberate and knowing recognition of the effect the application of this formula would have on generating entities at the time of entrance into the pool, and their agreement to deviate from the formula for member companies but to impose rigid formula applications on municipalities in the event municipals cracked the CAPCO entrance barrier.

215. Applicants' competitors must have either membership in CAPCO, thus obtaining concomitant bulk power services, or they must have alternate access to such services. As reflected in our findings dealing with individual Applicant activities and those dealing with the joint denial of access to nuclear facilities and/or membership in CAPCO, rival entities were unable to obtain sufficient bulk power services either through CAPCO or through alternate means. In these circumstances, we hold that denial of membership in CAPCO is and was equivalent to denial of access to a "bottle-neck" facility.

NEXUS

216. Section 105(c) requires that a situation inconsistent with the antitrust laws and the policies underlying those laws be created or maintained by activities under the license. The relationship between the proscribed antitrust situation and the license activities has been referred to as nexus. The NRC is not charged with the responsibility of the general enforcement or administration of the antitrust laws. Its particular interest is focused not upon a regulatory mandate to investigate all market activities of Applicants but only to consider the effect of granting a nuclear license on the competitive environment in which Applicants operate.

In its *Waterford II, supra*, p. 138, decision, the AEC stated that mere commingling of electric power generated by a nuclear station into the overall system

output of an Applicant was insufficient, in and of itself, to establish the necessary relationship giving rise to Commission authority to apply antitrust remedies. It is the effect of the licensed activities measured against particular situations which is the predicate for Commission involvement in Section 105(c) license consideration.

Throughout these proceedings, the Board has functioned with the instruction of *Waterford* clearly in mind. The nexus issue surfaced as early as the second prehearing conference and was specifically included as Item 11 of the Matters in Controversy. Periodically, Applicants have questioned whether the opposition parties were making a sufficient showing of nexus to enable them to proceed, and the Board has had occasion to reconsider whether the Commission's nexus requirements were being met. In our Memorandum and Order of November 19, 1975, for example, we discuss the relationships encompassed within matter in Controversy 11.

The issues herein as initially perceived related largely to the structure of the electric power industry within the CAPCO market. Dominance of the CAPCO companies and the possibility of abuse of monopoly power exacerbated by the granting of unconditioned licenses which would further strengthen that dominance were among the core issues. As discovery developed, of course, opposition parties sharpened the thrust of their allegations and disclosed in advance of the hearing that they also intended to introduce evidence of agreements in restraint of trade, some of which constituted *per se* violations of the antitrust laws.

217. Accordingly, we make findings with respect to nexus jointly and alternatively.¹⁵⁰ The Board finds nexus to exist with respect to structural abuses and secondly with direct reference to restraints imposed on specific outputs of the Davis-Besse and Perry plants. Either ground is sufficient in our judgment to support in full the conservative nexus standards enunciated in the *Waterford* decisions. Thus, although we make both findings, if we are in error with respect to either, the alternate approach would form a sufficient basis to support our actions with respect to the situational findings we have made.

Structure

218. With respect to the connection between the structure of the industry in the CCCT and the licensing of the Davis-Besse and Perry nuclear units, we can begin with Applicants' own proposed findings of fact. We accept Applicants' proposed finding 33.11 that:

¹⁵⁰ Findings in the alternative not only are permissible but are protected by the umbrella of the substantial evidence test. *Gainesville Utilities Corp. v. Florida Power Corp.*, 402 U.S. 515, 526, n. 7 (1971).

The CAPCO Pool was formed so that Applicants could coordinate installation of generation and transmission in order to further reliability and take advantage of scale economies.¹⁵¹

We also accept that part of Applicants' proposed finding 33.12 which provides:

To achieve these goals Applicants engage in a construction program of jointly committed generating units using a one-system planning concept.

And 33.13:

The five nuclear facilities being licensed in this proceeding are part of a larger fourteen-facility construction program implementing the CAPCO planning guidelines.

And 33.14:

Complementing the generation construction program is another joint program, again making use of the one-system concept, to coordinate sufficient transmission facilities to permit carrying out the arrangements described in the [CAPCO] Memorandum of Understanding.

Applicants' own proposed findings set forth a situation far different from the mere commingling of power from a single nuclear station with the other generation resources of a single electric utility. Within the CCCT, the generation of the nuclear units ineluctably will have a substantial effect on the supply and cost of power for each of the five Applicant companies.¹⁵² Moreover, there is a direct tie between the generating station construction program and the transmission program which Applicants describe as complementing it. As described in CAPCO memoranda, far more is contemplated than the mere extension of a line from the site of the proposed nuclear station to the closest terminal of the Applicant in whose service area of the plant is to be located. Applicants are engaged in substantial planning studies and construction programs specifically intended to develop a plan for high voltage transmission at low cost among CAPCO members. There will be commingling, but the commingling will be on an extraordinary scale. The one-system concept utilizing nuclear generation for base load power

¹⁵¹ As indicated previously, we do not find this to be the sole intended result of the formation of CAPCO.

¹⁵² Obviously, the cost factor would apply to Applicants' overall wholesale power rates and thus to their argument that municipalities can obtain all the benefits of CAPCO membership through wholesale contracts with Applicants (overlooking the fact that certain Applicants have resisted making unfettered sales at wholesale to certain municipalities). Thus, nexus would be established between the licensed activities and purchasing entities' competitive posture even were we to accept Applicants' argument since these municipalities would continue to have a vital interest in the cost of the power they were being offered.

will have such a pronounced effect on the overall economies of generation and transmission within the CCCT as to make the generation of these nuclear power plants an extremely substantial, if not the dominant, force in power production planning.

The Commission's *Waterford I* opinion indicated that structure is a very important element in the determination of nexus. The Commission directs its licensing boards to consider "the relationship of the specific nuclear facilities to the Applicant's total system or power pool, e.g., size, type of ownership, physical interconnections" in the evaluation of the link between the situation and the activities under the license.¹⁵³ We have made findings with respect to each of these Commission enumerated criteria. We have discussed the size of the five large generating stations involved in this license proceeding and the substantial contribution they will make to the resources of the CAPCO pool and in particular to the satisfaction of its base load power requirements. We have discussed the joint nature of the ownership not only of these stations but of the transmission facilities associated therewith¹⁵⁴ and we have discussed the physical interconnection relationships which CAPCO members have with each other and with noncompeting utilities as opposed to those they offer or fail to offer to rival entities in the CCCT.

219. Not only do the power supply options which Applicants will obtain by the addition of the Davis-Besse and Perry units to the CAPCO system have an effect on power generation within the CCCT, but there is a relationship between the nuclear generating plants and the transmission systems of Applicants and their ability to limit the power supply options of small electric entities in the CCCT. Mozer, NRC 205, p. 9, 12, 14, 18, 25, 60, 64-69; Mozer, Ex. HMM-3; Mozer, Tr. 3357-58. The construction of the nuclear stations herein at issue has required Applicants to plan additional high voltage transmission to supply this power in areas of need. This necessary transmission expansion would make it increasingly difficult for small utilities to obtain necessary approvals to construct alternate transmission systems since these systems in essence would duplicate portions of an already adequate transmission system owned by Applicants. Mozer, NRC 205, p. 57-58, 60-61, 64-69.

220. In order to utilize nuclear power, as with any other power supply, a provision must be made to carry a certain level of reserves. Mozer, NRC 205, p. 63, 68-69; Hughes, NRC 207, p. 32. The level of reserves that must be carried can be reduced substantially if generating entities can pool reserves with others through arrangements for sharing emergency and maintenance capacity and energy. Mozer, NRC 205, p. 63. These reserve requirements create a need for replacement capacity which must be arranged either within the system or

¹⁵³6 AEC 48, 49 (1973).

¹⁵⁴We refer, of course, to the one-system concept of CAPCO operation and development planning rather than the particular company in which legal title may vest.

through interconnection with an adjacent system and transmission services to provide this outside power. Denial of bulk power services including emergency and maintenance power and reserve share arrangements can and does act as an impediment to the use of nuclear power by Applicants' competitors, or would-be competitors, and discourages the use of nuclear power from Davis-Besse and Perry for competitive purposes. Thus, the structure created by Applicants within the CCCT combined with their refusal to make available necessary bulk power services creates a direct nexus between activities under the license and the situation inconsistent with the antitrust laws. In effect, Applicants have denied the option of effective utilization of nuclear power to their competitors. Mozer, NRC 205, p. 68; Hughes, NRC 207, p. 30; Wein, DJ 587, p. 145-47.¹⁵⁵

221. In considering whether nexus can be established by the structure of competition in the CCCT, we have found particularly helpful the analysis of the NRC's expert economy witness Dr. Hughes. On page 30 of his testimony, NRC 207, he discusses the economic relationships between Applicants' nuclear units and their possession and use of market power. After concluding that nuclear power offers a superior base load choice,¹⁵⁶ he then goes on to state:

Where nuclear generation is the superior base load choice, the cumulative effect on market power of a sequence of nuclear plants will be greater than the impact of any one plant alone, because each successive nuclear addition will confer an incremental advantage.

He concludes that:

The economic feasibility and benefits of access to bulk power services provided by the nuclear units themselves depend on access to other bulk power services from the Applicants.

The Board is of the opinion that Dr. Hughes supported the contentions set forth in his pretrial testimony during four days of intensive cross-examination and that the conclusions he urged should be accepted.

Restraints on Specific Outputs

222. Even in the absence of nexus arising through the structure of the

¹⁵⁵ Applicants' proposals for access to Davis-Besse and Perry, while better than nothing, are inadequate since they contain anticompetitive provisions—*i.e.*, restraints on resale or use of the power by rival entities—which have the effect of limiting competition. Thus, Applicants' proposal would have the effect of both creating and maintaining a situation inconsistent with the antitrust laws.

¹⁵⁶ He indicates that Applicants' own documents substantiate his conclusion that nuclear generation is a distinctly superior choice for expanding base load capacity over fossil-fueled alternatives. See CEI Annual Report for 1972, p. 11; CAPCO Base Load Generating Capacity Requirements follow Perry No. 2, 1981-84; Planning Committee Report No. 5, June 14, 1973.

electric power industry in the CCCT, there are significant direct relationships involving anticompetitive activities under the license. These involve attempts to place unreasonable restraints on the disposition or use of power to be generated by the licensed facilities.

(A) First, we refer to the testimony of Mr. Lyren of Wadsworth, Ohio, stating that he was informed by officials of Ohio Edison that the sale of nuclear power to Wadsworth and the WCOE group would be conditioned upon agreement not to use that power for resale to present customers of Ohio Edison. Lyren, Tr. 2030-31.

(B) The CEI response to Cleveland's request for access to power from Davis-Besse and Perry was conditioned on rights of first refusal to repurchase any excess power from Cleveland's share of those units for which Cleveland had no immediate need. The effect of this restraint would be to prevent or impede Cleveland from entering into power exchange or economy transactions with other electric power producers. We refer in particular to Cleveland's preliminary discussions and interest in agreeing to exchange bulk power services with the City of Richmond, Indiana. We have seen that Applicants' denial of CAPCO membership to Cleveland prevented Cleveland from pooling or coordinating its operation or development with CEI, its surrounding utilities, or with other Applicant companies. The right of first refusal on Davis-Besse and Perry power as a price for access to these units would frustrate Cleveland's ability to provide for any alternative to CAPCO membership and would relegate it to a continued role as an isolated entity. Applicants' jointly espoused rationale of the purpose of CAPCO is abundant evidence of and recognition of the competitive burden imposed by isolated operation.

(C) Painesville's Mr. Pandy testified that CEI general counsel Howley equated interconnection with CEI as the equivalent of and a substitute for access to the Perry nuclear plant (a plant to be constructed within the Painesville service area). However, as set forth in finding 74, *supra*, the interconnection offers with Painesville were conditioned upon anticompetitive terms including territorial and customer allocation.

(D) Pitcairn's Mr. McCabe testified with respect to the factors which influenced Pitcairn to abandon generation and to become a wholesale customer of Duquesne. Prior to reaching the decision, the Pitcairn request for CAPCO membership had been rejected as had its requests for participation in CAPCO nuclear generation. Findings 92-98, *supra*. Nonetheless, it is clear that access to nuclear power and access to alternate sources of power is of continuing interest to the Borough of Pitcairn. At Tr. 1659, McCabe testifies:

While this agreement certainly did satisfy one of our objectives in permitting us to acquire power for resale, it does not mean that this is the complete end of any planning for power acquisitions by the Borough of Pitcairn. The Borough of Pitcairn certainly has an obligation to its cus-

tomers to make every effort to provide them with the cheapest and most reliable electrical service. If it is possible for us to take any action which would enhance reliability and reduce the cost of our service, we certainly will consider that.

Thus, if access to nuclear stations in the CAPCO group is a viable competitive alternative, Pitcairn's long-time solicitor has expressed a direct interest in exploring such possibilities.¹⁵⁷

(E) Exhibit DJ 188 again illustrates Applicants' demands for illegal price fixing agreements as a condition of access to the Davis-Besse and Perry nuclear units.

(F) There is no question that Applicants themselves understood the relationship between unit access to the Perry nuclear plant and denial of membership in CAPCO as a whole. Unit participation was recognized as a less desirable alternative for the City and specific note was taken of the fact that membership and the attendant access to bulk power services could be construed as advantageous to the City "in securing new customers and capturing existing CEI customers." C. 146.¹⁵⁸

¹⁵⁷There remains, of course, the possibility that other municipalities in the Duquesne service area also may wish to consider reentry into the electric distribution business based upon the availability of base load power at costs which would be less than that experienced by users within the municipality who currently are purchasing from Duquesne. Indeed, the possibility that some of these municipalities may seek to use this alternative serves as a check upon prices Duquesne may include in its retail schedules. *United States v. Penn-Olin Co.*, 378 U.S. 158, 174 (1964). Actual yardstick competition is not necessary to serve as a price deterrent to Duquesne. *Id.*

Duquesne argues that it could not respond to the competitive alternatives available to Pitcairn by making rate reductions because it is bound by provisions of Pennsylvania law which prohibit discrimination in tariffs. Pitcairn, however, is the only customer affected by such a tariff so that plainly Duquesne could file amendments to the tariff acting solely in response to competitive pressures from Pitcairn for a different price schedule. No discrimination would be involved.

¹⁵⁸The analysis set forth in this memorandum is pertinent not only to our discussion of nexus, but in showing the defects in Applicants' arguments that FPC regulation is an effective check on all anticompetitive acts of the Applicant companies which were considered in this proceeding. C. 146 supports our determination that bulk power services constitute a relevant product market since the exhibit focuses upon the identical elements of bulk power services which were deemed so important by Staff witness Hughes and by this Board. It also reinforces Dr. Hughes' argument that access to alternative bulk power sources is necessary to prevent the maintenance of anticompetitive situations in the CCT, and it undercuts Applicants' argument that their proposed offers of access gave Cleveland and other entities all that they could hope to obtain by being members of the CAPCO group.

We should note that C. 146 was a document which Applicants initially declined to produce under claim of attorney-client privilege. Messrs. Greenslade and Hauser are both

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APPLICANTS' ARGUMENTS

Although the principal framework of our decision has been to evaluate evidence important to the resolution of the issues in controversy, we now take brief occasion to comment more specifically upon arguments raised by Applicants in their Proposed Findings of Fact and Brief. These arguments, of course, have been addressed throughout this opinion so that it is not necessary for us to conduct an exhaustive analysis of each point raised in Applicants' prolix filings. Many of their arguments are repetitious and to the extent that we have failed to comment on any argument with greater specificity, it is because we deemed it unpersuasive or without sufficient weight to change our view with respect to the resolution of any of the issues in controversy.

Applicants' arguments, stated succinctly, are that competition in the CCCT is precluded not through their actions but through the existence of state and Federal regulatory schemes which either act to suppress competition or which prevent abuses from arising in areas where competition may be permitted. Applicants' second argument is that as wholesale suppliers to rival entities within the CCCT, they extend to these entities essentially the same measure of benefits as Applicants derive from their CAPCO membership. Finally, Applicants argue that their actions did not suppress competition because rival entities always had the option of constructing fossil-fueled generating facilities of their own and of

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attorneys in the employment of CEI. Mr. Williams, who is shown as a carbon addressee of the memorandum, is an executive vice president of CEI serving in a nonlegal capacity.

Applicants were parties to a stipulation that documents claimed to be privileged would be reviewed by a Special Master whose decision on production would be binding upon all parties. Applicants have argued in support of this understanding in opposition to Cleveland's request for interlocutory relief. It has become the law of the case that the decision of the Special Master with respect to privileged documents is binding on all parties.

On June 19, 1975, the Special Master denied the claim of privilege with respect to C. 146 on the basis that it was business related rather than a document generated in connection with providing legal advice to a client, and its production was ordered. Applicants asked for and were granted a rehearing before the Master with respect to this document among others and such hearing was held on June 30, 1975. After consideration of Applicants' arguments, the Master reaffirmed his prior decision to order production of this document on the basis of its business-oriented nature. Tr. of Special Hearing, p. 85-86.

Although we accept the decision of the Special Master for the reasons set forth in our earlier memoranda dealing with Cleveland's application for consideration of claims of privilege by this Board, we should note that despite the fact that the document was written by a lawyer to another lawyer, the document focuses on benefits arising out of CAPCO membership and we therefore would reach the same conclusion as that drawn by the Master. We find nothing in the document of an inherently legal nature. Moreover, we note that Mr. Hauser has assumed a dual role in dealings with attorneys for CEI but he also has been involved in operational matters such as the approval of load transfer service when requested by Cleveland.

constructing a transmission network duplicative of Applicants. None of these arguments is tenable. Moreover, we find that each one of these arguments is contradicted by materials located in the files of various Applicant companies or in the testimony of expert witnesses sponsored by Applicants.

Turning first to the argument that the Federal and state regulatory schemes have created an environment in which competition cannot occur or in which it is regulated to prevent situations inconsistent with the antitrust laws or their underlying policies from arising, we begin by referring to Cleveland's Exhibit 121. This 1968 text of a speech of K.H. Rudolph, President of CEI, describes the factors which induced CEI to enter into pooling arrangements with other utilities and in particular the CAPCO pool. Although recognizing that the FPC urged greater coordination to prevent areawide power outages from occurring, Mr. Rudolph made plain his company's resistance to Federal regulation and its intent to conduct its pooling operations without government assistance or interference.¹⁵⁹

We also have observed TECO's attempts to avoid FPC supervision as an asserted reason for their refusal to sell power to the Southeastern Michigan Electric Co-op. Finding 165. Likewise, Duquesne compromised its differences with Pitcairn in an attempt to minimize the effects of FPC regulation and with the awareness that continuation of its controversy could lead to more intense interest by the FPC. This concern on the part of Duquesne is indicative of the fact that FPC regulation still leaves wide gaps in its coverage and wide choices with respect to the remedy of an assertedly anticompetitive situation. CEI, too, conditioned its responses to various requests for coordination and interconnection with Cleveland upon a fear that a failure to work out one type of arrangement might lead to a more intensive scrutiny by the FPC. Finding 186. Ohio Edison commenced its negotiations with the WCOE group under the benevolent good offices of the FPC, but plainly without the direct involvement of that agency in the negotiation of bulk power service alternatives. Thus, we have a situation in which Applicants display continuing awareness that the FPC may affect, to a degree, their coordination policies, but one in which the sporadic involvement of the FPC and its choices of lesser alternatives than the primary

¹⁵⁹C. 121, p. 8:

So you can see that the industry has long ago taken the steps necessary to provide the reliability of service which is so necessary, and *I might add* without any prodding on the part of the government. We all understand that the government has a rightful place in regulating industry when industry demonstrates that it is unable to meet its responsibilities without government assistance. There is absolutely no need for government interference in this area, however. For this reason, the Illuminating Company as one company is unalterably opposed to the FPC's proposed electric power reliability act and we feel that its enactment would impede the already significant progress that has been made in this area by the private sector of our industry.

relief sought by Applicants' rival entities suggests less than perfect regulation of competition.¹⁶⁰

The limitations on FPC regulation of anticompetitive entities have received comment during the recent term of the Supreme Court in *Conway v. FPC*, 425 U.S. 957, 96 S. Ct. 1999 (1976). There the Court concurred in an analysis by the District of Columbia Court of Appeals that wholesale rates even with costs fully allocated according to current provisions of the FPC, may fall within a zone of reasonableness. The Court further held that this zone of reasonableness can permit the imposition of a price squeeze between wholesale and resale rates notwithstanding the FPC's proper allocation of its own rules and regulations. This recognition of the imperfect nature of the regulation and the fact that approval of a particular wholesale rate structure does not necessarily eliminate the possibility of anticompetitive effects is significant to our determination to reject Applicants' argument that regulation has acted as a substitute or replacement for competition in the CCCT.

A second interesting aspect of the *Conway* decision is that the FPC, petitioner in the Supreme Court, was arguing that it lacked jurisdiction to consider the allegations of the company's wholesale customers that the proposed wholesale rates which are within the Commission's jurisdiction are discriminatory and noncompetitive when considered in relation to the company's retail rates which are not within the jurisdiction of the Commission. Thus, in passing upon rate applications, the FPC, prior to *Conway*, had considered its statutory role fulfilled by reference only to specified cost bases and without reference to certain downline competitive consequences. Since *Conway* was not decided until June 7, 1976, it is clear that the pre-1976 wholesale contracts in the CCCT approved by the FPC were reviewed under the FPC's self-perceived limitations on its jurisdiction.

Another holding of the Supreme Court during the current term, *Cantor v. Detroit Edison*, ___ U.S. ___, 96 S. Ct. 3110 (1976), also negates Applicants' argument that the presence and observance of a state regulatory scheme precludes the possibility of finding that electric power companies subject to the scheme may violate the antitrust laws.

[T]he Court has already decided that the state authorization, approval, encouragement, or participation in restrictive private conduct confers no antitrust immunity. *Id.* at 3118.

¹⁶⁰ As Dr. Hughes testified, NRC 207, p. 40:

In practice, coordination does not rule out a useful role for competition. Power systems can and do choose between different alternatives in putting together the overall power supply package on which they rely. For a large area, there are often many ways of developing an efficient overall bulk power supply plan or pattern of development. The existence of a diversity of approaches and the freedom to shop for options provide a degree of competitive stimulus to search for new and better power supply alternatives.

In its rationale, the Court noted:

In each of these cases the initiation and enforcement of the program under attack involved a mixture of private and public decisionmaking. In each case, notwithstanding the state participation in the decision, the private party exercised sufficient freedom of choice to enable the Court to conclude that he should be held responsible for the consequences of his decision.

The case before us also discloses a program which is the product of a decision in which both the respondent and the Commission participated. Respondent could not maintain the lamp exchange program without the approval of the Commission, and now may not abandon it without such approval. Nevertheless, there can be no doubt that the option to have, or not to have, such a program is primarily respondent's, not the Commission's *Id.* at 3118.

In the instant proceedings, as in *Cantor*, the Applicants were and are the direct beneficiaries of the regulatory schemes which they claim limits competitive options of other entities in the CCCT. It was Applicants who had the primary interest in the passage of the Ohio Anti-Pirating Act since it insulated their systems of possible loss of customers to more competitive suppliers. Once the scheme was in effect, Applicants then were in a position to utilize provisions to suppress competition as did TECO when it denied the application of Napoleon to obtain a waiver of the 90-day isolation provision in attempting to work out an interconnection and power supply agreement with Buckeye. Similar instances occur in Duquesne's refusal to sell power to Pitcairn except pursuant to Rate "M" and without attempting to explore the possibility of new and fairer tariffs or alternate supply arrangements. Other examples occur with respect to Penn Power's reliance on Pennsylvania rate structures and territorial schemes to deny power supply options to area municipalities.¹⁶¹

To the extent that Applicants seek to rely on state regulatory schemes which allegedly were enacted to protect the public interest, the Federal antitrust laws nevertheless may apply. In this proceeding, we are concerned with the grant of a license by a Federal government agency. Congress has directed this Commission specifically to consider the anticompetitive consequences of activities under this license and this directive cannot be subverted by state regulations.¹⁶²

¹⁶¹We recognize that Applicants may have been obliged to adhere to the provisions of existing tariffs. Our problem is that these tariffs were used as anticompetitive weapons by the Pennsylvania utilities in refusing to make available bulk service options.

¹⁶²In *Cantor*, the Court noted:

Amici curiae forcefully contend that the competitive standard imposed by antitrust legislation is fundamentally inconsistent with the "public interest" standard widely enforced by regulatory agencies, and that the essential teaching of *Parker v. Brown* is

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Another definitive answer to Applicants' first argument is that the existence of state regulation and the terms of the Federal Power Act certainly were well known to Congress at the time it enacted Section 105(c) of the Atomic Energy Act. Had Congress been convinced that Federal and state regulation was sufficient to obviate situations inconsistent with the antitrust laws from arising in the electric power industry, there would have been no need to order the Nuclear Regulatory Commission to engage in antitrust review in appropriate circumstances.

Applicants' argument also overlooks the implications and teachings of *Otter Tail Power Co.*, 410 U.S. 366 (1973) in which substantive antitrust violations were examined notwithstanding the presence of state and Federal regulatory schemes. It is foolish to suggest that the regulatory acts upon which Applicants seek to rely either eliminate the possibility of competition or are intended to serve as complete substitutes for competition. Even Applicants would be hard pressed to deny that the statutory scheme of the State of Ohio contemplates competition and that territorial and customer allocations are not a part of that regulatory scheme. In Pennsylvania, the decision in *Pennsylvania Metropolitan Edison Co. v. Public Service Commission*, 191 A. 678, 682 (1937), indicates that the Public Service Commission "had changed its established policy of non-competition." Disavowing the previous standard of "regulated monopoly" in the electric utility industry in Pennsylvania, the Commission stated that "In the field of electric power, a policy of regulated competition by municipalities has been adopted." *Id* at 683. Moreover, the Superior Court of Pennsylvania outlined several factors which would permit or require the Public Service Commission to issue a certificate of public convenience to a municipality enabling it to engage in generation and distribution notwithstanding the fact that another utility previously had supplied electric service to that locality.¹⁶³

For all of these reasons, we hold Applicants' first argument to be without merit.

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that the federal antitrust laws should not be applied in areas of the economy pervasively regulated by state agencies.

There are at least three reasons why this argument is unacceptable. First, merely because certain conduct may be subject both to state regulation and to the federal antitrust laws does not necessarily mean that it must satisfy inconsistent standards; second, even assuming inconsistency, we could not accept the view that the federal interest must inevitably be subordinated to the State's; and finally, even if we were to assume that Congress did not intend the antitrust laws to apply to areas of the economy primarily regulated by a State, that assumption would not foreclose the enforcement of the antitrust laws in an essentially unregulated area such as the market for electric light bulbs. 96 S. Ct. at 3119.

¹⁶³ Neither have Applicants suggested that the FPC endorses or approves customer or territorial allocations.

With respect to Applicants' second argument, that their current offers of access and to sell power at wholesale to certain entities within the CCCT eliminate the possibility of a situation inconsistent from being maintained, the quick answer is that these offers themselves contain anticompetitive provisions. There is no real need to go further in pointing out the deficiencies of Applicants' current concessions made in the context of licensing proceedings in which numerous antitrust violations have been disclosed. C. 146. There is, however, another cardinal deficiency of Applicants' argument as to which ruling should be made. We have emphasized that Applicants' actions creating the situation inconsistent with the antitrust laws have been aimed at competitors within the CCCT and within their respective service areas. The position that these competitors should now be left in the hands of Applicants to obtain their bulk power supply is akin to delivering these entities into the hands of their adversaries. Once these rival entities become dependent upon Davis-Besse and Perry power under options that restrict their use of that power or the exchange of that power, their opportunities for offering competition are reduced.¹⁶⁴

As to Applicants' third argument, that their competitors throughout the CCCT can build small scale fossil-fueled plants and obtain the same competitive advantages as would be available through CAPCO membership, we note that this argument appears to be a product of counsels' fertile imagination which received precious little credible support from any of Applicants' witnesses or experts. As noted in Dr. Hughes' testimony, Applicants themselves made a determination that nuclear power offered significant cost advantages and that economies of scale achieved through joint ownership of large sized stations offered a financial reward to each member of CAPCO. Hughes, NRC 207, pp. 30-31.

Applicants' contention is so frivolous as not to require elaborate discussion. It is bottomed on the premise that municipalities' costs of construction for small fossil-fueled plants would be lower than the construction costs of Applicants for the same small less efficient fossil-fueled plants because municipalities may obtain a somewhat lesser interest rate on construction borrowings because of the tax free nature of their bond offerings. What Applicants conveniently overlook is that their municipal competitors have the same ability to pay a lesser interest rate on the issuance of tax free bond obligations in connection with financing of large and efficient generating stations including nuclear generating stations.

Finally, we note that this argument is irrelevant. If state and municipal governments have the constitutional or statutory right to issue obligations free of Federal income tax, this ability hardly serves as a license for Applicants to engage in boycott activities.

¹⁶⁴The policies underlying the antitrust laws require the freedom to choose between alternatives *even at the expense of choosing the less desirable alternative.*

MISCELLANEOUS

Applicants' Motion for Leave to File Brief

As we reach the end of our findings of fact, one procedural ruling remains outstanding. The Board had discussions with the parties and entertained arguments relating to the schedule for submission and length of posthearing proposed findings of fact and conclusions of law. Tr. 12682-705. The Board's original preference for a four-week period in which to make such filings was modified to extend the period to approximately six weeks based on Applicants' representation that they needed additional time. Applicants were given an upper limit of 250 pages for their posthearing filing.¹⁶⁵

It was with full consideration of Applicants' arguments and reservations that the Board imposed this limit.¹⁶⁶ Applicants indicated an intent to return to the Board in the event this page limit proved burdensome with "a request for leave of the Board to file a brief that includes extra pages, if indeed it looks like that's going to be necessary." Tr. 12687-88. The Board agreed to entertain such a request.

Nothing more was heard on this issue until in an August 9, 1976, telephone call (seven days before the filing deadline) initiated by Applicants' counsel for additional time in which to file "initial briefs."¹⁶⁷ Over the strenuous objection of the opposition parties, Applicants were given an additional two weeks in which to file their posthearing pleadings. Minutes of Telephone Conference Call of August 9, p. 7-10. At no time during the discussion in this telephone conference was any mention made of an attempt to exceed the previously

¹⁶⁵ Although we refer to this filing as proposed findings of fact and conclusions of law, there was no doubt in any of the parties' minds that it also included such argument as the parties cared to address to the Board. Indeed, Applicants referred to the filing as a "brief." See, e.g., Tr. 12686, 1.11-13; Tr. 687, 1.7-11. There is no question that Applicants understood the 250-page limitation to apply to any material in the nature of a brief which would be included within proposed findings they might submit.

¹⁶⁶ The imposition of limits on pages is not unusual in Federal court practice. The rules of many Federal courts contain explicit page limitations covering the filing of any brief. The Commission's rule, 10 CFR Section 2.754, provides for the filing of proposed findings and conclusions within twenty days after the record is closed or within such reasonable lesser or additional time as may be allowed by the presiding officer. As noted, after extensive consideration, the Board modified the time periods suggested by Section 2.754 to allow all parties additional time. This extension was deemed warranted by the length of the record in these proceedings.

¹⁶⁷ The secretary who kept the minutes of this telephone conference was one of Applicants' counsel. We should note that where procedural matters required resolution by conference call, the Board adopted the practice of requiring counsel for one of the parties to prepare minutes to be placed in the public file following circulation to all parties for correction and approval.

established 250-page limit. On August 30, 1976, Applicants filed their Joint Proposed Findings of Fact and Conclusions of Law consisting of 211 pages. Simultaneously, they filed a Joint Brief in Support of Proposed Findings of Fact and Conclusions of Law which numbered 698 pages (excluding certain attached exhibits). Nowhere had Applicants put the Board on notice of the intent to file such a Brief or to produce such voluminous set of posthearing filings. Applicants' motion for leave to file made reference to the transcript exchange at 12688-89 in which their counsel indicated the possibility of requesting leave of the Board to file a brief that includes extra pages. That transcript, fairly read, could not possibly support the surprise request to file a "brief" almost three times as long as the 250 pages previously allocated to the Applicant. The post-hearing documents submitted by Applicants (excluding rebuttals to the other parties' proposed findings) number almost 1000 pages.

It cannot be contended in good faith that Applicants ever supposed the Board would be receptive to the receipt of so voluminous a pleading file. We note that not only did the parties file prehearing briefs, but that discrete legal issues such as nexus and motions for summary disposition also were the subject of extensive briefing during preceding portions of the proceedings. Thus, the Board was hardly without guidelines as to the particulars of the issues before it even assuming, incorrectly, that the Board has been less than attentive during the 13,000 pages of live testimony or that the Board has not reviewed comprehensively the thousands of pages of evidence submitted for its consideration.

Moreover, it is apparent that Applicants' representations during the telephone conference call of August 9 that they needed additional time in order to prepare their initial brief was evasive in that neither the Board nor any other party had any reason to suspect Applicants' intent to attempt to circumvent the 250-page rule.

Other parties have objected to receipt of Applicants' brief, thus placing the Board in the dilemma of ignoring materials Applicants offer as relevant to our considerations or running the risk of prejudice to the other parties whose post-hearing filings were confined (pursuant to our direction) to a substantially lesser number of pages.

To assist in resolving the dilemma, we took early opportunity to compare a citation to the Brief from one of the Applicants' proposed findings of fact, selected at random, with the material to which we were directed in the brief. In doing so, we had before us that statement in Applicants' moving papers that:

A supporting brief explaining our view of the evidence which was accumulated during this seven-month hearing and analyzing that evidence in light of the applicable legal principle and relevant case law, was deemed imperative in order to apprise this Board fully of the state of the record. (Emphasis added).

We sought to ascertain on this selective check whether the Brief contained

supporting arguments or discussion or whether it constituted an attempt to include materials which ordinarily would be found within proposed findings of fact. Our reference point was Applicants' proposed finding 21.03 which appears on page 5 of Applicants' Joint Proposed Findings of Fact and Conclusions of Law. Corresponding pages in the Brief appear at 115-118. These pages are factual in nature, replete with references to both documents and transcript of the hearing. Labeling this material as "explaining our view of the evidence which was accumulated during this seven-month hearing, and analyzing that evidence in light of applicable legal principles and relevant case law" severely distorts its nature.

Our initial inclination was to deny the motion to file the Brief, holding that Applicants' conduct in submitting this document was nothing more than a deliberate attempt to evade the prior order of the Board. However, the Board wanted to insure that it had overlooked none of Applicants' arguments in defense of the allegations made against them. We hold that there is good cause to reject the receipt of Applicants' Brief. Nonetheless, we have concluded that because we intend to impose extensive license conditions upon the Applicants, we will accept the Brief and make reference to it notwithstanding our conviction that it is not necessary to do so. Accordingly, Applicants' motion for leave to file dated August 30, 1976, is hereby granted.

Although we grant Applicants' motion, we reiterate our finding that the submission of this Brief was a deliberate attempt to circumvent an order of this Board. We find this particularly disturbing since the Board, throughout these proceedings, has made repeated efforts to understand the complete position of the parties and on numerous occasions has amended its procedural orders to grant relief upon a claim of hardship or burden by an affected party. Applicants have benefited by the receipt of numerous extensions of time (despite their expressed desire to advance the progress of these hearings to the maximum extent possible) and, as noted, by the Board's indication that it would receive applications to extend the length of proposed findings upon a showing of necessity or good cause. Accordingly, Applicants' counsel are reprimanded for their action in submitting the Brief without prior notice to the Board and other parties.¹⁶⁸

¹⁶⁸The imposition of the reprimand is intended as a disciplinary action by the Board. Since we have taken no action to suspend or bar any attorney from further participation in these proceedings, Section 2.713(c) is not applicable to this action of the Board. No other section of the Commission's Rules of Practice purports to deal directly with discipline short of suspension other than § 2.718 which delegates to the presiding officer the duty of conducting a fair and impartial hearing and to take appropriate action to maintain order. Subpart E of § 2.718 specifically includes the power necessary to "regulate the course of the hearing and the conduct of the participants." Subpart I includes the power to take any other action consistent with the Act and 5 U.S.C. § §551-558. We read this section as providing ample authority for the issue of reprimands relating to conduct intended to or with the known effect of evading or failing to comply with orders of the presiding officer.

Burden of Proof

Applicants and opposition parties differ in their views on the proper allocation of the burden of proof. Applicants simply place the burden of proof upon the opposition party, App. Brief p. 209-214. We would be inclined to favor Applicants' position as far as it goes, and to the extent that it is limited to evidence resolving the Issues in Controversy. But Applicants inextricably intertwine valid arguments of evidentiary burden with invalid arguments concerning the legal elements of a situation inconsistent with the antitrust laws under §105 of the Atomic Energy Act. *Id* at 209-210. Moreover, we cannot accept Applicants' simplistic statement that "the burden of proof at each stage in the analytical process rests" with the opposition parties (*Id*, p. 210) because this assertion fails to consider shifting burdens when affirmative defenses are relied upon.

City and Staff urge that the burden rests upon Applicants to establish their right to an unconditioned license once the opposition parties have made their *prima facie* cases. The best support for this position can be found in the Appeal Board opinions in *Consumers Power Company* (Midland Plant, Units 1 and 2), NRCI-76/2, 101 (February 27, 1976), and 2 NRC 11 (July 30, 1975). There the Appeal Board held that the "... burden of proof in any Commission proceeding ..." on an application to build or operate a nuclear reactor rests upon Applicants.

This is broadly inclusive language, but we recognize that the Appeal Board was concerned with a show cause matter in health and safety considerations. We do not believe the Appeal Board necessarily intended to encompass antitrust proceedings in the *Consumers* opinions. The entire debate arises from a provision of law which places §105 within a larger regulatory scheme principally concerned with public health and safety. We see no requirement that we depart from traditional and fair allocations of burdens of proof.

We are not helped by 10 CFR § 2.732 which provides:

Unless otherwise directed by the presiding officer, the applicant or the proponent of an order has the burden of proof.

This language may be applied with logic to both sides of the issue, but on balance, the better reasoning is that the disjunctive language of §2.732 was intended to provide for a rational allocation of the burden and does not require that Applicants always carry the ultimate burden.

Therefore, we have been guided in the conduct of this proceeding by the following order of procedure, allocation of the burden of proof, and the burden of proceeding with the evidence.

- 1) We began with a clean slate, presuming a lawful situation;
- 2) opposition parties were required to establish a *prima facie* case, whereupon;

3) the burden of proceeding with the evidence shifted to Applicants, then;
4) we analyzed the whole record to determine whether the opposition parties carried their burden of proof with a preponderance of the reliable, probative and substantial evidence, except;

5) where Applicants attempted to meet a specific charge (first established *prima facie*), by relying upon an affirmative defense. In this instance, we allocate the burden of proof to Applicants to establish such a defense upon the whole record.¹⁶⁹

Irrespective of the assignment of burden, however, opposition parties have prevailed by an overwhelming preponderance of evidence. Were we to accept Applicants' contention without change or comment, there would be no difference in our ultimate conclusions or provisions for relief.

Other Matters

We have reviewed all of the parties' proposed findings and have considered the record as a whole as we developed our findings and conclusions. To the extent that we have not commented upon any particular proposed finding or argument, it is because that discussion is subsumed into material appearing elsewhere in our opinion or because there would be no material effect upon our conclusions and findings were we to accept the argument.

It is appropriate to note that for the most part, we have chosen to cast our findings and discussion in our own words. This does not mean that we are unable to accept without change substantial numbers of the findings proposed by opposition parties, or considerable material included in Applicants' proposed findings. As has become apparent, we would reject outright or in substantial part more of Applicants' proposed findings than those of other parties. No useful purpose would be served, however, by commenting in greater detail upon those findings since, as noted, we have addressed every crucial argument which would have significant impact upon our reasoning.

CONCLUSION

In conclusion, we hold that a situation inconsistent with the antitrust laws and the policies underlying those laws would be both created and maintained by

¹⁶⁹2(a) Moore's Federal Practice, ¶8.27; 1(a) Moore's Federal Practice, ¶0.314[2]. The question of who has the burden of proof is sometimes more theoretical than practical. For example, once the traditional elements of a monopolization offense are established, the Applicants should be required to carry the burden of proving that they owe this standing to a natural monopoly, or that regulation is a complete substitute for competition and antitrust. *United States v. United Shoe Machinery Corp.*, 110 F. Supp. 295, 342 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521. As a practical matter, opposition parties were eager and effective in proving that the industry does *not* require natural monopoly and that regulation does *not* serve in lieu of antitrust and competition.

the unconditioned license of the Davis-Besse and Perry nuclear stations. We have examined Applicants' policy statements which they indicate will be followed collectively and individually by the Applicant companies irrespective of whether this Board grants relief in this case and we have concluded that the application of those policies would neither prevent nor eliminate anticompetitive activities under the license.

Opposition parties have prevailed in establishing both Broad Issue in Controversy "A" and Broad Issue "B," that the structure of the relevant markets and Applicants' position or positions therein gives them the ability acting individually, together, or together with others to prevent or hinder (1) other electric entities from achieving access to the benefits of coordinated operation either among themselves, or with Applicants; and (2) other electric entities from achieving access to the benefits of economy of size of large electric generating units by coordinated development, either among themselves or with Applicants.

We conclude further that Applicants' ability has been used, is being used and may be used to create and maintain a situation or situations inconsistent with the antitrust laws or the policies underlying those laws. In the course of our decision, we have answered the questions posed in Matters in Controversy under Broad Issues "A" and "B." In summary, our conclusion is that within the relevant product and geographic markets, Applicants have acted individually and collectively to eliminate one or more other electric entities and to preclude competition. Many of these anticompetitive acts are in the nature of *per se* violations of the antitrust laws. We have found Applicants to be engaged in activities which violate Section 1 of the Sherman Act, Section 2 of the Sherman Act and Section 5 of the Federal Trade Commission Act. Their activities also contravene the policies underlying these statutes. We have found that Applicants' policies with respect to providing access to nuclear facilities to other electric entities in the CCCT are anticompetitive in nature and intent. Indeed, we have determined that Applicants for many years have been aware of the effect of their acts and policies which we deem anticompetitive upon lesser electric generation or distribution systems within the CCCT. Finally, we have determined that there is a very substantial nexus both in terms of market structure and in terms of availability and use of power to be generated at the Davis-Besse and Perry nuclear stations and the situation inconsistent with the antitrust laws which we have found to exist.

RELIEF

We have concluded that the issuance of licenses for the nuclear units involved in these proceedings without appropriate license conditions will lead to the creation and maintenance of the proscribed situation inconsistent with the antitrust laws. Accordingly, it is our task to design license conditions which will prevent activities under the license from achieving and aiding in this result.

As we observed earlier in the proceedings:

In determining what constitutes appropriate relief, the Board cannot be bound by the terms of a particular proposal suggested by Applicants or, indeed, any other party or combination of parties. It is the *Board's* responsibility to determine what constitutes appropriate relief and there is no statutory provision for delegation of that responsibility. Faced with a "situation" which affects "activities" under the license, the Board must be satisfied that any relief proposed by the parties is appropriate.

See Ruling of Board with respect to Applicants' Proposal for Expediting the Antitrust Hearing Process, June 30, 1975, p. 9.

As is evident from our findings, denial of bulk power service options, particularly opportunities for coordinated operation, reserve sharing, wheeling, and economy energy exchanges is a substantial element in the situation prevailing in the CCCT. The anticompetitive situation is further exacerbated by restraint on utilization of power generated by the nuclear facilities in issue. Our relief, therefore, must focus upon providing access to power from the nuclear units in a manner in which it allows it to be used without restraint and with the availability of necessary bulk power service alternatives. See Hughes, NRC 207, p. 32.

Definitions

Entity shall mean any electric generation and/or distribution system or municipality or cooperative with a statutory right or privilege to engage in either of these functions.

Wheeling shall mean transportation of electricity by a utility over its lines for another utility, including the receipt from and delivery to another system of like amounts but not necessarily the same energy. Federal Power Commission, *The 1970 National Power Survey*, Part 1, p. I-24-8.

LICENSING CONDITIONS

1. Applicants shall not condition the sale or exchange of electric energy or the grant or sale of bulk power services upon the condition that any other entity:
 - a. enter into any agreement or understanding restricting the use of or alienation of such energy or services to any customers or territories;
 - b. enter into any agreement or understanding requiring the receiving entity to give up any other bulk power service options or alternatives or to deny itself any market opportunities;
 - c. withdraw any petition to intervene or forego participation in any proceeding before the Nuclear Regulatory Commission or refrain from instigating or prosecuting any antitrust action in any other forum.

2. Applicants, and each of them, shall offer interconnections upon reasonable terms and conditions at the request of any other electric entity(ies) in the CCCT, such interconnection to be available (with due regard for any necessary and applicable safety procedures) for operation in a closed-switch synchronous operating mode if requested by the interconnecting entity(ies). Ownership of transmission lines and switching stations associated with such interconnection shall remain in the hands of the party funding the interconnection subject, however, to any necessary safety procedures relating to disconnection facilities at the point of power delivery. Such limitations on ownership shall be the least necessary to achieve reasonable safety practices and shall not serve to deprive purchasing entities of a means to effect additional bulk service options.

3. Applicants shall engage in wheeling for and at the request of other entities in the CCCT:

1) of electric energy from delivery points of Applicants to the entity(ies); and,

2) of power generated by or available to the other entity, as a result of its ownership or entitlements¹⁷⁰ in generating facilities, to delivery points of Applicants designated by the other entity.

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of Applicants, the use of which will not jeopardize Applicants' system. In the event Applicants must reduce wheeling services to other entities due to lack of capacity, such reduction shall not be effected until reductions of at least 5% have been made in transmission capacity allocations to other Applicants in these proceedings and thereafter shall be made in proportion to reductions imposed upon other Applicants to this proceeding.¹⁷¹

Applicants shall make reasonable provisions for *disclosed* transmission requirements of other entities in the CCCT in planning future transmission either individually or within the CAPCO grouping. By "disclosed" is meant the giving or reasonable advance notification of future requirements by entities utilizing wheeling services to be made available by Applicants.

4. a) Applicants shall make available membership in CAPCO to any entity in the CCCT with a system capability of 10 MW or greater;

¹⁷⁰ "Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

¹⁷¹ The objective of this requirement is to prevent the preemption of unused capacity on the lines of one Applicant by other Applicants or by entities the transmitting Applicant deems noncompetitive. Competitive entities are to be allowed opportunity to develop bulk power services options even if this results in reallocation of CAPCO transmission channels. This relief is required in order to avoid prolongation of the effects of Applicants' illegally sustained dominance.

b) A group of entities with an aggregate system capability of 10 MW or greater may obtain a single membership in CAPCO on a collective basis.¹⁷²

c) Entities applying for membership in CAPCO pursuant to License Condition 4 shall become members subject to the terms and conditions of the CAPCO Memorandum of Understanding of September 14, 1967, and its implementing agreements; except that new members may elect to participate on an equal percentage of reserve basis rather than a P/N allocation formula for a period of twelve years from date of entrance.¹⁷³ Following the twelfth year of entrance, new members shall be expected to adhere to such allocation methods as are then employed by CAPCO (subject to equal opportunity for waiver or special consideration granted to original CAPCO members which then are in effect).

d) New members joining CAPCO pursuant to this provision of relief shall not be entitled to exercise voting rights until such time as the system capability of the joining member equals or exceeds the system capability of the smallest member of CAPCO which enjoys voting rights.¹⁷⁴

5. Applicants shall sell maintenance power to requesting entities in the CCCT upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

6. Applicants shall sell emergency power to requesting entities in the CCCT upon terms and conditions no less favorable than those Applicants make available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

¹⁷²E.g., Wholesale Customer of Ohio Edison (WCOE).

¹⁷³The selection of the 12-year period reflects our determination that an adjustment period is necessary since the P/N formula has a recognized effect of discriminating against small systems and forcing them to forego economies of scale in generation in order to avoid carrying excessive levels of reserves. We also found that P/N is not entirely irrational as a method of reserve allocation. We have observed that Applicants themselves provided adjustment periods and waivers to integrate certain Applicants into the CAPCO reserve requirement program. The 12-year period should permit new entrants to avoid initial discrimination but to accommodate and adjust to the CAPCO system over some reasonable period of time. Presumably new entrants will be acquiring ownership shares and entitlements during the 12-year period so that adverse consequences of applying the P/N formula will be mitigated.

¹⁷⁴Our objective is to prevent impediments to the operation and development of an areawide power pool through the inability of lesser entities to respond timely or to make necessary planning commitments. While we grant new member entities the *opportunity* to participate in CAPCO it is not our intent to relieve joining entities of responsibilities and obligations necessary to the successful operation of the pool. For those smaller entities which do not wish to assume the broad range of obligations associated with CAPCO membership we have provided for access to bulk power service options which will further their ability to survive and offer competition in the CCCT.

7. Applicants shall sell economy energy to requesting entities in the CCCT, when available, on terms and conditions no less favorable than those available: (1) to each other either pursuant to the CAPCO agreements or pursuant to bilateral contract; or (2) to non-Applicant entities outside the CCCT.

8. Applicants shall share reserves with any interconnected generation entity in the CCCT upon request. The requesting entity shall have the option of sharing reserves on an equal percentage basis or by use of the CAPCO P/N allocation formula or on any other mutually agreeable basis.

9. a) Applicants shall make available to entities in the CCCT access to the Davis-Besse 1, 2, and 3 and the Perry 1 and 2 nuclear units and any other nuclear units for which Applicants or any of them, shall apply for a construction permit or operating license during the next 25 years. Such access, at the option of the requesting entity, shall be on an ownership share, or unit participation or contractual prepurchase of power basis.¹⁷⁵ Each requesting entity (or collective group of entities) may obtain up to 10% of the capacity of the Davis-Besse and Perry Units and 20% of future units (subject to the 25-year limitation) except that once any entity or entities have contracted for allocations totaling 10% or 20%, respectively, no further participation in any given units need be offered.

b) Commitments for the Davis-Besse and Perry Units must be made by requesting entities within two years after this decision becomes final and within two years after a license application is filed for future units (subject to the 25-year limitation).

10. These conditions are intended as minimum conditions and do not preclude Applicants from offering additional bulk power services or coordination options to entities within or without the CCCT. However, Applicants shall not deny bulk power services required by these conditions to non-Applicant entities in the CCCT based upon prior commitments arrived in the CAPCO Memorandum of Understanding or implementing agreements. Preemption of options to heretofore deprived entities shall be regarded as inconsistent with the purpose and intent of these conditions.

The above conditions are to be implemented in a manner consistent with the provisions of the Federal Power Act and all rates, charges or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.

The Board concludes that the above conditions should attach to licenses for the Davis-Besse 1, 2 and 3 and Perry 1 and 2 nuclear units.

¹⁷⁵ Requesting entities election as to the type of access may be affected by provisions of state law relating to dual ownership of generation facilities by municipalities and investor-owned utilities. Such laws may change during the period of applicability of these conditions. Accordingly, we allow requesting entities to be guided by relevant legal and financial considerations in fashioning their requests.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

John M. Frysiak, Member

Ivan W. Smith, Member

Douglas V. Rigler, Chairman

**Dated at Bethesda, Maryland
This 6th day of January 1977.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Esq., Chairman
Mr. Glenn O. Bright
Dr. Robert L. Holton

In the Matter of

GEORGIA POWER COMPANY

Docket Nos. 50-424
50-425

(Alvin W. Vogtle Nuclear
Plant, Units 1 and 2)

January 11, 1977

Upon remand from the Appeal Board to consider proposed construction permit amendments (ALAB-285) and other matters (ALAB-291), the Licensing Board concludes that the requested amendments should be issued subject to a specific condition regarding financing of the plants.

Construction permit amendments authorized, subject to a condition.

**SUPPLEMENTAL INITIAL DECISION
(CONSTRUCTION PERMIT PROCEEDING)**

Appearances

George F. Trowbridge, Esq., Bruce W. Churchill, Esq., Thomas A. Baxter, Esq., and Ernest L. Blake, Jr., Esq., of Shaw, Pittman, Potts and Trowbridge, Washington, D. C., on behalf of Applicants Georgia Power Company, Oglethorpe Electric Membership Corporation and Municipal Electric Authority of Georgia.

Milton A. Carlton, Jr., Esq., Troutman, Sanders, Lockerman and Ashmore, Atlanta, Georgia, on behalf of the Applicant Georgia Power Company.

James C. Brim, Jr., Esq., Camilla, Georgia, on behalf of Oglethorpe Electric Membership Corporation.

L. Clifford Adams, Jr., Esq., Heard, Leverett and Adams, Elberton, Georgia, on behalf of Municipal Electric Authority of Georgia.

H. Ed Martin, Jr., Esq., Atlanta, Georgia, on behalf of Intervenor Georgia Power Project.

John T. Miller, Jr., Esq., Washington D.C., on behalf of the City of Dalton, Georgia.

Henry J. McGurren, Esq., and Daniel Swanson, Esq., Office of the Executive Legal Director, United States Nuclear Regulatory Commission, Washington, D.C., on behalf of the NRC Staff.

I. BACKGROUND

1. The Georgia Power Company (hereinafter referred to as "GPC" or "Applicant") was issued on June 27, 1974, construction permits (CPPR-108, CPPR-109, CPPR-110 and CPPR-111) by the Director of Regulation of the United States Atomic Energy Commission¹ which authorize the construction of the Alvin W. Vogtle Nuclear Plant, Units 1, 2, 3 and 4. The granting of these construction permits was authorized by an Atomic Safety and Licensing Board (hereinafter referred to as "Licensing Board") in an Initial Decision² following an uncontested evidentiary hearing.

2. Although no exceptions were taken to the Licensing Board's Initial Decision, the Atomic Safety and Licensing Appeal Board (hereinafter referred to as "Appeal Board") undertook its customary *sua sponte* review of the decision and the underlying record. In the course of its review, the Appeal Board questioned the Licensing Board's disposition of the question of the necessity of requiring that the particulate radioactivity monitoring systems be designed to withstand a safe shutdown earthquake. This question was briefed to the Appeal Board and oral argument by GPC and the AEC Staff was calendared for October 4, 1974.³ On September 16, 1974, however, GPC announced for financial reasons the cancellation of Vogtle Units 3 and 4 and the suspension of further construction

¹ The regulatory and licensing functions of the Atomic Energy Commission (AEC) were transferred on January 19, 1975, to the new Nuclear Regulatory Commission (NRC). References throughout this Supplemental Decision to "Commission" are to either the AEC or the NRC as appropriate.

² LBP-74-48, 7 AEC 1166 (1974). See also LBP-74-39, 7 AEC 895 (1974).

³ 39 Fed. Reg. 33391 (1974).

work on Units 1 and 2 pending further consideration by it of the possible deferment or cancellation of these two units. The Appeal Board upon notification of GPC's announcement vacated its oral argument order on the air particulate question and held in abeyance, pending advice from GPC as to its intentions regarding Units 1 and 2, further *sua sponte* review of the Licensing Board's initial decision.⁴

3. The Appeal Board in June 1975 inquired whether the outstanding construction permits for Vogtle Units 1 and 2 should be allowed to remain in effect pending GPC's determination as to the fate of the two units. GPC in its response described the construction work already done on the units at the time work was suspended in September 1974, outlined plans for resumption of construction of Units 1 and 2 in 1976 (which, it was stated, would depend upon the sale of a large percent of the interest in such units to three other entities and would require an extension in authorized completion dates), and proposed procedures and a schedule for further licensing proceedings; including a remanded hearing on requested amendments to the construction permits. GPC argued that the hearing should not address any changed circumstances since the issuance of the construction permits for Units 1 and 2 in June 1974 which are not directly related to the proposed amendments. Contemporaneous with the response to the Appeal Board, application was made for amendments to the Vogtle Units 1 and 2 construction permits; to reflect changed ownership and to extend the construction completion dates.

4. The NRC Staff filed a response wherein it concurred that there should be a remanded hearing on the proposed amendments to the construction permits for Units 1 and 2. However, the Staff viewed the remanded hearing as being broad enough in scope to allow the Licensing Board to delve into any changed circumstances which may have arisen since the issuance of the construction permits. The Appeal Board, noting agreement of GPC and the NRC Staff on the necessity of a supplemental hearing, remanded the proceeding to the Licensing Board for the purpose of conducting a supplemental hearing on at least the proposed construction permit amendments.⁵ In addition the Appeal Board scheduled oral argument on the question of whether the supplemental remanded hearing might appropriately encompass issues beyond those raised by the proposed amendments.⁶

5. Following the oral argument, the Appeal Board issued a decision⁷ which provided guidance to the Licensing Board on what additional safety and environ-

⁴39 Fed. Reg. 35199 (1974).

⁵ALAB-285, 2 NRC, 209.

⁶*Id.*

⁷ALAB-291, 2 NRC 404.

mental issues should be entertained in the remanded hearing beyond those directly raised by the proposed amendments.⁸

6. Notice of Supplemental Hearing on Proposed Amendment to Construction Permits was published in the *Federal Register* on September 8, 1975.⁹ The Notice of Supplemental Hearing announced that a hearing would be conducted concerning the effect changed circumstances might have on the Units 1 and 2 construction permits, including issues related to the proposed sale of a majority undivided ownership interest in the units and an extension of completion dates, and invited requests for leave to intervene. In response to the Notice, a Petition for Leave to Intervene was filed by the Georgia Power Project (hereinafter referred to as "Intervenor" or "Project") on October 8, 1975. Neither Applicants nor the NRC Staff opposed Project's intervention. One of Project's contentions was deemed acceptable and Project subsequently was admitted as the only party intervenor in the proceeding.¹⁰

7. On November 20, 1975, a special prehearing conference was held in Augusta, Georgia. In its Prehearing Conference Order following the special prehearing, the Licensing Board accepted a stipulated schedule for the remainder of the proceeding, acknowledged Intervenor's withdrawal of certain contentions (original Contentions 8, 11, 12 and 13 were withdrawn), and admitted revised Contention 9.¹¹

8. A second prehearing conference was held in Augusta, Georgia, on January 6, 1976, during which, Intervenor clarified its Contention 10, Applicants and Intervenor entered into a stipulation regarding uranium prices in proposals received by Applicants, and the parties exchanged witness names and agreed upon the order of presentation for the forthcoming evidentiary hearing.

9. The evidentiary hearing was conducted February 10 through February 12, 1976, in Augusta, Georgia, following exchange among the parties of pre-

⁸*Id.* at 414. In addition to addressing the types of significant safety concerns which might be appropriate for consideration in the remanded proceeding, the Appeal Board dealt specifically with the question of the air-particulate monitor design, noting GPC's decision since June 1974 to change the design of this system and thereby moot the Appeal Board's earlier concern. Observing GPC's commitment that the design change would be reflected in an amendment to the PSAR and brought to the Licensing Board's attention, the Appeal Board noted that no additional evidence would be required on this issue. The amendment subsequently was filed by Applicants and was brought to the attention of the Licensing Board during the remanded hearing. Tr. 552-554.

⁹40 Fed. Reg. 41568

¹⁰See Licensing Board's Ruling on Petition to Intervene of Georgia Power Project, of November 4, 1975. In its ruling, the Board accepted, as one contention in the proceeding, Project's Contention 10, related to need for power.

¹¹Contention 9, as admitted by the Board had three subparts, dealing with: the alternative of conservation through rate design (9(1)); the alternative of constructing coal-fired base load units (9(2)); and the alternative of constructing peaking units such as combustion turbines or combined-cycle facilities (9(3)).

pared written testimony. Limited appearance statements by two individuals were heard on the first day of hearing.¹² Applicants—Georgia Power Company, Oglethorpe Electric Membership Corporation, Municipal Electric Authority of Georgia and City of Dalton—and the NRC Staff presented evidence on Applicants' financial qualifications and good cause for extension of the construction permit completion dates. All three parties presented direct testimony and conducted cross-examination relating to each of the contentions raised by Intervenor as contested issues in this proceeding.

10. After the close of the February hearing and after Applicants, but not the other parties, had filed proposed findings based on the hearing, Applicants' counsel notified the Board of a probable reduction in the 30-25 percent ownership contemplated for MEAG and proposed an indefinite suspension in further licensing proceedings pending submission by Applicants of a revised application for amendment of the construction permits for Vogtle Units 1 and 2 reflecting new proposed ownership arrangements. In conference calls on March 8 and March 15, 1976, the Board and counsel for the other parties concurred in Applicants' proposal to defer further licensing proceedings pending Applicants' submission of a revised application and a further order of the Board.

11. On September 20, 1976, Applicants filed with NRC an amendment (hereinafter referred to as the "Applicants' September 20 Amendment") to their application for amendment of the Vogtle Units 1 and 2 construction permits to reflect anticipated ownership in the Vogtle facility by GPC, OEMC, MEAG and Dalton in the following respective percentages: 50.7%, 30%, 17.7% and 1.6%. The percentages differ from the percentages addressed in the public hearing in that MEAG's share is reduced from 30-25% to 17.7% and GPC's share is increased from 38.4-43.4% to 50.7%. Contemporaneously with its revised amendment request, Applicants filed a motion for leave to supplement the record requesting the Board to receive in evidence, without further hearing, Applicants' amendment request, together with certain related material bearing on Applicants' financial qualifications,¹³ as well as an affidavit subsequently filed by the Staff on the same subject.¹⁴ Since the issue of financial ownership and qualifica-

¹²Dr. Victor A. Skorapa and Ms. Marguerite Rece made limited appearances. Questions raised by these two individuals in their statements were subsequently addressed by the parties in their testimony and by the Staff in a specific response requested by the Licensing Board. Tr. 93-109, 605-09.

¹³This material consisted of a letter from Mr. William Ehrensperger, Senior Vice President of GPC, to Mr. Karl Kniel, NRC Branch Chief, dated September 16, 1976, (hereinafter referred to as "Ehrensperger letter") and attachments to the September 20 Amendment, including affidavit of Alfred W. Dahlberg, III, dated September 16, 1976 (hereinafter referred to as "Dahlberg Affidavit").

¹⁴Affidavit of Jim C. Petersen, dated October 28, 1976 (hereinafter referred to as "Petersen Affidavit").

tions was not a contested issue in this proceeding, and since Applicants' motion was supported by the Staff, the Board granted the motion.

12. On October 4, 1976, Intervenor filed a motion to reopen the hearing for the purpose of revising the estimate of its witness at the hearing with respect to estimated capacity factors for the Vogtle facility. This motion was opposed by Applicants and the Staff on the ground that it did not meet the tests of timeliness and significance required for reopening of the evidentiary record and was denied by the Board on the same grounds.

13. The Staff filed a Motion for Admission of Evidence dated November 26, 1976 in which the Staff requested that the Board receive into evidence an affidavit of F. S. Echols. By means of this affidavit, the Staff presented its evaluation of (1) the fuel cycle environmental impacts for Vogtle Unit Nos. 1 and 2 based on Table S-3 and (2) the revised values for reprocessing and waste management presented in the Commission's notice of proposed rulemaking of October 18, 1976.

14. The record in this remanded proceeding consists of: (i) the transcript of the evidentiary hearing of February 10-12, 1976, containing, *inter alia*, the testimony of ten witnesses presented by the Applicants, two witnesses presented by the Intervenor, and nine witnesses presented by the Staff, and the following exhibits which were received in evidence:

Intervenor's Exhibit No. 1 - Testimony of Neill Herring on Behalf of the Intervenor Georgia Power Project.

Intervenor's Exhibit No. 2 - Prepared Testimony of Charles Komanoff, Energy Projects Director, Council on Economic Priorities.

Applicants' Exhibit No. 1 - PSAR Amendment related to air particulate monitoring system design.

(ii) a submittal by the Applicants known as the September 20 Amendment consisting of (1) an amendment to the application for amendment of the Vogtle Unit Nos. 1 and 2 construction permits, (2) a letter from Mr. William Ehrensperger, Senior Vice President of GPC, to Mr. Karl Kniel, NRC Branch Chief, dated September 16, 1976, and (3) an affidavit of Alfred W. Dahlberg, III, dated September 16, 1976, which was received in evidence by Order of the Board dated November 11, 1976, and (iii) three submittals by the Staff: an affidavit of Jim C. Petersen, dated October 28, 1976, which was received in evidence by Order of the Board dated November 11, 1976; an affidavit of Mr. F. S. Echols, dated November 5, 1976, with attached Staff Negative Declaration and Supporting Environmental Impact Appraisal, which was received in evidence by Order of the Board dated November 11, 1976; and an affidavit of Mr. F. S. Echols, dated November 26, 1976, which is received in evidence by Order of this Board embodied in this Supplemental Initial Decision.

15. The hearing was chaired by Thomas W. Reilly, Esq. Following Mr. Reilly's resignation from the Atomic Safety and Licensing Board Panel in

August, 1976, Elizabeth S. Bowers, Esq., was appointed to succeed Mr. Reilly as Chairman of the Board.

II. UNCONTESTED MATTERS

Financial Qualifications

1. On July 15, 1975, GPC submitted to the Staff "Application for Amendment of Construction Permit Nos. CPPR-108 and CPPR-109 Adding Co-owners." This amendment sought to add, as co-owners of Vogtle Units 1 and 2, Oglethorpe Electric Membership Corporation (OEMC), the Municipal Electric Authority of Georgia (MEAG), and the city of Dalton, Georgia, acting by and through its Board of Water, Light, and Sinking Fund Commissioners (Dalton). If adopted, GPC would then be authorized to sell 50.1 percent of its ownership in the facility to OEMC, 30 percent to MEAG, and 2.3 percent to Dalton as tenants in common, without right of partition during the life of the plant, and both the land and the facility (except transmission lines) which comprise the Vogtle 1 and 2 facility. On December 15, 1975, GPC submitted to the Staff its "Amendment to Application for Amendment of Construction Permit Nos. CPPR-108 and CPPR-109 Adding Co-owners," which modified the ownership percentages of Vogtle Units 1 and 2 to 38.4 percent ownership by GPC, 30 percent by OEMC, 30 percent by MEAG, and 1.6 percent by Dalton. By amendment to application dated September 16, 1976, the Applicants have again revised their respective ownership percentages to 50.7 percent by GPC, 30 percent by OEMC, 17.7 percent by MEAG and 1.6 percent by Dalton. GPC, OEMC and MEAG have further agreed that, should Dalton for any reason not purchase its 1.6 percent share, GPC will retain a 52.3 percent interest in the facility.

2. The current estimate of the cost, including contingencies, of construction of Vogtle 1 and 2 as compiled by Applicants is \$2,852.1 million if Dalton participated and \$2,830.8 million if Dalton does not participate.¹⁵ The difference in total cost estimates is due to certain reserves and contingencies of Dalton that would be eliminated if it did not participate. The cost of designing and constructing Vogtle 1 and 2 will be borne by each participant proportionately to its share of the ownership of the facility.

3. The estimated capital cost of the nuclear production plant for the proposed Vogtle facility was compared to the cost calculated using the Staff CONCEPT cost model to ascertain the reasonableness of the Applicants' projections. The CONCEPT model estimated this capital cost to be \$1,686.0 million.¹⁶ The

¹⁵ Amendment to Application for Amendment of Construction Permit Nos. CPPR-108 and CPPR-109 adding Co-owners, dated September 16, 1976 (Amendment), Attachment A.

¹⁶ Testimony of Jim C. Petersen, following Tr. 188 (hereinafter referred to as "Petersen Testimony"), pp. 4, 5.

Board agrees with the Staff that it is reasonable to use the more detailed engineering cost study prepared by Applicants for its analysis,¹⁷ especially in light of the increased cost of the integrated transmission system and the initial core, and the higher financing cost which were included in Applicants' Supplemental Testimony, and which were not available to the Staff when preparing its CONCEPT estimate.¹⁸ For conservatism the Board will therefore use Applicants' adjusted estimate of \$2,852.1 million if the City of Dalton participates, and \$2,830.8 million if it does not, for the cost of designing and constructing Vogtle Units 1 and 2 in determining Applicants' financial qualifications.

GPC

4. GPC is an investor-owned utility engaged in the generation, distribution, and sale of electric energy to approximately one million customers in Georgia.¹⁹ GPC's operating revenues increased from \$957.2 million for the 12 months ended June 30, 1975, to \$1,099.6 million for the 12 months ended June 30, 1976, and net income increased from \$112.6 million to \$144.2 million over the same period. The improvement in earnings is reflected in the pretax coverage of total interest requirements which rose from 2.18 to 2.70 over the period.²⁰ Invested capital at December 31, 1975, amounted to \$3,059.4 million and consisted of 57.4 percent long-term debt, 10.9 percent preferred stock, and 31.7 percent common equity.²¹ The Southern Company, a holding company which owns all the common stock of GPC, sells its own securities and in turn provides capital to the subsidiaries. The Southern Company's consolidated operating revenues increased from \$1,791.9 million for the 12 months ended June 30, 1975, to \$2,051.3 million for the 12 months ended June 30, 1976, and consolidated net income increased from \$167.9 million to \$203.1 million over the same period. The improvement in earnings is reflected in the after-tax coverage of total interest charges which rose from 1.55 to 2.11 over the period.²² Consolidated invested capital at December 31, 1975, amounted to \$5,938.0 million and consisted of 57.4 percent long-term debt, 11.2 percent preferred stock, and 31.4 percent common equity.²³ Capital contributions from the Southern Company are an important part of the financing of GPC's overall construction program including its share of the Vogtle Nuclear Units.²⁴

¹⁷*Id.*

¹⁸Dahlberg Supplemental Testimony, p. 9.

¹⁹Petersen Testimony, p. 5.

²⁰Moody's Public Utility News Reports, August 6, 1976.

²¹Georgia Power Company's Prospectus for First Mortgage Bonds dated June 30, 1976.

²²See note 20, *supra*.

²³The Southern Company's 1975 Annual Report.

²⁴Affidavit of Jim C. Petersen dated October 28, 1976 (hereinafter referred to as "Petersen affidavit"), p. 5.

5. GPC provided an update of financial information previously analyzed by the Staff in connection with the original application for participation by the co-owners. The update includes a detailed explanation of the changes to the overall GPC construction budget upon which the Staff's earlier financial evaluation was based. GPC's overall construction expenditure for the period 1976 through 1984, assuming a 52.3 percent interest in Vogtle, are now projected to be approximately \$200 million less than the estimated expenditures on which Staff witness Petersen based his earlier testimony. The costs of GPC's increased participation in Vogtle are more than offset, in the aggregate, by sales of interests in fossil plants to MEAG and by other changes.²⁵

6. GPC's 1975 construction expenditures (estimated at \$468 million) have been financed in large part by the issuance of first mortgage bonds (\$200 million), the issuance of preferred stock (\$75 million), the issuance of pollution control revenue bonds (\$30 million), the sale of certain facilities to OEMC (\$306 million), capital contributions from the Southern Company (\$35 million), and by internally generated funds (estimated at \$92 million).²⁶ Such funds have also been used in part to retire maturing bonds (\$2 million) and to effect a net reduction in notes payable of \$268 million.²⁷

7. GPC is subject to regulatory jurisdiction as to its retail rates by the Georgia Public Service Commission and as to its wholesale rates by the Federal Power Commission (FPC). GPC's most recent retail rate increase was effective April 22, 1975, and was designed to produce \$116.1 million in additional revenue. A fuel adjustment clause is applicable to virtually all GPC rates and provides for recovery of significant changes in fuel cost. Subsequent to the February hearing, GPC has received wholesale rate relief from the Federal Power Commission and has been authorized to use a forward-looking fuel adjustment clause for both wholesale and retail customers. The latter action allows the company to recover increased costs of fuel on a current basis. GPC issued \$50 million of first mortgage bonds and \$50 million of preferred stock in July 1976. GPC's parent, the Southern Company, issued \$165 million of common stock in March 1976.²⁸

8. The Board concludes that Georgia Power Company is financially qualified to participate in the costs of design, construction, and related fuel cycle of Vogtle Nuclear Unit Nos. 1 and 2 in the ownership interest of either 50.7 percent or 52.3 percent. Our conclusion regarding GPC's increased ownership interest in Vogtle is significantly influenced by the following factors as discussed above: (1) a \$200 million net reduction in GPC's projected overall construction expenditures (assuming a 52.3 percent interest in Vogtle) for the period 1976

²⁵ Affidavit of Alfred W. Dahlberg, III, September 16, 1976.

²⁶ Petersen Testimony, p. 7.

²⁷ *Id.*

²⁸ Petersen affidavit, p. 5.

through 1984; and (2) continuing improvement in the financial condition of GPC and the Southern Company.

OEMC

9. OEMC is a cooperative of 39 electric membership corporations in the State of Georgia.²⁹ OEMC plans to finance its 30 percent undivided interest in Vogtle Units 1 and 2 with a loan to be guaranteed by the Rural Electrification Administration (REA). OEMC has successfully used this source for financing its interest in the Hatch Nuclear Units.³⁰ The Board concurs with the Staff's recommendation that a copy of the executed loan commitment notice from REA to OEMC should be required prior to the issuance of construction permit amendments, and hereby makes such a requirement a condition of the amendment.

10. OEMC and the member corporations are not subject to rate regulations by Georgia State regulatory agencies. OEMC is the exclusive power supplier (under irrevocable 45-year contracts) to its 39 member cooperatives who together presently service approximately 460,000 residential and commercial customers in Georgia. The Wholesale Power Contracts provide, *inter alia*, that the Board of Directors of OEMC must establish (and revise when and if necessary) rates charged to the members that are fully sufficient to cover all costs of service plus the maintenance of reasonable reserves. The members have agreed to pay such rates so established (and to revise their own rates when necessary) after approval by the Administrator of the Rural Electrification Administration.³¹

11. The Staff concludes that these arrangements provide adequate assurance of OEMC's capital contributions for the design and construction of Vogtle Nuclear Units 1 and 2.³² The Board concurs with this evaluation.

MEAG

12. MEAG was created by the General Assembly of Georgia in its 1975 session for the purpose of providing for the bulk power needs of political subdivisions of Georgia that desire this service. It has the authority on behalf of its members to acquire, construct, operate, and maintain electric generation and transmission systems. MEAG has entered into bulk power sales contracts for its political subdivisions for a term which extends to the final maturities of MEAG's

²⁹ Testimony of A.W. Dahlberg, G. Stanley Hill, Karl B. Porter, and Duncan C. Gray on the financial qualifications of the Applicants, following Tr. 112 (hereinafter referred to as "Dahlberg, et al. Testimony"), p. 11.

³⁰ *Id.* at pp. 13, 14.

³¹ Petersen Testimony, p. 10.

³² *Id.*

revenue bonds issued to finance its share in facilities such as Vogtle, not to exceed 50 years.³³

13. MEAG plans to finance its 17.7 percent interest in the design and construction costs of the facility through the issuance of its electric revenue bonds. The bonds will be issued in series from time to time as funds are needed to meet MEAG's obligations under the construction program. In turn, requirements will be met with bond anticipation notes and short-term borrowing where necessary.³⁴ These bonds will require validation in judicial proceedings which will be initiated as soon as all of the project agreements are executed.³⁵ The Board concurs with the Staff recommendation that evidence of this bond validation be required as a condition of the construction permit amendment.

14. Rates charged by MEAG to participants are not subject to regulatory jurisdiction. The power sales contracts between MEAG and its participants provide that rates charged by MEAG shall be designed (and adjusted when necessary) to cover all costs of operation, including the amounts required to pay debt service and to provide for eventual retirement of its bonds. MEAG's revenues under the contracts will be pledged as security for the bonds. The contracts further provide that each participant must take or pay for its entitlement share of power from any owned project, such as the Vogtle Nuclear Units 1 and 2. Each participant's monthly bill for power from MEAG will normally be paid as an operating expense of the local system. However, it may be paid from any funds of the political subdivision and the payments may be enforced against any such funds, including tax revenues.³⁶

15. The Staff concluded that MEAG's financing plan provides reasonable assurance that MEAG can obtain the funds required for its share of the design and construction costs of Vogtle Nuclear Units 1 and 2.³⁷ The Board concurs with the Staff's findings.

Dalton

16. Dalton is an incorporated municipality which owns and operates an electrical distribution system. Dalton elected to participate directly as a co-owner of Vogtle 1 and 2 rather than as a member of MEAG. It plans to finance its 1.6 percent share of the Vogtle design and construction cost through the issuance of its revenue bonds.³⁸

17. Dalton has previously issued revenue bonds for its electric and gas plant

³³ Dahlberg, et al. Testimony, pp. 15-19.

³⁴ Dahlberg, et al. Testimony, pp. 18, 19.

³⁵ *Id.* at pp. 19, 20.

³⁶ Dahlberg, et al. Testimony, pp. 17-20.

³⁷ Petersen Testimony, p. 12.

³⁸ Dahlberg, et al. Testimony, pp. 23, 24.

and has issued general obligation bonds for city school construction. The principal and interest on revenue bonds to be issued in support of Vogtle will be payable from revenues derived from the city's operation of its electric and natural gas system. Dalton has authority to increase its utility rates, if necessary, in order to recover all costs of operation and interest on its bonds, and to provide for retirement of the bonds. The issuance of the bonds, however, is subject to the outcome of a judicial validation proceeding before the local county court.³⁹

18. The Staff independently evaluated Dalton's ability to finance its share of the design and construction cost of Vogtle Units 1 and 2, and concluded that Dalton has reasonable assurance of obtaining the necessary funds.⁴⁰ The Board concurs with this evaluation. In addition, the Board agrees with the Staff recommendation that Dalton, if it should elect to participate, should provide evidence of the validation of its bonds as a condition of the construction permit amendments.

19. The Staff concluded that, if Applicants are required to meet the four conditions recommended on page 14 of the Testimony of Jim C. Petersen, that Applicants have reasonable assurance of obtaining the funds necessary to design and construct the Vogtle Nuclear Units in accordance with Section 50.33(f) of 10 CFR Part 50 and Appendix C to 10 CFR Part 50.⁴¹ The Board concurs with the Staff's independent evaluation, and finds that each of the applicants has reasonable assurance of obtaining the funds necessary to complete the design and construction activities, in the ratio of their respective ownership percentages noted in the record of this proceeding. In addition, the Board finds that GPC is qualified to finance up to and including 52.3 percent of the cost of the facility should Dalton not purchase its 1.6 percent share. The Staff prepared an Environmental Impact Appraisal, dated November 4, 1976, relating to the proposed change of ownership interest of Vogtle Units 1 and 2.⁴² The Staff concluded that environmental impacts would not increase over those previously evaluated in the Commission's Final Environmental Statement for Vogtle Units 1-4, published in March 1974. The Board agrees with this conclusion.

³⁹Dahlberg, et al. Testimony, pp. 24, 25.

⁴⁰Petersen Testimony, p. 13.

⁴¹Tr. 190. The Board acknowledges receipt from the Applicants of executed copies of the Vogtle Purchase and Ownership Participation Agreement, dated August 27, 1976. The Agreement is in substantial conformity with the draft Agreement previously provided to the Staff. This satisfies the first part of a four-part CP amendment condition that the Staff recommended.

⁴²The Staff also published a Negative Declaration Supporting Amendments No. 1 to CPPR-108 and CPPR-109 Relating to Change of Ownership Interest and Extension of Dates for Completion of Construction for Vogtle, Unit Nos. 1 and 2, submitted to the Board on November 5, 1976.

20. Prior to issuance of an amendment to Construction Permit Nos. CPPR-108 and CPPR-109 authorizing the transfer of these ownership rights in Vogtle Units 1 and 2 from GPC to OEMC, MEAG, and Dalton, Applicants must submit documents to the NRC Staff as follows:

- (a) A copy of a Commitment Notice on a loan guaranteed by the Rural Electrification Administration;
- (b) Evidence of bond validation from both MEAG and Dalton;^{42a} and
- (c) Documentation of approval by the Securities and Exchange Commission to GPC of the sale of its ownership interest in Vogtle.

Extension of Completion Dates for Construction Permits

21. As previously indicated in the introduction, Construction Permit Nos. CPPR-108, CPPR-109, CPPR-110 and CPPR-111 were issued by the AEC to GPC on June 28, 1974, for construction of Vogtle Units 1, 2, 3 and 4 respectively. Work construction was halted on September 12, 1974, at which time the Licensee announced an indefinite suspension of further work on Units 1 and 2 and cancellation of Units 3 and 4. The suspension of construction activity was attributed by the Licensee to "financial 'facts of life': inflation, tight money and poor earnings," which placed "in serious question" the Licensee's "ability to raise money, even at extremely high interest rates."⁴³ On July 15, 1975, the Licensee filed an Application for Amendment of Construction Permit Nos. CPPR-108 and CPPR-109, which requested the extension of the construction completion dates for Units 1 and 2 by two years (for Unit 1 from October 1979, earliest date, and April 1981, latest date, to October 1981, earliest date, and April 1983, latest date; and for Unit 2 from October 1980, earliest date, and April 1982, latest date, to October 1982, earliest date, and April 1984, latest date).

22. Licensee informed the Staff that insufficient funds were available in 1974 to continue construction of these units. The utility industry in general experienced a shortage of construction funds during 1974, due in part to inflation and in part to an inability to raise funds from the sale of securities or bonds. In addition to these general problems, GPC also was experiencing a delay in the granting of requested increased rates by the Georgia Public Service Commission. All of these factors made it imprudent for the Licensee to continue construction.⁴⁴

23. The Staff has reviewed the financial situation of GPC, and concludes that the overall picture has improved. The Licensee obtained rate relief from the

^{42a}If Dalton wants to participate as a co-owner

⁴³Testimony of Lawrence P. Crocker, following Tr. 185 (hereinafter referred to as "Crocker Testimony"), p. 1.

⁴⁴Crocker Testimony, p. 2.

Georgia Public Service Commission in December 1974, February 1975, and April 1975. Also, in April 1975, the Federal Power Commission allowed the Licensee to increase its rates for wholesale service. In June 1975, the Licensee received notice of intent of three power supply entities in the state of Georgia, under the antitrust provisions of the construction permits, to purchase 82.4 percent of Vogtle Units 1 and 2. This figure later was changed to 61.6 percent.⁴⁵ GPC's share now is 50.7 percent if the city of Dalton participates, and 52.3 percent should Dalton not participate.⁴⁶

24. In view of the improved financial situation of the Licensee and the reduced requirement for construction funds to be supplied by GPC, the Licensee now proposes to resume construction of Vogtle Units 1 and 2. The Staff made an independent review of the cause for postponement of construction, and finds that the Licensee has shown good cause for the delay in the construction of the Alvin W. Vogtle Units 1 and 2.⁴⁷ The Board concurs with this evaluation.

25. The Staff additionally evaluated the license amendment application to determine whether the amount of time of delay experienced by the Licensee, and thus whether the amount of time requested by the Licensee for the extension of its construction permit completion dates, is reasonable under the circumstances. GPC and the three power supply entities that are proposing to purchase portions of Units 1 and 2 of the Vogtle facility have consummated the sale of ownership interest. Following the sale, several months will be required to mobilize necessary construction forces to restaff engineering design teams. However, full construction activity necessarily will be delayed until design efforts have progressed such as to allow orderly procurement of necessary construction materials and plant components.⁴⁸

26. Accordingly, the Staff concluded that the delay of two years requested by the Licensee was reasonable and appropriate.⁴⁹ The Board concurs with this evaluation, and finds that the 24-month extension time is reasonable and appropriate under the circumstances.

27. The Staff independently evaluated the impact of the cancellation of Units 3 and 4, and the extension of the completion dates for Units 1 and 2 upon the safety of the Vogtle facility. As indicated in the Safety Evaluation Report, the Vogtle plant was designed as two-unit stations. There was to be no sharing of any safety related features between each pair of units, and therefore no adverse impact on plant safety is expected due to deletion of a pair of units. Accident dose calculations remain unchanged since such calculations are premised on an accident at only one unit at a plant site. Calculated effluent releases, which were

⁴⁵ Crocker Testimony, pp. 2, 3.

⁴⁶ Dahlberg Affidavit, pp. 1-2.

⁴⁷ Crocker Testimony, p. 3.

⁴⁸ Crocker Testimony, pp. 3, 4.

⁴⁹ Crocker Testimony, p. 4.

found to be acceptable for the original four-unit design, would be halved for a two-unit plant, and thus are still acceptable. The Staff therefore concluded that the requested two-year extension of construction completion dates has no adverse impact on plant safety.⁵⁰ The Board concurs with this evaluation.

28. Under the terms of the proposed sale agreement, GPC retains sole responsibility for the planning, design, construction, operation, maintenance, and disposal of Vogtle Units 1 and 2. The staff therefore concluded that the proposed altered ownership arrangements will have no effect on plant safety.⁵¹ The Board agrees with the Staff evaluation.

29. The Staff also evaluated the environmental impacts associated with the extension of the construction completion dates for Vogtle Units 1 and 2 (Environmental Impact Appraisal). The Board agrees with the Staff's conclusion that no significant change in environmental impact is expected to result from the two-year delay.

30. The Board concludes that good cause has been shown, in accordance with 10 CFR § 50.55(b), for the extension of the completion dates for Vogtle Units 1 and 2 for a total of 24 months. The Board hereby approves the extension of CPPR-108 completion dates from October 1979 to October 1981 for the earliest completion date, and from April 1981 to April 1983 for the latest completion date; and for CPPR-109 completion dates from October 1980 to October 1982 for the earliest completion date, and from April 1982 to April 1984 for the latest completion date.

Nuclear Fuel Cycle Considerations

31. Consistent with the mandate of the Appeal Board in ALAB-291 and the Notice of Hearing (40 FR 41569) in this remanded proceeding, the Board has considered, as a changed circumstance which might affect the cost-benefit balance previously struck, recent regulatory developments in connection with nuclear fuel cycle considerations.

32. In the initial environmental hearing leading to the issuance of construction permits for the Vogtle Plant, the Board considered only the environmental impact of the transportation of fuel to and from the Vogtle site. This was consistent with the guidance provided at that time by the Appeal Board's *Vermont Yankee* decision, *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), ALAB-56, 4 AEC 930 (1972). The Commission subsequently amended 10 CFR Part 51 to include Table S-3 which provided environmental impact values for other portions of the uranium fuel cycle to be factored into the NEPA evaluation of individual nuclear power plants. On July

⁵⁰Crocker Testimony, pp. 4, 5.

⁵¹Crocker Testimony, p. 5.

21; 1976, the United States Court of Appeals for the District of Columbia Circuit decided in *Natural Resources Defense Council v. NRC* that the Commission's Table S-3 was inadequately supported by the record insofar as it treated two aspects of the fuel cycle—the impacts from reprocessing of spent fuel and radioactive waste management. The decision generally complimented other aspects of the Commission's survey underlying Table S-3.

33. In response to the Court decisions, the Commission issued a General Statement of Policy (41 FR 34707, August 16, 1976). In that statement, the Commission announced its intention to reopen rulemaking proceedings on the environmental effects of the fuel cycle to supplement the existing record with regard to reprocessing and waste management; to determine whether the rule should be amended, and if so, in what respect. The Commission directed the Staff to prepare a well-documented supplement to WASH-1248 to establish a basis for identifying environmental impacts associated with fuel reprocessing and waste management activities that are attributable to the licensing of a model light water reactor (LWR). The NRC Staff issued NUREG-0116, *Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle* in October 1976 for this purpose.

34. On November 5, 1976, the Commission issued a Supplemental General Statement of Policy regarding the licensing of nuclear power plants as related to the analysis of fuel cycle environmental impacts. The Commission concluded that licensing of light water reactors may be resumed on a conditional basis using existing Table S-3 values for reprocessing and waste management, provided the revised values presented in the Commission's Notice of Proposed Rulemaking of October 18, 1976, were also examined to determine the effect on the cost-benefit balance for constructing or operating the plant.

35. In the Affidavit of F. S. Echols⁵² filed by Staff's Motion for Admission of Evidence dated November 26, 1976, the Staff presented its evaluation of (1) the fuel cycle environmental impacts for Vogtle Unit Nos. 1 and 2 based on Table S-3 and (2) the revised values for reprocessing and waste management presented in the Commission's Notice of Proposed Rulemaking of October 18, 1976.

36. The Staff assessed each of the Table S-3 impacts in light of the previous analysis set forth in the FES and concluded that the fuel cycle effects presented in Table S-3 are sufficiently small so that when they are superimposed upon the other assessed environmental impacts associated with Vogtle Unit Nos. 1 and 2 the overall environmental impacts are not appreciably changed.⁵³ In accordance with the Commission's directive contained in the Supplemental General Statement of Policy, the Staff also assessed the effect of using the revised chemical

⁵² Staff's Affidavit of F. S. Echols (hereafter "Echols Affidavit").

⁵³ Echols Affidavit at 9.

processing and waste storage values set forth in the Commission's Notice of Proposed Rulemaking of October 18, 1976, on the cost-benefit balance for Vogtle Unit Nos. 1 and 2. The Staff concluded that these impacts are so small that there is no significant change in impact from that associated with the effects presented in Table S-3 and, accordingly, the use of the fuel cycle effects presented in Table S-3 with consideration of the revised values set forth in the Commission's Notice of Proposed Rulemaking of October 18, 1976, would not alter the overall cost-benefit balance previously found to support the issuance of construction permits for Vogtle Unit Nos. 1 and 2.⁵⁴ The Board agrees.

III. MATTERS IN CONTROVERSY

1. Intervenor's Contention 10 states the following:

Petitioner contends that Applicants' estimates of load growth are unsound in that these estimates overstate the future electrical needs of the State of Georgia, and fail to recognize that the demand for electricity is increasing at a diminishing rate. There is no basis for Applicants' assumption that the need for power will continue to increase at the rate experienced in the recent past. Petitioner contends that current information on the growth in demand and on the demand growth projections presently used by the Applicant in its planning would demonstrate an actual and presently anticipated decline in the rate of load growth.

2. At the time of issuance of the construction permits for Vogtle Units 1, 2, 3 and 4, the Applicant projected an annual growth rate over the period 1974-85 of 10.7 percent, resulting in a peak demand projection for the year 1985 of 28,105 megawatts. The Applicant planned to have in service in 1985 generation capacity of 33,107 megawatts, providing a reserve margin of approximately 18 percent over peak-hour demand. Capacity additions to meet this load included four units of 1,100 megawatts each at Plant Vogtle.⁵⁵

3. The Georgia Power Company's 10.7 percent annual compound growth rate for the 1974-85 period was calculated by extrapolating peak demand data for various historical periods.⁵⁶ Georgia Power Company studies of 10-year trends ending in years 1965 through 1975 indicated growth rates varying from 8.15 to 10.7 percent, the highest being for the 10-year period ending in 1973. The 10-year growth rate for the period ending in 1974 was 10.54 percent.⁵⁷

⁵⁴ *Id.*

⁵⁵ Applicants' Testimony of James H. Miller, Jr. (hereafter "James Miller Testimony"), following Tr. 152, at 5.

⁵⁶ *Id.*

⁵⁷ *Id.*

4. For the period 1976-90, the Georgia Power Company currently forecasts an average annual compound growth rate of 7.7 percent, or a peak demand for 1985 (the first full calendar year of operation of Vogtle Units 1 and 2) of 19,200 megawatts. The currently planned capacity of the Georgia Power Company to meet this load in 1985 totals 21,321 megawatts, providing a reserve margin of 11 percent.⁵⁸

5. To project this peak demand growth for the period 1976-90, the Georgia Power Company (1) computed annual estimates of the total Georgia territorial supply requirements (See Attachment 1, Column 6, James Miller Testimony) and historical load factor and (2) adjusted these estimates based on an analysis of historical load factor trends (See Attachment 1, Column 7, James Miller Testimony) and growth in energy requirements.⁵⁹

6. The Georgia Power Company's estimate of total Georgia territorial supply requirements includes load estimates for OEMC, MEAG and Dalton, as well as 390 MWe of load supplied by the Southeastern Power Administration (See Attachment 1, James Miller Testimony).⁶⁰

7. This estimate of energy requirements was based on an analysis of sales (by class of customers), losses, and internal use.⁶¹

8. Sales to the residential class of retail customers of Georgia Power Company were estimated by projecting customer additions and use trends and examining population projections in the service area. Sales per customer, in annual kilowatt-hours, were estimated by projecting actual historical data. The number of customers was similarly projected. Ten years of historical data were analyzed statistically and regression analysis was used to fit historical data to various equations. The equations that best described the trends were used to project estimates of annual energy sales per customer and number of customers. The results were combined to produce a projection of aggregate annual residential energy sales. Results were then evaluated by personnel with experience in the area of residential marketing, and consideration included appliance saturation effect, and other factors such as conservation, inflation, and short- and long-term business and economic conditions in the service area. Then results were tested by comparison with a forecast of aggregate annual residential sales projected by analyzing such aggregate sales and projecting future estimates in a similar manner as described.⁶²

9. Sales to commercial-class customers of Georgia Power Company were also forecast. The method was practically identical to that employed to estimate the number of residential customers and their energy requirements. The number of

⁵⁸*Id.*

⁵⁹*Id.* at 6 and 7.

⁶⁰*Id.* at 1.

⁶¹*Id.* at 2.

⁶²*Id.*

commercial customers was estimated by a combination of statistical and judgmental analyses. Actual sales (annual KWH) for the previous decade were used to extrapolate the "best-fitting" regression line through 1980. The "goodness of fit" was calculated by the same computer program used to predict residential sales. The regression equation was manually selected from six representative curves on the basis of which had the highest "index of determination."⁶³

10. For the industrial class, annual energy sales (KWH) and customer maximum noncoincident demand (KW) were estimated by interviewing over a hundred large users of electricity concerning their plans for the forecast period. Sales to smaller industrial customers were projected based on the expectations of the larger customers, along with consideration of business conditions and outlook for future industrial activity.⁶⁴

11. Street lighting sales were estimated by the Georgia Power Company based on knowledge of customer plans, specifically considering state and federal anticrime programs along with technological advances in energy-saving lighting sources.⁶⁵

12. The aggregate amounts of annual energy to be delivered to delivery points of municipal distributors and distribution electric membership corporations (including members of MEAG and OEMC) were estimated by the Georgia Power Company by analyzing 10-year historical data and making a projection using mathematical procedures heretofore described. The resultant projection of annual aggregate energy to be delivered was then studied and adjusted as considered necessary in light of more recent growth trends (5 years and less).⁶⁶

13. The amounts of energy determined as described for residential, commercial, street lighting, municipals and cooperatives were then added together to obtain an aggregate amount of energy for each year. To each of such amounts was added energy to reflect system losses and internal use. The result for each year is the total Georgia territorial energy supply requirements as shown in Column 6 of Attachment 1 of the James Miller Testimony.⁶⁷

14. The peak demand for each of the years 1976 through 1990 (Column 5, Attachment 1, James Miller Testimony) was computed using the energy requirements (Column 6, Attachment 1, James Miller Testimony) and projected load factors (Column 7, Attachment 1, James Miller Testimony). The load factors used for computing the peak demand for each year reflects the decline in the company's load factor from 61.0 percent to 56.3 percent between 1965 and 1975 as well as an estimated further decline of another 2-1/2 percentage points

⁶³*Id.* at 3.

⁶⁴*Id.*

⁶⁵*Id.* at 4.

⁶⁶*Id.*

⁶⁷*Id.*

by 1980 to account for the economic recession, conservation and general business conditions.⁶⁸

15. On the basis of these computations, the Georgia Power Company forecasts a peak-hour demand compound annual growth rate through 1990 of 7.7 percent.⁶⁹ By comparison, the Georgia Power Company has historically experienced a growth of total system peak load of 9 to 10 percent. (For the period 1961-1975, Georgia Power Company experienced a peak growth rate of 9.3 percent.)⁷⁰ This reduced peak load growth rate is consistent with the slowing of real economic activity in Georgia. The OBERS national model indicates that during the seventies, real economic activity in Georgia will slow from an annual growth rate of 6.9 percent to about 4.5 percent.⁷¹

16. As a further check on the reasonableness of Georgia Power Company's peak demand forecast, a forecast of future electrical needs of the Georgia Power Company's service area was performed for the Applicants by Dr. John B. Legler with the knowledge and agreement of the Georgia Public Service Commission.⁷² Dr. Legler's forecasts of Georgia Power Company's electrical needs was based upon the computer forecasts from the Georgia economic forecasting model (Georgia Model). The Georgia Model uses forecasts of national variables, exogenous state variables (e.g., state tax rates), and estimated relationships among variables based on historical trends to forecast approximately 125 economic variables for the state on an annual basis. These forecasted variables are grouped into eight major areas: output by industry; employment by industry; wages, income and prices; state government tax revenue; manufacturing investment; population; bank deposits and securities; and retail trade.⁷³ The Georgia Model was developed in close association with the Wharton Econometric Associates, Inc., and updated through association with Wharton and receipt of Wharton's extensive computer forecasts of national trends which form the basis of most of our national variable inputs. In addition, other national projections such as those of the Survey Research Center at the University of Michigan and the Chase econometric models were utilized.⁷⁴

17. The performance of the Georgia Model was verified through simulation of the model over an extended time period providing it with accurate historical data for exogenous variables and comparing the model's forecasts with actual data. The mean average percentage error for key economic variables averaged

⁶⁸*Id.* at 6.

⁶⁹*Id.*

⁷⁰Staff Testimony of Robert G. Uhler (hereafter "Uhler Testimony"), following Tr. 566, at 40.

⁷¹*Id.* at 41.

⁷²Testimony of Dr. John B. Legler (hereafter "Legler Testimony"), following Tr. 153, at 2.

⁷³*Id.* at 3 and 4.

⁷⁴*Id.* at 4 and 5. See also Tr. 196 and 197.

approximately 2 percent and 60 percent of the forecasted variables had an average error of less than 4 percent.

18. The model used by Dr. Legler to check the reasonableness of the Georgia Power Company's estimates of load growth related electric consumption by class of user, total peak demand, and number of customers by class to economic variables for the State of Georgia. Future electric needs were forecast by utilizing these relationships and the forecasts of trends in the economic variables which relate to electric needs. These economic variables included personal income, population, manufacturing output, retail sales, percentage of homes air conditioned, and the price of electricity by class of user.⁷⁵ On the basis of the factors considered, the model forecast indicated that peak demand for electricity will grow at a compound annual rate of approximately 8.7 percent during the next 10 years.⁷⁶ The Board notes that the Georgia Power Company's projection of growth rate of 7.7 percent represents a considerable downward revision from the Company's earlier forecast which was in the 10 percent range for the same period and is considerably below the forecast developed by Dr. Legler.⁷⁷ The Board finds that the Georgia Power Company's forecast analysis as well as Dr. Legler's analysis of Georgia Power Company forecast are reasonable and adequate for purposes of determination of the need for power which will be generated by Vogtle Units 1 and 2.

19. The Intervenor asserted that the Georgia Power Company's revision of its projections downward was caused by the decline in peak growth rate for the years 1972-1975.⁷⁸ The Intervenor asserted that the causes of the decline in the growth rate are several, including: general economic recession, milder weather during the peaking season, and increases in electric rates.⁷⁹ The Intervenor admitted that Georgia Power Company's revised forecasts are more reliable than its previous forecasts. However, the Intervenor asserted that the forecasts are still overstated since they fail to account for "continuing changes in rate schedules and rate levels which will undoubtedly occur during the period between the present and the 1983 startup date proposed for the Vogtle Plant."⁸⁰ The Board finds that the effect that rate changes may have on the quantity of energy consumed in the system serviced by Georgia Power Company is speculative.⁸¹ Moreover, the Intervenor offered no proof of the effects of future changes in rates on growth rate.⁸² The Board finds that Georgia Power Company's assess-

⁷⁵ *Id.* at 6.

⁷⁶ *Id.*

⁷⁷ *Id.* at 7.

⁷⁸ Intervenor's Testimony of Neill Herring (hereafter "Herring Testimony"), Intervenor's Exhibit 1, at 3 and 4.

⁷⁹ *Id.* at 3 and 4.

⁸⁰ *Id.* at 5.

⁸¹ Tr. 203. See also, Tr. 158.

⁸² Herring Testimony at 5.

ment of load growth rate is reasonable and adequately based on evidentiary support which is demonstrably valid.

20. Additionally, the Georgia Power Company's forecast was evaluated on behalf of the Staff by Robert Uhler, Executive Director of the Electric Utility Rate Design Study being conducted by the Electric Power Research Institute and the Edison Electric Institute. Mr. Uhler's evaluation was based on information contained in the *1972 OBERS Projections*,⁸³ a comprehensive economic planning document which provides historic and projected economic and demographic data for Georgia and Alabama.⁸⁴ This data provides a general understanding of the underlying economic forces that impact directly on the Georgia Power Company.⁸⁵ The data for Georgia indicate that population growth will be slower in the decade of the seventies compared to the sixties; per capita real income will increase at about 3.4 percent each year rather than 5.4 percent; and total personal income will increase at a slower pace in the seventies as will total earnings. General economic activity is expected to occur at an average annual rate of 4.5 percent during the seventies. This compares with the average annual rate of 6.9 percent that was realized between 1962 and 1970.⁸⁶ This means that the economic activities of Georgia are conservatively projected to increase at a rate less rapid than that experienced in the recent past. Thus, the economy will replicate in the first eight years of the seventies what it accomplished in the previous eight years even with the much slower rate of growth. In 1980, this expanded (*i.e.*, at 4.5 percent per year) economy will require significantly greater amounts of electric energy and increased capacity. These greater demands will result from a manufacturing sector that is expected to be 52 percent larger, governmental activities that are projected to be 41 percent greater, trades that will be 55 percent bigger, services 77 percent greater, and from families with real per capita income 40 percent higher.⁸⁷ The Board concurs in Mr. Uhler's findings that these lower rates of increase in demand were incorporated in Dr. Legler's projections⁸⁸ and finds that caution should be exercised in the Applicants' scaling back of the estimated rate of growth due to

⁸³This report is a delineation of regional economic activity in the United States, published by the U.S. Water Resources Council under the direction of the Bureau of Economic Analysis of the U.S. Department of Commerce and the Economic Research Service of the U. S. Department of Agriculture. This document was prepared in response to a need for basic economic information by public agencies engaged in comprehensive planning for the use, management and development of the Nation's resources. *1972 OBERS Projections, Regional Economic Activity in the U.S.; Series E Population; U.S. Water Resources Council, April 1974; Volume 1, p. 4.*

⁸⁴Uhler Testimony at 7.

⁸⁵*Id.* at 7.

⁸⁶*Id.* at 10.

⁸⁷*Id.* at 15 and 16.

⁸⁸*Id.* at 41.

the sharply reduced rate of power plant construction and resulting low reserve margins. The Georgia Power Company's currently planned capacity to meet the projected demand reduces the reserve margins from about 32 percent in 1976 to 11 percent by 1985.⁸⁹ This is below the (18-22) percent reserve values which the Southern Companies Subregion calculates are required for loss-of-load probability.⁹⁰

21. The Board finds that Georgia Power Company's forecast of the electrical need for the State of Georgia, as verified by Dr. Legler and the Staff, has been shown to be based on a proper data base, conservatively estimates the future electrical needs of the State of Georgia, and are appropriate.

22. Intervenor's Contention 9(1) states the following:

The Applicant has not given sufficient consideration to the following alternative:

Conservation through Rate Design. Since the issuance of the CP's conservation efforts, which have been caused by changes in retail rate schedules, have resulted in significant changes in electricity consumption. Therefore, further alteration in retail rate schedules directed toward conservation, particularly temperature-sensitive load, can result in improvement of system load factors, both daily and seasonal, and therefore result in greater efficiencies. Therefore, changes in the rate schedules are preferable to the construction of the Vogtle Plant. [Intervenor contends that the above alternative would have a cost-benefit balance preferable to that previously struck by the Licensing Board in its initial decision of May 28, 1974.]⁹¹

23. The Intervenor asserts that conservation efforts caused by increases in retail rate schedules have resulted in significant changes in electric consumption and that, therefore, further alteration in retail schedules would be preferable to construction of Vogtle Units 1 and 2. However, the Intervenor did not adduce any evidence quantifying the portion of change in consumption of electricity attributable to rate alterations.⁹² In fact, the record in this proceeding shows that levels of electricity consumption have held steady in spite of massive price increases. Data compiled in the Edison Electric Statistical Yearbook⁹³ for the South Atlantic States and Alabama comparing 1973 and 1974 indicates that with a sagging economy and electric prices higher by 30 percent, the quantity of electricity sold slipped less than 1/2 of one percent.⁹⁴ For Georgians, with

⁸⁹ James Miller Testimony at 5; See also Uhler Testimony, at 48.

⁹⁰ Tr. 598.

⁹¹ Contention 9, last sentence.

⁹² See Herring Testimony at 4.

⁹³ Uhler Testimony at 44 through 47.

⁹⁴ *Id.*

prices more than 1/5 higher in 1974 than in 1973, purchases of electricity held constant, indicating inelastic demand,⁹⁵ at least in the short-run.⁹⁶

24. The Georgia Power Company has given consideration to conservation through rate design as indicated by its past and present rate schedule.⁹⁷ Georgia Power Company's Schedule "R-2" (seventh revised, which has features that are now five years old) provides that "all Kwh in excess of 600 during the billing months of June through September inclusive be billed at 2.16¢ per Kwh." Therefore, consumption during the summer (the high peak-load period) is priced at significantly higher levels (2.16¢/Kwh vs 1.60¢/Kwh).⁹⁸ Furthermore, Georgia Power Company customers pay "inverted rates" in the summer and some declining block rates in the nonsummer months.⁹⁹ Georgia Power Company Schedule "R-3" strengthens the summer/winter differential (3.25¢/Kwh vs 1.60¢/Kwh). Schedule GS-2 has a separate demand charge and demand ratchet (i.e., 95 percent of the highest demand occurring in any revision to this schedule would raise the ratchet to 100 percent).¹⁰⁰ Moreover, pursuant to a Georgia Public Service Commission Order dated April 24, 1975 (Docket No. 2663-U) the Georgia Power Company will propose the testing of several residential experimental rates.¹⁰¹ The Company will be considering a residential on-peak demand rate, maximum demand rate and on-peak/off-peak energy rate.¹⁰²

25. The Staff witness, Mr. Uhler, analyzed FPC Form 5 data concerning the Georgia Power Company to determine changes in residential¹⁰³ electricity consumption, commercial sales,¹⁰⁴ and industrial sales¹⁰⁵ for 1972 through 1975. For the three-year period residential prices were 73 percent higher (this represents a price hike of 6, 23, and 33 percent for the three years) and the average customer's bill increased 80 percent but sales per customer still increased 5 percent. For commercial sales, a pattern similar to residential sales developed. Commercial sales jumped 12 percent in 1973 over 1972, did not increase through 1974, and are estimated to increase 3 percent in 1975.¹⁰⁶ For the largest customer class of Georgia Power Company, industrial sales increased 8

⁹⁵Price elasticity of demand is defined as the percentage change in quantity of electricity demanded that is associated with a percentage change in price. Uhler Testimony at 70.

⁹⁶*Id.*

⁹⁷*Id.*, 78 through 81.

⁹⁸*Id.* at 78.

⁹⁹*Id.*

¹⁰⁰*Id.* at 79.

¹⁰¹Hensley Testimony at 11.

¹⁰²*Id.*

¹⁰³*Id.* at 52.

¹⁰⁴*Id.* at 53.

¹⁰⁵*Id.* at 55 and 56.

¹⁰⁶*Id.* at 53.

percent in 1973 over 1972. In 1974, industrial sales showed no change (with a price increase of 36 percent over 1973) but fell 7 percent in 1975 (with a price increase of 50 percent over 1974). Based on this data and the sagging of the textile manufacturing and metals production sector of the economy in 1974 and collapse in 1975, the Staff witness opined that the recession and not increased prices was the major cause of the decline in growth of sales in the industrial sector.¹⁰⁷ Thus, while rate alteration is a factor affecting electricity consumption, the significance of that factor and quantification of its affect on electricity consumption is uncertain and speculative. The record indicates that there are other factors which affect electrical consumption. These factors include fear of energy shortages brought on by the oil embargo; mild weather,¹⁰⁸ severe economic recession, and inflation.¹⁰⁹

26. The Board finds, after considering all the evidence of record, that changes in the rate schedules would not eliminate the need for Vogtle Unit Nos. 1 and 2.

27. Intervenor's Contention 9(2) reads as follows:

The Applicant has not given sufficient consideration to the following alternative:

Construction of Coal-fired Base Load Units. Since the issuance of the CP's:

- (a) The price of nuclear fuel has increased at a greater rate than that of coal.
- (b) The Applicant has foregone fuel supply contracts for Vogtle Units 1 and 2, and therefore Applicant must purchase fuel in a market in which price levels are at historical highs.
- (c) The Applicant's latitude in negotiating fuel financing contracts has been limited by order of the GPSC Order of January 10, 1975. The probable result of such limitation will be to further increase the cost of nuclear fuel. Since the issuance of the CP's, the capital cost advantage of coal-fired plants has been enhanced by a more rapid relative rise in the capital cost of nuclear plants. Cumulative operating histories of nuclear power plants since the issuance of the CP's reveal a tendency toward performance below design ratings. Coal plants have exhibited greater unit reliability, as measured by capacity factor. Therefore, conservative financial management would dictate investment in the more reliable units.

28. This contention, which concerned the use of coal and nuclear fuel as

¹⁰⁷Uhler Testimony, Tables 31, 32, and 33, at 58 and 59, 60.

¹⁰⁸Herring Testimony at 4.

¹⁰⁹Applicant Testimony of W. R. Hensley (hereafter "Hensley Testimony"), following Tr. 154, at 2 and 4.

alternative sources of energy for the Vogtle facility, was addressed at great length by the parties. In general, the Intervenor asserted that subsequent to the issuance of the Vogtle construction permits, escalation in the fuel and capital costs for nuclear plants, and a poorer operating performance for a nuclear versus a coal-fired plant has recast the alternative choice in favor of coal-fired units rather than the Vogtle Nuclear Units.¹¹⁰ The Staff and the Applicants, on the other hand, presented testimony which showed that there was a clear economic advantage in the choice of a nuclear plant over a coal-fired plant for the Vogtle facility and that the selection of uranium as a fuel for the proposed station was warranted.¹¹¹

29. The Staff's testimony was presented through a panel consisting of Arvin W. Quist (the moderator for the panel), Louis M. Bykoski, Robert Bown, and Howard I. Bowers, who responded to questions relating to the CONCEPT code used in the Staff's written testimony. The Intervenor's testimony was presented through Mr. Charles Komanoff, who is the Energy Projects Director of the Council on Economic Priorities, a public interest research organization based in New York City. The Applicants' testimony was presented through Mr. Ruble A. Thomas, a Vice President of Southern Services, Inc.

30. The testimony concerning the use of coal or nuclear fuel as sources of fuel for the Vogtle facility centered on four principal subjects: (1) capital costs, (2) fuel costs at the start of plant operation, (3) fuel costs during plant operation, and (4) capacity factor.¹¹² The evidence presented with regard to these four areas is examined below. After fully considering the evidence of record, the Board finds that the proposed nuclear steam-electric power plant is the more economic method of producing electricity for the Vogtle facility.

Capital Cost

31. The parties to this proceeding presented capital cost estimates comparing the nuclear units described in the Vogtle application with equivalent-size coal-fired plants burning high sulfur coal (more than 0.7 percent sulfur) and employing scrubbers for SO₂ removal.

32. The Staff used a computer program to verify the Vogtle capital costs and the capital costs of a coal-fired alternative.¹¹³ The Staff testified that this computer program, known as CONCEPT, was designed primarily for identifying important elements in the cost structure, examining average cost trends, determining sensitivity to technical and economic factors, and to provide reasonable

¹¹⁰ Contention 9(2).

¹¹¹ Quist, Table 5; Thomas, Table 1.

¹¹² See Tr. 428-34.

¹¹³ Quist at 3.

long-range projections of costs.¹¹⁴ The Staff's capital cost estimates resulting from the use of the CONCEPT code were \$727/Kw for the nuclear units and \$555/Kw for the alternative coal-fired plants; a difference of \$172/Kw.¹¹⁵ The Staff estimates also included escalation and interest during construction at 7.5 percent. The Staff testified further that while the cost estimates produced by the CONCEPT code are not intended as substitutes for detailed engineering cost studies for specific projects,¹¹⁶ the Staff believed that the capital costs estimates produced by CONCEPT for the Vogtle facility are reasonable.¹¹⁷ The Board agrees.

33. The Applicants, in estimating the capital cost of the nuclear units and the high-sulfur coal-fired units, determined that, with the inclusion of escalation and interest during construction, the Vogtle nuclear units capital cost would be \$997/Kw and the coal alternative \$851/Kw, a difference of \$146/Kw.¹¹⁸ The Applicants testified that the capital cost estimate for the Vogtle nuclear units was based on a detailed cost estimate prepared for the Applicants in August 1974 and subsequently updated in October 1975 to reflect actual inflation experienced during 1974, and the revised engineering procurement construction schedule.¹¹⁹ The high-sulfur coal-fired plant estimates were based on "conceptual plant cost models."¹²⁰ These models reflected the most probable scope of coal-fired plants for new units to be added on the Georgia Power System (coal-fired plants in the 825 MWe range), and included a two-unit design, allowances for materials and labor, the possible construction schedules, to which was applied escalation and interest during construction.¹²¹ After pricing out the coal-fired units in the lower megawatt range, the Applicants scaled the results to arrive at the capital cost estimates for the large (1160 Mw) units used by the Staff and Applicants for comparison with the Vogtle nuclear units.¹²² The Applicants determined that this scaling resulted in a 5 percent decrease in the unit capital cost of the coal-fired units. The Board notes, however, that the Applicants testified that because of reliability factors, the Applicants are unwilling to build a plant larger than 900 megawatts, and that the present size chosen for seven new coal-fired units is 825 megawatts electric.¹²³

34. The Intervenor estimated a capital cost of \$926/Kw for the proposed 2-unit Vogtle Nuclear Plant and \$742/Kw for the high-sulfur-coal alternative

¹¹⁴ *Id.*

¹¹⁵ Quist, Table 2, 3.

¹¹⁶ Quist at 3.

¹¹⁷ Tr. 488-92.

¹¹⁸ Thomas, Table 1.

¹¹⁹ Thomas at 5; Tr. 521.

¹²⁰ *Id.*

¹²¹ Tr. 522-23.

¹²² *Id.*

¹²³ *Id.*

with scrubbers for SO₂ removal, which results in a difference of \$220/Kw between the nuclear units and the coal alternative.¹²⁴ Intervenor based these estimates on a 1975 report by Ebasco Services entitled "Fossil and Nuclear 1000-MWe Central Station Power Plants, Investment Estimates."¹²⁵ Intervenor's witness testified that this report developed estimates of capital costs on the basis of detailed estimates of equipment costs, labor costs, and labor productivity. However, the report specifically excluded allowance for escalation and interest during construction. Intervenor subsequently adjusted these costs to include escalation and interest during construction, deriving these factors by way of a formula provided by the Market Research and Analysis section of the Power Systems Marketing Division of Westinghouse entitled "Escalation, Interest During Construction, and Power Plant Schedules," to which he added various inputs from the Applicant's figures and the Ebasco report as supported by the Bupp report.¹²⁶ Intervenor also made adjustments for unit size and geographical location for both nuclear and coal as suggested by the Ebasco report, and included decommissioning cost for both alternatives in arriving at the estimated capital cost of \$962/Kw for the Vogtle nuclear plant and \$742/Kw for the coal alternative.¹²⁷

35. In arriving at these estimated costs, the Intervenor assumed an escalation rate per year during construction of the alternative units at .08 (or 8 percent) for the nuclear units and .06 (or 6 percent) for the coal alternative.¹²⁸ Intervenor stated that these escalation rate assumptions were "... probably favorable to nuclear in light of the fact that the capital cost of nuclear plants has been escalating more rapidly than that of coal-fired units."¹²⁹ On cross-examination, however, Intervenor's witness, Mr. Komanoff, testified that the higher rate for nuclear was based on an extra allowance of 5 percent for changes in the scope or required equipment for the nuclear units. Mr. Komanoff agreed that without this extra allowance being factored into the Ebasco calculations, by him, the escalation rate for the coal and nuclear plants would be similar.¹³⁰ He also testified that he was not aware of whether the Ebasco estimates had already made allowances for such changes in the scope of required equipment,¹³¹ and, finally, that the Ebasco report, in estimating direct construction costs, had already included a contingency allowance of 15 percent for materials and 25 percent for

¹²⁴ Komanoff at 8.

¹²⁵ *Id.*

¹²⁶ Komanoff at 8-9.

¹²⁷ Komanoff at 8-10.

¹²⁸ Komanoff at 9.

¹²⁹ *Id.*

¹³⁰ Tr. 383-85.

¹³¹ Tr. 394.

installation for the nuclear plant as compared with a lower 10 percent for materials and 20 percent for installation for the coal-fired plant.¹³²

36. The Staff, on the other hand, used an 8.5 percent per year escalation rate on site labor, site materials and purchased equipment.¹³³ The cost inputs to the CONCEPT code were also modified first to increase the spare parts allowances from 1 to 2 percent of the direct costs of equipment and materials, then to increase the contingency allowances from 7-1/2 to 10 percent of direct costs, and to increase the indirect cost relationships by 60 percent for the nuclear plant.¹³⁴ The Applicants also used an escalation rate during construction of 8.5 percent and testified that a contingency allowance of 10 percent had been used partly to offset changes in the scope of plant equipment requirements.¹³⁵

37. The Board notes that each party used a different method for preparing their respective capital cost estimates, thus making direct comparisons difficult. However, on the basis of the record before us, the Board finds that while the Staff's CONCEPT code evaluation presents a reasonable estimate of capital costs of constructing nuclear and coal-fired plants, the Applicant's detailed cost evaluation presents the most accurate assessment of the capital costs of constructing nuclear and coal-fired plants at the Vogtle site.

Fuel Costs at Start of Plant Operation

38. As another component in the derivation of the electric power generation cost for the proposed Vogtle nuclear plant and the coal-fired alternative, the parties, in their respective prepared testimony, estimated the fuel expenses for nuclear and coal fuel at the start of plant operation.¹³⁶ The Staff testified that the cost of nuclear fuel depends on the costs associated with the various components of the fuel cycle, including uranium mining and milling, conversion of uranium concentrates to uranium hexafluoride, uranium enrichment, fabrication of nuclear fuel, reprocessing irradiated fuel, radioactive waste management, and the transportation of nuclear fuel materials.¹³⁷ The cost of coal consists primarily of mining and transportation.¹³⁸

39. The parties' estimates for the cost of uranium fuel considered the various fuel cycle components identified in paragraph 38 above, and here again

¹³²Tr. 412.

¹³³Quist at 4.

¹³⁴*Id.*, 4-10.

¹³⁵Tr. 523-24.

¹³⁶Quist, Table 4; Thomas, Table 2; Komanoff at 16-19.

¹³⁷Quist at 14.

¹³⁸*Id.*

the Board notes that the three parties used different approaches to arrive at their respective nuclear fuel cost estimates.

40. The Staff testified that their estimate for the cost of uranium fuel considered the various fuel cycle components as identified by ERDA, and that the 1974 estimates contained in WASH-1174-74 were updated based on the latest available information to develop the cost estimates set forth in the Staff's prepared testimony.¹³⁹

41. The Applicants testified that their nuclear fuel costs were developed using estimates and projections for uranium and each of the other fuel cycle steps set forth in their prepared testimony. Projections based on contractual arrangements between the Applicants and ERDA and Westinghouse were also factored into the fuel cost estimates.¹⁴⁰

42. The Intervenor's technical witness, Mr. Komanoff, testified that he had not seen the Applicants' estimate for the nuclear fuel cost, nor had he prepared his own detailed estimates of these costs.¹⁴¹ Instead, Mr. Komanoff relied on a 1975 fuel cost estimate which was prepared by the Tennessee Valley Authority and offered in another construction permit proceeding.¹⁴² In the same vein, the Staff and Applicants' nuclear fuel costs were quoted in 1975 dollars (with the exception of the cost of uranium concentrate which was quoted by the Applicants in 1976 dollars),¹⁴³ while the Intervenor's estimates were in 1981 dollars.

43. Perhaps the most important of the differences between the parties' nuclear fuel cost estimates were those relating to the estimated cost of uranium concentrate. The Staff estimated this cost at \$26/lb. (1975 dollars),¹⁴⁴ the Intervenor at \$31/lb. (1981 dollars),¹⁴⁵ and the Applicant's at \$40/lb. (1976 dollars).¹⁴⁶ However, these differences in the uranium cost may be offset by observing the different assumptions used by the parties to arrive at the overall fuel cost estimates. The Staff's testimony indicates that it assumed both uranium and plutonium recycle, thus to a degree offsetting their estimated spent fuel reprocessing cost.¹⁴⁷ The Applicants assumed uranium reprocessing but took no credit for plutonium recycle, and, in addition, they assumed a large initial sum for long-term plutonium storage.¹⁴⁸ Mr. Thomas testified that these assumptions were conservative.¹⁴⁹ The Intervenor, in preparing his nuclear fuel

¹³⁹Quist at 14.

¹⁴⁰Thomas at 7.

¹⁴¹Komanoff at 17.

¹⁴²*Id.*

¹⁴³Thomas at 7.

¹⁴⁴Quist, Table 4.

¹⁴⁵Komanoff at 17.

¹⁴⁶Thomas, Table 2.

¹⁴⁷Quist at 15.

¹⁴⁸Thomas, Table 2.

¹⁴⁹Thomas at 9; Tr. 529.

cost estimate, assumed that no uranium nor plutonium reprocessing or recycle would take place,¹⁵⁰ and testified that such assumptions were conservative.¹⁵¹ Having noted the different cost assumptions used by the three parties, the Board finds that the Staff's nuclear fuel cost estimate is the most reasonable.

44. Each of the parties to this proceeding developed estimates for the future cost of high-sulfur coal as an alternative to uranium as a power plant fuel for the Vogtle site. The Staff's cost estimates for delivered high sulfur coal were determined by using projections contained in the Federal Energy Administration's (FEA) "Project Independence Report" together with Georgia Power Company's historical coal costs.¹⁵² The Staff testified that the Report estimated that long-term coal prices would return to 1972-1973 price levels, and that the coal industry had the capacity to satisfy almost any foreseeable demand for coal by 1985, at prices near 1972-1973 levels and considerably below current spot market levels.¹⁵³

45. The Staff considered the FEA estimate to be as low an estimate as might reasonably be expected for coal prices in 1985 and therefore used this projection as its lowest price of coal for its estimate of 1985 coal prices for comparison with uranium as a power plant fuel.¹⁵⁴ This resulted in a Staff determination that the 1972 average delivered cost of coal for a number of Georgia Power Company's largest coal-fired plants was \$10.42 per ton, and this cost escalated at 8 percent to 1985 resulted in a cost estimate of \$28.34 per ton for high-sulfur coal to be delivered to the Vogtle site in 1985.¹⁵⁵

46. The Staff's testimony with respect to these estimates and the basis for them was the subject of cross-examination by the Applicants.¹⁵⁶ The Board notes that the Staff witness, Dr. Quist, while conceding that because of a number of factors the cost of coal increased more than 8 percent between 1972 and 1975,¹⁵⁷ did testify that the increase in price in the period 1973 through 1975 was not necessarily representative of long-term trends, and more specifically that the increases over the last year (1975) would not cause the Staff to change its long-term estimates for the cost of coal which could be delivered to the Applicant.¹⁵⁸ Mr. Quist further reaffirmed the Staff's use of the FEA projections as the most conservative basis for its estimate of 1985 coal prices for comparison with uranium as a power plant fuel.¹⁵⁹

¹⁵⁰ Komanoff at 17-18.

¹⁵¹ *Id.*

¹⁵² Quist at 15.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.* at 16.

¹⁵⁶ Tr. 501-509.

¹⁵⁷ Tr. 508-509.

¹⁵⁸ *Id.*

¹⁵⁹ Tr. 505.

47. The Applicants calculated their high-sulfur coal cost projections in mid-1976 dollars escalated at a compound annual rate of 6.5 percent thereafter. The resulting costs for high-sulfur coal was \$1.31–\$1.34 per million Btu or approximately \$28.30 per ton in 1976.¹⁶⁰ The Applicants based the mid-1976 costs on a long-term contract entered into in Illinois approximately one year before the instant proceeding.¹⁶¹ The Applicants further based the escalation rate of 6.5 percent compounded annually on the wholesale price index for coal experienced over the 30-year period 1944-1974 which this escalation rate currently approximates, and testified that it was their judgment that this rate of escalation can be expected based on “today’s conditions.”¹⁶²

48. The Intervenor calculated high-sulfur coal cost estimates in 1975 dollars escalated at 5 percent (as opposed to 8 percent for the Staff and 6.5 percent for the Applicants) to 1983 (as opposed to 1985 for both the Staff and the Applicant).¹⁶³ The Intervenor’s estimates were based on Georgia Power Company’s 1975 reported systemwide average coal costs which he stated ranged between \$19 and \$26 per ton, and which showed an average cost of \$23.09 per ton (\$0.98 per mega-Btu) in November 1975.¹⁶⁴ Mr. Komanoff, therefore, used the average November coal cost (\$0.98 per mega-Btu) as his starting point and adjusted it to \$0.90 per mega-Btu to account for the low sulfur content coal which he stated Georgia Power Company currently burns.¹⁶⁵ By escalating this adjusted cost at 5 percent to 1983, Mr. Komanoff estimated that the cost of high-sulfur coal delivered to the Vogtle site in 1983 would be \$1.33 per mega-Btu.¹⁶⁶

49. The Board notes that Mr. Komanoff did not offer adequate justification for the various adjustments which resulted in a reduction of \$0.08 per mega-Btu, and that his testimony with respect to the alternative coal cost estimates must be evaluated in that light.

50. On the basis of the record of this proceeding, the Board finds that overall, the Staff’s high-sulfur coal cost estimates which are based on Georgia Power Company’s historical coal costs and the projections set forth in the FEA report, provide an acceptable basis for comparing coal and nuclear fuel as alternative power plant fuel. The Board, however, believes that the Staff’s estimates of coal costs are conservative and agrees with the Staff that these estimates represent the very minimum estimated price of coal.¹⁶⁷

¹⁶⁰ Thomas at 6.

¹⁶¹ *Id.*, Tr. 356.

¹⁶² Thomas at 6-7.

¹⁶³ Komanoff at 16.

¹⁶⁴ *Id.*

¹⁶⁵ Komanoff at 16.

¹⁶⁶ *Id.*

¹⁶⁷ Tr. 509.

Fuel Cost Assumptions During Plant Operation

51. Both Applicants and the Staff project that nuclear fuel and coal costs will escalate at approximately the same rates after the initial year of operation. The Staff's annual escalation rate is 8 percent compounded for both nuclear fuel and coal.¹⁶⁸ Applicants used an escalation rate of 6.5 percent for both fuels, except that the uranium component of nuclear fuel costs was escalated at a 10 percent compound annual rate for 1980 and 7.5 percent thereafter.¹⁶⁹

52. The assumption that nuclear fuel and coal costs will escalate at similar rates during the lifetime of the plant is an important assumption in the economic comparison of nuclear versus coal plants. On this assumption, since fuel costs account for a substantially greater fraction of annual production costs for a coal plant than for a nuclear plant (and since capital costs remain fixed once the plant is completed), continued fuel cost escalation works to the disadvantage of the coal plant. Applicants' witness, Mr. Thomas, explained that for this reason, consistent with general utility practice, Applicants used a 30-year levelized cost comparison in which annual costs, including escalation, were projected for the 30-year period and were then present-worthed to arrive at a levelized annual cost.¹⁷⁰ The Staff similarly based its conclusions on a levelized cost approach.¹⁷¹ Levelizing costs over the 30-year period to reflect the greater absolute cost of escalation for a coal plant accounts for a significant portion of the cost differential which Applicants find in favor of the nuclear plant. Thus, Mr. Thomas testified that on the basis of his cost estimates the differential fuel cost in favor of the nuclear plant during the first year of commercial operation was 10.7 mills/kwh. On a 30-year levelized basis, the differential increases to 21.49 mills/kwh. Thus, the differential in fuel cost in favor of the nuclear plant increases by 10.79 mills/kwh, or approximately \$160 million per year, when considered on a 30-year levelized basis compared to first-year costs only.¹⁷²

53. In contrast, Intervenor's witness, Mr. Komanoff, based his cost comparison only on the first year's cost of operation and on the assumption that thereafter the rate of escalation for nuclear fuel would be twice that of coal.¹⁷³ Both Mr. Thomas and Mr. Komanoff agreed, however, that only Mr. Komanoff's assumption that nuclear fuel costs would escalate during plant lifetime at twice the rate of coal could justify Intervenor's cost comparison on the basis of first year rather than levelized costs.¹⁷⁴

¹⁶⁸ Quist at 15-16.

¹⁶⁹ Thomas at 6 and Table 2.

¹⁷⁰ Tr. 539-42.

¹⁷¹ Quist, Table 5.

¹⁷² Tr. 540-41.

¹⁷³ Komanoff at 19.

¹⁷⁴ Tr. 541-43, 429, 433.

54. Mr. Komanoff advanced three reasons¹⁷⁵ for his assumption that nuclear fuel will have double the escalation rate of coal. Each of these reasons was the subject of both cross-examination by Applicants' counsel and of rebuttal testimony by Mr. Thomas.

55. Mr. Komanoff's first reason was the asserted dependency of the nuclear fuel cycle on scarce ores and possible dependence in the 1980's on foreign ore supply. He admitted, however, to a lack of personal knowledge or background in this area and cited only a single ERDA publication (ERDA-33) in support of his thesis.¹⁷⁶ In response, Mr. Thomas quoted at length the conclusions of ERDA-33 to the effect that, without going into low-grade deposits, there was reasonable assurance that with proper incentives the domestic uranium industry could produce sufficient uranium to fuel approximately 400,000 Mwe of water reactor capacity for a 40-year operating lifetime without recycle of plutonium or uranium. With recycle the capacity which could be supported would be substantially larger.¹⁷⁷ This compares with approximately 220,000 Mwe in nuclear capacity committed to date, including Vogtle.¹⁷⁸ Mr. Thomas further testified that in his opinion the uranium price assumed in Applicants' nuclear fuel cost estimates (\$40/lb. in 1976 dollars with future escalation at a compound rate of 10 percent to 1980 and 7.5 percent thereafter) will be adequate to attract capital for necessary exploration and mining.¹⁷⁹

56. The second reason advanced by Mr. Komanoff was the capital-intensive nature of the fuel cycle. On cross-examination, however, he admitted that he had made no study of the capital requirements per unit of electrical production for either the nuclear fuel cycle or coal.¹⁸⁰ Mr. Thomas testified that Southern Services had made such comparisons and that the necessary capital investments were approximately the same for nuclear fuel and coal.¹⁸¹

57. Mr. Komanoff's last reason for doubling nuclear fuel escalation rates compared to coal was that the nuclear fuel cycle requires development of unproven technology for waste disposal and fuel reprocessing. Offered the opportunity, however, to counter Applicants' position that both waste disposal and reprocessing technology have in fact been demonstrated,¹⁸² he was unable to do so.¹⁸³

58. The Board finds that the record of the hearing does not support Intervenor's contention that nuclear fuel costs will escalate after the

¹⁷⁵Komanoff at 19.

¹⁷⁶Tr. 346-48, 387-88.

¹⁷⁷Tr. 531-32.

¹⁷⁸Tr. 532.

¹⁷⁹Tr. 560-61.

¹⁸⁰Tr. 389-91.

¹⁸¹Tr. 534-36.

¹⁸²Tr. 333, 536-37.

¹⁸³Tr. 398-99.

commencement of plant operation at twice the cost of coal, and accepts the estimates of the Applicants and Staff that such escalation rates will be approximately the same. The Board further finds that the Applicants and Staff are correct in comparing the costs of the alternative nuclear and coal plants on a 30-year levelized basis rather than on the basis of first-year production costs only.

Capacity Factor

59. The Staff's estimates of annual generating costs for uranium and coal fueled electrical generating stations were based on a range of plant capacity factors from 50-80 percent.¹⁸⁴ The Staff based its selection of a range of capacity factors for the Vogtle facility on past and projected operation of uranium and coal-fueled base-load power stations.¹⁸⁵ The Staff determined that the capacity factors for both a coal-fired and a nuclear-fueled Vogtle facility would fall within this range, and that at each plant capacity factor level uranium was a more economical fuel as compared to high-sulfur coal for the Vogtle plant.¹⁸⁶ The Applicants based their cost estimates on a plant capacity factor of 75 percent for both the nuclear and the coal-fired units.¹⁸⁷ The Intervenor based his cost estimates on a plant capacity factor of 59 percent for the nuclear units and 61 percent for the coal-fired units.¹⁸⁸

60. The Board finds that the differences in the capacity factors assumed by Applicants and Intervenor are not very significant. To begin with, Mr. Thomas testified that the 2 percent differential which Intervenor credited to coal units is more than offset by the 5 percent "stretch" rating credit which Applicants allocated to the coal but not the nuclear units.¹⁸⁹ More importantly, if both nuclear and coal plants are assigned the same capacity factor at ranges in excess of 50 percent, the relative economics of the two plants are not significantly altered by the selection of a particular capacity factor. Thus, the Staff estimates show that the comparative economic advantage of the nuclear alternative in mills/kwh is relatively stable at capacity factors of 50, 60, 70 and 80 percent.¹⁹⁰ Further, Applicants performed a sensitivity analysis using their reduced capacity factor performance. When the nuclear and coal-fired plant capacity factors were allowed to decrease together, it was found that the coal-fired plant generating cost exceeded that of the nuclear plant until a breakeven capacity factor of about 25 percent was reached.¹⁹¹

¹⁸⁴ Quist, Table 5.

¹⁸⁵ Quist at 17.

¹⁸⁶ *Id.* at 18.

¹⁸⁷ Thomas, Table 1.

¹⁸⁸ Komanoff at 11-16, 20.

¹⁸⁹ Tr. 525.

¹⁹⁰ Quist, Table 5.

¹⁹¹ Thomas at 13.

61. Intervenor's Contention 9(3) reads as follows:

The Applicant has not given sufficient consideration to the following alternative:

(3) **Construction of Peak Units, such as Combustion Turbine, or Combined Cycle Facilities.** Deterioration of the Southern system load factor makes construction of base load equipment imprudent. Recent demand forecasts for the Georgia portion of the Southern system indicate that demand growth is increasing simultaneously with a decline in energy sales growth as indicated by annual reports of the Southern system operating companies. The result is increasing demand for capital expansion while revenue growth is diminishing. Therefore, investment in lower capital cost units (peaking units) would be the better alternative. [Intervenor contends that the above alternative would have a cost-benefit balance preferable to that previously struck by the Licensing Board in its initial decision of May 28, 1974.]¹⁹²

62. The Board finds that Georgia Power Company has given consideration to the need for peaking capacity in its generation expansion plan (outlined in Attachment 3 to James Miller's Testimony). Georgia Power Company has studied the quantities of peaking capacity already planned, including peaking capacity to be installed if load management efforts fail, and has related these quantities to aggregate integrated peak-hour load, keeping in mind that the load duration curve indicates that peaking facilities should serve approximately 26 percent of peak-hour demand. Georgia Power Company's plan will result in 25.5 percent of the peak-hour demand in 1976 being satisfied out of peaking units.¹⁹³ In 1985, 19.8 percent of peak-hour demand will be served by peaking units if only 11 percent reserves are maintained; but 28.8 percent of the load would be carried by peaking units if 20 percent reserves were achieved.¹⁹⁴ The Board notes that Southern Companies subregion considers a reserve margin in the range of 18 to 22 percent to be required for loss-of-load probabilities.¹⁹⁵ If peaking units were additionally installed to replace the Vogtle units, as the Intervenor suggests, almost 40.6 percent of the load projection of 19,200 Mw would be carried by peaking units.¹⁹⁶ The Board concurs with the Applicants' finding that this percentage would be an imprudently high proportion of system requirements.¹⁹⁷

¹⁹² Contention 9, last sentence.

¹⁹³ James Miller Testimony at 15.

¹⁹⁴ *Id.*

¹⁹⁵ Staff's Testimony of C. Frank Miller (hereafter "Frank Miller Testimony"), following Tr. 590, at 2 and 3.

¹⁹⁶ James Miller Testimony at 15 and 16.

¹⁹⁷ *Id.* at 16.

63. With currently planned capacity to meet the forecasted peak demand in 1985 of 19,200 megawatts, the Applicants will have a reserve margin of 11 percent.¹⁹⁸ Due to the long leadtime necessary for construction of base-load facilities, on short notice the Applicant will only be able to install peaking units to improve the reserve margin. Therefore, resurgence in demand for electricity or failure of Applicants' load management program (designed to reduce peak demand by 950 megawatts)¹⁹⁹ would require installation of peaking units and not allow sufficient time to construct base-load plants.

64. If the Applicants' load management plan does succeed, the resulting shifting of usage to off-peak times will increase the need for base-load generating units.²⁰⁰

65. The Applicants' current capacity plan includes two pumped-storage hydroelectric projects, Carters Dam and Wallace Dam. The pumped storage capacity of these projects is dependent on the availability of off-peak generating capacity totaling 516 megawatts for the transfer of water into the upper reservoirs of these projects at night and other off-peak times.²⁰¹ The Board finds that this increases the requirement for base-load generating units above that ordinarily considered necessary as a result of customer requirements alone.

66. In this contention the Intervenor asserts that it would be more economical to substitute peaking units such as combustion turbine or combined cycle facilities for Vogtle Units 1 and 2. The evidence presented by the Staff's witness regarding this contention, Dr. C. Frank Miller, indicates that operation of the Georgia Power Company's system with Vogtle Units 1 and 2 would be more economical than operation with peaking units such as combustion turbine or combined-cycle facilities.²⁰²

67. Calculations performed by Dr. Miller to compare Georgia Power Company's total system operating costs with and without substitution of the peaking alternatives indicated that operation of combustion turbines instead of the Vogtle Units 1 and 2 would cost an additional \$70,754,743 in 1983; an additional \$196,219,694 in 1984; and an additional \$283,908,741 in 1985; and that operation of combined cycle facilities instead of Vogtle Units 1 and 2 would cost an additional \$108,394,410 in 1983; an additional \$240,605,715 in 1984 and an additional \$302,243,719 in 1985.²⁰³ The Board concurs in Dr. Miller's findings that it would not be more economical to substitute peaking alternatives such as combustion turbine or combined cycle facilities for Vogtle Units 1 and 2.²⁰⁴

¹⁹⁸ *Id.* at 5.

¹⁹⁹ *Id.* at 11.

²⁰⁰ *Id.* at 14.

²⁰¹ *Id.* at 15.

²⁰² Tr. 590.

²⁰³ *Id.*, Table 2.

²⁰⁴ *Id.* at 3 and 4.

68. Dr. Miller simulated Georgia Power Company's system operation (using the inhouse FPC Production Cost Computer Program) with the peaking alternatives proposed by the Intervenor.²⁰⁵ The FPC computer program dispatches the generating units of the Georgia Power Company's system according to a programmed logic designed to permit the system to meet its hour-by-hour demand in the most economic manner. Simulating the Company's system with the peaking alternatives (combustion turbine and combined cycle) resulted in operation of the peaking alternatives at plant factors too high for peaking mode units. Except in emergencies, peaking mode units such as combustion turbine and combined cycle facilities are normally operated at plant factors ranging from 0-15 percent. This computer simulation using the peaking alternatives resulted in loading these units to plant factors ranging from 21.4 percent in 1983 to 39 percent in 1984. The Board concurs with Dr. Miller's opinion that the computer simulation loading of the peaking units at plant factors beyond the peaking mode supports the conclusion that Georgia Power Company's system will need additional base-load capacity to meet its energy requirements and not, as contended by the Intervenor, substitution of peaking units such as combustion turbine or combined cycle facilities.²⁰⁶

69. The Board, therefore, finds on the basis of the entire record that the need for Vogtle Unit Nos. 1 and 2 will exist within the time frame contemplated by the Applicant for the construction of the units and that it would not be preferable to substitute peaking units for Vogtle Unit Nos. 1 and 2.

IV. CONCLUSIONS OF LAW AND CONDITIONS

1. The Board's authority in this proceeding is based on (a) the Appeal Board's Memorandum and Order of August 12, 1975, directing that the proceeding be "remanded to the Licensing Board for the purpose of conducting a supplemental hearing on at least those issues which are directly raised by the pending applications of the Applicant for amendments to its construction permits for Units 1 and 2" and (b) the Appeal Board's Memorandum and Order of September 24, 1975, providing guidance to the Licensing Board on the scope of the supplemental hearing with regard to additional issues unrelated to the proposed amendments.

2. The Board has reviewed the entire record in this proceeding, including all of the proposed findings of fact submitted by the parties.²⁰⁷ Those proposed findings submitted by the parties which are not incorporated directly or inferentially in this Supplemental Initial Decision are herewith rejected as being

²⁰⁵ *Id.* at 4.

²⁰⁶ *Id.* at 5.

²⁰⁷ Intervenor did not submit proposed findings of fact or conclusions of law.

unsupportable in fact or in law, or as being unnecessary to the rendering of this decision.

3. The Board has given careful consideration to all of the documentary and oral evidence presented by the parties. Based upon our review of the entire record in this proceeding and the foregoing findings, the Board has concluded as follows:

- (a) Each of the Applicants has reasonable assurance of obtaining the funds necessary to finance its respective share of the estimated construction costs of Vogtle Unit Nos. 1 and 2;
- (b) The requested extension of two years in the estimated completion dates for Vogtle Unit Nos. 1 and 2 are reasonable and appropriate;
- (c) The safety determinations made, in accordance with the provisions of 10 CFR § 50.35(a), by the Board in its Initial Decision are still valid;
- (d) The environmental determinations made, in accordance with the provisions of 10 CFR § 50.10(e) and Appendix D to 10 CFR Part 50, by the Board in its Initial Decision are still valid.

4. The Board concludes that the issuance of amendments to construction permits requested by the Applicants should be subject to the following condition:

Prior to issuance of an amendment adding co-owners, the Applicants must provide the Director of Nuclear Reactor Regulation with the following documents:

- (a) A copy of the Commitment Notice on a loan guaranteed by the Rural Electrification Administration;
- (b) Evidence of bond validation from both MEAG and Dalton;²⁰⁸ and
- (c) Documentation of approval by the Securities and Exchange Commission to GPC of the sale of its ownership interests in Vogtle.

5. In sum, the Board concludes that the appropriate action to be taken at this time is the issuance of this Supplemental Initial Decision approving the issuance of amendments to Construction Permits CPPR-108 and CPPR-109 adding Oglethorpe Electric Membership Corporation, Municipal Electric Authority of Georgia, and City of Dalton as undivided co-owners with Georgia Power Company of the Alvin W. Vogtle Nuclear Plant, Units 1 and 2, and extending for two years the estimated construction completion dates for those two units, subject to the condition recited herein, recognizing that such action will permit the Director of Nuclear Reactor Regulation to issue the amendments to the construction permits.

²⁰⁸If Dalton wants to participate as a co-owner

V. ORDER REGARDING PROPOSED AMENDMENTS

Based on the Board's foregoing Findings and Conclusions, and pursuant to the Atomic Energy Act, as amended, and the Nuclear Regulatory Commission's regulations, IT IS ORDERED that the Director of Nuclear Reactor Regulation is authorized to issue amendments adding Oglethorpe Electric Membership Corporation, Municipal Electric Authority of Georgia, and City of Dalton as undivided co-owners with Georgia Power Company of the Alvin W. Vogtle Nuclear Plant, Units 1 and 2, and extending for two years the estimated construction completion dates for those two units, PROVIDED prior to issuance of an amendment adding co-owners, PROVIDED prior to issuance of an amendment adding co-owners, the Director is provided with the following documents:

- (a) A copy of the Commitment Notice on a loan guaranteed by the Rural Electrification Administration;
- (b) Evidence of bond validation from both MEAG and Dalton;²⁰⁹ and
- (c) Documentation of approval by the Securities and Exchange Commission to GPC of the sale of its ownership interests in Vogtle.

IT IS FURTHER ORDERED, in accordance with Sections 2.760, 2.762, 2.764, 2.785 and 2.786 of the Commission's Rules of Practice, that this Supplemental Initial Decision shall become effective immediately and shall constitute, with respect to matters covered herein, the final action of the Commission forty-five (45) days after issuance hereof, subject to any review pursuant to the Commission's Rules of Practice. Exceptions to this Initial Decision may be filed by any party within seven (7) days after service of this Initial Decision. Within fifteen (15) days thereafter [twenty (20) days in the case of the Staff] any party filing such exceptions shall file a brief in support thereof. Within fifteen (15) days of the filing of the brief of the appellant [twenty (20) days in the case of the Staff] any other party may file a brief in support of, or in opposition to, the exceptions.

THE ATOMIC SAFETY AND LICENSING BOARD

Glenn O. Bright, Member

Robert L. Holton, Member

Elizabeth S. Bowers, Chairman

Issued at Bethesda, Maryland,
this 11th day of January 1977.

²⁰⁹If Dalton wants to participate as a co-owner

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Samuel W. Jensch, Chairman
George C. Anderson
Lester Kornblith, Jr.

In the Matter of Docket No. STN 50-482

KANSAS GAS AND ELECTRIC COMPANY
KANSAS CITY POWER AND LIGHT COMPANY

(Wolf Creek Generating Station,
Unit No. 1)

January 18, 1977

Upon application for a construction permit, the Licensing Board issues a partial initial decision, making findings of fact and conclusions of law and authorizing the issuance of a limited work authorization, subject to several conditions.

NEED FOR POWER: APPLICABLE STANDARD

Given the uncertainties inherent in projections of future power demand, a licensing board should evaluate need for power on the basis of whether it can fairly be concluded on the evidence presented that a particular projection of future need for power is a reasonable one. *Niagara Mohawk Power Co.* (Nine Mile Point Nuclear Station), ALAB-264, 1 NRC 347, 367 (1975).

TECHNICAL ISSUES DISCUSSED: Cooling water supply; uranium availability and fuel cost; consideration of coal as an alternative; need for power.

**PARTIAL INITIAL DECISION
AUTHORIZING LIMITED WORK AUTHORIZATION***

Appearances

Gerald Charnoff, Esq., Thomas A. Baxter, Esq., Michael T.
Harris, Esq., Jay E. Silberg, Esq., Ralph Foster, Esq., John

*This decision is unanimous on all substantive issues for a Limited Work Authorization. Board Member Jensch dissents on the length and form of the decision.

Healzer, Esq., on behalf on Kansas Gas and Electric Company and Kansas City Power and Light Company, Applicants

William H. Griffin, Esq., on behalf of the State of Kansas, Intervenor

James T. Wigglesworth, Esq., William H. Ward, Esq., on behalf of Mid-America Coalition for Energy Alternatives, Intervenor

Edward G. Collister, Jr., Esq., on behalf of Wolf Creek Nuclear Opposition, Intervenor

Glen Ortman, Esq., of the Federal Power Commission

Albert V. Carr, Jr., Esq., Auburn Mitchell, Esq., Michael A. Riddle, Esq., Myron Karman, Esq., Stephen Lewis, Esq., Milton Grossman, Esq., on behalf of the Regulatory Staff of the Nuclear Regulatory Commission

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I. PRELIMINARY STATEMENT AND DESCRIPTION OF RECORD

1. On August 21, 1974, the Commission¹ issued a "Notice of Hearing on

¹The Energy Reorganization Act of 1974, 42 U.S.C. §5801, *et seq.*, abolished the Atomic Energy Commission and transferred its licensing functions to the Nuclear Regulatory Commission. The term "Commission" is used in this decision to refer to both the AEC and the NRC.

Application for Construction Permit"² with respect to the application filed under the Atomic Energy Act of 1954, as amended, by Kansas Gas and Electric Company (hereinafter "KG&E") and Kansas City Power and Light Company (hereinafter "KCPL") (collectively "Applicants") for a permit to construct a pressurized water nuclear reactor, designated the Wolf Creek Generating Station, Unit 1 (hereinafter "WCGS") to be located on Applicants' site in Coffey County, Kansas.

2. This application is one of four concurrently filed applications which comprise the Standard Nuclear Unit Power Plant System (hereinafter "SNUPPS"). These applications were filed pursuant to the Commission's "Duplicate Plant" concept,³ whereby one or more utilities may submit individual construction permit applications which reference, for the technical information pertaining to design specified in 10 CFR §50.34, a single document describing the design of the reactors which are to be constructed and operated at the various sites and the postulated site parameters for the design. Under the "Duplicate Plant" concept each application is accompanied by an environmental report for the individual site, which discusses the environmental effects of construction and operation of the proposed reactor at the actual site where it will be located. Thus while the NRC Staff (hereinafter "the Staff") might simultaneously review the safety related parameters of duplicate plants, each site is separately assessed for its environmental impact. It is expected, however, since the design will be essentially the same for all reactors comprising a duplicate plant group, that certain basic assumptions concerning the release of radioactive materials during both normal operation and postulated accident conditions will be the same for each of the reactors.

3. The Notice of Hearing gave notice that the Chairman of the Atomic Safety and Licensing Board Panel had designated this Atomic Safety and Licensing Board (hereinafter "the Licensing Board") to conduct the hearing in this proceeding and in each of the other SNUPPS proceedings. The other SNUPPS applications were filed by: (1) Union Electric Company for the Callaway Plant, Units 1 and 2 in Callaway County, Missouri (Docket Nos. STN 50-483, 50-486); (2) Northern States Power Company (Minnesota) and Northern States Power Company (Wisconsin) for the Tyrone Energy Park, Units 1 and 2, in Dunn County, Wisconsin (Docket Nos. STN 50-484, 50-487); and (3) Rochester Gas and Electric Corporation for the Sterling Power Project Nuclear Unit 1 in Cayuga County, New York (Docket No. STN 50-485).

4. The Notice of Hearing provided that any person whose interest may be affected by the proceeding and who wishes to participate as a party in the proceeding might file a petition for leave to intervene in accordance with the provisions of 10 CFR §2.714 by September 30, 1974.

² 39 Fed. Reg. 31684 (August 30, 1974).

³ See Subpart D of 10 CFR Part 2 and Appendix N to 10 CFR Part 50.

5. On September 14, 1974, a petition for leave to intervene was filed by Keith M. Stutterheim. In an answer dated October 7, 1974, Applicants stated that Mr. Stutterheim had set forth at least one contention meeting the requirements of 10 CFR §2.714, but had not adequately set forth his interest. Applicants stated that they had no objection to an amendment of the petition to adequately set forth Mr. Stutterheim's interest. A similar answer was filed by the Staff on October 10, 1974. By Order dated October 17, 1974, the Licensing Board granted Mr. Stutterheim 30 days to supplement his request to intervene. Mr. Stutterheim filed a supplement to his petition on November 11, 1974. The Applicants responded on November 27, 1974, asserting that Mr. Stutterheim had again failed to show his interest in the proceeding and requesting that his petition be denied. The Staff's answer, dated December 3, 1974, also stated that Mr. Stutterheim had not shown a cognizable interest, but requested that he be given an additional opportunity to clarify his interest in the proceeding. After the Licensing Board's December 9, 1974, Order granting additional time, Mr. Stutterheim on December 16, 1974, filed a Supplement #2 to his petition. Applicants again responded, on December 31, 1974, that Mr. Stutterheim had not demonstrated any interest, noting that he lived about 100 miles from the site. The Staff's answer, dated January 2, 1975, stated its conclusion that Mr. Stutterheim had demonstrated, albeit marginally, an interest in the proceeding. By Order dated January 9, 1975, the Licensing Board ruled that Mr. Stutterheim had not shown a valid personal interest and denied his petition to intervene.

6. Following extensions of time granted by the Licensing Board, petitions for leave to intervene were filed by Mid-America Coalition for Energy Alternatives (hereinafter "MACEA") and by Wolf Creek Nuclear Opposition, Inc. (hereinafter "WCNO") on October 30, 1974, and by the State of Kansas by its Attorney General (hereinafter "Kansas") on November 11, 1974. Neither Applicants nor the Staff opposed granting the petitions. By Order dated November 25, 1974, and December 5, 1974, the Licensing Board admitted MACEA, WCNO and Kansas (hereinafter collectively "Intervenors") as parties to the proceeding.

7. In an Order dated May 5, 1975,⁴ the Licensing Board scheduled a special prehearing conference, pursuant to 10 CFR §2.751a, to be held in Lawrence, Kansas, on May 19, 1975. At the prehearing conference, the parties submitted a "Stipulation of Contentions and Proposed Hearing Schedule" setting forth the contentions advanced by Intervenors and providing that contentions previously advanced be withdrawn. Tr. 10. The Licensing Board heard oral argument at the prehearing conference on those contentions whose admission was in dispute, Tr. 33-88, and, following the submission of briefs requested by the Licensing Board, issued on June 23, 1975, an Order Determining Contentions. On July 11, 1975, a Special Prehearing Conference Order was issued in which the Board established

⁴40 Fed. Reg. 20370 (May 9, 1975).

all of the issues in controversy in this proceeding and a schedule for further actions. A number of these contentions were withdrawn at later stages in the proceeding. Order Approving Withdrawal of Contentions, January 19, 1976; Tr. 2565-2566.

8. A number of the preliminary motions were acted upon by the Board. These included a motion for a stay of proceedings pending issuance of various Staff documents, received from Kansas and MACEA on May 15, 1976, a motion filed May 27, 1975, by MACEA to compel Applicants to withdraw the application, a motion by MACEA for summary disposition based on lack of financial qualifications by KG&E filed on May 27, 1975, and a motion filed by MACEA and Kansas on June 30, 1975, requesting a continuance until the DES and FES had been issued. After receipt of appropriate responses, the Board denied all of these, the first three by orders dated June 23, 1975, and the last in the Prehearing Conference Order of July 11, 1975.

9. The parties undertook substantial prehearing discovery in the course of which the Board received and acted upon a number of motions. Included among these was a motion to compel discovery of certain material regarding prices and price-related matters in the fuel contract between Applicants and Westinghouse. Applicants had offered to disclose this information only upon execution of a nondisclosure agreement to protect the alleged proprietary information in the contract. The Board's order of January 9, 1976, granting the motion was stayed by the Appeal Board to the extent that it required unrestricted disclosure and remanded to the Board to provide the Applicants with a reasonable opportunity to establish that there is a rational basis for treating the material at issue as confidential. A hearing was held on June 24 and 25, 1976, to provide such an opportunity. The Board's order on this matter was issued on November 24, 1976, and held that an adequate showing of a rational basis had not been made. The Applicants' motion for Appeal Board review has been granted.

10. A motion filed on August 25, 1975, by Applicants for summary disposition of certain contentions was denied by the Board's Order of October 7, 1975. An October 14, 1975, motion by Kansas to stay all proceedings pending resolution of a lawsuit between Applicants and Westinghouse concerning the fuel supply contract was denied by the Board on October 24, 1975.

11. In a motion dated December 9, 1975, Applicants requested that the Licensing Board determine that construction of offsite portions of the plant access road and railroad spur prior to issuance of a limited work authorization was not legally precluded. The Staff opposed the motion but suggested that the matter be certified to the Commission. MACEA joined in the Staff's arguments. On January 7, 1976, the Licensing Board denied Applicants' motion, finding that this offsite construction was within the Commission's regulatory jurisdiction. Although the Licensing Board rejected the Staff's certification suggestion, it noted that Applicants could request the Appeal Board to direct certification.

On January 15, 1976, Applicants requested the Appeal Board to direct certification to it of the Licensing Board's January 7, 1976, Order. Following the Staff's response in support of this request, the Appeal Board, by Order dated January 22, 1976, provisionally directed certification. Following the submission of briefs by Applicants and the Staff and oral argument, the Appeal Board in ALAB-321 (April 7, 1976) affirmed the Licensing Board's January 7, 1976, Order and ruled that offsite construction of the plant access road and railroad spur could not be undertaken without Commission approval. The Appeal Board did, however, suggest three alternate avenues of relief. Pursuant to the third option, a showing that construction would not adversely affect the environment, Applicants and the Staff made evidentiary presentations on the effect of such construction. Based upon that record, the Licensing Board on May 18, 1976, ruled that offsite construction of the plant access road and relocation of FAS 10 could commence in advance of a limited work authorization or construction permit, but that construction of the railway spur could not commence until issuance of such an authorization permit. Upon appeal by the Applicants, this Board ruling was affirmed by the Appeal Board in ALAB-331 (June 8, 1976). The Commission has elected to review ALAB-321 (and presumably ALAB-331) (Commission Orders dated May 26, 1976, and June 28, 1976) and the matter is pending before it.⁵

12. Notice of evidentiary hearing was issued by the Licensing Board on October 24, 1975.⁶ The evidentiary hearing began on November 12-13, 1975, in Burlington, Kansas, and continued on January 26-28, February 2-6, February 23-26, March 2-5, April 26-30 and June 24-25, 1976, in Kansas City, Missouri, and May 4, 1976, in Bethesda, Maryland. Limited appearance statements pursuant to 10 CFR §2.715(a) were presented at the November 12-13, 1975, session in Burlington, Kansas, and at the January 26, 1976, session in Kansas City, Missouri. The record of the hearing includes the testimony of witnesses for Applicants, the Staff and Intervenor. The record also includes exhibits offered by the parties and received in evidence as set forth in Attachment A, which is appended to this Initial Decision.

12a. After the conclusion of the evidentiary hearings, Intervenor MACEA, on August 6, 1976, filed a motion to admit the following additional contention:
Applicants have no legally enforceable contract for a supply of the necessary makeup water for their cooling lake.

The motion was based on an assertion that the contract is contrary to the laws

⁵The Board notes that, on the eve of issuance of this Partial Initial Decision, the Commission has issued its decision, *Kansas Gas and Electric Company and Kansas City Power and Light Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), CLI-77-1, 5 NRC 1 (January 12, 1977) affirming ALAB-321 and, with one qualification, ALAB-331.

⁶40 Fed. Reg. 50755 (October 31, 1975).

of Kansas and is therefore invalid and unenforceable. Intervenor further alleged that the validity of the contract was the subject of pending litigation in a Kansas court,^{6a} and asserted that unavailability of the contract for consideration "until recently" was the reason for the lateness of the motion. Both Applicants and the Staff opposed the motion, both on substantive bases and on the basis of timeliness. In the latter respect, the contract has been available to Intervenor at least since April 26, 1976, when it was offered in this case and admitted in evidence as Exhibit 20. The Staff points out that the record, which shows that the contract was reviewed and approved by the Attorney General of the State of Kansas and submitted to and approved by the State legislature on April 1, 1976, establishes the presumptive validity of the contract. Both Applicant and Staff urge that this proceeding is not the proper forum for litigating the validity of this contract, citing ALAB-189 and ALAB-308.^{6b} We agree and deny the motion for that reason and as being untimely.

13. On December 13, 1976, Intervenor MACEA filed a motion to reopen the hearing with respect to "cost of capital and related issues including cost-benefit analysis and financial qualifications of the Applicants." After considering the Intervenor's brief and the responses thereto, the Board has determined to reopen the record with respect to financial qualifications and will shortly issue a separate order so doing. The issue set forth in the Notice of Hearing relative to financial qualifications and Contention II-1, which is directed to the same subject, remain open for future decision. This Partial Initial Decision, however, makes all findings and determinations established by 10 CFR 50.10(e) as prerequisites for issuance of a limited work authorization by the Director of Nuclear Reactor Regulation.

13a. On September 7, 1976, during the period when issuance of licenses, permits and authorizations was suspended pursuant to the Commission's General Statement of Policy of August 13, 1976, Applicants requested that the Commission grant them an exemption pursuant to 10 CFR 50.12 permitting them to conduct certain site preparation activities. An Order of the Commission issued on November 5, 1976, concurrently with the Commission's Supplemental Statement of Policy, directed us to treat this request as an application for a limited work authorization. We are doing so.

13b. The Licensing Board, in accordance with the Notice of Hearing, has decided herein the matters in controversy among the parties and the issues pursuant to the Atomic Energy Act of 1954, as amended, and the National

^{6a}We have subsequently been advised by the parties that the suit has been dismissed for lack of standing of the plaintiffs, who were represented by one of the counsel for MACEA.

^{6b}*Southern California Edison Company, et al. (San Onofre Nuclear Generating Station, Units 2 and 3)*, 7 AEC 410, 412 (1974) and NRCI-76/1 20, 30 (January 26, 1976), respectively.

Environmental Policy Act of 1969 and 10 CFR Part 51, except as set forth in paragraph 13, *supra*. Our ultimate decision on issuance of a construction permit, however, must abide resolution of the excepted matters. Any activities undertaken by the Applicants in the interim, therefore, are undertaken at their own risk.⁷

II. FINDINGS OF FACT—CONTESTED ISSUES

A. Contention I-1(a)

The Environmental Report does not adequately evaluate the impacts of operation of the proposed Wolf Creek Generating Station (WCGS) on the Neosho River, and its impoundments, in the site vicinity in the following manner:

(a) During the period of assumed drought, consumption of water by the Applicants from John Redmond Reservoir, and from Council Grove and Marion Reservoirs to the extent Applicants make use of water from those reservoirs, may consume substantial quantities of water in John Redmond Reservoir and thereby adversely affect all three reservoirs and possibly leave an inadequate supply of water for downstream usages, which include municipal, commercial, and agricultural consumers, a fish and wildlife refuge, and recreational use.

14. The Staff's testimony on this issue was presented by a panel of witnesses having expertise in hydrology and related disciplines and aquatic and terrestrial ecology.⁸ Applicant's panel of witnesses focused principally on the hydrological

⁷The dissenting member suggests that definition be given to the term "undertaken at their own risk," whether at ratepayer or stockholder expense. In view of the acclaim to provide incentives to business activity, the member also suggests that the stockholder risk and expense may provide the necessary incentive to business management to see that a quality perfect nuclear plant is constructed (despite what history of other plants indicates uneven construction contractor performances) and constructed within a reasonably expeditious time frame, without redesign problems and delays caused by redoing poor welding, etc., all to result in a plant with a higher plant capacity factor than has been experienced in previously constructed nuclear facilities. The stockholder concern can be continuously expressed whereas ratepayers are not as well organized as stockholders to influence management.

⁸Supplemental Testimony of Charles R. Boston, Gerald K. Eddlemon, Edward F. Hawkins, Howard A. McLain, Martha S. Salk and Robert L. Waterfield on Contention I-1, following Tr. 3279 (hereinafter "Staff Testimony"). Parts (b) through (d) of Contention I-1, which included material on which Mr. Waterfield was to testify, were withdrawn prior to hearing, making his appearance unnecessary. In addition to the "Staff Testimony," Affidavits of Edward F. Hawkins, Martha S. Salk and Gerald K. Eddlemon were introduced following Tr. 5131 (hereinafter "Affidavits").

aspects⁹ of this contention and on WCGS operational requirements.¹⁰ While Intervenor presented no written testimony, their participation aided in a full development of the record on this subject.¹¹

15. The primary source of makeup water for the WCGS cooling lake will be John Redmond Reservoir (Redmond) which is located on the Neosho River in the upper portion of the middle third of the Neosho River Basin. Environmental Statement,¹² Figure 2.5-1; ER, §2.5.1.1.2. In addition to Redmond, this contention calls for a consideration of impacts on the other two major surface water impoundments within the upper Neosho River Basin, Council Grove and Marion Reservoirs.¹³ Council Grove is located on the Neosho approximately 100 stream miles above Redmond. Final Environmental Statement,¹⁴ §2.5.1.2; Tr. 3644. Marion Reservoir is located on the Cottonwood River, the major tributary to the Neosho above the site, approximately 130 stream miles above Redmond. ER, Figure 2.5-1; Tr. 3644. The WCGS cooling lake will be formed by impounding Wolf Creek, a tributary of the Neosho, at a point approximately four miles to the southeast of Redmond. FES, Figure 2.2. Redmond and the WCGS cooling lake are approximately at equal distances (6-7 miles) above the confluence of the Neosho and Wolf Creek. ER, §2.5; ER, Figure 2.5-1. The nearest municipal water user downstream of the Wolf Creek watershed is the town of LeRoy which is about 14 river miles downstream of the Wolf Creek-Neosho River confluence. ER, §2.5.1.2.2. River flow necessary to maintain water quality requirements for Chanute, Kansas, and water needed to fill pools periodically in the Neosho Waterfowl Management Area are also considered. Chanute and the waterfowl area are approximately 50 and 90 miles to the south of Redmond, respectively. ER, Figure 2.5-1; Staff Testimony, pp. 20, 27.

16. During periods of normal Neosho flows, spills over the Redmond Dam average 1300-1400 cfs. Tr. 3496; FES, §5.5.2.1; ER, Table 2.5-1a. Withdrawal of makeup water from Redmond is a small fraction of the total spill and thus

⁹ Testimony of Edward B. Madden, Consulting Engineer, concerning sediment deposition in John Redmond Reservoir (hereinafter "Madden Testimony"); Supplemental Testimony of Surya Bhamidipaty on Sedimentation Analysis of John Redmond Reservoir (hereinafter "Bhamidipaty Sedimentation Analysis Testimony"); Testimony of Surya Bhamidipaty on Contention I-1(a) (hereinafter "Bhamidipaty Testimony on Contention I-1(a)"); and Supplemental Testimony of Surya Bhamidipaty on Contention I-1(a) (hereinafter "Bhamidipaty Testimony on Conservative and Nonconservative Assumptions") all following Tr. 4063.

¹⁰ Supplemental Testimony by F.L. Spakoski on Contention I-1(a) (hereinafter "Spakoski Testimony on Contention I-1(a)") and Supplemental Testimony of J.O. Arterburn on Contention I-1(a) (hereinafter "Arterburn Testimony on Contention I-1(a)") following Tr. 4063.

¹¹ Tr. 3550-3553.

¹² Exhibit 3 (hereinafter "ER").

¹³ A fourth reservoir, Cedar Point Lake, has been authorized but is not yet under construction. ER, §2.5.1.1.2.

¹⁴ Exhibit 4 (hereinafter "FES").

would not be a significant impact for most of the life of the plant. FES, §5.5.2.1. This contention, however, is not addressed to the situation normally pertaining during the lifetime of WCGS but rather focuses on impacts during the drought-of-record which it is reasonable to assume will occur once during the 40-year life of the WCGS. Staff testimony, p. 7. The questions raised by occurrence of a drought-of-record are principally two: (a) will there be adequate water for plant operation during that period; and (b) what are the attendant impacts on the Neosho River system of withdrawal of cooling water.

17. Redmond, Council Grove, Marion and the yet unconstructed Cedar Point Lake Reservoir form a four-unit system which is a part of the U.S. Army Corps of Engineers multiple-purpose plan for flood control and allied water uses on the Arkansas River and tributaries in Kansas, Arkansas and Oklahoma. Allied water uses include releases made to maintain water quality requirements downstream, to provide water supplies for municipal and industrial purposes, and to maintain capacity lost in reservoirs due to sedimentation. ER §2.5.1.3. Redmond commenced operation first with filling in 1963. Madden Testimony, pp. 1, 4. Council Grove began filling in 1964 and Marion in 1967. The Kansas Water Resources Board (KWRB) has purchased an undivided 55.84 percent of the conservation storage space in Redmond from the U.S. Army Corps of Engineers under the provisions of the Federal Water Supply Act of 1958 (P.L. 85-500, as amended) and is negotiating the purchase of space in the Council Grove and Marion Reservoirs from the Corps of Engineers. FES, p. 5-1; Staff Testimony, pp. 2-3. While the KWRB obtains the right to storage space from the Corps of Engineers, it obtains the right to water stored in such space pursuant to the water reservation right granted by the Division of Water Resources, Kansas Department of Agriculture as provided for in the Kansas Water Storage Act.¹⁵ Kansas Statutes Annotated, §82a-1303-1304. This Act, in turn, gives KWRB the right to contract for the withdrawal (purchase) of water from a reservoir at a rate not exceeding the reservoir storage space yield capability during a drought having a 2% chance of occurrence in any one year with the reservoir in operation.¹⁶ Kansas Statutes Annotated, §82a-1305.

¹⁵ KWRB's "water reservation right" is subject to all vested rights, appropriation rights, approved applications for permits to appropriate water and other vested property interests acquired prior to KWRB's acquisition, but not to those acquired thereafter. K.S.A. § 82a-1303. Therefore, Applicants excluded flows into Redmond equal to senior water rights (i.e., assumed they passed on through) when performing their yield analysis. Staff Testimony, p. 13.

¹⁶ Section 82a-1313 states that persons having contracts under section 82a-1305 are entitled to the same protection of their rights under such contracts as the owner of any other vested property interest (including vested rights, appropriation rights and approved applications for permits to appropriate water) is entitled to receive. Section 82a-1313 further provides that "no person shall be entitled to any waters withdrawn under this act from the conservation storage water supply of any reservoir except in accordance with a contract under [82a-1305] of this act."

18. Since negotiations between KWRB and the Applicants were ongoing at the time of publication of the FES and because of the importance of the water supply from Redmond to WCGS, the Staff recommended that the Applicants be required to finalize their contract with KWRB prior to issuance of a limited work authorization or construction permit. FES, p. vi; Staff Testimony, p. 5. Contracts entered into by the KWRB for sale of water from conservation storage space are subject to a review period by the State Legislature during which time it may disapprove and revoke the contract. K.S.A. §82a-1307. A contract between KWRB and the Applicants was executed on March 13, 1976. Exhibit 20. The contract has a term of 40 years (January 1, 1978, to December 31, 2017) and a provision for renegotiating prices every ten years. Additionally, a renewal option is provided. The review period during which the State Legislature may disapprove and revoke the contract has now expired. Arterburn Testimony on Contention I-1(a), pp. 1-3, Exhibit 20.¹⁷

19. The method of contracting used by the Corps of Engineers in selling reservoir storage space is to sell that amount of storage in acre-feet assumed to exist in a reservoir at the end of its life. Exhibit June 24, 1976-4. In the case of Redmond, the Corps of Engineers assumed for purposes of contracting with KWRB that deposition of sediment in the conservation storage space would be such that at the end of that period KWRB's 55.84% would equal 34,900 acre-feet. *Id.*, p. 1. The conservation pool storage space is defined in the contract between the Corps of Engineers and the KWRB as being that space below 1039 mean sea level (MSL). Madden Testimony, p. 2; Exhibit June 24, 1976-4. From 1039 MSL to 1068 MSL is the flood pool or the storage space for receipt of flood waters. Madden Testimony, p. 2-3.

20. KWRB's contract with the Applicants for makeup water from Redmond is for 41 cfs. Arterburn Testimony on Contention I-1(a); Exhibit 20. This quantity equals the amount of water KWRB's yield analysis indicated would be available from its 55.84 percent of the conservation storage capacity assumed to exist in 2013 (34,900 acre-feet) and contracted for from the Corps of Engineers. This yield can be analyzed during a drought having a 2% chance of occurrence in any one year. Staff Testimony, p. 5. The drought has been equated to the drought-of-record occurring in the period 1952-1957. *Id.*, p. 7. KWRB in its analysis used a nonsequential mass curve analysis in determining Redmond yield. *Id.*, p. 8. The Staff testified that this method of analysis gives a fairly rough approximation of yield. *Id.*, p. 9. The Applicants used a detailed sequential operation analysis method which the Staff considered to be the superior technique. Hawkins Affidavit, p. 4. In practice, the KWRB method is often used to make initial estimates of yield to be used as input to simulation

¹⁷The Applicants also had applications for rights to water in the Council Grove and Marion Reservoirs which they indicated would be withdrawn once their purchase of water from Redmond was complete. FES §5.2.1.

studies such as the Applicants performed: *Ibid.* Intervenor challenged these yield analyses by questioning the Applicants' assumption as to the amount of conservation storage available in Redmond for water supply. Intervenor raised their inquiry based on the data from an unpublished sediment survey performed by the Corps of Engineers in 1974.¹⁸ Tr. 3508-3514; Tr. 3699. The survey showed that from 1964 until the time of the survey sedimentation had been higher than predicted by Corps of Engineers in the conservation pool, lower than predicted in the flood control space, and somewhat higher than expected overall. Hawkins Affidavit, p. 1. Applicants subsequently undertook a detailed examination of the data presented in the sediment survey and concluded, after appropriate adjustment, that rather than 34,900 acre-feet available in the year 2013 there would be 24,729 acre-feet. Madden Testimony, p. 9; Bhamidipaty Sedimentation Analysis Testimony (attached table—John Redmond Reservoir Sedimentation Results). The calculation of 34,900 acre-feet of storage at the end of the 50-year project life in the year 2013 was based on assessments by the Corps of Engineers of the total rate of sedimentation during the 50-year period and the assumed allocation of incoming sediment in accordance with the assumption that 37% would go into the conservation pool, 56% would be deposited in the flood-control pool between 1039 and 1068 MSL, and 7% would be above elevation 1068 MSL. Madden Testimony, p. 2-3. Actually, for the first 10.5 years of operation, 68 percent of reservoir volume reduction occurred in the conservation pool, 23 percent occurred between elevation 1039 and 1068, and 9 percent occurred above elevation 1068. *Id.*, p. 3. As adjusted through 2013, the percentage deposition by volume would be 63% in the conservation pool and 37% above. Bhamidipaty Sedimentation Analysis Testimony, p. 5. Based on these new calculations of available storage space, Applicants performed a new yield analysis which showed a yield from John Redmond in excess of 41 cfs during a drought-of-record which might occur prior to about 2004, after which point it drops to 38.5 cfs. Bhamidipaty Sedimentation Analysis Testimony (attached table). The Staff examined the Applicants' sedimentation analysis and yield analysis and concluded that they were reasonable. Hawkins Affidavit, p. 2. Further, the Staff indicated that, if desirable or necessary at the time yield dropped below 41 cfs, there are several potential alternatives available to meet project purposes, including raising the top of the conservation pool, reallocation of amounts of water needed for the various project purposes, and dredging. *Ibid.* The Corps of Engineers has indicated that an appropriate adjustment of the conservation pool elevation would be considered. Exhibit June 24, 1976-4.

21. The Staff in its analysis of Applicants' original yield analysis determined

¹⁸ The sediment survey had not been published at the time of these hearings since the Corps of Engineers had not completed its analysis of the data. Intervenor obtained the data from the Corps of Engineers under the Freedom of Information Act.

that it was reasonable and concurred that Redmond would probably yield 41 cfs during the drought-of-record. Staff Testimony, p. 13. However, the Staff noted a number of respects in which the Applicants' yield analysis appeared to be conservative (in the sense that the assumptions would understate yield) and other respects in which the analysis appeared to be nonconservative (in that they might tend to overstate the yield). Staff Testimony, pp. 11-13; Hawkins Affidavit, p. 4. Applicants undertook to attach values to these various assumptions and concluded that 13.6 cfs over and above the 41 cfs (38.5 cfs after 2004) was obtainable. Bhamidipaty Testimony on Conservative and Nonconservative Assumptions, p. 10. Rather than being considered as an addition to the previously calculated yield, the 13.6 cfs may properly be considered as reinforcing the probability that Redmond will yield 41 cfs during the drought-of-record. Tr. 4129-4130.

22. Average annual makeup requirement over a 16-year period (including the drought-of-record) utilized by Applicants in analyzing cooling lake operation was 46.6 cfs. ER, Table 3.3-1; Staff Testimony, p. 21; Spakoski Testimony on Contention I-1(a), p. 2-3. The analysis assumed makeup rates of up to 120 cfs during certain drought and postdrought periods, with 41 cfs coming from Redmond and the remainder from Neosho River surface water. Spakoski Testimony on Contention I-1(a), p. 2-3; Bhamidipaty Testimony on Contention I-1(a), p. 2, Table 2. The applications to Kansas Department of Agriculture for rights to the Neosho River surface water have, however, not yet been acted upon. FES, §5.2.1, Tr. 3321-3323.¹⁹ Because of this fact and because the Applicants had not originally separated the amount of makeup water necessary for plant operation from the amount used for water quality purposes, the Staff took the position that a construction permit should not issue until Neosho River surface rights were granted the Applicants. Tr. 4311, 3322-3323. In response, the Applicants presented additional testimony to demonstrate that WCGS operational requirements were not dependent on Neosho River surface water. Applicants' analysis showed that operational requirements at their anticipated capacity factor schedule of 100% for June-September and 62.5% for October-May would be 30 cfs for one unit²⁰ based upon analysis of cooling lake operation using the LAKET computer program described in ER §3.4. Spakoski Testimony on Contention I-1(a), p. 1. These figures were confirmed by the Staff. Tr.

¹⁹ Application is also pending for the right to impound water draining from the Wolf Creek basin into the cooling lake. FES, §5.2.1.

²⁰ These proceedings are concerned with the application to construct only one nuclear unit. However, as discussed in paragraph 212, the proposed cooling lake is being designed to accommodate two units in the event that additional generating capacity may eventually be needed. 40 cfs from Redmond would be required for two nuclear units. Spakoski Testimony on Contention I-1(a), p. 1. Since it has been shown that only 38.5 cfs may be available during a drought, a derating on the order of 10% for two units for the four summer months might be required. *Ibid.*

4311-4312. Applicants' revised yield analysis shows that if a drought were to occur in the period 2004 to 2013, 38.5 cfs would be available from Redmond for makeup. Bhamidipaty Sedimentation Analysis Testimony p. 6. Based upon the above testimony, the Staff has concluded, and the Board concurs, that the State's approval of the applications for the Neosho River surface water is not a prerequisite for issuance of a construction permit. Tr. 4311-4312. The Board further concludes that the yield which can be reasonably expected from Redmond during the postulated drought will be adequate to supply the operational requirements of WCGS.

23. The record in this case includes a comprehensive assessment of the impacts of diversion of water for cooling purposes from Redmond, commencing with assessment of the impact on the two upstream reservoirs. Operation of WCGS will not adversely affect water levels in either Council Grove or Marion reservoirs since none of the storage capacity for either lake will be used for makeup water for WCGS. Staff Testimony, p. 20. Nevertheless, releases for water quality from such reservoirs during their normal operations will pass on to Redmond and, therefore, are properly included in any yield analysis of Redmond. Withdrawal of water for cooling WCGS will adversely affect Redmond during the drawdown associated with the hypothesized drought of record. *Id.*, p. 22. Presently, Redmond is operated so that the water level and the surface area vary with the time of year. *Ibid.* The present surface area is 9400 acres (at 1039 feet MSL) and the minimum is 7650 acres (at 1036 feet MSL). Salk Affidavit, p. 2; Staff Testimony, p. 22. This current fluctuation of the water level during different seasons of the year was recommended by the Kansas Forestry, Fish and Game Commission to the Corps of Engineers in an effort to enhance fish spawning and waterfowl attraction. Exhibit 18, p. 4; Tr. 3705-3708. Applicants' original yield analysis, based on the assumed Corps of Engineers sedimentation rate and allocation between the conservation and the flood pool, indicated a maximum drawdown of Redmond to 1030.3 feet MSL, and resultant capacity of 12,700 acre-feet. Staff Testimony, p. 9. The principal impacts expected by the Staff as a consequence of this drawdown are an increase in mud flats (which will be occupied by plant communities similar to those now growing around the reservoir during water level fluctuations), a temporary relocation of waterfowl from Redmond to other nearby open water bodies (including the cooling lake), and a stressing of the fish population in Redmond. Staff Testimony, p. 22-27. This drawdown is expected to discourage temporarily hunting, fishing and recreation. However, in the case of fish, the Staff testified that it is possible that the drawdown could have a desirable effect in restoring balance to the reservoir fish population. *Ibid.* By comparison, Applicants' revised yield analysis indicated that, should the postulated drought occur in the year 2013, maximum drawdown of the reservoir during the 50-year recurrence drought would decrease Redmond's size from 5690 acres at 1039 feet MSL to

1070 acres at 1026.6 feet MSL.²¹ Salk Affidavit, p. 2; John Redmond Reservoir Elevation-Area-Capacity Table following Eddlemon Affidavit. With respect to the greater drawdown levels, the Staff testified that waterfowl impacts would be similar to those described at the 1030.3 MSL, although there could be a greater concentration of waterfowl on the lake during the October-April period. The effects of increased mud flats would also be similar to those described for 1030.3 MSL. Salk Affidavit, p. 3. In the case of impacts on aquatic biota, the Staff indicated the adverse effects of drawdown would be essentially the same in kind as those considered earlier but of greater severity, e.g., greater crowding of fish, probable fish kills, reduced water quality, and far less attraction for most fishermen (estimated to be about 19,000 in 1974, Tr. 5139) and other recreationists.²² Eddlemon Affidavit, p. 2. The Staff indicated that upon reflooding the reservoir could take on many of the characteristics of new reservoirs. *Id.*, p. 3. Particularly, the fishery may be rejuvenated with more desirable species comparable to those observed in new reservoirs for the first few years. However, proper culling, stocking and other management techniques may be necessary. *Ibid.* This rejuvenation would likely occur even if the reservoir were to be made essentially dry, although restocking would almost certainly be required in that event. *Ibid.* If reduced to the order of 700 acres, commercial fishermen could be utilized to harvest the fish remaining in order to start anew. Management techniques which could be used to rejuvenate the fishery would include use of rotenone poison if the reservoir were reduced to 100 acres. Tr. 5191, 5190; 5142-5143. The cost of restocking the reservoir, in the event it became necessary, would depend on the number of species restocked. Present estimates for large mouth bass ranged from \$15 to \$25 per acre (80-100 fingerlings per acre). The Staff indicated that the cost estimates provided were tentative, being based on conversations with the Kansas Forestry, Fish and Game Commission, and could change based on actual study. Tr. 5190-5193. The Staff concluded that the impacts from drawdown of Redmond during drought conditions would be temporary in nature and would not constitute long-term detrimental impacts. Salk Affidavit, p. 4; Eddlemon Affidavit, p. 4. The Board concurs that the

²¹ This level should not be taken as an absolute value, but only as one estimate of what could occur in the future. The minimum level achieved could be either higher or lower depending on the length (and severity) of the drought when actually experienced. However, 1026.6 MSL is the level one would expect based on Applicants' simulation study if the historic drought-of-record were to be exactly repeated, an event the Staff identified as having a probability of practically zero. Hawkins Affidavit, p. 3. The consequences of lower reservoir levels are discussed below.

²² Although adverse conditions might exist periodically over a five-year span, the period of maximum drawdown would exist for only six to eight months. Tr. 5139, 5176. Since rejuvenation of the fishery may take place over a one- to two-year period after the drought, the total period during which adverse conditions exist may be about seven years. Tr. 5138, 5139.

impacts would be temporary in nature but that adverse effects could exist for a period of 1-5 years and that normal recreation uses may be affected for a period of as long as 7 years.

24. An assessment of the impact of WCGS cooling water withdrawal from Redmond on downstream users must be considered in the context of the assumptions utilized by Applicants in their detailed sequential operation yield analysis. Staff Testimony, pp. 13-17. Applicants' yield analysis methodology simulates operation of the Neosho watershed system. Bhamidipaty Testimony on Contention I-1(a), Figure I-1(a)-1. In accordance with State law,²³ Neosho River flows (to the extent they exist during the drought) will be passed through Redmond as necessary to satisfy senior downstream appropriators. Both the KWRB and the Kansas Department of Agriculture, Water Resources Division, compiled a list of water rights on the Neosho. Staff Testimony, p. 13. The Staff examined both of these lists to determine those which were senior in time to the

²³The Board expressed an interest in the fundamental basis for determining the rights of various appropriators, including municipalities. Tr. 4251. In addressing this question it is worthwhile to set out at length Section 82a-707 of the Kansas Statutes entitled "Principles Governing Appropriation; Priorities."

(a) Surface or ground waters of the State may be appropriated as herein provided. Such appropriation shall not constitute ownership of such water, and appropriation rights shall remain subject to the principle of beneficial use.

(b) Where uses of water for different purposes conflict, such uses shall conform to the following order of preference: Domestic, municipal, irrigation, industrial, recreational and water power uses. However, the date of priority of an appropriation right, and not the purpose of use, determines the right to divert and use water at any time when the supply is not sufficient to satisfy all water rights that attach to it. The holder of a water right for an inferior beneficial use of water shall not be deprived of his use of the water either temporarily or permanently as long as he is making proper use of it under the terms and conditions of his water right and the laws of this State, *other than through condemnation*. (Emphasis added.)

(c) As between persons with appropriation rights, the first in time is the first in right. The priority of the appropriation right to use water for any beneficial purpose except domestic purposes shall date from the time of the filing of the application therefor in the office of the chief engineer. The priority of the appropriation right to use water for domestic purposes shall date from the time of the filing of the application therefor in the office of the chief engineer or from the time the user makes actual use of water for domestic purposes, whichever is earlier.

(d) Appropriation rights in excess of the reasonable needs of the appropriators shall not be allowed.

Paragraph (b) lists domestic, municipal and irrigation uses ahead of industrial uses, such as WCGS. However, the paragraph further provides that priority is to be afforded in accordance with date and not with use. Additionally, it is provided that a holder of a domestic, municipal, or irrigation water right can only defeat the right of a prior-in-time industrial user making proper use of the water under the doctrine of condemnation.

“water reservation right” of KWRB to the stored water in Redmond and whose priority the Applicants, by virtue of their contract, assume. The Staff concluded that all senior rights (including that of the Kansas Forestry, Fish and Game Commission) could be satisfied during a drought-of-record without impacting on the 41 cfs yield (until 2004 and 38.5 cfs thereafter). Staff Testimony, p. 17. The Staff indicated that it appeared reasonable to discount some of the senior downstream water rights, since they had not been reported as having been used for “a lawful and beneficial purpose for three successive years or more.”²⁴ *Id.*, p. 14. The Staff considered that the Kansas Forestry, Fish and Game Commission water rights for the Neosho Waterfowl Management Area could also be discounted, since during periods of assumed low flow water withdrawals cannot presently be made due to the nature of the diversion at that location. *Id.*, p. 15. However, the Staff concluded that, even if those rights which may have been abandoned and the rights for the Waterfowl Management Area were included, the requisite yield would still be obtainable. *Id.*, p. 16; Tr. 3534-3535.

25. The Staff also calculated flow rates in the Neosho River immediately downstream from the Redmond Dam both with and without diversion of water for WCGS for the assumed drought-of-record. Staff Testimony, p. 18. The calculations show that, while there is a reduction of the river flow during some portion of the drought-of-record due to the diversion of water to WCGS, the downstream river flow during the worst part of the drought is the same as would have occurred during natural conditions. This is because the water surface level in Redmond would be below conservation level and water would only be released for water quality purposes. *Id.*, pp. 18-19. On this basis, the Staff concluded that the presence of WCGS should have a minimal effect on availability of water to downstream water right holders. *Id.* p. 18. The Staff’s assessment also considered impacts from the Neosho Waterfowl Management Area which lies adjacent to the Neosho River about 90 miles downstream of Redmond. *Id.*, p. 27. Water cannot be withdrawn from the Neosho when the flow is less than about 200 cfs. *Ibid.* The Staff concluded that WCGS operation could be reasonably expected to extend the normal effects of drought (including suspension of use of the salt marsh) for up to a period of 5 years rather than two periods of dry pool areas, one of 3 years duration and one of one year’s duration, if WCGS were not in operation. *Id.*, p. 30. Since the area which would be subjected to additional stress by plant operation would be relatively small and frequency of occurrence of drought conditions would be quite low, the Staff concluded that this potential impact of plant operation would be acceptable. *Id.*, p. 31. The Board concurs that the water requirements of downstream users with senior rights could be satisfied during WCGS cooling water withdrawal from

²⁴K.S.A. § 82a-1313.

Redmond even under drought-of-record conditions and that the potential impact of plant operations on other downstream use would be acceptable.

B. Contention I-4(a)

The Environmental Report is inadequate in that it fails to assess:

(a) The effects on agricultural needs of the removal from agricultural production of the approximately 10,500 acres of currently productive farmland.

26. Both Applicants and the Staff presented testimony by expert soils scientists on the effect of removing 10,500 acres from agricultural production. Intervenors presented no testimony on this issue.

27. Of the total site area of 10,500 acres, about 8,800 acres have been classified as cropland or rangeland, presently used for agricultural production. Of the 5,290 acres to be used by the plant, 4,209 acres are productive agricultural land. Withdrawal of 4,209 acres from agricultural land would reduce the total land in farms in Coffey County by 1.1%; withdrawal of 8,800 acres would reduce the total land in farms in the county by 2.3%. Horn Testimony,²⁵ pp. 2-3. Removing the cropland on the developed portion of the site would reduce Coffey County crop production by about 2% and Kansas crop production by about 0.02%. Withdrawing all site rangeland would reduce county rangeland by 2%. The total value of production from all agricultural uses of this land would be about \$1 million (1973 prices), which is about 4% of Coffey County production. *Id.*, pp. 4-6.

28. From the standpoint of agricultural production, the site contains no areas of unique or special importance. Kline Testimony,²⁶ pp. 7-9. None of the soils on the site is considered Class I as classified by the Soil Conservation Service of the U.S. Department of Agriculture, and thus none is considered "prime farmland." Horn Testimony, pp. 10-11; Kline Testimony, p. 7; Tr. 2479-2480, 2487-2488. Coffey County is comprised of 5.5 percent Class I land and Kansas, 7.3 percent Class I land. Horn Testimony, p. 13. Almost two-thirds of the total site is comprised of soils which require special conservation management, which are marginal for cultivated crops, or which are unsuited for cultivation. *Id.*, p. 12. Although productivity could be improved with inputs such as fertilizers, there is no reason for concentrating such inputs in Coffey County; in fact, such inputs will have a greater economic return when applied to better soils. *Id.*, p. 15; Tr. 2476-2477.

²⁵Testimony of Merlin E. Horn on Contentions I-4(a) and (b), following Tr. 2465 (hereinafter "Horn Testimony").

²⁶Supplemental Testimony of Jerry R. Kline on Contention I-4(a), following Tr. 2486 (hereinafter "Kline Testimony").

29. Neither national nor international agricultural considerations warrant concern over the removal of the site from agricultural production. Nationally, harvested farmland is about 340 million acres as compared to a total cropland of 472 million acres, thus allowing an ample margin for expansion. Kline Testimony, pp. 10-11. The agricultural inventory for the State of Kansas has been estimated at 49 million acres. *Id.*, p. 17. There is a sufficiently abundant supply of suitable land during the expected life of WCGS so that the site area will not be needed to fulfill presently foreseeable local, regional, and national needs. Horn Testimony, pp. 16-17. In the unforeseen event that site property should be needed in the future for agricultural production, most of the site would be reclaimable for productive agriculture. Kline Testimony, p. 21.

30. The Licensing Board finds that the removal of site land from agricultural production has been adequately considered. Loss of production on this land will have a small impact on local production but will be negligible compared to regional and national agricultural production.

C. Contention I-7

The Applicants' proposed onsite spent fuel pool does not have adequate capacity for storage of the spent fuel. The need for such capacity will be substantially greater than anticipated because of the unavailability of adequate reprocessing or offsite spent fuel storage facilities.

31. At the present time, a number of operating reactors are at or approaching the point where the fuel normally discharged at refueling cannot be accommodated in their spent fuel pools. Miller Testimony,²⁷ pp. 1-3. The NRC has received numerous applications for authority to modify the fuel storage racks to substantially increase storage capacity and several of these have been granted. *Id.*, p. 4; Tr. 2074-2075. In some cases, plants do not have the capability to discharge the entire reactor core into the fuel pool. Miller Testimony, p. 3; Tr. 2093. However, there is no NRC regulatory requirement that such capability must be maintained. Miller Testimony, p. 3; Tr. 2029-2030, 2100. Although such a reserve is considered operationally desirable for carrying out infrequent maintenance such as the ten-year inspection program, there is no safety reason for maintaining a full core storage reserve. Tr. 2065, 2092-2093, 2109-2110.

32. In addition to increasing onsite storage, offsite spent fuel storage facilities currently exist at Morris, Illinois, and West Valley, New York. Application has been made for approval of spent fuel storage at Barnwell, South Carolina. Exxon has recently filed an application to construct a new offsite storage

²⁷Supplemental Testimony of James R. Miller on Contention I-7, following Tr. 2077 (hereinafter "Miller Testimony").

facility, large enough to store about 250 reloads (more than 80 full cores). Miller Testimony, p. 5; Tr. 2063, 2075, 2078. Other storage possibilities include intersite transfers of spent fuel. Rider Testimony,²⁸ p. 3; Tr. 2041-2042.

33. As set forth in the Safety Analysis Report, the WCGS spent fuel pool is sized to hold 350 fuel assemblies (1.8 cores). Tr. 2023, 2044. With this capacity, fuel storage would not affect plant operation for more than seven years following commencement of operation.²⁹ Miller Testimony, p. 7. Applicants have determined that WCGS fuel pool storage capacity can be increased to 612 assemblies (3.2 cores) by changing the design of the fuel storage racks. This change would provide seven years of normal fuel discharge with a full core storage reserve or ten years of normal fuel discharges without full core storage reserve. Rider Testimony, p. 2; Tr. 2023-2024, 2026-2027, 2044, 2056-2057. The cost of increasing the storage capacity to 612 assemblies is estimated at about \$2 to \$3 million. Tr. 2028. It is believed that a further increase in capacity to 850 assemblies can be accommodated by the WCGS pool. This capacity would be enough for thirteen years operation without full core reserve or ten years with full core reserve. Tr. 2068-2069.

34. Thus, Applicants have many years before any determination need be made for further additional spent fuel storage capacity. With the 3.2 core capacity, no operational restrictions for WCGS would be incurred until at least 1993 even if no offsite spent fuel shipments were made. Rider Testimony, pp. 2-3. Even if spent fuel had already been discharged into the pool, storage capacity could still be increased. Tr. 2060-2063.

35. In addition to increasing the capacity of the presently planned WCGS fuel pool, an additional onsite storage facility could be built to accommodate all the spent fuel which would be generated over the life of the facility. Such a facility, which could be built in two to three years, would cost an estimated \$20 million. Rider Testimony, p. 3; Miller Testimony, p. 10; Tr. 2064-2065, 2068, 2106-2108. Other alternatives would include storage in offsite facilities such as those described above and intersite transfers of spent fuel. Rider Testimony, p. 3; Tr. 2041-2042.

36. Given the long time that Applicants have before WCGS operation would be affected by fuel storage limitations, the relatively short time for implementing remedial steps such as increasing onsite storage, and the feasibility of installing onsite facilities to store all the spent fuel, reprocessing facilities will not affect operation of WCGS. Rider Testimony, pp. 1-3. Delaying reprocessing would have the advantage of lowering the fuel activity for shipment and alleviat-

²⁸ Testimony of R.L. Rider on Contention I-7, following Tr. 2019 (hereinafter "Rider Testimony").

²⁹ Three to four years following commencement of operation if provision is made for a full core storage reserve.

ing any bottlenecks at offsite storage and reprocessing facilities. Tr. 2020-2021, 2047.

37. Based upon the uncontroverted evidence, the Licensing Board finds that Applicants have provided adequate capacity in the WCGS onsite spent fuel pool and that the costs of increasing the capacity prior to operation, if this should be done, would not significantly affect the cost-benefit balance. The proposed findings of the State of Kansas that are judgmental or conclusionary (particularly proposed findings 7 and 10) are rejected to the extent that they are inconsistent with the above findings.

D. Contention I-12

The Applicants' Environmental Report is inadequate in that it assumes a sufficient supply of uranium for the lifetime of the WCGS without demonstrating that such uranium will in fact be available.

Contention I-13

The Applicants have failed to detail the extent to which an assumed fuel supply for the WCGS is dependent on the implementation of the breeder reactor program or the plutonium recycle program by the AEC. The dangers inherent in supplying fuel to a plutonium reactor have not been fully assessed, and such assessment is essential to the safety and environmental impact of the proposed facility. There should be no licensing of construction or operation of facilities which are justified in whole or in part by the nonexperimental recycle of plutonium prior to completion of the AEC's environmental review and final decision on plutonium recycle and the commercial use of the breeder reactor.

38. The Staff presented testimony on uranium resources by John A. Patterson, Chief of the Supply Evaluation Branch of the Division of Nuclear Fuel Cycle and Production, U.S. Energy Research and Development Administration (hereinafter "ERDA"). Mr. Patterson, although not a geologist, has been involved in exploring for, estimating, evaluating and studying domestic and foreign uranium resources since 1952. Qualifications of John A. Patterson, following Tr. 526; Tr. 1045-1051. Applicants presented the testimony of Dr. Richard H. DeVoto, a uranium geologist who teaches uranium geology and exploration and conducts uranium exploration and evaluation programs for mining, oil and utility companies, and of Seymour Jaye, Vice President and General Manager of the Utilities Division of S.M. Stoller Corporation, which assists utilities in uranium purchases and performs industrywide studies on uranium supply. Mr. Jaye is also president of a Stoller subsidiary which is operating manager for a utilities uranium mining operation in Wyoming. Qualifications of Richard H. DeVoto,

following Tr. 855; Qualifications of Seymour Jaye, following Tr. 860A; Tr. 891. Intervenor's witness Alfred James, a petroleum geologist, testified on treating estimates of both known reserves and undiscovered resources. James Testimony,³⁰ p. 1; Tr. 805, 808, 837.

39. There are two matters involved in the determination whether or not there is a sufficient supply of uranium for the lifetime of this (or any other) facility—the supply and the demand. We shall take up first the supply question.

40. Mr. Patterson, a recognized authority in this area, presented the ERDA estimates of the available supplies.³¹ He has testified on this subject in numerous recent hearings, and his testimony, outside of minor updating, has been the same in each case. Since all other estimates of U.S. uranium supplies appear to be based on the data of ERDA (and its predecessor, AEC), it may be useful to summarize the salient features.

41. ERDA classifies the potential supplies into two major categories—reserves and resources. Reserves are those ore bodies about which ERDA has the highest assurance regarding their magnitude and economic availability. Estimates of reserves are based on detailed sampling data, primarily from gamma ray logs of drill holes. The available data, including detailed studies of feasible mining, transportation and milling techniques and costs are used to estimate the reserves in individual deposits. The reserves are sufficiently well delineated by drilling and sampling that decisions can be made to proceed with production. Patterson Testimony, pp. 4-5; Tr. 542, 601, 645.

42. Resources are ore bodies which are known to exist or which are believed on the basis of geological information to exist, but about which not enough information is known to put them in the reserves category. The amount of available information about each ore body will vary widely. In some cases the body will be very well established, but the drill holes delineating may not be closely enough spaced to permit accurate enough estimates of its extent. At the opposite end of the spectrum, the only information may be that there are geologic formations considered to be favorable for the occurrence of uranium deposits. ERDA divides the resources category into three sections: probable resources, possible resources, and speculative resources. Probable resources are those contained within favorable trends in productive uranium districts. They are essentially extensions of known ore reserves where the extensions are known to exist from drilling data or outcroppings and quantitative estimates of the resources can be made by comparisons with the known reserve body, but the delineation is not sufficient to satisfy the requirements for classification of reserves. Thus, the reliability of estimates of probable reserves is quite high. The

³⁰ Testimony of Alfred James III, following Tr. 803 (hereinafter "James Testimony").

³¹ Supplemental Testimony of John A. Patterson on Contentions I-12 and I-13, following Tr. 528 (hereinafter "Patterson Testimony").

estimates of possible reserves are somewhat less reliable. These generally are still in geologic provinces and formations that have been productive but are outside of the identified mineral trends. Again, quantitative estimates are made by comparison with the known and well-defined deposits. The third subcategory is speculative resources. These are located outside of formations or geologic provinces that have been productive, in areas which, based on evaluation of available geologic data are considered to be favorable for the occurrence of uranium deposits. Estimates of these resources are least reliable. Patterson Testimony, pp. 4-6; Tr. 542-544, 646-649.

43. ERDA also classifies reserves and resources by "forward costs." Forward costs are the production costs yet to be incurred before the uranium can be brought to the market in the form of U_3O_8 or yellowcake. There is only a nebulous connection between forward cost and market prices. Market prices of uranium from any given ore body will, in general, reflect a combination of already incurred costs, forward costs, and profit, perturbed by the various economic factors affecting the market place.

ERDA divides reserves and resources into those having forward costs of less than \$10 per pound, \$10-\$15 per pound, and \$15-\$30 per pound, all expressed in current dollars.³² This classification by costs is useful for some purposes, but for the considerations undertaken here is unnecessary, since the uranium in all of these subdivisions could come to the market within the general price range used in the various fuel cost estimates put forth by the parties. For this reason, we will lump all U_3O_8 having a forward cost of \$30 per pound or less.

44. ERDA's estimate shows reserves of 600,000 tons, probable resources of 1,060,000 tons, possible resources of 1,270,000 tons and speculative resources of 590,000 tons. In addition, ERDA estimates that in the period 1975-2000 90,000 tons will be available as byproducts of phosphate and copper production and that from 2000 to 2020 an additional 150,000 tons will become available. These amounts are considered as reserves, making the total reserves 840,000 tons. The total of reserves plus resources is 3,760,000 tons (Patterson Testimony, Figure 3).³³

45. The relationship of reserves and resources deserves a further word. The principal method of additions to reserves is the development of sufficient additional data on a given resource (usually in the probable classification) to satisfy the requirements for categorization as a reserve. Acquisition of the additional data requires substantial capital investment and apparently the industry has little incentive to make this investment until it appears that mining of that ore body is imminent. Thus the mining companies concentrate on the next 5 to 15 years and

³² Thus last year's \$10 per pound U_3O_8 may be next year's \$15 per pound U_3O_8 .

³³ The ERDA report from which these data were taken was apparently published in 1975. A later report (not in evidence) as of January 1, 1976, shows some changes, but they are not substantial.

attempt to define additional reserves at a rate that will provide for their needs for a limited time into the future. This, of course, is frustrating to the utility and government planners who are looking much further into the future to determine the adequacy of supplies (as well as to licensing boards who must make present judgments of probable future events). A slim ray of light has appeared, however, since recent market conditions seem to have led to an increase in developmental drilling. The results of this over the next several years should aid in future judgments of the degree of success to be anticipated in conversion of resources into reserves. Patterson Testimony, pp. 7-8. Figure 9; Tr. 645-657, 693-694.

46. The reserves and resources discussed above are the domestic supplies presently estimated by ERDA to be available at a forward cost of \$30 per pound or less in current dollars. There are several other potential sources of supply worth noting as part of the long-range picture, although we will not use them quantitatively in our assessment. First, there is an increasing effort to identify additionally low-cost resources. Second, starting in 1977, enrichment of foreign uranium will be allowed. Although future availability of foreign uranium is uncertain because of the uncertainty of foreign needs, 41,000 tons is presently under contract for future delivery to U.S. customers. Third, there are large amounts of domestic uranium available at forward costs in excess of \$30 per pound. Although the amounts are known to be large, relatively little exploration work has been carried out to better define the resource, because they have been beyond the range of economic interest. This situation has recently been altered, however, by changes in fossil fuel costs. (One hundred dollars per pound U_3O_8 has been estimated to result in fuel costs roughly equivalent to those for \$12 per barrel oil.) An example of such a deposit is the Chattanooga shale in Tennessee. This material has a uranium content of 60 to 80 parts per million and, although the amount of material to be mined might be comparable to the amount of material mined for coal having the equivalent heat energy, the deposits contain in excess of 5,000,000 tons of U_3O_8 producible at a cost in excess of \$100 per pound. Other low grade ore bodies include materials susceptible to production of U_3O_8 in the \$55-\$70 per pound range by open-pit mining and as much as 30,000,000 tons in the \$120-\$150 per pound range by underground mining. Current programs being undertaken by ERDA are expected to produce substantially more information about both high grade and low grade resources over the next several years. Patterson Testimony, pp. 9-25; DeVoto Testimony,³⁴ pp. 2-3; Tr. 534-540, 544-548, 550-551, 569-571, 727-728, 868-873, 895-899-904.

47. There was little dispute as to the magnitude of presently forecasted uranium reserves. The Intervenor's witness had no estimates of his own as to reserves and acknowledged Mr. Patterson's authority in that area. Tr. 797-798, 808. He did, however, assert that resources characterized by him as being "undiscovered" should not be used as a basis for capital expenditures for an

³⁴Testimony of Richard H. DeVoto on Contention I-12, following Tr. 859.

expensive facility, but only as a goal for exploration and that known supplies would be inadequate for the operation of the Wolf Creek facility. His testimony was based primarily on a USGS document which, at first glance, appeared to be in contradiction of the ERDA estimates. Subsequent testimony, however, showed that the document was based on AEC estimates of an earlier date than the current ERDA estimates and that the positions of the two agencies were consistent with each other. Exhibit 15; Tr. 586-590, 845.

48. Use of the uranium supply requires removal from the earth and processing to convert the ore into U_3O_8 . Current domestic production capability is about 16,000 tons of U_3O_8 with current requirements about 11,500 tons. Industry has already reported plans to expand capacity to 25,000 tons per year by 1979. Patterson Testimony, p. 3; Tr. 562-565, 706-707. The peak production requirements for the 236 plants currently operating, under construction or planned would be about 51,000 (without recycle, 0.3% tails) or 33,000 tons (with recycle, 0.2% tails) and would occur in 1985. Patterson Testimony, p. 4; Tr. 565, 719-720. This level of expansion can be achieved by industry. Tr. 721, 892-894. Although the cost to increase production capacity would be substantial, it would be a small part of the total cost of the nuclear facilities which that capacity would serve. Tr. 572-573.

49. We come now to the requirements portion of the supply-demand question involved in a determination of whether the supply of uranium is adequate. There are two entirely different ways of determining uranium requirements and much of the examination of some of the witnesses was confounded by lack of recognition of this difference. The first method is to define the requirements as the amount of uranium that will be needed *by some certain date* for a specified program of reactor construction. For example: How much uranium will be used by 2000 if, in addition to the reactors now operating or under construction, 15 new reactors are started each year? The second method is to define the requirements as the amount needed *throughout their lifetimes* for some specified number of reactors. For example: How much uranium will be required throughout their lifetimes for the 236 reactors now operating, under construction, or planned? Each method has been used and for a particular purpose one may be more appropriate than the other. The first, for instance may be more useful if one wishes to know the needed capability of the mining and milling industries in some future year. For our purpose of judging the adequacy of uranium supply; however, the second method appears to be most meaningful, since it is based on the need for a lifetime supply of fuel for this facility, and is the method the Board will use. We will, in fact, consider precisely the question posed in the second example above, noting that the 236³⁵ reactors referred to

³⁵Mr. Patterson testified (Tr. 529-530) that at the beginning of 1976 the number was 238, although it was 236 at the time he performed his calculations. The latter figure will be used in our discussions.

includes this one and at least 21 planned but not yet ordered reactors. Since the findings required of us relate only to Wolf Creek, an answer to the question posed will suffice, although the results can be extrapolated as one desires.

50. The U_3O_8 requirements for a given reactor are determined by a number of factors, the most important of which include the reactor design, the length of the operating lifetime, the uranium enrichment plant tails assay and whether or not the uranium or plutonium or both are recycled. All reactors of current design consume about the same amount of U_3O_8 per megawatt hour and, within the accuracy needed here, differences between them need not be further considered. With regard to operating lifetime, the ERDA calculations are based on a 30-year reactor life and a "moderately high" capacity factor. The ERDA data are calculated for 0.2% and 0.3% enrichment tails and for no recycle, uranium only recycle, and uranium and plutonium recycle. These alternatives will be discussed further below. The requirements calculated by ERDA appear in Table 1 of the Patterson Testimony and range from 900,000 tons (for 0.2% tails and plutonium and uranium recycle) to 1,455,000 tons (for 0.3% tails and no recycle) for the lifetime of the 236 operable, being built, and planned reactors having a total electrical capacity of 234,900 megawatts. The often-quoted rule of thumb of 5000 tons per 1000 megawatts lies about in the middle of this range and corresponds well with the estimates for either 0.3% tails and full recycle or 0.2% tails and no recycle.

51. The management of the enrichment process has a strong influence on the uranium requirements and an understanding of the basic process is useful.^{35a} Natural uranium contains about 0.7% U-235. The typical power reactor requires uranium containing about 3% U-235. The enrichment plant produces material to satisfy this requirement by taking a batch of natural uranium and removing most of the U-235 from one portion of the batch and adding that U-235 to the balance of the batch. One then ends up with two portions—one enriched in U-235 and the other depleted of U-235. The first is the fuel used for the reactor, the second is the so-called tails. This separation does not occur in one step. The uranium goes through hundreds of "stages" in the enrichment plant, in each of which a little U-235 is removed from the depleted portion and added to the enriched portion. To perform each stage of the separation, energy must be expended. This energy is measured in a unit known as a "separative work unit" or SWU. The more stages the uranium goes through, the more depleted the depleted portion becomes and the more enriched the enriched portion becomes and the more SWUs are used. The process can be stopped at any point and the point at which it is stopped can be defined by the

^{35a} This description is based both on the record and on information generally available from standard sources. See, for example, Nuclear Chemical Engineering, Benedict and Pigford, McGraw Hill Book Company, 1957, and "Environmental Survey of the Nuclear Fuel Cycle," USAEC, November 1972.

extent of depletion of the tails portion. When we speak of enrichment tails assay, we refer to the amount of U-235 remaining in the tails. Thus 0.2% tails mean that of the original 0.7% U-235, five-sevenths have been removed leaving two-sevenths or 0.2% U-235. This process requires a certain number of SWUs. The process could have been stopped at a tails assay of 0.3%, thus saving a certain number of SWUs. This savings does not come without cost, however, because if the same enrichment of the product fuel is desired, the quantity put out by the plant for a given input quantity of natural uranium will be less with the 0.3% tails than with the 0.2% tails. To get out the same quantity and enrichment of product fuel requires more natural uranium input with a high tails assay than with a low one, although it requires less separative work. Thus, separative work and quantity of feed material can be traded off against each other. An example will demonstrate this. Assume that we want 100 kilograms of 3% enriched uranium as the output product. If natural uranium is used as feed material and the tails assay is 0.2%, the amount of feed material required would be 548 kilograms and the separative work required would be 431 SWUs.^{35b} If the tails assay is 0.275%, 625 kilograms and 361 SWUs would be required.^{35c} This change in tails assay, then, would require use of an additional 77 kilograms of natural uranium, but would save 70 SWUs. The choice of tails assay currently is made by ERDA, the operators of the enrichment plants, but there is currently a proposed change that would allow the customer to exercise some control over this at some time in the future.^{35d} If there is an abundance of both feed material and separative capacity, a choice of tails assay can be made, knowing the cost of each, on the basis of a simple dollar optimization. If either component is in short supply, the choice can be adjusted to favor that component. Several other points regarding this process should be mentioned. First, if the process is set up so that the tails have a relatively high enrichment, these tails can later be fed back into the plant and further depleted at essentially no more cost than if it were done in one step. Second, if recovered uranium from fuel reprocessing is to be recycled, it can be fed into the process in the same manner as natural uranium. In the typical fuel cycle, the enrichment of this material will be slightly higher than that of natural uranium, so each kilogram recycled will save more than a kilogram of natural uranium feed (or alternatively, will save SWUs).³⁶ Finally, there are two different forms of tails assay definition. This has sometimes led to confusion. These are "contractual" tails assay and "operating" tails assay. The first is the tails assay established by the enrichment contract between ERDA (or AEC) and the customer. This establishes the amount of feed

^{35b} 38 Fed. Reg. 21518 ff.

^{35c} 40 Fed. Reg. 1117 ff.

^{35d} *Ibid.*

³⁶ This advantage may be reduced by the fact that recycled uranium contains some U-236, a neutron absorber, and thus requires a slightly higher enrichment in the product fuel.

material the customer must supply and the number of SWUs for which he must pay. The second is the actual tails assay at which the enrichment plant is operated. This may or may not be the same as the contractual assay. At some or all times in the past, the operating tails assay has been significantly higher than the contractual value. This results in the government "subsidizing" the customer with regard to the amount of feed material furnished, but is balanced by the extra separative work paid for. From the point of view of fuel cycle costs for a particular power plant, the "contractual" tails assay, is the only one of importance. From the point of view of adequacy of uranium supplies on a national basis, however, the "operating" assay value is more important. This conclusion must be qualified to some extent by the facts that high enrichment tails can later be "mined," as described above and that the difference in feed material is supplied from government stock piles (which once were large but now are of unknown magnitude) which are not included in the reserves discussed earlier.

52. In considering the adequacy of uranium supply, the Board has determined that the proper tails enrichment assay to use is 0.2%. This judgment is based on the reasonable assumption that if uranium supply ultimately appears to limit light water reactor use, the enrichment process will be operated in such a way as to maximize the usable output. Additional monetary costs of doing this, even if it involves reusing higher enrichment tails, will be a small part of total power production costs.

53. Assuming 0.2% tails assay, the quantities of U_3O_8 required for the present 236 reactors operating, under construction or planned is 1,210,000 tons if there is no recycle, 1,010,000 if uranium is recycled, and 900,000 if uranium and plutonium are both recycled. Patterson Testimony, Figure 1. The Commission is currently engaged in a rulemaking proceeding to determine whether or not plutonium recycle will be permitted. In view of this, we will for the present purpose ignore the possibility of plutonium recycle. Further, since the record in this case does not indicate whether or not the economics of recycling uranium only would justify that procedure, we will consider only the no recycle situation.

54. The many alternatives have now been winnowed down to one manageable question. Are the presently known reserves and resource adequate to supply the 1,210,000 tons of U_3O_8 needed by the 236 reactors during their planned lifetimes? The present reserves consist of 840,000 tons. Of this total, a portion of the 150,000 tons considered to become available as a byproduct of copper and phosphate production during 2000-2020 will be available too late for use in these reactors. If this portion is assumed to be cut off at 2016 (the reactors under consideration will run until 2018) we should reduce the reserves by 30,000 tons. The remaining reserves are 810,000 tons. Thus 400,000 tons must be supplied from the deposits categorized as resources. These resources consist of 1,060,000 tons in the probable section, 1,270,000 tons in the possible section

and 590,000 tons in the speculative group. Patterson Testimony, Figure 3. In view of the definitions of the various groups, it is this Board's view that at least 400,000 tons will be available. More realistically, we believe that more than 1,000,000 should become available, since most of the probable resources, which total 1,060,000 tons, should be available and any shortfall in this should be made up by the possible and speculative resources. This would provide for approximately 100 additional plants.

55. Accordingly, the Board finds that a sufficient supply of uranium exists for the lifetime of Wolf Creek Generating Station and that this supply is not dependent on the breeder reactor or on plutonium recycle.

E. Contention I-14(a)

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

(a) Failure to account for costs relative to the environmental impact of the plant which will be imposed upon most persons who live near the plant during its operation and persons who work at the plant. At allowed rates of radiation release, there will be a measurable impact on public health, safety and welfare, and on the environment, which ought to be included in a cost benefit analysis even though they will not be direct costs to the plant.

56. Although the contention as written relates to the impact of radiological releases on both persons living near WCGS and the persons who work in the facility, the testimony on the contention was directed solely towards the exposure to plant workers. Tr. 3374; Frenkel Testimony, p. 6;³⁷ Kreger Testimony, p. 1.³⁸ Radiation exposure to persons at or beyond the site boundary is discussed in the section of this decision dealing with the NEPA evaluation.

57. The regulatory limits for occupational exposure set a whole body dose limit of 1-1/4 rems per calendar quarter (*i.e.*, 5 rem per year) or under specific circumstances 3 rems per calendar quarter (*i.e.*, 12 rem per year). 10 CFR §20.101. Actual 1974 occupational radiation exposures for the 32,000 monitored personnel at 32 light water power reactors indicated a mean exposure per individual of 0.74 rems. The monitored personnel included plant radiation workers, contract employees, utility employees and visitors. Of the 32,000 monitored personnel, more than half had no measurable exposure and only 103 had an annual exposure in excess of 5 rem. None approached the upper

³⁷Testimony of Jacob K. Frenkel on Contention I-14(a) Corrections and Curriculum Vitae, following Tr. 3341 (hereinafter "Frenkel Testimony").

³⁸Supplemental Testimony of William E. Kreger on Contention I-14(a), following Tr. 2851 (hereinafter "Kreger Testimony").

limit of 12 rem per year. Kreger Testimony, p. 2. The data available in the table presented by the witness do not permit a precise calculation of the total exposure, since the table lists only the number of people in each of several exposure ranges (0-1, 1-2, 2-3, etc., rem per year), but one can calculate the possible extremes. This calculation indicates a total exposure in the range of 8000-24000 man-rem. The midpoint of this range, 16000 man-rem for 32 reactors, corresponds remarkably with the Staff's estimate of 450 man-rem per reactor. The Staff's testimony further indicates that, based both on data showing a declining trend and on improvements in radiation protection, no substantial increase in radiation exposures among plant workers is expected over plant lifetimes. Better designs and operating procedures to be incorporated in newer plants such as WCGS are also expected to result in lower occupational exposure trends. Kreger Testimony, p. 3; Tr. 2864-2871. Awareness of radiation protection practices among plant workers is assured by the training program required of applicants and licensees by NRC. Tr. 2879, 3453.

58. Testimony presented by Dr. George V. LeRoy for the Staff and by Dr. Leonard A. Sagan for Applicants, both of whom have been directly involved for many years in the study of the medical effects of radiation and have written extensively in the field, concluded that effects of radiation on the plant operating force would be insignificant. LeRoy Testimony,³⁹ p. 6; Sagan Testimony,⁴⁰ p. 5; Tr. 2853-2854. Using the risk estimates of the BEIR Report,⁴¹ and assuming that 1000 persons received occupational exposure of 1.0 rem at WCGS,⁴² 0.06 excess cancer deaths per year would be predicted.⁴³ The BEIR Report estimates that the risk of cancer death would be increased 0.2% for persons above the age of 9 exposed to an annual 1 rem exposure. LeRoy Testimony, p. 3. The BEIR estimates are considered by Drs. LeRoy and Sagan to be conservative in that they assume linearity (despite the likelihood that there is no effect at low exposure levels) and ignore dose rate (notwithstanding the fact that radiation delivered at low dose rates has less effect than radiation delivered at higher dose rates). Sagan Testimony, pp. 2-3; Tr. 2852-2853, 2923-2934.

59. Testimony presented for Intervenors by Dr. J. K. Frenkel asserted that

³⁹ Supplemental Testimony of George V. LeRoy on Contention I-14(a), following Tr. 2851 (hereinafter "LeRoy Testimony").

⁴⁰ Testimony of Leonard A. Sagan on Contention I-14(a), following Tr. 2923 (hereinafter "Sagan Testimony").

⁴¹ Report by the Advisory Committee on the Biological Effects of Ionizing Radiation of the National Academy of Sciences, "The Effects on Populations of Low Levels of Ionizing Radiation" (1972) (hereinafter "BEIR Report").

⁴² The 32,000 monitored personnel referred to above represented the monitored personnel at 32 power reactors. Kreger Testimony, p. 2.

⁴³ For a work force of 100,000 continuously exposed to 1 rem/yr throughout their entire occupational lifetime (as compared to the 0.74 mean actual exposure per individual), the BEIR Absolute Risk estimate is 6 excess cancer deaths per year. LeRoy Testimony, p. 4.

genetic effects should also be considered and claimed that genetic defects from occupational exposure would range from 0.1 every ten years to 0.3 per year. Frenkel Testimony, pp. 4, 7-8. However, no evidence of human genetic defects from radiation has ever been found, notwithstanding an extensive effort made to identify such cases among the Japanese populations exposed to radiation from the Hiroshima and Nagasaki atomic bombs. A study of 73,000 pregnancies among that exposed population and of hundreds of Japanese who received exposures of several hundred rads revealed no genetic damage. Tr. 2937-2942-2943, 2950-2957, 2960-2963. Although genetic defects have been produced in animals by radiation exposure, the lowest dose at which this has been observed was about 50 rads. Tr. 2942-2943, 2955-2956.

60. Dr. Frenkel argued that, based upon health considerations, a coal plant was preferable to a nuclear plant. Frenkel Testimony, pp. 12-13. However, the one paper he cited which compared all the health effects of coal and nuclear plants found the health effects from nuclear power to be a small percentage of those attributable to a coal-fired generation. Frenkel Testimony, p. 14; Tr. 3437-3440. When Dr. Frenkel was asked about other comparison studies, the only one cited was by Dr. Sagan, in which Dr. Sagan concluded that the nuclear plant is far safer than the coal plant. Tr. 2963-2964; 3373. Dr. Frenkel's major argument in this regard appears to be that occupational risks in a coal plant can be reduced because workers are more familiar with and aware of those risks, while risks from radiation cannot be reduced since radiation cannot be seen, heard or smelled. Tr. 3441-3451. The Licensing Board finds no basis for this theory, particularly in view of Dr. Frenkel's commendations for the training received by nuclear plant workers, the watchfulness of the NRC, and his criticism of the relative lack of training in coal facilities. Tr. 3453-3454.

61. The Staff has estimated that the population dose to the WCGS plant work force will be approximately 450 man-rem per year. FES, §5.5.2.4. In Appendix I to 10 CFR Part 50, the Commission has established \$1000 per man-rem as the value to be used for making cost-benefit determinations regarding radioactive waste control equipment, although it recognized that there was no consensus on this value and indicated its plans for conducting further rule-making on the matter. Appendix I, §II.D; 40 Fed. Reg. 19439-19441 (May 5, 1975). Although we recognize that the use for which the value is being adopted here is somewhat different from that for which the Commission adopted it, the Board considers it a more appropriate value to use than the \$30 per man-rem value proposed by Dr. Sagan and also adopted by Dr. Frenkel. Testimony of Sagan, p. 4; Testimony of Frenkel, p. 6; Tr. 2967.⁴⁴

⁴⁴The value adopted by the Commission is an all-inclusive figure. Separate consideration, therefore, need not be given to the genetic effects alleged by Dr. Frenkel. Adoption of this value also makes unnecessary the adjudication of the differing numbers of cancers alleged by the several parties.

62. The Board finds that the cost associated with occupational exposure to radiation have been appropriately considered and they will be included in the Board's cost-benefit balance accordingly.

F. Contention I-14(b)

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

(b) An unrealistic assumption of the cost of borrowing money at the rate of 7-1/2% for construction of the project.

63. Since this contention relates to the cost of the plant, rather than to the capital component of the cost of electricity, the Applicants' testimony focused on the interest rate used for the allowance for funds used during construction (AFUDC). The Applicants' witness testified that both KG&E and KCP&L independently arrived at an AFUDC rate of 7-1/2%. This rate is used for all generating stations, whether coal-fired or nuclear, as well as for transmission lines, substations, and other facilities. Walker I-14(b) Testimony,⁴⁵ pp. 1-3. Although indicating that the rate could be larger, Intervenor later stipulated that 7-1/2% is a reasonable base. Tr. 3104-3105.

64. The AFUDC rate was determined by examining the weighted cost for each financing method. The weighted cost was determined for the period 1970-1975 by multiplying the average rate for preferred stock or the return on equity^{45a} by the average capitalization ratio and, for bonds and short term borrowings, by the net effective cost after income tax. For KG&E, the total weighted cost is 7.35%; for KCPL it is 6.67%. Walker I-14(b) Testimony, pp. 2-4 and Exhibits A and B attached thereto. Weighted costs for first mortgage bonds, pollution control bonds, and short term borrowings are net of income taxes because Applicants receive a reduction in income tax payments due to interest payments. *Id.*, p. 3. The Board has recalculated these weighted costs using, instead of average 1970-1975 costs, the highest interest rates paid during the period and found weighted costs of 7.84% for KG&E and 7.34% for KCPL. In view of recent interest rate changes, this calculation would probably represent an upper limit.

65. Cross-examination of the Applicants' witness focused on whether the interest cost should be calculated on a gross basis or net of income taxes. The

⁴⁵ Testimony of W.B. Walker on Contention I-14(b), following Tr. 2727 (hereinafter "Walker I-14(b) Testimony").

^{45a} The highest rate of return earned on equity during the period was used for the KG&E calculation. For that of KCPL, the average rate of return was used. Use of the highest rate for KCPL (11.3% in 1971) would have raised the total weighted cost from 6.67% to 7.01%.

witness affirmed the Applicant's position that cost should be calculated net of taxes and stated that the Kansas Corporation Commission has never permitted AFUDC on a gross income basis. Tr. 2731-2734. A review of the Applicants' Annual Reports in the application confirms that this has been the Applicants' practice in the past.

66. The Staff did not estimate an AFUDC rate for Applicants based on the weighted cost of capital. Rather, the Staff assumed that long term interest rates moderating at 8.5 percent would likely represent the upper limit of the cost of capital during plant construction. Nash Testimony,^{45b} p. 6. The Staff conservatively used the 8.5 percent level for computing that portion of the capital cost of WCGS attributable to interest during construction for the purpose of comparing nuclear and coal-fired plants. *Id.*, p. 5. While whether the use of an 8.5% gross rate or a 7.5% net rate is more appropriate for this purpose is arguable, it makes little difference in the end result—less than 2% of the cost differential.

67. The Board finds that a rate of 7-1/2% for the cost of borrowing money for construction of the project is reasonable for cost estimating purposes.

G. Contention I-14(c), (e), (f) and (j)^{45c}

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

- (c) An unrealistic assumption of a fuel cost of 5.7 mills/kwh.
- (e) Underestimating cost of fuel over the life of the plant in that Applicants have underestimated changes in the uranium, enrichment, fabrication and reprocessing costs.
- (f) Underestimating increases in fuel, storage and transportation costs because of the need to store waste fuel awaiting the availability of adequate reprocessing facilities. This cost should include deferred realization of the value of recovered uranium and plutonium at a discount of at least 8%.
- (j) Underestimate of waste management cost.

^{45b}Supplemental Testimony of Darrel A. Nash on Contentions I-14(b), (c), (d), (e), (f), (g), (h) (in part), (i), (j) and I-18, following Tr. 3130 (hereinafter "Nash Testimony"). This testimony supersedes an earlier version which was introduced following Tr. 1057. See 3128-3129.

^{45c}The Board's dissenting member comments that he does not understand the majority's rejection of the best evidence of fuel costs from the nuclear fuel supply contract, now required to be disclosed by another formation of a majority of this Board. His view is that the use of estimates is only justified when actual costs are not available. Further discussion of the majority's view of this matter is set forth at pages 28-30 of the dissenting opinion in our "Order Directing Public Disclosure of Prices of Fuel in the Uranium Supply Contract" dated November 24, 1976.

68. The Applicants and Intervenor stipulated to fuel cycle costs for use in this proceeding.⁴⁶ The agreed upon costs for the entire fuel cycle, on a 30-year levelized basis, were 10.5 mills/kwh (at 75% capacity factor), 10.7 mills/kwh (at 65% capacity factor), and 11.1 mills/kwh (at 55% capacity factor). Applicants considered the stipulated costs as a conservative, limiting case, Tr. 3060, and introduced testimony which presented a fuel cycle cost model developed by S.M. Stoller Corporation. *Jaye I-14 Testimony*.⁴⁷ The Staff did not join in the stipulation and presented its independent evaluation of fuel cycle costs. *Nash Testimony*, pp. 10-16, 27.

69. The stipulated fuel cycle costs assume that spent fuel would not be reprocessed, but that a "throwaway" cycle would be used. The effect of this assumption is to increase the levelized fuel costs by 0.8 to 1.7 mills/kwh. *Jaye I-14 Testimony*, p. 18; *Nash Testimony*, p. 31; Tr. 3057. Assumption of a "throwaway" cycle is a conservative approach since reprocessing capability may be in operation during WCGS' lifetime. *Nash Testimony*, p. 31; see also discussion of Contention I-7, *supra*.

70. Another conservatism in the stipulated fuel cycle costs is an assumed escalation rate of 6-7% over the lifetime of the plant. Tr. 3104. Using a model developed by the St. Louis Federal Reserve Bank projecting general escalation by projecting the GNP Deflator, Applicants' witness established three escalation cases: a 6% rate considered to be the maximum sustainable value; a return by 1980 to the average post-World War II value of 2%; and 3.5% rate considered to be reasonable considering recent actions of raw materials and energy suppliers. For the period 1975-2000, these cases would yield average annual increases of 2.6% (low), 3.9% (medium), and 6.0% (high). *Jaye I-14 Testimony*, pp. 12-13. If the stipulated costs had been based on the medium case, the stipulated fuel cycle costs would be reduced by 3 mills/kwh. Tr. 3055-3056.

71. A third conservatism is the assumed uranium prices. The stipulated fuel costs were based on uranium prices similar to the high cost case of witness *Jaye* of about \$46 per pound in 1980. Tr. 3056, 4494. Had a nominal uranium cost (*Jaye I-14 Testimony*, pp. 7-8) been used instead of the high cost, the stipulated costs would have been further reduced by one mill/kwh. Tr. 3056. The three examples of conservatism described above elevate the stipulated fuel cycle costs by 4.8 to 5.7 mills/kwh.

72. The Stoller fuel cycle cost model projects the costs of all goods and services used in the nuclear fuel cycle, using varying assumptions on escalation rate, U₃O₈ prices, enrichment, fabrication and reprocessing. The model is based

⁴⁶Table "Comparison of Energy Costs Nuclear and Coal," following Tr. 3051 (hereinafter "Comparison Table"). The Staff did not join in the stipulation.

⁴⁷Testimony of Seymour *Jaye* on Contentions I-14(c), (d), (e), (f), (j), following Tr. 3159 (hereinafter "*Jaye I-14 Testimony*").

on a cost plus rate of return analysis for each step in the fuel cycle and at each step considers a nominal cost case (pricing for a service averaged over all facilities providing such a service) and a high cost case (pricing appropriate to the highest cost facility providing the service). The model also considers prices established by Applicants' contractual arrangements, including the long term fixed commitments enrichment contract with ERDA for the WCGS' lifetime separative work requirements, a Westinghouse uranium and plutonium recycle fabrication contract sufficient for 20 years' operation, and the Westinghouse uranium supply contract now in litigation which would provide uranium for twenty years, with firm prices for the first seven years. Jaye I-14 Testimony, pp. 3-4. Based upon this analysis, the Stoller model projects on a 30-year levelized basis a nominal cost case without Westinghouse uranium of 6.4 mills/kwh; and a nominal cost case with high cost uranium of 7.4 mills/kwh. Other projections range as high as 9.0 mills/kwh for the high cost case with nominal escalation and without Westinghouse uranium. Jaye I-14 Testimony, pp. 14-16, Table 6.⁴⁸ This range compares to the 30-year levelized cost of 6.5 mills/kwh based upon the fuel costs set forth in the Environmental Report. *Id.*, p. 5.

73. The Staff's analysis of fuel cycle costs was based on ERDA and updated AEC estimates and predicted a 30-year levelized fuel cycle cost of 12.9 mills/kwh. Nash Testimony, pp. 10, 27. The Staff's evaluation is independent of prices established in Applicants' contracts for uranium and fabrication. *Id.*, p. 9. The Staff projected a 1982 U₃O₈ price, based on supply costs and rate of return consideration, of \$31.88 per pound. *Id.*, p. 13. Because of market influences and the possible course of uranium reserve development, the Staff increased this to \$40 per pound for use in the cost-benefit calculations. *Id.* p. 14. The \$40 per pound figure was indicated to be conservatively high in the Staff's opinion. *Id.* pp. 12-14; Tr. 1060-1061; Supplemental Testimony of John A. Patterson on Contention 14(e) (in part), following Tr. 1051, p. 8; Tr. 1081. For enrichment costs, the Staff assumes enrichment charges equivalent to those which a commercial producer of separative work would charge. These charges are higher than the prices expected by Applicants under their long-term contract with ERDA which includes "full cost recovery." Imposition of the "commercially based" pricing used by the Staff would require Congressional action. Nash Testimony, pp. 14-15; Jaye I-14 Testimony, p. 4; Tr. 3163-3164. The Staff's estimates are based on a 65% capacity factor, Nash Testimony, p. 27, a level which the Staff believes to be conservative, *Id.*, p. 25. The Staff's estimate is based on an escalation rate of 8% to 1982 and 5% from 1982 to 2012 (equivalent to an average

⁴⁸The Stoller model was based on an 80% capacity factor. Only 25% of the fuel cost is sensitive to capacity factor. Should capacity factor change, this 25% would increase in inverse proportion to the change in capacity factor. Tr. 3162. For example, if the capacity factor were 60% instead of 80%, a fuel cycle cost of 9.0 mills/kwh would increase to about 9.75 mills/kwh.

rate of 5.5%) which was characterized as being conservatively high. Nash Testimony, p. 27; Tr. 1060-1061. The Staff used a discount rate of 8.5%, while both Applicants and Intervenor used 10%. Tr. 2383, 3071, 3105.

74. The Licensing Board has examined the range of projected nuclear fuel costs included in the record and concludes there is substantial utility in using those stipulated by Applicants and Intervenor as the appropriate ones for this proceeding. In so doing, the Board recognizes that there are significant conservatisms included in the stipulated costs particularly as concerns escalation, enrichment, fabrication and reprocessing costs. Thus, it appears quite likely that the range of costs projected by the Stoller model, on a 30-year leveled basis, of 6.4 to 9.0 mills (appropriately adjusted for capacity factor) will be those actually achieved during the lifetime of WCGS. Jaye I-14 Testimony, pp. 14-16, Table 6. However, as indicated, the stipulated values proved extremely useful in the proceeding and will be used for purposes of our evaluation. The Staff's values serve as a further conservative check on their use. In addition, since the stipulated fuel cycle costs assumed that spent fuel would not be reprocessed, the Board finds that it is not necessary to address further parts (f) and (j) of this contention.

H. Contention I-14(d)

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

(d) Overevaluating the average availability factor of the reactor in operation. For the first eight months of 1974, average availability factor for nuclear reactors was only 68.1% where "availability" is defined as the time the generator was in operation divided by the total time during the period. This is a slippage from the 1972 figure of 73% and the 1973 figure of 70%. The "capacity factor" of nuclear plants (which includes consideration of operating capacity as well as time on line) was only 56.6% through August 1974 compared to 58% in 1973. Thus, there is no basis for the assumed 80% factor applied in the cost-benefit analysis.

75. Applicants' Environmental Report calculated the direct benefits of WCGS using an estimated capacity factor⁴⁹ of 70% for the first nine months, gradually increasing to 80% after six years. ER, §8.1.1. The Staff used a range of capacity factors from 50% to 80%. FES, Table, 9.2. Applicants' cost comparison between nuclear and coal assumed a range of capacity factors from 58% to

⁴⁹Capacity factor is defined as the amount of net electricity output produced by a unit in a given period (here, a year) divided by the maximum net output the unit would have produced if operating continuously at maximum capacity. Nash Testimony, p. 23; Tr. 2155.

75%.⁵⁰ The energy cost stipulation between Applicants and Intervenor also uses a capacity factor range (55%, 65% and 75%). Comparison Table.

76. All parties agreed that simply averaging past capacity factor data was not an adequate method of predicting the lifetime capacity factor of the plant. The Applicants' witness pointed out that most large power plants, both fossil and nuclear, exhibited poor availability during their first years of operation and that the wide spread in these factors between plants and from year to year within plants indicated need for more detailed analysis, which they carried out. Jaye I-14 Testimony, pp. 19-24, Table 7-8, Figures 1-2. The Staff's witness agreed with this, further pointing out that the experience was limited and encompassed units of older design as well as current units. The Staff considered the frequency distribution of capacity factors to be a more useful measure for estimation than the average or mean of the historical data and used this method for its analysis. Nash Testimony, pp. 23-25, Table 7. The Intervenor's witness did not make an independent analysis, but pointed out that in order to get a true measure of capability factor, each data point must be analyzed to determine the exact reasons for its down time. Viren Testimony,⁵¹ p. 19. This was done by Applicants. Jaye I-14 Testimony, pp. 22-23, Table 8.

77. Applicants' analysis showed that for plants with Westinghouse nuclear steam supply systems, lifetime availability increases from the 65% to 70% range in the first year of operation to about 77% after about eight years. Lifetime capacity factor increases from the 53% to 60% range in year one to about 72% for the entire eight-year period. Jaye I-14 Testimony, p. 22, Figure 1. In examining the causes for losses in availability and capacity factor for Westinghouse plants, a major contributor was problems with the turbine generator systems. None of the plants comprising the composite plant used a General Electric turbine generator, the type to be used in WCGS. Because the historical performance of General Electric nuclear plant turbine generators has been very good, the lifetime average capacity factors can be adjusted to 65-70% in year one increasing to approximately 79% after eight years. *Id.*, pp. 22-23, Table 8, Fig. 2. The Applicant expects that further experience with the many units similar to this one will result in at least modest improvements in performance. *Id.*, p. 24.

78. The Staff's analysis showed that for both 1974 and 1975, the most frequent value of the capacity factor was in the 75-100 percent range. From 1973 through September of 1975, half of the plants had cumulative capacity factors above 60%. Nash Testimony, Table 7. The Staff concluded that it is reasonable to assume that, as experience is gained, many plants will operate at capacity factors in excess of 75 percent. For purposes of conservatism, the Staff

⁵⁰ Testimony of James R. Lucas on Contention I-18, following Tr. 2328, p. 9.

⁵¹ Testimony before the Nuclear Regulatory Commission (Re: Wolf Creek Generating Station Unit No. 1) by Michael A. Viren, Ph.D., following Tr. 1438 (hereinafter "Viren Testimony").

estimated benefits of the facility at a 65 percent capacity factor as a base case. *Id.*, p. 25.

79. The Board finds that an appropriate range of capacity factors for WCGS has been analyzed. Although somewhat better performance may eventually be realized, the Board finds that a reasonable and conservative range of values to use for this evaluation is 65 to 75%.

I. Contention I-14(g)

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

(g) Failure to consider the likelihood of contingency costs for increased safety requirements, which cause changes in design and operation, and associated maintenance.

80. WCGS has been designed to meet all established regulatory requirements. Schwoerer Testimony,⁵² p. 1. Neither Applicants nor the Staff could identify any future increased safety requirements which would significantly increase the cost of WCGS. *Ibid.*; Nash Testimony, p. 25. Intervenors' witness believed that an additional contingency of \$62.6 million should be considered. Comparison Table. Although some unspecified part of this amount was intended by Intervenors' witness to represent future back-fitting requirements, the only support for including this portion was a generalized impression that NRC requirements have been constantly changing. Tr. 3116.

81. Only one issue has been identified by Applicants, the Staff or the Advisory Committee on Reactor Safeguards which would require adding equipment of more than negligible cost. That issue, anticipated transient without scram, is currently under Staff review. Should the Staff accept Applicants' analysis, no design changes would be needed. If additional design features are needed, the added cost would be less than 0.1% of the overall plant cost. Schwoerer Testimony, pp. 1-2; Tr. 2497, 2501-2502, 2515.

82. It is, of course, possible that additional regulatory requirements could be imposed prior to plant operation. Applicants' witness did not consider this likely in view of the substantial conservatism in the WCGS design, provisions included to satisfy currently unresolved issues, and the stabilization of regulatory requirements. Schwoerer Testimony, p. 1; Tr. 2515. This stabilization is evidenced by the many regulatory guides which have been issued in the past several years as well as the requirement that more detailed design information be provided at the construction permit stage. Tr. 2512-2513, 2515.

83. The Licensing Board finds that the plant cost estimates have adequately

⁵² Testimony of Frank Schwoerer on Contention I-14(g), following Tr. 2496 (hereinafter "Schwoerer Testimony").

accounted for the possibility of future foreseeable cost increases due to increased safety requirements.

J. Contention I-14(h)

The Applicants' analysis of costs of the plant is inadequate and severely underestimates the entire costs of the facilities in the following manner:

(h) Underestimation of anticipated decommissioning cost.

84. As of the present time, decommissioning has been performed on commercial nuclear plants as well as on test reactors, research reactors and other nuclear facilities. Although these reactors are considerably smaller than WCGS, the technology used and the experience gained in these decommissionings and the component tasks to be completed can be applied to the projected decommissionings of the WCGS. Weinstein Testimony,⁵³ pp. 1-4; Scaletti Testimony,⁵⁴ p. 1. Applicants' witness, who had directly participated in decommissionings of the BONUS and Elk River facilities, presented detailed cost estimates for the three types of decommissioning: Class A (in-place containment), Class B (in-place isolation), and Class C (complete dismantling and site restoration). See generally Weinstein Testimony.

85. Class A decommissioning involves putting the reactor in a state of protective storage, and maintaining full plant security. Scaletti Testimony, p. 2; Weinstein Testimony, p. 1. Five tasks would be involved: licensing, removal of spent fuel, system flushing, shipment of radioactive wastes, and facility closeout. Based on detailed cost information from actual decommissionings, Applicants estimated that the capital cost would be about \$3 million (including 20% contingency) and operating costs (monitoring and security) about \$80,000 per year. Weinstein Testimony, pp. 42-44, 47.

86. Class B decommissioning would involve the decontamination of piping systems, encasing highly radioactive components in a concrete isolation structure, and sealing off structures in the nuclear portion of the plant. Spent fuel, demineralizer resins, filters, loose tools, etc., would be shipped offsite. The BONUS, Piqua and Hallam facilities have been decommissioned in this manner. Using cost data from BONUS and other decommissionings, the Applicants estimated that the capital cost would be about \$8 million (including 20% contingency) and the annual operating costs about \$30,000. Weinstein Testimony, pp. 1, 33-41, 46-47; Scaletti Testimony, p. 2.

87. For Class C decommissioning, the plant would be dismantled to below

⁵³ Testimony of Albert A. Weinstein on Contention I-14(h), following Tr. 2701 (hereinafter "Weinstein Testimony").

⁵⁴ Supplemental Testimony of Dino C. Scaletti on Contention I-14(h), following Tr. 2712 (hereinafter "Scaletti Testimony").

grade, all radioactive components shipped to an approved burial site, nonradioactive components removed for salvage or land fill, and the site restored using clean fill material. Weinstein Testimony, pp. 1-3; Scaletti Testimony, p. 2. Cost data were derived by the Applicant from the Class C decommissioning of the Elk River facility and, where Elk River data were not available, from the BONUS decommissioning. Weinstein Testimony, pp. 3-4. Separate cost analyses were performed for site and facility preparation, removal of spent fuel, decontamination and removal of pipes and equipment, removal of reactor vessel, vessel internals and biological shield, shipment and burial of radioactive wastes, and demolition. Allowing a 20% contingency, the total cost was estimated to be about \$48 million. Weinstein Testimony, pp. 5-32. The Staff, without having performed a detailed engineering analysis, placed a very conservative upper limit of \$83.4 million on the cost for complete site restoration. Scaletti Testimony, p. 4; Tr. 2714.

88. In response to the Licensing Board's inquiry, testimony was also presented on the costs of decommissioning the cooling lake after WCGS ceases operation. The lake could continue in use as a cooling lake for future generating stations (whether or not nuclear fueled) at no cost attributable to WCGS. The lake would be an asset of considerable value in view of the more limited future availability of plant sites and its use would pose no health or safety questions. Alternatively, the lake could be used for recreation; no decontamination would be required in view of the extremely low radionuclide levels. The cost of such use would be less than \$25,000 annually. Finally, the lake could be drained and the bed land released for unrestricted use. The worst case treatment to render the lake bed material secure from the standpoint of external exposure is estimated to cost from \$200,000 to \$600,000. Supplemental Testimony of Albert A. Weinstein on Contention I-14(h), following Tr. 4348; Tr. 4695.

89. Intervenors, although presenting no testimony estimating the costs of decommissioning, argue that the costs for Class C decommissioning (\$31.7 million in 1982 dollars) should be used, while Applicants believe that Class A decommissioning (\$2.4 million) is the appropriate method. See Comparison Table. Both parties arrived at the 1982 costs by using the Applicants' estimates of 1973 costs, escalating them to 2023 at 7% and discounting these figures to 1982 at 10%. Tr. 3105. Applicants and Intervenors agree that if there is to be another power plant on the site, Class A decommissioning is appropriate. Tr. 3085-3086, 3106. Intervenors argue, however, that the sedimentation rate in the John Redmond Reservoir indicates that there will be inadequate cooling water at the site by the end of the life of WCGS. Tr. 3106-3107, 3548-3553. Recognizing that a fossil plant would require somewhat less water than a nuclear plant and recognizing the shortage of plant sites in Kansas, the Board considers it likely that some type of power plant will occupy this site after the proposed facility is decommissioned. Thus, Class A decommissioning is the appropriate cost to be considered.

90. The Licensing Board finds that decommissioning costs have not been underestimated and that the appropriate cost to be considered is the cost of Class A decommissioning.

K. Contention I-17(b)

Applicants fail to adequately consider the use of an alternate site for the WCGS.

(b) Which would utilize land already committed to electric power generation, specifically, Belvue.

91. The Belvue site, located about 30 miles west-northwest of Topeka, is being developed by Kansas Power and Light Company (hereinafter ("KPL")), the principal owner of the site. The site is not within the certificated service areas of either KG&E or KCPL. Initial development consists of four 680 MW coal-fired units, scheduled to begin commercial operation in 1978, 1980, 1982, and 1984. Development of the site for coal units is already in progress with the first unit approximately 30% complete and the second unit underway. KG&E will own 20% of each of these four units. In addition to these units, KPL plans to develop the site to its full capability and to maintain at least the same share of ownership in any later units as it has in the initial four (64%). Arterburn/Lucas Testimony,⁵⁵ pp. 1-2; Boston Testimony,⁵⁶ p. 1; Tr. 2530, 2554, 3168. Although the Belvue site contains over 12,000 acres, such a large site was needed not only to provide coal storage and handling facilities and onsite impoundment of bottom and fly-ash, but also to accommodate a storage reservoir to provide water to cooling towers for the planned units. Boston Testimony, p. 1. Future capacity additions by KPL will be limited by water supply considerations. Arterburn/Lucas Testimony, p. 2, Tr. 2528.

92. In addition to KPL's intent to develop the full capability of the Belvue site for its own purposes and its location outside Applicants' service areas, there are other factors which precluded its consideration as an alternative to the Wolf Creek site. From a power supply standpoint, Belvue's more remote location from KG&E's loads would necessitate additional provisions for system voltage support, *i.e.*, installation of more power factor correction equipment and running of higher cost generation more of the time. Arterburn/Lucas Testimony, p. 3. Furthermore, additional transmission capacity would have to be constructed and interconnection capabilities increased if WCGS were to be located at Belvue in order to meet minimum planning criteria of the Southwest

⁵⁵ Testimony of Jesse O. Arterburn and James R. Lucas on Contention I-17(b), following Tr. 2526 (hereinafter "Arterburn/Lucas Testimony").

⁵⁶ Supplemental Testimony of Charles R. Boston on Contention I-17(b), following Tr. 3167 (hereinafter "Boston Testimony").

Power Pool. *Id.*, pp. 3-4; Tr. 2532-2536. Finally, system transmission losses could be increased by more than 20 MW and by more than 100,000 MWh annually, losses valued at minimum of \$3 million per year. Arterburn/Lucas Testimony, p. 4.

93. Based upon the uncontradicted evidence, the Board finds that the Belvue site has been adequately considered and that no significant advantages over the Wolf Creek site have been identified.

L. Contention I-18

The Applicants' Environmental Report is inadequate in that an analysis of the alternative of a coal-fired plant, using either Wyoming or Kansas coal, to the proposed WCGS would show the coal plant as the favorable alternative with regard to (1) capital costs, (2) fuel costs, (3) operating and maintenance costs, (4) plant reliability, and (5) decommissioning costs.

94. Testimony was presented on each of the five aspects of the coal versus nuclear comparison specified in the contention. In large part, the issues are resolved by the comparison between coal and nuclear costs to which Applicants and Intervenors stipulated. Comparison Table.

a. Capital Costs

95. Intervenors and Applicants stipulated that the base construction cost for WCGS is \$948 million. Comparison Table. This cost, which is equal to \$825 per kilowatt, was based on detailed estimates prepared by Bechtel Power Corporation (for the standard power block), Sargent & Lundy Engineers (site specific portions), Daniel International Corporation (construction planning activities), and Applicants (for owners' costs). The \$825 per kilowatt is the highest value for the seven pressurized water reactors contracted for in 1973 for operation in 1982 or 1983. Arterburn Testimony,⁵⁷ pp. 1-5.

96. The Staff's estimate of WCGS construction costs was based upon its CONCEPT computer code^{57a} rather than on detailed cost studies of the WCGS project. The Staff's cost estimate was not intended as a substitute for detailed cost studies, but rather as a test of their plausibility. The CONCEPT code's estimate for WCGS construction cost is \$1012 million. Nash Testimony, pp. 3-5.

⁵⁷Testimony of Jesse O. Arterburn on Contention I-18, Following Tr. 2400 (hereinafter "Arterburn Testimony").

^{57a}CONCEPT is a code designed to identify important elements in the cost structure, examine cost trends, and provide reasonable long term projections of costs (Nash Testimony, p. 3).

This value is sufficiently close to Applicants' \$948 million cost that the Licensing Board finds Applicants' analysis acceptable.

97. The only disagreement between Applicants and Intervenor as to nuclear construction costs concerned contingency costs. Applicants' \$948 million estimate included an allowance for contingencies of \$76.5 million, associated with the power block, not including contingencies for owners' costs.⁵⁸ Tr. 3077. Intervenor believe that an additional \$62.6 million in contingencies should be allowed. Comparison Table. The establishment of a reasonable contingency factor, which is an expression of the risk that actual costs will exceed estimated costs, is determined primarily by the adequacy of the basis cost estimate, the degree of owner involvement and the status of the project. Applicants have prepared their cost estimate by selecting experienced architect-engineers, contractors and consultants, by extensive use of modeling to determine in advance construction sequencing and constructability, and by the extensive review by Applicants' personnel as well as the personnel of the other SNUPPS utilities and the SNUPPS staff organization. Tr. 3079-3084. NRC Staff review has been completed and a considerable part of the design and procurement has already been accomplished. For example, Bechtel has purchased or has quotations for \$170 million of the \$210 million of equipment which it is to procure; the cost of Bechtel's procurement effort to date is within \$2 million of the estimate. Daniel International has ordered or received quotations for about \$15 million of a total procurement of \$90 million, and is within \$500,000 of the estimate. Tr. 3084-3085, 3094-3095. These considerations make the \$76.5 million contingency allowance appear reasonable.

98. Intervenor argue that the additional \$62.6 million for contingencies is needed for cost overruns and additional backfitting requirements. Tr. 3116. Intervenor's witness sought to extrapolate WCGS' construction costs from a statistical study of nuclear plant construction costs based on plants ordered in 1970 or earlier. Exhibit 13; Exhibit 14; Tr. 3107-3111, 3567-3572. In the view of the Board, this study is not directly applicable to WCGS, primarily because it was an historical study and did not attempt to project its findings to 1982 or beyond as Intervenor have done. Extrapolation of the data into the future would necessarily assume that the present situation is the same as has historically existed. Present indications, however, are that the major changes in NRC regulatory and safety requirements which have occurred in the past decade are not likely to continue into the future. That major cost increases occurred in the facilities which the study analyzed is not surprising in view of the major changes in NRC requirements during the late 1960's and early 1970's. Exhibit 14, Figure 15. As discussed in the findings on Contention I-14(g), only one issue

⁵⁸ In addition to allowances for contingencies, allowance of \$191 million for escalation is also included in the \$948 million total construction cost. Arterburn Testimony, p. 4; Tr. 3124, 3805.

(anticipated transient without scram) has been identified. The Licensing Board therefore agrees that Applicants' capital cost estimates are adequate.

99. As for the capital costs of a coal alternative to WCGS, Applicants and Intervenor stipulated to a cost of \$655.6 million (\$575 per kilowatt) for two 575 MW units at the Wolf Creek site and \$287.5 million (\$500 per kilowatt) for one 575 MW unit at KCPL's Iatan site.⁵⁹ Comparison Table. The Staff's estimate of the capital cost for a coal replacement for WCGS is \$690,000,000 (\$600 per kilowatt) as projected by the CONCEPT code. Nash Testimony, pp. 3-5. Both the stipulated cost and the CONCEPT estimate, which are substantially the same, exclude the cost of sulphur dioxide abatement systems. *Id.*, p. 4; McPhee Testimony, p. 2.

b. Fuel Costs

100. As discussed in the findings on Contention I-14(c), (e), (f), and (j), the Licensing Board finds that the stipulated nuclear fuel costs of 10.5 mills/kwh (75% capacity factor) and 10.7 mills/kwh (65% capacity factor) are reasonable for purposes of this evaluation.

101. With regard to fuel costs for a coal-fired plant, Applicants and Intervenor stipulated that an appropriate 1982 unit price would be \$1.60 per million BTU for a Wolf Creek coal plant and \$1.30 per million BTU for a single KCPL unit at Iatan. On a levelized basis, the stipulated coal cost is 29 mills/kwh for units at Wolf Creek and 23.6 mills/kwh for the single KCPL unit at Iatan.⁶⁰ Comparison Table. These costs are based upon low sulphur western coal since sufficient Kansas coal is not available for the additional units. McPhee Testimony, pp. 5-6; Tr. 2129-2130, 2186-2187, 2189-2193. The costs were determined from coal contracts recently negotiated or under negotiation and from direct contact with coal companies and railroads.

102. The Staff estimated the fuel cost for a coal-fired plant based upon data reported to the Federal Power Commission, discussions with railroads on freight rate projections, and an updating of a coal price and availability study. Based on its evaluation, the Staff projected a 1982 price of \$1.55 to \$1.71 per million BTU. In its comparison of coal versus nuclear facilities, the Staff used the lower figure, which equates on a 30-year levelized basis to a cost of 27.4 mills/kwh. Nash Testimony, pp. 16-23, 27. The Staff's use of the lower coal figure and

⁵⁹KCPL investigated adding a single additional 575 MW coal unit at its Iatan site. Since Iatan site development costs have already been budgeted in the Iatan Unit 1 program, the lower cost reflects the absence of the need to develop site facilities for an additional unit. Testimony of Donald T. McPhee on Contention I-18, following Tr. 2125 (hereinafter "McPhee Testimony").

⁶⁰The costs for coal at Iatan are lower than those at Wolf Creek as a result of lower transportation costs. McPhee Testimony, p. 7 and Exhibit D thereto; Tr. 3140.

conservatively high nuclear cost estimates indicates that in the comparison of nuclear versus coal, the cost advantage shown for nuclear is likely smaller than that which will actually be realized. *Id.*, p. 28.

c. Operating and Maintenance Costs

103. Applicants and Intervenor stipulated that levelized operating and maintenance costs of WCGS would be 3.6, 3.0, and 2.6 mills/kwh at capacity factors of 55%, 65%, and 75%, respectively. For the coal alternatives, the equivalent costs are 7.3, 6.2, and 5.4 mills/kwh. Based on 1972 data, the Staff projected a cost of 2.2 mills/kwh for both coal and nuclear plants and assumed that it was invariant with respect to capacity factor. Nash Testimony, pp. 6-9.

d. Plant Reliability

104. As shown in the findings on Contention I-14(d), the appropriate range of capacity factors to be used in evaluating the cost of nuclear capacity over its lifetime is 65% to 75%.

105. Testimony was received indicating that large, coal-fired units had an average capacity factor of 58% for the period 1965-1974. Tr. 2431-2433. Testimony further showed that on KG&E's system a coal unit could not operate in excess of 60% in the period 1982-1987 without increasing overall system fuel cost by unloading other coal units which operate at a lower cost. Lucas I-18 Testimony,⁶¹ pp. 9-10; Tr. 2361-2364. Despite this showing of the possibility of lower capacity factors for coal-fired units, the Licensing Board finds it appropriate for purposes of this comparison to evaluate both coal and nuclear at an assumed capacity factor of 65%. This is the central figure in the stipulation between Applicants and Intervenor (Comparison Table) and the level used by Staff in its evaluation. Nash Testimony, p. 27.

e. Decommissioning Costs

106. A detailed description of the costs of decommissioning is set forth in the findings of Contention I-14(h). Applicants and Intervenor stipulated that the cost of decommissioning WCGS at the end of its useful life would range from \$2.4 million for a Class A decommissioning (in-place containment) which Applicants believe appropriate, to \$31.7 million for Class C decommissioning (complete dismantling and site restoration) which Intervenor believe appropriate. Comparison Table. On a levelized basis, this represents essentially 0

⁶¹Testimony of James R. Lucas on Contention I-18, following Tr. 2328 (hereinafter "Lucas I-18 Testimony").

mills/kwh for the former and 0.4, 0.5, or 0.6 mills/kwh at capacity factors of 75%, 65%, and 55%, respectively, for the latter. *Id.* The Staff assumes in its analysis the cost of a Class C decommissioning and estimates that cost to be \$31.2 million in 1982 with a levelized cost of 0.44 mills/kwh. Nash Testimony, pp. 23, 29.

107. Both the Staff's cost estimates and the Applicants'/Intervenors' stipulated costs assume no cost for decommissioning the alternative coal plant. Comparison Table; Nash Testimony, p. 23. Notwithstanding this assumption, decommissioning a coal plant will entail costs, largely due to the need to dispose of the ash and slurry. Assuming a generating plant utilizing low sulphur Wyoming coal even with no slurry disposition cost, decommissioning would be about \$10 million. Tr. 2742-2743.

f. Nuclear-Coal Comparison

108. A consideration of all of the factors discussed above including the conservatisms used in arriving at the estimates leads to the conclusion that a nuclear-fueled plant at Wolf Creek is the most economical alternative. This is demonstrated by the total energy costs (levelized over 30 years) stipulated by Applicants and Intervenors as set forth in the Comparison Table. These values show that at all capacity factors a nuclear plant at Wolf Creek has a lower total energy cost than an equivalent sized coal plant at Wolf Creek and has a lower total energy cost than the single KCPL unit at Iatan for all capacity factor combinations except the 55% capacity WCGS compared to the 75% capacity Iatan unit.⁶² Based upon the Board's acceptance of a 65% capacity factor range to evaluate coal vs nuclear plants, paragraph 105 *supra*, the comparison favors WCGS.

109. Both KG&E and KCPL presented detailed studies comparing the economics of coal versus nuclear units. The KG&E study included a number of cases involving a range of values for the significant variables. In each case, the nuclear plant was the preferred choice and could save customers from \$1 to \$3 billion compared to the coal alternative over the 30-year plant life. Lucas I-18 Testimony; Exhibit 9, "KG&E Cost and Savings Comparison With Sensitivity Analysis: 1982 Nuclear Unit vs. 1982 Coal Unit." A similar study by KCPL showed that the nuclear unit was more economical, and, even when compared to the single Iatan unit, produced less expensive energy at nuclear capacity factors as low as just above 50%. McPhee Testimony, p. 7; Lucas I-18 Testimony, p. 11; Tr. 2154-2156, 2174. In addition KCPL's witness emphasized that diversifying

⁶² As discussed above, the only differences between Applicants' and Intervenors' stipulated costs for WCGS are Intervenors' inclusion of the higher decommissioning cost and the additional contingency cost. Even if Intervenors' WCGS costs are used, WCGS is still the economically preferred choice.

its generating capacity with a nuclear-fueled plant would be beneficial. McPhee Testimony, pp. 7-8; Tr. 2128, 2131-2134, 2157-2159, 2178-2183.

110. The Staff performed an independent cost-benefit balance of the relative economics of coal and nuclear fueled capacity. Based on its assessment of the factors discussed in subsections a. – e. above, the Staff calculated a 30-year levelized total cost of 31.6 mills/kwh for the nuclear plant and 41.1 mills/kwh for the coal alternative. The Staff's study also included sensitivity analyses for capacity factor, uranium prices and the "throwaway" cycle. In each of these cases, the nuclear plant maintained a significant economic advantage.⁶³ Nash Testimony, pp. 25, 27-31.

111. Intervenors concede that in 1982, WCGS is the preferred alternative. Comparison Table. However, they contend that this stipulation must be viewed in light of when the power plant is actually needed—1990 according to their calculations—at which time they assert a coal plant would be economically preferable to WCGS. (The basis of MACEA's proposed findings showing this economic superiority in 1990, while not specifically referenced, appears to be Revised Table 1, Viren Testimony, following Tr. 3051.) Since the Board concluded that WCGS is needed in 1982 (See paragraph 140) and that it is clearly preferred at that time, we need not consider MACEA's hypothesis further.

112. Based upon the comparative total energy costs, contingency costs, fuel costs (nuclear or coal), operation and maintenance costs, plant reliability, and decommissioning, the Licensing Board finds that WCGS is the economically preferred alternative over coal units at Wolf Creek or a single KCPL unit at Iatan. This view is reinforced by the separate studies made by KG&E, KCPL and the Staff showing the economic advantages of nuclear over coal.

M. Contention I-19

The Applicants' projections of demand, and thus the assessment of the need for the proposed WCGS, are inadequate and overstated because they fail to take into account price elasticity of demand for electricity. The real price of electricity per kilowatt hour will increase, and will result in a decrease in demand from that predicted by the Applicants.

113. In the context of addressing Contention I-19, which deals with the impact of increases in the real price of electricity on Applicants' demand projections, the Licensing Board has examined the methodology used by Applicants to forecast demand and sales as well as other techniques which were put forward as

⁶³ For example, the Staff concluded that 1982 uranium prices would have to reach the improbably high level of \$107 per pound before the nuclear cost advantage is jeopardized. Nash Testimony, pp. 29-30.

alternative forecasting methods. We outline below each of the projections and discuss the comments on them by the parties.

a. Kansas Gas & Electric Projections

114. KG&E separately forecasts energy sales and system peak demands. Lucas I-19 Testimony,⁶⁴ pp. 3-7. KG&E's energy forecast is prepared separately for residential, commercial, industrial, street and highway lighting and sales for resales. The industrial forecast is based upon interviews with customers representing more than 65% of industrial energy sales. In the course of these interviews, conducted more than once each year, KG&E seeks to determine each customer's power needs for each of the succeeding ten years. Projections for other industrial customers are based on historic patterns, adjusted as a result of projections for similar larger customers. Adjustments are also made for substitution due to curtailments of natural gas and new plant location activities. Woolery Testimony,⁶⁵ pp. 4-5, 10; Tr. 1929-1930, 1948-1950. Gas curtailments are expected for all larger industrial customers, as well as some smaller industrial and commercial customers. This eventuality is causing these customers to seek alternate energy sources or to convert from natural gas to other forms of energy. Woolery Testimony, pp. 4-5, 11-14; Exhibit 8; Tr. 1942-1948.

115. The commercial sales forecast is based on a consideration of increasing urbanization, growth in the number of customers and population, projected increases in per capita income, the substitution of electricity for natural gas and propane, and increases in the prices of electricity and other fuels. Increasing personal income was judged to cause increasing demand for commercial facilities, competitive fuel prices were estimated to increase faster than electricity costs, and the lack of competitive fuels was considered to result in substitution of electricity. Woolery Testimony, pp. 5-6, 9.

116. Residential energy sales were forecast on the basis of increase in households, population, income and appliance saturation, improvements in thermal conditioning, price and availability of competitive fuels, price of electricity, and substitution of electricity for gas, fuel oil and propane. A significant increase in residential electric heating is projected consistent with the very high levels of new housing units (greater than 90%) which are all electric. An adjustment was made to recognize the installation of solar heating in new residential construction and a decrease in consumption of total electric customers reflecting increased appliance efficiencies, small households and better thermal conditioning. For the forecast period, it is KG&E's judgment that prices

⁶⁴Testimony of James R. Lucas on Contention I-19, following Tr. 1773 (hereinafter "Lucas I-19 Testimony").

⁶⁵Testimony of W.K. Woolery on Contentions I-19, I-20, I-21 (a) and I-21 (c) through (f), following Tr. 1765 (hereinafter "Woolery Testimony").

of competitive fuels will rise faster than the cost of electric power, that competitive fuels will become scarce, that household income will increase but not as rapidly as energy costs and that households and population will increase. Woolery Testimony, pp. 6-9.

117. Street and highway lighting sales were forecast based on urbanization, population and household trends; these sales are not expected to increase as rapidly as in the past due to increased lighting efficiencies. Woolery Testimony, p. 7. Sales for resale include sales to rural electric cooperatives and municipally owned distribution systems, and interconnections with municipally owned generating utilities. The sales forecast for this group is based on the similarity of its growth rate to KG&E's, adjusted to reflect the likelihood that the generating municipalities will increase their purchases from KG&E as gas and oil supplies for their owned generating capacity become more expensive or unavailable. Woolery Testimony, pp. 7-10.

118. KG&E's forecast of its system peak demand had traditionally been made by fitting mathematical curves to historical data and adjusting the results for economic conditions, air conditioning saturation and weather effects. With two exceptions, the forecasted values for 1958-1975 (prepared five years in advance) actually occurred within one year of the forecast dates.⁶⁶ Lucas I-19 Testimony, pp. 8-9, Fig. 1. KG&E has recently altered its procedures to improve the accuracy. The present forecasting technique breaks down peak demand into its large industrial component (based on individual customer load information), the residential, commercial and small industrial nonweather-sensitive component (based on loads on an April weekday with no heating or cooling effects minus large industrial loads), and the weather-sensitive component (the actual peak minus the previous two categories). Lucas I-19 Testimony, pp. 12-15; Tr. 1981-1992, 2216-2219. The industrial and nonweather-sensitive components are forecast in essentially the same manner as before. Lucas I-19 Testimony, pp. 16-18; Tr. 2004-2005, 2216-2218. To adjust for the difference between a hot and cool summer, a bracket of 5% (based on past experience) is used. To reflect future uncertainties, the upper end of the weather band is used for planning; use of the lower end would have the effect of delaying the need for WCGS capacity about one year. Lucas I-19 Testimony, pp. 15, 18-19; Tr. 1985-1986, 1997-1999.

119. KG&E forecasts a 1982 peak hour demand of 2130 MW. Taking into account firm purchases and the required reserve margin of 15%,⁶⁷ KG&E

⁶⁶ The exceptions were due to a slowdown in air conditioning growth (1960-1961) and the Wichita area's severe economic recession of 1970-1971 which resulted in the loss of one year's growth. Lucas I-19 Testimony, pp. 8-9.

⁶⁷ The Southwest Power Pool and the Missouri-Kansas Power Pool, to both of which KG&E belongs, require member utilities to maintain a reserve capacity of 15%. Tr. 2232-2233, 2271-2274, 2276-2277. This level is one of the lowest in the nation. Tr. 2620.

would have a total system capacity responsibility of 2366 MW. If WCGS were not to be available in 1982 as scheduled, KG&E would have a deficiency of 79 MW from its total system capacity responsibility. Without KG&E's share of the capacity of Jeffrey No. 3 (a coal unit also scheduled to come on line in 1982), KG&E's deficiency would be 215 MW. KG&E Load and Capability Data Actual (1975) and Projected (1976-1990), following Tr. 2205; Tr. 2280. With both WCGS and Jeffrey No. 3, KG&E would have a capacity balance of 496 MW in 1982. In addition, KG&E has offered to sell 100 MW of WCGS capacity to other participants, not included in KG&E's load forecast. Tr. 2280-2281, 2440, 2459-2460.

120. The capacity balances do not, however, tell the whole story. At the present time, 1034 MW of KG&E's 1564 MW capacity is gas fired. Tr. 2293-2294. Gas is being phased out as an available fuel source for KG&E's power plants. Tr. 2574, 2625, 2627-2628. In 1975, KG&E experienced 100% curtailment during most of the winter. Woolery Testimony, p. 11. By 1980 or 1981, it is anticipated that no gas will be available to KG&E. Tr. 2575. To replace gas, KG&E is burning increasing quantities of oil.⁶⁸ Operating these units with oil would cause a derating of 85 MW, a loss which could be reduced to about 50 MW by costly and time-consuming modifications. Tr. 2574-2578. In addition, the converted gas-fired capacity has proven less reliable when fueled by oil. Tr. 2581-2583, 2646-2647. The fuel costs for oil are much greater than WCGS fuel costs and much greater than current gas costs. ER, Table 9.2-1; Testimony of David N. Raffel on Contentions I-21(b) and I-22(b) through (i), following Tr. 3751, p. 61. Thus, it would be uneconomic to operate the gas-fired plants as base load capacity after they are converted to oil. Apart from cost, there are serious questions as to the availability of oil for KG&E's currently gas-fired capacity. See FES, §9.1.2.1; Tr. §9.2.1.1.4.

121. Additional portions of KG&E's present accredited capacity cannot be considered reasonably reliable for extended peak operation because of age, environmental limitations and other reasons. These portions, totalling 318 MW, represent accredited capacity that cannot be prudently relied upon for extended peak operations, thus indicating a need for higher reserves than the 15% KG&E has customarily tried to maintain. Tr. 2582-2590, 2594-2595. In addition, firm purchases of 100 MW through a diversity interchange with TVA which have already been reduced at TVA's request to 73 MW for 1980, could be further reduced. Tr. 2281-2282. Finally, units such as the 95 MW unit at the Ripley plant which is already 35 years old will be even older and less reliable by 1982. ER 2598.

⁶⁸KG&E's oil consumption increased from 50,000 barrels in 1973 to 1.6 million barrels in 1975. Tr. 2580.

b. Kansas City Power and Light Company Projections

122. KCPL load forecasts are based on forecasts of its future peak demands, its projected load factor, and its future energy sales. The demand projections for the period 1975-1983 were derived from a methodology which KCPL has developed over many years. Forecasts based on this methodology have proven to be highly accurate over a long period of time (the maximum overprediction was 3.9% over the actual peak) and have tended to underpredict, rather than overpredict, demand. Rasmussen Testimony,⁶⁹ p. 3, Schedules 3a and 3b. KCPL analyzes its peak demand by analyzing its two components, the base summer demand (nontemperature sensitive) and the estimated temperature-sensitive load. *Id.*, p. 3. Data for the fifteen years since KCPL became a summer-peaking system were examined in this analysis to determine actual winter peak demands. The nontemperature related base load was arrived at by taking 86% of the arithmetic average of two preceding winter peaks. This relationship was empirically determined over 17 years of analysis to be the demand which exists on days when the maximum temperature is in the range of 64° to 72°F. *Id.*; Tr. 3229-3231, 3245, 4082-4083. Growth in the winter peak demand was forecast after examining the historic growth rates of 5.3% during 1958-1973 and 4.9% during 1966-1973. Based on KCPL's judgment that electric heat and other electric installations will increase due to unavailability of natural gas⁷⁰ and its knowledge of particular customer requirements, KCPL projects that the growth rate will gradually return to the 5.3% level. Rasmussen Testimony, pp. 3-4; Tr. 3231-3232, 4093-4094. Projected growth in cooling load was based upon five-year bands of historic cooling load growth modified by knowledge of what is happening in the service area and corrected for temperature. Rasmussen Testimony, p. 4, Schedule 1; Tr. 3249-3250, 4086-4087, 4090-4091. The cooling load growth is forecast on the basis of 100 degree weather, with the recognition that each additional degree above 90°F increases demand by 22 to 32 MW. Tr. 4084-4086, 4091.

123. KCPL's load factor during the period 1963 to 1973 ranged between 46.9% and 50.4%, and averaged 48.8%. In 1974, due to the massive national attempt at conservation, the load factor dropped to 45.2%; however, by 1975 it had increased to 47.1%, due in part to 11.1% increase in residential sales and 7.3% increase in commercial sales. Rasmussen Testimony, Schedule 6; Tr. 4099-4102. KCPL projects a gradual increase in load factor from 47.1% to 50.0% by 1987, based on judgments as to the specific requirements of KCPL's

⁶⁹ Testimony of Louis Rasmussen on Contention I-19, following Tr. 3228 (hereinafter "Rasmussen Testimony").

⁷⁰ In perhaps the highest growth area in KCPL's service territory, the gas company has had essentially no gas available for the past two years. Tr. 3232.

customers and their relationship to the national economy and economic trends. Tr. 3234-3235, 3266-3267, 4102-4104, 4106. This predicted improvement in load factor is borne out by the 18% increase in industrial sales in the first quarter of 1976. Tr. 4102. KCPL's energy forecast is based upon the projected demand forecast and the anticipated load factor. Using this methodology KCPL's long-term system energy input projections have tended to underpredict the actual system energy input. Rasmussen Testimony, Schedule 5.

124. KCPL forecasts a peak demand in 1982 of 2760 MW. *Id.*, Schedule 6. With the 15% reserve required by KCPL's membership in the Southwest Power Pool and the Missouri-Kansas Power Pool,⁷¹ KCPL has a total system capacity responsibility of 3174 MW. If WCGS were not available in 1982 as scheduled, KCPL would have a deficiency of 149 MW from its total system capacity responsibility. With WCGS, KCPL would have a capacity balance of 426 MW in 1982. Exhibit 31 (revised ER Table 1.1-8b).

125. This capacity balance must, however, be considered in light of the prudently available capacity, not merely the accredited capacity level. At present, only 1826 MW of KCPL's 2334 MW accredited capacity (90% of which is coal fired) can be considered reliably available for extended peak operation, partially for reasons similar to those advanced by KG&E and partially because, unlike nuclear units, coal-fired capacity cannot be run for extended periods of time at 100% capacity because of the wear which burning coal imposes on the equipment. Tr. 2598-2601, 2613.

c. Emerson Analysis

126. Applicants presented a demand analysis prepared by Dr. M. Jarvin Emerson, who was from 1969 through 1974 the Chief Economist, Office of Economic Affairs of the State of Kansas, and has written widely on Kansas economic growth. Emerson Testimony;⁷² Emerson Qualifications, following Tr. 1097. Dr. Emerson's knowledgeability on the particular economic conditions of Kansas was acknowledged by Intervenors' witness. Tr. 1638.

127. Dr. Emerson, in his original written testimony, discussed the economic aspects of the service areas involved. He then reviewed and analyzed electricity demand studies and models proposed by other economists in the field, following which he proposed several demand models for the Applicants' service areas. Finally, he estimated the resultant growth rates and showed that they covered bands of growth rates that included the values predicted by the Applicants. Emerson Testimony, pp. 90-92. His studies were concerned with energy demands exclusively and did not deal with peak loads.

⁷¹ ER, pp. 1.1-10, 12-13. See also fn. 67, *supra*.

⁷² Testimony of M. Jarvin Emerson on Contention I-19, following Tr. 1100 (hereinafter "Emerson Testimony").

128. In rebuttal testimony,⁷³ Dr. Emerson further elucidated the basis for the bands of growth rates predicted in his original testimony. He also discussed, and presented partial results of, a number of alternative formulations of models that he had prepared during the course of the development of his testimony. These various alternatives were tried in order to test various possible weaknesses of the models and various sets of available data. He stated that he had selected as the most probable growth rates the broad middle range of the values obtained.

d. Staff Projections

129. The Staff presented testimony on need for power and the effects of price by an economist and by a witness from the Federal Power Commission's Bureau of Power, Division of Power Supply and Reliability.

130. The FPC witness examined the Applicants' projected 5.3% annual rate of peak load growth (1974-1984) and determined it to be reasonable based upon a comparison of other load projections. The historic load growth for Applicants' system has been 6.9%; for the contiguous United States it has been about 7%. For all nine Regional Electric Reliability Councils, the projected average annual load growth rate 1974-1984 is 6.8% with a range of 5.2% to 8.4%; for SWPP the predicted rate is 8.4%. Based on these considerations, and the possible substitution of electric energy for rapidly diminishing supplies of petroleum and gas, the FPC witness found Applicants' 5.3% projection to be reasonable. Gekas Testimony,⁷⁴ pp. 13-16. Applying this growth rate to Applicants' total capacity as of 1982 would result in a reserve margin of 10.3% without WCGS, a level below the 15% reserve required by SWPP and recommended by the Federal Power Commission. *Id.*, pp. 7, 14, 19; Tr. 4856. For SWPP, the reserve margin in 1982 would be 16.3% without WCGS; however, this level assumes that 4600 megawatts of capacity other than WCGS would be added in that year. If none of the additional capacity scheduled to be added in 1982 actually came on line, the SWPP reserve margin could be well below 10%.⁷⁵ Similarly, if all the capacity scheduled for 1982 came on line except for WCGS, and none of the capacity scheduled for 1983 was installed, reserves would also fall far below the 15% level in 1983. Gekas Testimony, p. 12, Attachment JCG2. If KG&E/KCPL annual

⁷³ Rebuttal Testimony-Professor Jarvin Emerson, following Tr. 4511 (hereinafter "Emerson Rebuttal").

⁷⁴ Supplemental Testimony of James C. Gekas of the Federal Power Commission in Response to the Need for the Wolf Creek Generating Station and Contention I-21 (f), following Tr. 4843 (hereinafter "Gekas Testimony").

⁷⁵ Based on Attachment JCG2 to Gekas Testimony, total SWPP capacity increases from 58,347 MW (1981) to 64,099 MW (1982), or an increase of 5752 MW including WCGS. Subtracting this addition from the 9959 MW reserve in 1982 would leave a reserve of 4207 MW, or about 8% of 1982 peak load responsibility.

growth rates are 5 percent or higher (as compared to Applicants' historic growth rate of 6.9 percent), WCGS is needed not later than 1982. At an annual growth rate as low as 4%, reserves in 1984 would be 15% without WCGS; this, however, assumes that an additional 106 MW capacity would be added in 1984. Without this added capacity, reserves in 1984 would be below 15%. *Id.*, p. 14.

131. The Staff's economist investigated the effects of price on electricity demand and also evaluated Applicants' forecast against national and regional projections. Because of the extensive qualitative analysis, the use of both supply and demand models, and the incorporation of engineering models and mathematical programming models, the Staff's economist gave considerable weight to the Federal Energy Administration's forecasting model. Feld Testimony,⁷⁶ pp. 12-13, 15; Tr. 1306-1307, 1424, 1427; Feld Response,⁷⁷ pp. 2-4. The Staff preferred this model to others because, although it is not a model based specifically on the Applicants' service areas, it uses more detailed information than is used in any available local model. Feld Testimony, p. 6; Tr. 1306-1307, 1322-1323. Using the revised FEA base case national growth forecast (at the time only available in partial draft form) of 5.4% (1974-1985), Dr. Feld adjusted for differences in the service areas on the basis of the Wichita and Kansas City S.M.S.A.'s and derived a projected 5.5% growth rate for these areas. *Id.*, p. 16; Tr. 1275. After the revised FEA forecast was published in March 1976 (National Energy Outlook), Dr. Feld reported that the regional forecast for the West Central Region (which includes Kansas and Missouri) now projects growth rates which exceed the national average for all customer classes reported. Feld Response, p. 3. Dr. Feld also presented forecast results by the Atomic Energy Commission, Energy Research and Development Administration, Federal Power Commission and two other research studies. These national and regional studies projected annual compound growth rates from 4.8% to 7.6%. Even if the lowest of these forecasted growth rates were assumed to occur, after adjusting that rate to account for regional differences, WCGS would still be needed in 1982. Feld Testimony, pp. 11-17, 19.

e. Intervenors' Projections

132. Intervenors presented an econometric model developed by Intervenors' witnesses Drs. Burns and Viren. The Burns/Viren model for estimating demand is a time-series equation using price of electricity (average price), per capita income (or value added), gas price, temperature, time, and for industrial customers, number of customers. Burns Testimony,⁷⁸ pp. 8-15. The coefficients derived

⁷⁶Supplemental Testimony of Sidney E. Feld on Contentions I-19, I-21 and I-21(a), (d), (e), following Tr. 1273 (hereinafter "Feld Testimony").

⁷⁷Testimony of Sidney Feld in Response to Requests for Information Concerning Testimony on Contention I-19, following Tr. 4889 (hereinafter "Feld Response").

⁷⁸Testimony of Malcolm Burns on Contention I-19, following Tr. 1433 (hereinafter "Burns Testimony").

from the estimating model were then used with input values selected by Dr. Viren to forecast sales and demands for KG&E and KCPL from 1974 through 1999. Using these predictions, Burns/Viren concluded that the system growth rate would be 2.15% and that WCGS would not be needed until 1990.⁷⁹ Viren Testimony,⁸⁰ pp. 22, 24-26, 28; Tr. 1452. In their rebuttal testimony, Burns/Viren adjusted their model in several aspects. With these changes, their projected combined KG&E/KCPL growth rate would range from about 1.6% to 2.62%. Burns/Viren Testimony,⁸¹ pp. 46-47. Using these growth rates, Burns/Viren again concluded that WCGS' capacity would not be needed until 1990.⁸²

f. Criticisms of Projections and Models

133. Each of the projections and models described above was subject to extensive cross-examination and, in some cases, rebuttal evidence. The major criticisms of each projection by the other experts is set forth below.

134. The principal criticisms of the Applicants' projections were that they were not made upon any scientific basis. They were characterized as being "ruler projections" adjusted on the basis of an impressionistic assessment of the future. Tr. 1447. Specifically, Drs. Burns and Viren asserted that the Applicants'⁸³ trend extrapolations were "unscientific and meaningless" and should be categorically rejected because:

- (1) trend extrapolation is in fact an extremely primitive econometric model;
- (2) the technique is not based on a quantitative economic analysis of the actual determinants of increased KWH consumption;
- (3) its forecasts necessarily assume that these influences will continue to operate in the future almost exactly as they have in the past, despite strong evidence to the contrary for real electric prices; and
- (4) the projections cannot be systematically adjusted to reflect such altered marketing conditions. Burns/Viren Testimony, pp. 49-50.

⁷⁹Dr. Viren subsequently found an error in the income coefficient for the KG&E commercial forecast which changed the Burns/Viren projected growth rate of that classification from 0.39% to 3.2%. This resulted in changing the year of need from 1990 to 1989.

⁸⁰Testimony before the NRC by Michael A. Viren, Ph.D., following Tr. 1438 (hereinafter "Viren Testimony").

⁸¹Testimony of Malcolm Burns and Michael A. Viren on Contention I-19, following Tr. 4929 (hereinafter "Burns/Viren Testimony").

⁸²Dr. Viren also calculated that if WCGS were built in 1982 but not needed until 1990, there would still be a net benefit to consumers (fuel cost savings minus extra fixed charges) of \$657 million (at 55% capacity factor), \$1.216 billion (at 65% capacity factor), and \$1.767 billion (at 75% capacity factor). Revised Viren Testimony, Table V, p. 27; The Benefits-Costs of WCGS, following Tr. 3051; Tr. 3557-3560.

⁸³These specific allegations were directed to the KG&E projections, but implicitly applied to those of KCPL.

The Applicants' reply to these assertions is quite straightforward. Agreeing that their analyses do not involve complex econometric models and admitting that their methodology may be more art than science, Applicants respond that their projections are based upon past trends modified by the exercise of judgment founded upon past experience and upon a detailed knowledge of the specific circumstances that have affected, and will in the future affect, their customers. Tr. 1929, 2005, 2255-2256, 3265-3268. They further assert that when a "turning point" has been reached because of changes in major factors affecting demand (such as the recent increases in electricity prices), their judgmental methodology is as capable of forecasting the changes as an econometric method. Tr. 4779-4780. Finally, they point to the past accuracy of their forecasts. Paragraphs 118 and 122, *supra*.

135. The principal criticism of the staff's testimony, made by both Kansas and MACEA, was that it was based on a national, rather than a local, model. They based this criticism on a statement by one of the Staff witnesses that "Ideally, it would be preferable to base an elasticity estimate for the service areas on an electricity demand model for those service areas." Feld Testimony, pp. 5-6. The Staff witness pointed out, however, both in his prepared testimony and during cross-examination that, although this was the ideal situation, the national model incorporated sufficiently more detail than any available local model that he had made a conscious tradeoff and selected the detailed national model in preference to a less detailed local model. He further pointed out that the FEA model that he used also forecasted on a regional basis and that the growth rate for the region that included Kansas was identical to the national value. Feld Testimony, p. 6; Tr. 1306-1308.

136. There was extensive criticism of both the Applicants' and the Intervenor's econometric models. The principal criticisms of the Emerson model revolved around the facts that some of the coefficients in his equation had the wrong signs and that he had tempered his mathematical results with judgment. The principal criticism of the Burns/Viren model centered around their method of incorporating their time variable, the omission of a constant term, and their selection of a data base. Extensive rebuttal was presented by both sides. In view of the Board's determination, set forth below, to place little weight on the projections from either of these models, it does not appear either useful or necessary to burden this opinion with detailed discussion of these charges and countercharges.

g. Board's Findings

137. The road to prediction of future electric power demand is fraught with many perils and the penalties for a serious misstep on either side can be large. Fortunately for this Board, we need not walk the entire road in order to make the findings required of us, but rather only to determine with reasonable

assurance where the far end of the road appears to be. The standard for determining whether or not the need for power that our cost-benefit balancing requires exists has been succinctly set forth by the Appeal Board: given the uncertainties inherent in projections of future power demand, can it fairly be concluded on the evidence presented that a particular projection of future need for power is a reasonable one. *Niagara Mohawk Power Company* (Nine Mile Point Nuclear Station), ALAB-264, 1 NRC 347, 367 (April 8, 1975).

138. The projection of concern here is the projection by the Applicants that the plant will be needed to satisfy the demands in 1982. This projection rests basically on a projected peak load in 1982 of 4890 MW (2130 for KG&E and 2670 for KCPL), a required reserve margin of 15%,⁸⁴ and an anticipated available capability in 1982 of 5396 MW (2371 for KG&E and 3174 for KCPL) without Wolf Creek. Load and Capability Data Table following Tr. 2205; Load and Capability Data Table, Exhibit 31. Thus, the two companies would show a deficit of 228 MW in 1982 without WCGS or a surplus of 922 MW with WCGS. Based on these figures, without WCGS, the reserve margin in 1982 would be reduced to slightly over ten percent.

139. We must next test the reasonableness of the three basic starting points: the anticipated load of 4890 MW, the 15% reserve margin and the anticipated capability of 5396 MW. With respect to the required reserve margin, there seems to be no question. The Intervenor has not challenged it and the Board notes that it is at the low end of the spectrum of values proposed by other utilities and consistent with the recommendations of the FPC. With respect to the anticipated capabilities, the Board believes that the value of 5396 MW without WCGS is optimistic. As pointed out earlier, certain units are very old, some are no longer suitable for extended peak operations, some have environmental limitations and some will lose efficiency because of conversion from gas to oil. Although the Board cannot arrive at a precise number, it would appear that the true capability for extended peak operation would be in the range of 4500-5000 MW with slightly more available, perhaps, for short periods of time.

140. The values for anticipated peak demands are more arguable. The 4890 MW 1982 demand for the Applicants as set forth above represents an average growth rate of 6% from the 1975 actual value (3241 MW). An earlier estimate showed an average growth rate of 5.3% for the 1974 to 1984 period. (This difference reflects the fact that the 1974-1975 growth was less than 1%.) The FPC witness for the Staff testified that the facility would be needed in 1982 if the growth rates for each of the nine Regional Electric Reliability Councils were in the range of 5.2% to 8.4% and averaged 6.8%. Gekas Testimony, pp. 14-15. The Staff witness testified that the national forecasts he had studied ranged from 4.8% to 7.6% and that his best estimate was 6.4%. Feld Testimony, 12, 16. The

⁸⁴ Except with respect to firm purchases and sales.

Board finds that its detailed review of the Applicants' forecasting methods and the corroborating evidence by the Staff's witnesses are persuasive that the Wolf Creek Generating Station will be needed in 1982.

141. The Board does not view the Emerson and Burns/Viren analyses as persuasive. They each suffer from a number of defects that have been identified by their opponents. One additional matter, common to both, deserves comment. Implicit in both models is the assumption that price elasticity is independent of the direction and magnitude of price changes. This is, of course, inherent in the types of models that have been proposed, but we are aware of no data that support this assumption. While no problem is obvious for small changes, the equations indicate that if the real price doubles in a year or two, the usage by an average residential customer should decrease by 40-50%. Intuitively, this appears to be unreasonable.⁸⁵ The same problem can arise with regard to income elasticity and perhaps other variables.

142. One further comment with regard to need for power is appropriate. We have based our finding on demand. One might argue that peak demand should be met by a peaking unit rather than by a nuclear unit. This argument is easier to support when the capacity factor is expected to stay constant or decrease than in a case such as this one, where the capacity factor is expected to increase. Further, in this case it appears that a sizeable fraction of the present base load capability will not be suitable for base load operation in the foreseeable future because of fuel supply problems, indicating that any additions including this one, should preferably be base-load units.

N. Contention I-21(a)-(f)

The Applicants have not adequately considered the following alternatives which singly or in combination could so significantly reduce the demand in its service area as to eliminate the need for the WCGS:

(a) Institution of a conservation program in the Applicants' service area to reduce demand for electricity, particularly in light of the fact that present experience would indicate that such a program could achieve significant reductions in demand;

(b) Use of solar heating and cooling facilities in residences, which would reduce the projected power demands upon which the project is justified;

(c) Development of a peak shifting strategy for commercial and industrial customers;

(d) Development of a peak demand surcharge designed to discourage demand during peak hours;

(e) Reform or restructure of the current rate structures used by Applicants in order to provide an escalating charge for increased use of electricity;

⁸⁵ Cf. Tr. 1848-1854.

(f) Expansion of usage of interruptible loads, which could significantly reduce the demand for electricity.

a. Conservation

143. The evidence introduced demonstrates that KG&E and KCPL have had continuing active conservation programs advocating the wise use of electric energy for the past several years, Feld Testimony, p. 25. In late 1972, KG&E advertising began concentrating on conservation. By 1974, over 85% of all KG&E advertising was aimed at conservation methods or wise use of electric power. This was done through distribution of thousands of booklets on conservation, conservation messages to customers through other company publications, and by consumer consultants who have appeared before over 2000 audiences to present conservation programs. Woolery Testimony, pp. 14-15; ER, pp. 1.1-6d, f. KCPL has undertaken similar programs since 1973 through its advertising, Home Service program and distribution of books and booklets on conservation. Jester Testimony,⁸⁶ pp. 2-5; ER, pp. 1.1.6f, g; Tr. 3885-3892.

144. Conservation programs have also been carried out with Applicants' commercial and industrial customers. Since 1972, KG&E has worked directly with its large customers to conserve energy, efforts which have resulted in at least some changes in industrial processes and lighting. Tr. 2241-2242, 2248, 3005, 3008, 3026. Seminars have been held for these customers, booklets on wise use of energy published, and assistance afforded to industrial customers to set up conservation committees within their plants. Tr. 2243-2244. KCPL sales engineers work directly with larger customers, assisting them in design and encouraging wise use of energy. Tr. 3887-3888, 3893. Advertising addressed to commercial customers has been used to encourage good insulation and proper construction. Jester Testimony, p. 6. Direct contacts with builders and city officials have been undertaken to promote efficient design and construction. Tr. 3900, 3921-3922.

145. Results from these conservation efforts are difficult to analyze. Factors such as the economy and mild weather were affecting sales and demand at the same time as conservation efforts reached major proportions. Feld Testimony, pp. 25-27; Tr. 2244, 3894. Efforts aimed at improved insulation and more efficient air conditioning can be expected to moderate to some extent future growth in peak load, but will occur over a long period of time as present equipment is replaced. Jester Testimony, p. 7. For the most part, industrial and commercial customers have always practiced economical use of energy in order to control costs. This factor thus restricts future conservation savings. Jester Testimony, pp. 5-6; Tr. 3893-3895. The conservation effect is largely a one-time

⁸⁶Testimony of Jack N. Jester on Contention I-21, following Tr. 3875 (hereinafter "Jester Testimony").

saving, most of which has already occurred. Woolery Testimony, p. 16; Feld Testimony, p. 28; Tr. 3911-3914. Conservation thus establishes a lower base from which future growth is made and which Applicants have used for their forecasts. Lucas Testimony, pp. 16, 18; Tr. 2216-2217, 2244-2245.

146. A final consideration is that energy conservation of fuels which are in short supply (oil and natural gas) will lead to a conversion to electricity, thus increasing electric sales and demand. In some area within Applicants' service territories, limitations have been placed on new gas customers. These restrictions have resulted in some conversions of industrial activities to electrical energy and an increasing saturation of electric appliances in the residential market. Feld Testimony, pp. 28-29; Jester Testimony, pp. 7-8; Woolery Testimony, pp. 11-14; Tr. 3879-3883, 3904-3905.

147. In light of the offsetting effect of conversions and the probability that any reduction in electric sales and demand due to conservation has in large part already been achieved, conservation programs are not likely to reduce significantly the need for WCGS.

b. Solar Heating and Cooling

148. Applicants have forecast that by 1978 solar heating of residences will become evident and by 1984 five percent of all new homes will be heated by solar energy. This factor was considered in Applicants' forecast of residential demand. ER, pp. 1.1-6h, 1.1-6i; Raffel Testimony,⁸⁷ p. 8; Woolery Testimony, p. 7. Additional testimony presented by Applicants and the Staff confirms the conclusion that solar heating and cooling of residences will not affect the need for WCGS.

149. Solar heating is technically feasible and has been implemented on an experimental basis in as many as 1,000 homes and structures. Raffel Testimony, p. 7; Beall/McLain Testimony,⁸⁸ p. 1. Costs of such systems are high. Collector plate alone for heating a 1925 square foot residence in Applicants' service areas would cost in excess of \$6,400. Added to this would be the costs of pumping equipment and, for the times when the sun does not shine, either a heat storage system or a supplementary conventional heating system. Raffel Testimony, pp. 7-8; Tr. 3764-3765. The cost of these components has been estimated at 50% of the cost of collectors. Beall/McLain Testimony, p. 5. The investment cost alone for a \$10,000 solar heating system as reflected in an 8% 30-year mortgage and ignoring maintenance costs, would exceed \$73 per month; *Id.*, pp. 5-6; Tr. 4046-4047. Consumer acceptance is likely to be slow because of the high capital costs involved. Beall/McLain Testimony, pp. 6, 9. Reductions in collector costs

⁸⁷Testimony of David N. Raffel on Contentions I-21(b) and I-22(b) through (i), following Tr. 3751 (hereinafter "Raffel Testimony").

⁸⁸Supplemental Testimony on Contention I-21(b) presented by Samuel E. Beall and Howard A. McLain, following Tr. 3492 (hereinafter "Beall/McLain Testimony").

will be dependent upon achieving future mass production levels. Beall/McLain Testimony, p. 4. Certain other parts of a solar system are "off-the-shelf" items for which significant cost reductions are unlikely. Tr. 3784-3785.

150. Even if a shift to solar heating greater than that projected by Applicants should occur, the effect on the need for WCGS would be minimal. In Applicants' systems, both peak load and energy needs are greater during the summer than the winter. Thus, solar heating would not reduce the demand for capacity to serve the summer load. Raffel Testimony, pp. 6-7. Assuming that every existing building and every new building constructed by 1983 were to install solar heating, the reduction in electric energy would be 11% of WCGS output. Raffel Testimony, pp. 12-13. A much more likely estimate of the effect of solar heating would be about 1% of the energy from WCGS because retrofitting solar systems in existing residences is expected to be more expensive than in new construction. Raffel Testimony, pp. 9-13; Beall/McLain Testimony, pp. 3, 6-8.

151. Solar-powered cooling is unlikely to have more than a minimal impact during the next decade. A desiccant system will work only in humid atmosphere and is not commercially available. Also, its performance and cost are conjectural. Absorption coolers are not commercially available in capacities suitable for residential use. A solar-powered Rankine engine could also be utilized but at a high cost both in money and materials. Raffel Testimony, pp. 14-15; Tr. 3780-3781.

152. It is the view of the Board that, based on both economics and availability, solar-powered heating and cooling will not affect Applicants' need for WCGS.

c. Peak Shifting

153. Both Applicants have experience with peak shifting strategies for large customers. KG&E has had an off-peak rate for its cement plant customers (representing 6.5% of industrial sales) for several years. Woolery Testimony, p. 17; Tr. 3027-3031. Although the major industrial customers represent a large share of energy sales, they are a much smaller fraction of KG&E's peak. Tr. 3001-3002. KCPL currently has seven customers using a Primary Large Rate with an increased night use provision. The potential effect of this rate has been to reduce peak demand about 70 megawatts. Jester Testimony, p. 10; Tr. 3895-3896.

154. The effect of peak shifting is to move the demand to another period, thereby increasing the need for base-load capacity such as WCGS. Feld Testimony, p. 30. Peak shifting can only be effectively used by customers who are able to shift production to off-peak hours. In most cases, this would require additional equipment and considerably higher labor costs. Since electricity is generally not a major cost factor in most industrial and commercial facilities, off-peak power cannot be sold at a sufficiently low price to make it attractive.

Feld Testimony, pp. 32-33; Woolery Testimony, pp. 17-18; Tr. 2997-2998; 3014-3015. Given the relatively long daily peak on Applicants' systems and the lack of seasonality for industrial loads, peak shifting is unlikely to affect the need for WCGS. Tr. 3757-3761.

d. Peak Demand Surcharge

155. A peak demand surcharge would penalize use of electricity during peak periods and tend to shift consumption to off-peak hours. By moving consumption from one time period to another, overall energy consumption would not necessarily be reduced. The net effect of this shift would be to reduce the need for peaking units and increase the need for base-load capacity such as WCGS. Feld Testimony, p. 35; Tr. 3015. A peak demand surcharge could cause "needle peaks" by cutting back consumption during the peak period but leaving the absolute peak relatively unaffected. *Id.*, p. 36.

156. KCPL is currently working with the Missouri Public Service Commission on a load sampling study to determine the load characteristics of various customer classes. This study, while it might ultimately lead to a time-of-day pricing system or other rate structure changes, is not far enough advanced to speculate as to its outcome. Jester Testimony, p. 10; Tr. 3901. The Missouri Commission has found that KCPL's rate design is appropriate, pending completion of this study. Exhibit 11, p. 28.

157. KG&E and KCPL use declining block rates for all customer classes with the exception of a higher summer tail block for KG&E residential customers. KG&E's residential rates have had a higher tail block since 1954, primarily in an attempt to regain the costs of serving the air conditioning load. The declining block rate and summer tail rate are cost-justified. Woolery Testimony, pp. 18-19; Feld Testimony, p. 43. For the same reasons that a peak demand surcharge is not likely to reduce the absolute system peaks, so, too, an inverted rate structure would probably not cause a reduction. Woolery Testimony, p. 19. Studies of the effect of flattening or inverting rates indicate that the overall effect will not be a reduction in electricity use. Feld Testimony, pp. 41, 43.

f. Interruptible Loads

158. KCPL has one 4.5 megawatt interruptible customer and is negotiating with another customer for an interruptible load of about 40 megawatts for 1976. Contacts with a number of other KCPL major customers have indicated little interest in additional interruptible loads. Jester Testimony, p. 10; Tr. 3909-3910. KG&E has had discussions with major customers about the possibility of interruptible rates but without finding sufficient interest to implement such rates. Woolery Testimony, p. 19; Tr. 3025. One reason for lack of interest is that greater investment would be necessary to assure production or acceptable business operating hours on an interruptible basis. Woolery Testimony, p. 19. As

in other cases discussed above, electric power is generally a small fraction of operating expenses and, therefore, a reduction of electric rates below economic limits would be required to attract most customers to an interruptible schedule. *Ibid.*

159. Interruptible loads, like a peak demand surcharge, would not reduce energy consumption and thus would not affect the need for base-load capacity like WCGS. Woolery Testimony, p. 19; Tr. 3023-3024. Since interrupting electrical loads for long periods of time would probably affect the economy adversely, interruptible loads are not considered a substitute for base-load capacity. Gekas Testimony, p. 19.

160. The Licensing Board finds that none of the alternatives identified in Contention I-21(a)-(f) could singly or cumulatively reduce substantially the need for WCGS.

O. Contention I-22(d)-(i)

Applicants have not adequately considered alternative means of generating electricity which singly or in combination would replace the capacity to be generated by the WCGS. These alternatives, in addition to conventional fossil fuel generation of electricity, are specifically:

(d) Synthetic fuels from coal and oil;

(e) Use of fuel cells as peaking and/or base-load facilities;

(f) Improved efficiency of current fossil facilities by development of magnetohydrodynamic techniques;

(g) Combustion of trash to reduce the need for coal;

(h) Wind, including individual, residential and agricultural generating units;

(i) Agricultural wastes (production of methane both by Applicants and individuals).

d. Synthetic Fuels from Coal and Oil

161. Applicants' Environmental Report considered a fossil fueled plant using synthetic fuels from coal and oil and found that after the mid-1980's such fuels might be commercially available but could not substitute for WCGS. ER, pp. 912-4d, g., j. Additional testimony presented by Applicants and the Staff confirmed this view.

162. Under ERDA's direction, demonstration plants to convert coal to oil and gas are being planned. The first such demonstration plant is scheduled to begin operation in 1980. Demonstration plants for other processes are scheduled in 1981. Commercial synthetic fuel plants will not be built until demonstration plants have proved feasible, beyond the time required for initial operation of WCGS. Beall Testimony,⁸⁹ pp. 1-4.

⁸⁹ Supplemental Testimony of Samuel E. Beall on Contention I-22(d), (e), (f), (g) and (i), following Tr. 3942 (hereinafter "Beall Testimony").

163. Cost estimates by El Paso Natural Gas Company for its proposed coal gasification plant show that synthetic fuel costs cannot compete with the cost of alternatives. For a plant built in the early 1980's, the 25-year average cost per million BTU would be \$3.97, two to three times the cost of a coal-fired alternative to WCGS. Raffel Testimony, p. 34.

e. Fuel Cells

164. Fuel cells use natural gas or petroleum distillates to generate electricity. Raffel Testimony, p. 36. Although small units can be purchased by special arrangements, no facilities exist for commercial production. *Id.*, p. 37. A program is underway to build a 5 MWe prototype system by mid-1978. However, it will not be known until after 1981 whether fuel cells are capable of producing large amounts of electricity economically. Beall Testimony, pp. 5-6. In any event, fuel cells use those fossil fuels which are in shortest supply. While fuel cells might replace other generating units using those fuels, they would not be used for base-load capacity and would, therefore, not replace plants such as WCGS. *Ibid.*; Raffel Testimony, pp. 36-37.

f. Magnetohydrodynamics

165. This technique for improving the efficiency of fossil-fueled plants was considered in Applicants' Environmental Report and rejected as not being practical until the 1990's. ER, 9.2-4d, 9.2-4g, 9.2-4j. At the present time, major unresolved technical problems for magnetohydrodynamics exist with regard to reliability, seeding materials, electrode corrosion and erosion, and magnets and heaters. Raffel Testimony, p. 38. No cost data are yet available. *Ibid.* The first commercial "demonstration" will not take place until the late 1980's. Therefore, magnetohydrodynamics cannot be considered as an alternative to WCGS. Beall Testimony, p. 71.

g. Combustion of Trash

166. Combustion of trash to generate electricity was considered in Applicants' Environmental Report. Based upon calculations described therein, the maximum achievable contribution would be a few percent of 1985-1995 electric energy needs. ER, 9.2-4e, 9.2-4g-9.2-4i, Table 9.2-0.

167. Experimental prototype plants are currently burning trash in combination with coal to generate electricity. Beall Testimony, p. 8. Use of trash in existing coal plants would save coal, but would not provide any additional capacity. Raffel Testimony, p. 39. Union Electric Company, which has been operating an experimental prototype since 1972, finds that trash processed and delivered to the steam plant is more expensive than coal. *Id.*, p. 43.

168. While combustion of trash in new generating facilities could add capacity, the amount would not be sufficient to affect the need for WCGS.

Based upon a daily per capita trash generation of 8 pounds⁹⁰ and assuming 25% of paper trash is recycled,⁹¹ about 1,500 kilowatt hours per person per year could be generated. However, given collection efficiencies and the need to improve waste collection systems and special processing facilities, generation per capita from trash is not likely to exceed 750 kilowatt hours per year, or about 5% of 1983 electrical energy needs. *Id.*, p. 41. The Staff calculated the potential generation of electricity from trash of about 8% of WCGS output at a 75% capacity factor. Beall Testimony, p. 10. In light of the fact that trash has been shown to be at least as expensive to burn as coal and that new generating capacity would have to be built if trash is to be anything but a way of saving coal, Raffel Testimony, pp. 39, 43, this technique would not replace the need for WCGS.

h. Wind

169. Both the Staff and Applicants concluded that wind power is not a viable alternative to WCGS. FES §9.1.2.1; ER p. 9.2-4d, g. j. Testimony presented by both Applicants and the Staff supported that conclusion.

170. The technology to generate electricity from wind currently exists. In view of the fact that Kansas and western Missouri are favorable areas for wind power, Applicants have been funding research in wind power since 1964. Raffel Testimony, pp. 44-45; Tr. 3810-3813. Large-scale research programs are currently being conducted by ERDA. Under this program, ERDA has built an experimental 100 KWe wind turbine generator and plans to build a 200 KWe unit by the end of 1976 and a second unit in 1977. Design work has been started for a 1.5 MWe unit; construction of the first two units is scheduled for 1978. Testing these units will continue until 1981. Testing of multiple 1.5 MWe units will not begin until the 1980's. McLain I-22(h) Testimony,⁹² pp. 5-6; Tr. 4032-4034. Given these projections and ignoring costs, there will not be enough experience with wind turbines to justify reliance upon them as a substitute for WCGS until at least the mid 1980's. Tr. 3967-3969, 3993. Nor have the techniques of integrating wind turbines into a utility system been resolved. Tr. 3988, 4002-4003. It is anticipated that wind power would have to be coupled with storage facilities in order to prove feasible for base load purposes. McLain Testimony, p. 10.

171. The cost of energy from a wind turbine, assuming its commercial availability, was also shown to exceed that of nuclear or coal-fired generation.

⁹⁰The 1970 level of waste in the United States amounted to about 8 pounds per person per day. ER, p. 9.2-4h.

⁹¹At present, 19-20% of paper trash in the U.S. is recycled. In West Germany and Japan, about 50% is recycled. Raffel Testimony, p. 40.

⁹²Supplemental Testimony on Contention I-22(h) by Howard A. McLain, following Tr. 3948 (hereinafter "McLain Testimony").

Using thirty years of Wichita wind speed data, the amount of extractable power from the wind was determined. Raffel Testimony, pp. 46-58; Tr. 3813-3817, 3820-3824. Based upon a detailed analysis of the types and quantities of materials used in the Smith-Putnam wind turbine (a 1.25 MWe unit which was the largest wind turbine generator ever built) and allowing for cost reductions which large scale production might achieve, the installed cost after financing was estimated at \$850 per kilowatt. The energy cost would range from 35.2 to 47.2 mills per kilowatt hour (1982 costs), depending upon wind conditions. Raffel Testimony, pp. 58-59, Tr. 3847-3857. If construction costs were as low as \$250 per kilowatt, the energy cost would range from 15.0 to 20.1 mills per hour. Tr. 3858. Conceptual studies examined by the Staff's witness have yielded cost estimates for 1.5 MWe, mass-produced wind turbines as low as \$335 (1975) per rated kilowatt. McLain Testimony, Attachment A. These costs do not include a profit margin. *Id.*, p. 8; Tr. 3975. Assuming a 15% profit margin, estimates for turbines for sites having 18 miles per hour mean wind speeds ranged from 15.7 to 28 mills per kilowatt hour (1975). For sites having 12 mph mean wind speeds, costs ranged from 40 to 70 mills per kilowatt hour (1975). At an 8% escalation rate, the 1982 energy cost estimates would range from 25 to 120 mills per kilowatt hour, as compared to 7.4 mills per kilowatt hour for nuclear fuel costs. McLain Testimony, Attachment B, p. 11. In addition, the Staff's witness cautioned that these studies were entirely conceptual and that analysis of the results of the studies as well as the actual building and operation of specific units over a period of time will be required before more reliable estimates can be obtained. McLain Testimony, p. 10; 4034-4035. Thus, these estimates and the \$250 per kilowatt hour cost remain speculative.

i. Agricultural Waste

172. ERDA is currently supporting several experiments using agricultural wastes as a fuel. Large demonstrations may begin as early as 1978 and could be completed by 1981. Beall Testimony, p. 31.

173. Applicants' witness presented a detailed study to determine the caloric content of sugar cane (the crop with the maximum energy producing potential). Raffel Testimony, pp. 66-78. Any crop grown in Kansas or Missouri would be less efficient as an energy source than sugar cane. Use of the agricultural waste from crops such as wheat would increase the need for fertilizer, since most straw and chaff is turned into the ground. The cost estimate for extracting the caloric content of sugar cane took into account the costs of equipment and energy intensive items, seed cane, labor, interest and land rent, harvesting and delivering cane to the mill, and processing. The cost of the total energy before conversion to electricity and excluding conversion of the cane into alcohol would be at least \$4.49 per million BTU, or three times the cost of coal and thirteen times the cost of nuclear fuel. Raffel Testimony, pp. 67-72.

174. A study of cattle manure as a source of energy showed that it would take almost 5 million steers to provide the fuel equivalent to generating as many kilowatt hours as WCGS, exclusive of the energy needed to collect, transport, dry and grind the dried manure. Although there were 6.4 million cattle and calves in Kansas, less than 1 million were in feed lots. No large feed lots were in KG&E's service area. In Missouri, there were 7.6 million cattle and calves, but only 170,000 in feed lots. Manure from the largest existing feed lot in Applicants' service areas would only be enough to generate 3.5 MWe, at a cost far greater than a coal-fired plant. Raffel Testimony, pp. 73-78.

175. Use of agricultural wastes to produce methane would not replace WCGS. Even if the agricultural wastes were provided at no cost, and ignoring collection and delivery costs, producing and storing methane would cost about \$6.79 per million BTU and electricity generated from it about 61 mills per kilowatt hour for fuel alone. Raffel Testimony, pp. 79-84. Thus, agricultural wastes are not an economic alternative to WCGS.

176. The Licensing Board finds that, under the present state of development, synthetic fuels, fuel cells, magnetohydrodynamics, trash, wind, and agricultural wastes, either singly or in combination, cannot economically or reliably replace the capacity to be generated by WCGS or any substantial fraction thereof.

P. Contention II-1

Applicants are not financially qualified to construct and operate the WCGS in light of the fact that Applicants have delayed its construction for one year.

177. The Board has deferred its decision on this contention and on the issue set forth in the Notice of Hearing regarding financial qualifications as discussed in paragraph 13, *supra*. The Board has, however, considered the record on financial qualifications compiled to date and finds that the Applicants are financially qualified to redress any damage caused to the environment in the course of work undertaken pursuant to any limited work authorization that might be issued.

Paragraphs 178-182⁹³ not used.

Q. Contention II-4

Applicants' proposed emergency plans are inadequate to provide for protection of the public health and safety in the site area in the event of a general emergency at the site.

⁹³Footnote numbers 94-97 not used.

183. At the construction permit stage, an applicant is not required to present detailed plans concerning the appropriate protection measures to be taken in the event of an accident, but only to show that such measures (e.g., evacuation) are feasible. *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-248, 8 AEC 957, 961 (1974); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 485 (fn. 15) (1975). Appendix E to 10 CFR Part 50 does require, however, that certain specific aspects of emergency plans be set forth in the PSAR. These are discussed below.

184. Applicants have described their preliminary plans for coping with emergencies, including organization, training, onsite treatment facilities and protective measures. The Applicants have also identified and contacted those state and local agencies with which arrangements will be established and hospitals which can provide treatment for radiological emergencies. The Staff has determined that Applicants' emergency planning program complies with Appendix E to 10 CFR Part 50. Boyer Testimony, ⁹⁸ pp. 105; SER, §13.3; Tr. 2780-2784.

185. A general emergency at the site would involve property beyond the site boundary and would require the assistance of offsite support groups. Boyer Testimony, p. 2. From within the control room, WCGS operators would be able to determine the occurrence of an accident and make initial assessments of its offsite consequences based on in-plant readouts of meteorological instrumentation. Tr. 2773, 2817-2818, 2839. In the event of a serious accident, Applicants would initiate a preplanned program of increased environmental sampling and a radiation survey. SER, p. 13-2. Communication with state and local agencies offsite would be accomplished through a telephone system (with underground cables from the site to Burlington), an FM radio communication system, or a microwave communications link between the site and Wichita. Boyer Testimony, p. 1; Tr. 2784-2785. Notification of population would be by telephone, public address system, or house-to-house. Tr. 2758-2759.

186. Both Applicants and the Staff have determined the feasibility of evacuating areas around the WCGS site. Applicants, using future population estimates and Environmental Protection Agency guidelines for action level doses, determined that the notification times and egress capabilities permit evacuation in a timely fashion, even using conservative dose calculations and meteorology. PSAR Addendum, Appendix R, R. 420-1-R.420-5; Tr. 2754-2755. The Kansas Highway Patrol has indicated that Applicants' evacuation times were conservative. Tr. 2755. The Staff has undertaken an extensive analysis to determine evacuation times on a sector-by-sector basis, using a semi-empirical mathematical

⁹⁸Testimony of Gary Boyer on Contention II-4, following Tr. 2556 (hereinafter "Boyer Testimony").

model which accounts for projected population and the number, capacity and character of egress routes. Evacuation times calculated by this model were then compared with time/distance dose curves to determine whether evacuation can be accomplished within a sufficiently short time. Tr. 2804-2815, 2825-2833, 2835-2838. Based upon the uncontradicted evidence, the Board finds that the Applicants have acted responsibly in developing their planning for emergencies for onsite personnel and offsite populations in concert with local, state and Federal officials as required by 10 CFR §50.34(a)(10) and Appendix E to 10 CFR Part 50, and have adequately described these plans for the construction permit stage.

III. COMPLIANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 AND FEDERAL WATER POLLUTION CONTROL ACT

A. Environmental Report and Environmental Statements

187. Pursuant to 10 CFR §51.20, Applicants submitted an Environmental Report ("ER") (Exhibit 3), which contains a description of the proposed action, a statement of its purposes, and a description of the environment affected. Notice of the availability of Applicants' Environmental Report was issued on August 16, 1974. 39 Fed. Reg. 33814 (September 20, 1974). Based on the information submitted by Applicants and on its own independent review and analysis, the Staff prepared a Final Environmental Statement ("FES") (Exhibit 4). Notice of the availability of the Final Environmental Statement was issued on October 31, 1975. 40 Fed. Reg. 51695 (November 6, 1975). The FES contains a detailed description of the site and the plant and a discussion of the status of compliance of the facility with applicable Federal, state, regional, and local environmental requirements. The FES includes an evaluation of the probable environmental impact of plant construction and operation. It contains an assessment of Applicants' effluent and environmental measurement and monitoring programs and an assessment of the environmental effects of postulated accidents. In the FES, the Staff analyzed the need for the power to be generated by the facility and assessed alternatives to the plant, its site and design. In addition, the FES includes an evaluation of the adverse environmental effects which cannot be avoided, the relationship between short-term uses of man's environment and maintenance and enhancement of long-term productivity, and the irreversible and irretrievable commitments of resources. Finally, the FES contains a cost-benefit analysis which considers and balances the environmental effects of the facility and the alternatives available for reducing or avoiding adverse environmental effects, as well as the environmental, economic, technical, and other benefits of the facility.

188. The Board finds that the Staff review has appropriately considered the

information supplied by the Applicants in the ER and that the Staff review set forth in the FES, as supplemented, has been adequate and that the requirements of the NEPA and 10 CFR Part 51 have been complied with in this proceeding. The Board accepts the facts set forth in the FES and concurs in the conclusions by the Staff with the exception of certain factors set forth herein.

B. Impacts of Construction

189. The land area of the 10,500-acre proposed site which will be disturbed by construction of the plant and related facilities is approximately 5,090 acres for the cooling lake and about 200 acres for the generating station, dam and dikes. The land area displaced by the cooling lake, plant, and associated structures will be lost to terrestrial vegetation and wildlife population for the life of the plant. Land immediately adjacent to the cooling lake will be modified during construction activities, but is subject to restoration. FES, §§4.1.1, 4.1.2; ER, §§4.1.1, 4.3.1. The land use implications of the removal of farm land from agricultural production as a result of the plant are addressed in the Licensing Board's findings on Contention I-4(a).

190. No natural or historic landmarks, sites, or places listed in the National Register of Historic Places and the National Register of Natural Landmarks are located within a 5-mile radius of the plant. FES, §2.3.1. Except for one site, all archeological sites discovered on the site are within the cooling lake basin and will be inundated. Prior to inundation, the most significant of these sites will undergo further evaluation or excavation. FES, §4.1.1; ER, §4.1.1.

191. The plant will require the construction of transmission line facilities, makeup water pipelines, roads, and a railroad spur.⁹⁹ Clearing for construction of these facilities constitutes an additional unavoidable disturbance of the environment. Construction of the makeup water facilities at John Redmond Reservoir will result in local increases in total suspended solids and some interference with recreation for a period of 1 to 1.5 years.

192. Siltation and high total suspended solids (TSS) resulting from the construction of the Wolf Creek dam will produce a temporary impact on Wolf Creek and Neosho River, the significance of which will vary directly with rainfall. Runoff resulting from activities associated with the construction of the power block must meet the EPA TSS limitation of 50 mg/l. (40 CFR 423.40 *et seq.*) FES, §4.3.2.1, 4.5.1, Appendix A pp. A-22, A-23; ER, §4.1.2; Supplemental Testimony of Gerald K. Eddlemon, following Tr. 3738. Siltation and turbidity arising from the construction of the makeup intake structure will be

⁹⁹ Although the Board has previously found that the environmental impact of construction of the railroad spur will be more than "de minimis," LBP-76-19, NRCI-76/5 652, affirmed ALAB-331, NRCI-76/6 771, we now find that that impact, when viewed in the light of all of the costs and benefits, will be acceptable.

quite localized, and while all benthic organisms and their habitats on the immediate site of the structure (less than 1.5 acres) will be lost, this loss is not significant in view of the total benthic area available for bottom-dwellers. FES, § 4.3.2.1, 10.3.3.2; ER, § 4.1.2.

193. Following closure of the Wolf Creek dam, the 6 or 7 miles of Wolf Creek below the dam will depend solely on runoff from the remaining watershed for maintaining flow during the 25 to 64 months needed to fill the cooling lake. Although it will probably be dry intermittently, it is expected that on resumption of adequate flow repopulation by both fish and microinvertebrates will occur. FES, § 4.3.2.2. The construction of the 5,090-acre cooling lake, which will cover approximately 55 percent of the length of Wolf Creek, will change 15 miles of stream habitat into still water habitat, and will cause attendant shifts in aquatic species composition. FES, § 10.3.3.2.

194. The plant will require the construction of transmission line connections to each of the Applicants' systems. In addition, the construction of the cooling lake will necessitate the relocation of two lines. Approximately 180 miles of transmission lines will be constructed. Environmental effects will be minimized through the selection of routes which largely avoid heavily populated areas and which generally pass through the center of sections of land, thus minimizing the appearance of the lines from roads. Transmission line construction will be accomplished without a significant long-term or permanent adverse effect on agricultural production along the right-of-way and adjoining properties. A small area of land will be taken out of production (land occupied by transmission line tower bases), but this will amount to less than 1 percent of the 3,127 acres encompassed by the transmission line rights-of-way.

195. Plant construction will require the relocation of 25 households. The noise of heavy machinery and blasting will have a temporary impact upon residents within two miles of the site. Dust, smoke, and noise due to construction activities will not, however, have significant effect on people in the residential areas of Burlington and New Strawn because of their distance from the site. Traffic congestion associated with construction activities will cause some temporary inconvenience.

196. During the period of plant construction, the surrounding communities will experience an increase in population due to the arrival of construction personnel and their families. Estimates indicate that during the 1979 period of peak employment 77 workers and their families will have moved into Coffey County, and 132 families will have relocated in the intermediate impact area (within a 75-mile radius of the site). While there will be a demand for increased services in Coffey County as a result of the construction, no major housing or school problems are expected. FES, § 4.4.2, 4.4.3, 4.4.4, and at iii; ER, § 8.2.

197. On the basis of its review, the Staff has evaluated these impacts and has concluded that, if commitments made by Applicant to limit the adverse effects

of construction are combined with additional Staff recommendations, environmental impacts will be kept to minimum practicable levels. FES, 4.5.2. The Board finds that the unavoidable impacts of construction of WCGS have been adequately described and evaluated. To minimize these impacts, the Board has adopted the conditions set forth in Section V of this decision.

C. Impacts of Operation

198. Circulating and service water for the station will be drawn from and returned to the Wolf Creek cooling lake. Makeup water will be pumped into the lake from the John Redmond Reservoir. The adequacy of the supply of makeup water and the environmental consequences of the reduced flows caused by makeup water usage are addressed thoroughly in the Licensing Board's findings on Contention I-1(a).

199. Applicants and the Staff have each performed thermal analyses of the behavior of the Wolf Creek cooling lake. The results of these analyses are essentially in agreement. FES, §5.3; ER, §5.1.1. No significant impact on the biota of the Neosho River is expected as a result of blowdown temperatures. FES, §§5.5.2.1, 10.1.2.3; ER, §5.1.8.4. Elevated temperatures in the cooling lake, however, will probably induce shifts in species composition of plankton and benthic organisms, but most species of fish likely to inhabit the cooling lake will adequately tolerate the water temperatures.

200. Phytoplankton, zooplankton, and fish in the waters below John Redmond Dam will be subject to entrainment in and impingement on the makeup water intake system. The magnitude of entrainment and impingement losses cannot be definitively assessed, but, on the basis of the small amount of water to be withdrawn compared to the total average flow, it would appear that no serious impacts will occur in the Neosho River. FES, §5.5.2.2; ER, §5.1.3. Entrainment of phytoplankton, zooplankton, and ichthyoplankton in the circulating water system may reduce the overall productivity of the cooling lake, although the extent of this reduction cannot be estimated definitively. Some mortality of juvenile and adult fish in the cooling lake will result from impingement on the traveling screens of the circulating water intake structure. Applicants will adjust circulating water flow to maintain intake velocities at no more than 1.0 feet per second or, alternatively, will monitor fish impingement whenever the cooling lake elevation falls below 1,075.6 feet MSL. FES, §5.5.2.3; ER, §5.1.3.

201. Total dissolved solids (TDS) concentrations in the cooling lake will be controlled by varying water makeup and blowdown rates. Spakoski Testimony on Contention I-1(a), pp. 2-3; ER, §3:6.2. Average TDS concentrations in the cooling lake during normal conditions will be 1160 mg/l of which 460 mg/l is from sulfate introduced from sulfuric acid anticorrosion treatment. FES,

§5.5.2.3. During a postulated period of record drought, Applicants predict maximum concentrations of approximately 2,000 mg/l of which about 800 is composed of sulfate. ER, Table 3.6-3. Using conservative assumptions, the Staff predicted a buildup of TDS during the postulated drought of about 2150 mg/l. Tr. 4312-4315; Supplemental Testimony of Charles R. Boston in Response to Board Questions Dealing With Cooling Lake Water Quality following Tr. 4306. Most organisms expected to exist in the cooling lake can tolerate TDS levels somewhat higher than 2,000 mg/l. *Id.*, p. 1; FES, §5.5.2.3, Table 5.23. The Applicants made additional estimates of TDS buildup utilizing a different program of spillage and blowdown and the assumption that average makeup water may be restricted to only the amounts necessary for plant operation. For one unit operation (30 cfs), Applicants estimated a maximum TDS buildup including sulfate over a 16-year period, including the period of drought, of 1350 mg/l. Tr. 4139-4143, 4255-4271. The Staff's conservative calculation for 30 cfs average makeup during a postulated drought was 2000 mg/l. Tr. 4318-4324-4325, 4797-4802. The combination of high sulfate concentration and anaerobic conditions in the hypolimnion during the summer will probably lead to hydrogen sulfide production and the removal of a portion of the lake from inhabitation by most organisms. FES, §5.5.2.3. Releases of water to the Neosho River will be made in accordance with Kansas State Board of Health standards for drinking water. Increased TDS concentration in the Neosho River due to these releases will pose no threat to existing aquatic organisms. FES, §5.5.2.1.

202. Applications of chlorine at the circulating water screen house will be used to control biofouling of the condensers. Concentrations of free available chlorine at the condenser discharge will be in the range of 0.1 to 0.5 mg/liter, which will comply with the EPA effluent limitations of 0.2 mg/liter average and 0.5 mg/liter maximum free available chlorine.¹⁰⁰ FES, p. 5-34.

Based upon these concentrations of free available chlorine and assuming dilution in the cooling water (but ignoring decay of residual chlorine and chlorine demand of the receiving water), the Staff calculated that concentrations of total residual chlorine in the outfall from the initial discharge pond to the main body of the cooling lake would be in the range of .001 to .03 mg/liter. Tr. 4446-47. The Staff found the impacts of chlorination at these levels on aquatic biota to be acceptable. Tr. 4447, 4466; See also: Testimony of F.L. Spakoski and G.W. Wadley on Chlorine Discharges, following Tr. 4332.

203. Plant operation will have only minor impacts on the terrestrial ecosystem of the area. Fluctuations in water level of the cooling lake will cause mud-

¹⁰⁰The Licensing Board raised the question whether EPA effluent limitations (in this case, with respect to chlorine) were applicable to the Wolf Creek cooling lake (Tr. 4455-59). We note that EPA, itself, in its comment letter on the DES, treated the cooling lake as subject to these effluent limitations. FES, p. A-54. In view of the fact that chlorine releases will be within this limitation, the Board need not address this question further.

flats to develop during the dry period of plant operation. Woody vegetation which invades these areas will be destroyed when reinundated, leaving an area around the perimeter of the lake inhabited by dead shrubs and trees of various ages. In areas which are not inundated for 4 or 5 years, however, some seral plant communities will replace the pioneer communities. Flood tolerant woody species will also invade the mudflats. FES, §5.5.1.2.

204. Both the Staff and Applicants estimated the radiation doses to man at and beyond the site boundary via the most significant pathways and utilizing conservative assumptions on the dilution of effluent gases, the dilution of radionuclides in the liquid discharge, and the use by man of the plant surroundings.^{100a} FES, §§5.4.2.3, 5.4.2.5; SER Supp. 2, Appendix B; ER, §5.3. The estimated maximum radiation doses to individuals and the upper bound doses to the population from normal operation of the plant will be an extremely minor contribution to the dose that persons in the area normally receive from natural background radiation, and represent no measurable radiological impact. *Ibid.* The contributions toward the environmental costs of this plant of the effects of the transportation of fuel and waste to and from the plant are summarized in the Staff's Final Environmental Statement at Table 5.13. No detectable radiological impact is expected on the aquatic biota or terrestrial animals as a result of the quantity of radionuclides to be released by the plant. *Ibid.*

205. The Staff has included in its evaluation of environmental costs of the plant, in Table 5.14, the effects of the uranium fuel cycle based on Table S-3 of 10 CFR 51.20 in effect at the time of its evaluation. On November 5, 1976, the Commission issued its Supplementary General Statement of Policy, 41 Fed. Reg. 49898, in which it directed that, in addition to using that Table S-3, a specific analysis should be performed to determine whether, if the revised chemical reprocessing and waste storage values set forth in the Commission's notice of proposed rulemaking of October 18, 1976, 41 Fed. Reg. 45849, were used, the result would tilt the cost-benefit balance against the issuance of the license. The Board requested the view of the parties on the effect of the revised values on the cost-benefit balance. The Staff, on November 24, 1976, provided to the Board and parties its "NRC Staff Evaluation of the Impact of Revised S-3 Values on the Wolf Creek Cost-Benefit Analysis" and on December 13, 1976, submitted its "Motion of NRC Staff to Supplement the Record," moving the inclusion of the November 24 evaluation into the record. The motion was accompanied by an affidavit of the Environmental Project Manager attesting to the truth of the evaluation. A meeting of the parties and several conference telephone calls among the Board and parties then took place in the course of which the Staff offered to elaborate upon its conclusion that the cost-benefit balance would not be tilted by the application of the revised Table S-3 values. It did so in a December

^{100a}In-plant exposures are addressed in the Board's findings on Contention I-14(a).

23, 1976, document entitled "Supplementary Views of the NRC Staff Regarding the Impact of Revised S-3 Values on the Wolf Creek Cost-Benefit Balance." All parties agreed, during a telephone conference, to incorporation of the documents into the record. Accordingly, the Board grants the Staff Motion to incorporate the November 24 statement and on its own motion incorporates the December 23 statement, as Exhibits 33 and 34. The Board has considered them in its cost-benefit analysis.¹⁰¹

206. The Board has considered the evaluation by the Staff of the environmental impacts of plant operation including radiation doses to man and other organisms. The Board concludes that the effects of operation will be environmentally acceptable and that the release of radioactive materials will be as low as practicable.

D. Monitoring Programs

207. The Staff has reviewed Applicants' proposed preoperational and operational effluent and environmental measurement and monitoring programs for the monitoring of chemical, thermal, and radiological effluents, and for aquatic, terrestrial, and radiological effects. The Staff has proposed certain modifications thereto which the Board adopts and has included in the conditions set forth in Section V. Subject to those modifications, the Board finds that the preoperational monitoring programs appear to be adequate.

E. Environmental Effects of Postulated Accidents

208. The probability of occurrence of accidents and the spectrum of their consequences to be considered from an environmental effects standpoint have been analyzed using best estimates of probabilities and realistic fission product release and transport assumptions. The impact of postulated accidents have been assessed by Applicants in response to Commission guidance issued on September 1, 1971,¹⁰² requiring the consideration of a spectrum of accidents with assumptions as realistic as the state of knowledge permits. The Staff has evaluated Applicants' assessment using the standard accident assumptions and guidance issued by the Commission as a proposed amendment to 10 CFR Part 50.¹⁰³ FES, §7.1.

209. When considered with the probability of occurrence, the annual potential radiation exposure of the population from all the postulated accidents is

¹⁰¹ The Board has received MACEA's "Response" of January 11, 1977, to the Staff's considerations of the revised S-3 Table and has considered MACEA's views expressed therein in reaching the cost-benefit balance set forth in paragraph 219, *infra*.

¹⁰² 36 Fed. Reg. 18071 (September 9, 1971).

¹⁰³ 36 Fed. Reg. 22851 (December 1, 1971).

smaller than exposure from natural background radiation and is well within variations in the natural background. On the basis of these results, the Staff and Applicants conclude (FES, §7.1; ER, §7), and the Board agrees, that the environmental risks due to postulated radiological accidents are exceedingly small. The environmental effects of accidents during the transportation of radioactive materials to and from the plant are summarized in the Staff's Final Environmental Statement at Table 7.3.

F. Need for Power

210. The "need for power" has been addressed in the Board's findings on Contention I-19. Alternative energy sources were considered with Contentions I-18 and I-22(d)-(i), while alternatives not requiring the creation of new generating capacity were addressed in Contention I-21. The Board has concluded that the testimony adequately supports the need for power and alternative energy sources are not an economical substitute for WCGS.

G. Alternate Sites and Design Features

211. In the search for a suitable site for the proposed nuclear power plant, certain areas were eliminated because of population densities, and sites on the Missouri River were eliminated as being too far from Applicants' main load centers. An evaluation of regional water resources sufficient to sustain power plants of the size proposed led to the delineation of 6 subregions within the primary siting region. While potential sites within each of the 6 subregions were identified and investigated, the subregion of the Neosho River Basin, and, in particular, the John Redmond Reservoir area, is the most suitable for the location of a nuclear power plant because the reservoir is the only one capable of storing sufficient water to sustain plant operation through potential drought periods. Applicants' detailed studies of three sites near the John Redmond Reservoir show that the differences in environmental features are minor. While all three sites are technically viable from an engineering standpoint, the Wolf Creek site was selected because it can be developed at the lowest economic cost and with no greater environmental impacts than at the other two sites. FES, §9.1.2.2; ER, §9.3.¹⁰⁴ The Staff has reviewed the Applicants' analysis and conclude that no other site will offer significant advantages. FES, §9.1.3. The Board concurs in the choice of sites.

212. The Applicants have designed the 5,090 acre Wolf Creek cooling lake on the basis that additional generating capacity, either nuclear or fossil, will be installed at the site at some future date. In view of the fact that the application

¹⁰⁴The Belvue site has been addressed in the Licensing Board's findings on Contention I-17(b).

under consideration is for a single unit nuclear plant, the Board has considered the possibility of limiting the size of the lake to the 3,000 acres which would be needed for a single unit at the present time.

213. The ER sets forth a detailed analysis of the construction and operation of WCGS with a cooling lake sized for one unit and for two units. ER, Appendix 10.1A. The Staff also reviewed the alternative of two sizes of cooling lakes. FES, §9.2.1.2. Both analyses found no reasons why a smaller cooling lake would not be technically feasible. FES, p. 9-13. Construction of a smaller cooling lake would, however, entail potentially significant economic penalties with little offsetting benefits. Building a smaller lake subject to its expansion when additional generating capacity may eventually be needed would be significantly more expensive than building the larger lake initially. The cost of building the larger lake is estimated at \$65.4 million as compared with \$55.8 million for the smaller lake, or a savings of \$9.6 million. However, expansion of the smaller lake to a larger lake for a second unit in 1987 would necessitate construction starting in 1983 and costing \$36.2 million (in 1983 dollars) and land acquisition costing about \$4.8 million (in 1982 dollars). ER, §10.1A.4. The Staff analyzed the cost impact on a present worth basis and concluded that construction of a larger lake would save \$14.28 million (1982 dollars) over the cost of building a smaller lake with subsequent expansion by 1987. Even if expansion were to take place in the year 1995, the savings would still exceed \$10 million. FES, pp. 9-9, 9-12, 9-13.

214. The larger lake would obviously remove additional agricultural land from production. However, as shown in the findings on Contention I-4(a), removal from production of the entire site area is small in terms of local regional, or national production. Thus, the effect would not be large in either case. Increasing the size of the lake affects more total acreage, but affects lands of lower agricultural capability, and in some cases land unsuitable for cultivation. Horn Testimony, pp. 22-23. A smaller cooling lake would be somewhat warmer than the larger lake but would not be as strongly stratified. Testimony of Howard A. McLain in Response to Board Question Dealing with Small Cooling Lake Analysis, following Tr. 4353. Any incremental impacts are slight and do not outweigh the significant economic penalty associated with the smaller lake. The Board finds that the larger cooling lake is preferable from an economic standpoint and that environmental effects have been adequately considered.

215. The Board inquired whether the cooling lake could be built as a 5,090 acre lake but filled only to the level needed to sustain one unit operation until such time as a second unit at Wolf Creek is built. Tr. 2675. Under such a plan, additional agricultural land might be allowed to remain in production until construction for a second unit is required to begin. This alternative is technically feasible but economically unattractive. Also, some additional design difficulties would be encountered. Tr. 2675. Considering the fact that annual value of all agricultural production from the entire site is at most \$1 million, Horn Testi-

mony, pp. 4, 6, the added agricultural product which might be achieved for a few years on the land made available by only filling a large lake for one-unit operation would not make up the added construction and operating costs which would be required. The Board concurs in this conclusion.

216. Other alternatives to the proposed cooling lake heat dissipation system which have been considered by both Applicants and Staff are once-through cooling, dry cooling towers, mechanical-draft wet (evaporative) towers, natural-draft (evaporative) towers, wet-dry cooling towers, and a spray pond. FES, 9.2.1; ER, 10.1. Once-through cooling is not a viable alternative because of the absence of an adequate and reliable water source of sufficient volume and flow. After weighing the overall advantages and disadvantages of the various types of cooling towers and a spray pond, and particularly when comparing the economic penalty associated with the use of cooling towers with the acceptable environmental impact of the proposed cooling lake, the Board finds that the cooling lake is the preferred heat dissipation system.

H. Cost-Benefit Balance

217. The Licensing Board has weighed the environmental, economic, technical, and other benefits of construction of the proposed plant against environmental, and other costs upon the basis of the evidence of record. This weighing has included the impacts of the revised Table S-3 values. The principal environmental and other costs identified are those which have been described by the Licensing Board in its findings herein and are as follows:

a) Construction related activities will disturb about 200 acres and 5090 acres will be inundated by the cooling lake.

b) Approximately 3127 acres will be affected by transmission lines.

c) A new rail access will require approximately 150 acres. A makeup water line and access roads will utilize additional small amounts of land.

d) Approximately 50 households will be affected of which 25 will require removal. Traffic on local roads will increase due to construction and commuting activities.

e) Consumptive use of an average of 46.6 cfs from John Redmond Reservoir to supply the cooling lake. 1256 cfs will be circulated from the cooling lake during plant operations. During a period of record drought, Redmond levels could be reduced such that recreation, including fishing, would be affected for periods of up to several years.

f) Aquatic populations in the lower half of Wolf Creek will be reduced during filling of the cooling lake. Approximately 15 miles of Wolf Creek will be replaced by the lake and 7 miles of stream below the dam will be severely altered. Temporary reductions of aquatic populations below Redmond in the Neosho River will occur during construction.

g) During drought periods, withdrawal of makeup water will reduce flows in the Neosho River. Fish populations will be severely stressed.

h) Entrainment of plankton in the circulating water system may reduce the productivity of the cooling lake. Minor losses of fish may occur due to impingement and entrainment. Hydrogen sulfide formation in the cooling lake during summer may have temporary adverse effects on the biota.

i) Minor impacts on plankton and fish will occur in the makeup water system below Redmond Dam due to entrainment.

j) The cooling lake will displace rare native prairie habitat for two species of wildlife which are rare in the area.

k) Fluctuation in level of the cooling lake will cause extensive mudflats to develop during drought conditions.

l) Insignificant effects from normal operational releases of radioactive material.

m) Exposure of plant personnel to 450 man-rem per year of radiation.

n) The capital and operating costs of the plant.

218. The principal benefit of the plant is the production of electrical energy to satisfy the needs of the Applicants' customers. Based on the capacity factor range of 65%-75% used to evaluate WCGS, the probable generation of electricity will range from approximately 6.6 to 7.6 billion kilowatt hours of electricity per year.

219. The Board finds that, based upon the entire record regarding need for power and the available alternatives to the plant, construction of WCGS for operation on the schedule proposed by the Applicants is required to meet the need for electric power and that the plant, as designed and selected from available alternatives, represents the optimum selection based on overall economic and environmental consideration. The Board further finds that, based on the entire record, the environmental and economic benefits from the construction and operation of the plant are greater than the environmental and economic costs which will necessarily be incurred.

I. Federal Water Pollution Control Act

220. The State of Kansas, through its Department of Health and Environment, issued to Applicants on September 2, 1975, a certification, FES, p. G-13, that:

... [A]ny proposed discharge(s) from the ... facility will be in compliance with all applicable Water Quality Criteria Standards of the State of Kansas and Sections 301, 302, 306, 307 and any other applicable section(s) of the Federal Water Pollution Control Act.

The Licensing Board finds that this certificate satisfies the requirements of Sec-

tion 401 of the Federal Water Pollution Control Act, as amended (33 U.S.C. §1341).

IV. RADIOLOGICAL HEALTH AND SAFETY ISSUES (UNCONTESTED)

A. The Application and its Review

221. On May 17, 1974, the Commission docketed for formal review the application by Kansas City Power & Light Company for licenses to construct and operate the Wolf Creek Generating Station, Unit 1, on a site in Coffey County, Kansas. The application is one of four concurrently filed applications submitted under the Commission's standardization policy by five utilities which have formed for that purpose the Standardized Nuclear Unit Power Plant System ("SNUPPS"). These applications were filed pursuant to the Commission's "Duplicate Plant" concept,¹⁰⁵ whereby one or more utilities may submit individual construction permit applications which reference, for the technical information pertaining to design specified in 10 CFR §50.34, a single document describing the design of the reactors which are to be constructed and operated at the various sites. This concept permits the simultaneous review of the safety-related parameters of the duplicate plants. The other SNUPPS applications were filed by: (1) Northern States Power Company for the Tyrone Energy Park in Dunn County, Wisconsin (Docket No. STN 50-484); (2) Rochester Gas and Electric Corporation for the Sterling Power Project Nuclear Unit 1 in Cayuga County, New York (Docket No. STN 50-485); and (3) Union Electric Company for the Callaway Plant, Units 1 and 2, in Callaway County, Missouri (Docket Nos. STN 50-483 and 50-486).¹⁰⁶

222. The Wolf Creek application includes a SNUPPS Preliminary Safety Analysis Report ("SNUPPS PSAR"), (Exhibit 1), which describes those portions of the Wolf Creek Generating Station that are standard to the SNUPPS plants,¹⁰⁷ and a Wolf Creek Generating Station Addendum to the SNUPPS PSAR ("PSAR Site Addendum"), (Exhibit 2), which sets forth the specific site and related design information, and the applicant-related information for the plant. The application contains a description of the site and the basis for its suitability, a detailed description of the proposed facility, including those reactor systems and features which are essential to safety, an analysis of the safety features provided for in the facility design, an evaluation of various

¹⁰⁵ See Subpart D of 10 CFR Part 2 and Appendix N to 10 CFR Part 50.

¹⁰⁶ Construction permits were issued to Union Electric Company for the Callaway Plant on April 16, 1976. See 41 Fed. Reg. 17436 (April 26, 1976).

¹⁰⁷ Portions of the Westinghouse Reference Safety Analysis Report (RESAR-3 Consolidated Version as amended through Amendment 6) are incorporated into the SNUPPS PSAR as specified in section 1.6 thereof.

postulated accidents and hazards involved in the operation of such a facility and a description of the engineered safety features provided to limit their effect. It also includes a description of the financial qualifications of Applicants, a description of the technical qualifications of Applicant Kansas Gas and Electric Company,¹⁰⁸ including its contractors, to design and construct the facility, a description of Applicants' quality assurance program and plans for the conduct of operation, and information relevant to the common defense and security of the United States. The Licensing Board finds that the application adequately describes the proposed facility in accordance with the Commission's regulations.

223. The Staff reviewed the information provided by Applicants and performed its own analyses and investigations evaluating the radiological health and safety aspects of the Wolf Creek Generating Station. The results of the Staff's technical evaluation of the proposed plant design and the scope of the technical matters considered by the Staff in that evaluation are set forth in the Safety Evaluation Report ("SER") (following Tr. 521), which was issued on September 3, 1975.

224. The Advisory Committee on Reactor Safeguards has also reviewed the radiological health and safety aspects of the application. In a letter of October 16, 1975, to the Chairman of the Commission, the ACRS concluded that if due consideration is given to certain matters which the ACRS believes can be resolved during construction, the Wolf Creek Generating Station, Unit 1, can be constructed with reasonable assurance that it can be operated without undue risk to the health and safety of the public.¹⁰⁹ The matters referred to include fuel design, ECCS evaluation, fire hazards, protection against sabotage, coordination of emergency plans with state agencies and previously identified generic problems.

225. On January 14, 1976, the Staff issued Supplement No. 1 to the SER ("SER Supp. 1") (following Tr. 521), which summarizes the results of the Staff's evaluation of the additional information submitted by Applicants since the issuance of the SER, and which addresses (see SER Supp. 1, §18.0) the comments made by the ACRS in its report of October 16, 1975. In addition, Applicants reported on the status of, and the applicability to Wolf Creek Generating Station of, the generic problems relating to light water reactors discussed in an ACRS report of March 12, 1975, and referred to in the ACRS Report.¹¹⁰ Schwoerer Supplemental Testimony.¹¹¹ The Board finds that the

¹⁰⁸ Applicant Kansas Gas and Electric Company has primary responsibility for the design, installation, construction, operation and maintenance of the plant.

¹⁰⁹ The ACRS letter is reprinted at Appendix B of Supplement No. 1 of the SER.

¹¹⁰ In addition, the Staff presented, in Exhibit 10, a listing of the generic problems and a report on the status of their resolution.

¹¹¹ Supplemental Testimony of Frank Schwoerer, following Tr. 2520 (hereinafter "Schwoerer Supplemental Testimony").

Staff and Applicants have taken or plan to take appropriate actions in response to the comments and recommendations of the ACRS with respect to this application.^{111a}

226. On February 10, 1976, the Staff issued Supplement No. 2 to the SER ("SER Supp. 2") (following Tr. 2551), which summarizes the results of the Staff's evaluation of the additional information submitted by Applicants since the issuance of Supplement No. 1 to the SER, and which includes the results of the Staff's review of the radioactive waste management systems to meet the requirements of Appendix I to 10 CFR Part 50.^{111b}

227. The Staff concluded, as a result of its review of the application, that the issuance of permits for construction of the facility will not be inimical to the common defense and security or to the health and safety of the public, and that the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public. SER: SER Supp. 1; SER Supp. 2, §21.0.

B. The Site

228. The Licensing Board has evaluated the proposed site for the Wolf Creek Generating Station to determine whether, considering the particular design proposed for the Wolf Creek Generating Station and the site criteria contained in 10 CFR Part 100, the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.

229. The record before the Board includes Applicants' thorough description of the site, PSAR Site Addendum, §2; Applicants' Testimony on Site Suitability,¹¹² following Tr. 2700, and the results of the Staff's detailed technical review of the site characteristics. SER, §2. The site evaluation has addressed the population distribution and density, the use characteristics of the site environs, and the physical characteristics of the site, including meteorology, hydrology, geology, and seismology, to determine that these characteristics have been adequately described, that they have been given appropriate consideration in the design of the Wolf Creek Generating Station, and that they conform to the Commission's reactor site criteria, 10 CFR Part 100, taking into consideration the facility design and proposed engineered safety features.

^{111a}The dissenting member believes, in view of the unresolved items listed by the ACRS, that there are not sufficient data in the record from which to conclude that, in accordance with the regulations (10 CFR 50.35(a)), the Applicants have described all of the safety features or components which require research and development and that Applicants have identified and there will be conducted a research and development program reasonably designed to resolve safety questions associated with such features or components.

^{111b}Supplement No. 3 was issued on November 29, 1976. See paragraph 262, *infra*.

¹¹²Hereinafter "Applicants' Site Testimony."

230. The proposed site is a 10,500 acre tract of rural land in the Wolf Creek Valley in Coffey County, Kansas, approximately 75 miles southwest of Kansas City, Kansas, 100 miles northeast of Wichita, Kansas, 53 miles south of Topeka, Kansas, and 28 miles east-southeast of Emporia, Kansas. SER, §2.1.1; Applicants' Site Testimony, pp. 2, 3.

231. The 1970 population within a 50-mile radius of the site was 163,834, which corresponds to a population density of 21 persons per square mile. Applicants have projected the population within 50 miles of the site to be 194,851 by the year 2020—a growth of 19 percent. Applicants' projected population growth compares reasonably well with independent projections of population growth made for that area of the United States by the Commerce Department's Bureau of Economic Analysis and is therefore acceptable. SER, §2.1.2; Applicants' Site Testimony, p. 3.

232. The nearest population center containing more than 25,000 residents is Topeka, Kansas, located 53 miles north of the site, which had a 1970 population of 155,322. This population center distance of 53 miles is well in excess of the minimum distance of one-third times the low population zone radius of 2.5 miles (4000 meters), as required by 10 CFR Part 100. Applicants' Site Testimony, p. 4. If Emporia, Kansas, which had a 1970 population of about 23,000 and is expected to exceed 25,000 early in the plant's operating life, and which is located 28 miles west-northwest of the site, were considered to be the appropriate population center, the population center distance would still be well in excess of the required minimum distance. In 1970, there were 101 residents within the low population zone, and a decline to about 60 persons by 1980 is projected. SER, §§2.1.1, 2.1.2; Applicants' Site Testimony, p. 5.

233. Applicants have defined an exclusion area which consists of the land surrounding the planned location of the plant structures out to a radius of 0.75 miles (1200 meters) measured from the center of the reactor building. Except for several public roads which presently traverse the designated exclusion area, Applicants own or control all of the area within designated exclusion area, including the mineral rights. Applicants have provided reasonable assurance that the public roads which traverse the exclusion area can and will be abandoned prior to the start of construction. SER, §2.1.1; Applicants' Site Testimony, p. 5. Since Applicants presently either own (including mineral rights), or have a permanent easement (including control of minerals) on, all land within the designated exclusion area, they have the authority to determine all activities within the exclusion area as defined by 10 CFR Part 100.

234. The Board finds that the exclusion area, low population zone, and population center distance for the Wolf Creek Generating Station meet the requirements of 10 CFR Part 100 and are acceptable.

235. The evaluation of the use characteristics of the site environs has included an examination of the nearby industrial, transportation, and military

facilities. There are no significant manufacturing facilities within a 5-mile radius of the proposed plant site. While there are no chemical plants or significant chemical storage facilities within 5 miles of the site, there are facilities for the storage of petroleum, petroleum products, and fertilizer at Sharpe and Burlington, Kansas, located about 3.2 miles north of the site and 4.7 miles southwest of the site, respectively. Analyses by Applicants and the Staff of the consequences of a postulated failure of the largest petroleum storage facility, a 90,000 gallon propane storage tank at Sharpe, and of the postulated detonation of a flammable cloud about 1.6 miles from the site, show that there would be no adverse effects on the safety-related plant structures. SER §2.2; Applicants' Site Testimony, pp. 6, 7; PSAR Site Addendum, §2.2.1.2.2.

236. There are no significant highways, railroads, water transportation routes, or airports near the site. The nearest major highway is U.S. Route 75, which passes 2.8 miles west of the site. The nearest railroad track is a line of the Missouri Pacific Railroad which passes about 9 miles to the southeast. SER, §2.2; Applicants' Site Testimony, pp. 7, 8.

237. The closest pipelines are 8-inch and 12-inch diameter lines which carry refined hydrocarbons and which pass 2.6 miles northwest of the plant site. The Staff's evaluation of the consequences of a postulated failure of these pipes shows that such accidents would have no adverse effects on the safety-related plant structures. SER, §2.2; Applicants' Site Testimony, pp. 8, 9.

238. There are no significant military facilities near the proposed plant site. The only military facility within 5 miles of the site is the Kansas Army National Guard Armory in Burlington, located 3.9 miles to the southwest. SER, §2.2; Applicants' Site Testimony, p. 5.

239. Since no nearby industrial, transportation, and military activities have been identified which have the potential for adversely affecting safety-related plant structures and systems at the proposed site, the Licensing Board finds that there are no offsite hazards that would affect the safe operation of, or require special consideration in the design of, the Wolf Creek Generating Station.

240. The climate of the region in which the proposed site is located is continental, characterized by rapid changes in temperature and the extremes of hot summers and cold winters. Severe weather is not uncommon, and thunderstorms can be expected to occur on about 59 days per year. During the 1955-1967 period, 50 tornadoes were reported in the one-degree latitude-longitude square containing the proposed site, giving a mean annual tornado frequency of 3.8. The computed recurrence interval for a tornado at the plant site is 340 years. Applicants have selected a design basis tornado which is adequately conservative for the area. SER, §2.3.1; Applicants' Site Testimony, p. 9.

241. Atmospheric dispersion conditions at the site were based upon joint frequency distributions of wind speed and direction by atmospheric stability class (based upon vertical temperature differences) from one year of onsite

data. The Staff, for its evaluation of atmospheric dispersion characteristics at the proposed site, used joint frequency distributions based upon wind speed and direction measurements at the 10-meter level and the vertical temperature gradient measured between the 10-meter and 60-meter levels. The onsite meteorological data provides a reasonably representative and conservative basis for estimating atmospheric dispersion conditions at the proposed site, and it compares favorably with existing long-term data for the site area. SER, §2.3.3; Applicants' Site Testimony, pp. 9, 10. The Staff performed an evaluation of short-term accidental releases from buildings and vents assuming a ground level release with a building wake factor of 1325 square meters using the onsite data and the diffusion model described in Regulatory Guide 1.4. SER, §2.3.4.

242. The Licensing Board finds that, with respect to the expected atmospheric dispersion conditions and the occurrence of severe weather conditions, including tornadoes, the proposed site for the Wolf Creek Generating Station is acceptable.

243. Primary plant structures at the station will be located on the east side of a 5,090-acre cooling lake, which will provide cooling water for normal operation and for shutdown requirements. Additional makeup water will be pumped from the John Redmond Reservoir, located 4 miles northwest of the plant on the Neosho River. A 95-acre submerged pond, formed by excavating a portion of the cooling lake and constructing a submerged seismic Category I dam, will act as the safety-related portion of the ultimate heat sink, providing essential cooling water for shutdown in the event water is not available from the cooling lake. SER, §2.4.1; Applicants' Site Testimony, pp. 11, 12.

244. Several potential flood-producing sources have been investigated, including postulated dam failures on the Neosho and Cottonwood Rivers, inadequate drainage of runoff in the plant site area, and probable maximum flood on Wolf Creek. An evaluation of the potential effects of a postulated accident involving the domino failure of 4 upstream dams coincident with a standard project flood shows that the resultant flood would not spill into the Wolf Creek drainage basin and would, therefore, have no effect on safety-related buildings at the site. The design bases proposed for the site drainage facilities are such that a local probable maximum flood would not constitute a threat to safety-related buildings. Applicants and the Staff estimated the water level in the cooling lake and the peak flow produced by a probable maximum flood on Wolf Creek. The Staff has found Applicants' predicted maximum water level in the lake and the amount of freeboard to be provided for the main dam, considering the significant wave at that level, to be acceptable. Since the water elevation in the cooling lake due to a probable maximum flood plus wind activity will be below plant grade level, the probable maximum flood on Wolf Creek will not adversely affect the plant site. SER, §2.4.2; Applicants' Site Testimony, pp. 12-14.

245. The cooling water necessary to remove waste heat from the plant

during normal operation or postulated accident conditions will be obtained from the proposed cooling lake via pumps in the essential service water pumphouse. The intake structure at the pumphouse will be located on the edge of the cooling lake near the plant site and will be connected to the 95-acre submerged pond. The essential service water intake and discharge structures will both be seismic Category I and will be located on opposite ends of the submerged pond to prevent short-circuiting of the flow between the intake and discharge structure. Applicants will carry out a monitoring program for the submerged pond to assure that the capacity of the pond remains above the level required to provide a cooling water heat sink for the safe shutdown of the reactor under postulated accident conditions. SER, §2.4.3; PSAR Site Addendum, §2.4.11.6.

246. The hydrological consequences of a postulated radioactive liquid release from the plant have been evaluated, including potential flow paths, travel times and dilution factors. A spill, entering the groundwater, would travel to the cooling lake in 38 years. Dilution would result in concentrations of radioactive materials in the lake which are a small fraction of the limits in Appendix B to 10 CFR Part 20. The resultant concentrations in groundwater beyond the cooling lake area would be even less, due to further dilution effects. SER, §2.4.2; Applicants' Site Testimony, pp. 14-18.

247. The Board finds that acceptable flood design bases have been adopted, an acceptable water supply can be assured for safety, and plant construction and operation will not adversely affect regional or local groundwater users.

248. An evaluation of the geological characteristics of the region and the immediate site area has disclosed no geo-technical phenomena, attributable to capable faults, subsidence or solutioning due to mineral or fluid extraction, or other geologic features which represent a hazard or potential hazard to the proposed facility. In addition, there is no evidence to indicate surface faulting in the site area or any geologic structure in the vicinity of the site that could cause surface displacement. SER, §§2.5.1, 2.5.2, 2.5.3; Applicants' Site Testimony, pp. 19-23; PSAR Site Addendum, §§2.5.1, 2.5.3.

249. The Staff reviewed the vibratory ground motion potential for the site in order to: (1) determine an acceptable value for the intensity of the safe shutdown earthquake and the resultant ground acceleration value to be applied to the design of those seismic Category I structures outside the scope of the standard (SNUPPS) portion of the facility; and, (2) assure that the resultant ground acceleration value for the site safe shutdown earthquake does not exceed the design value of 0.2g at the foundation established for the standard (SNUPPS) portion of the facility. The Staff has taken the position that an intensity MM VII at the site is an appropriate value for the random earthquake which should be considered in the development of the safe shutdown earthquake for the Wolf Creek site. The Staff chose a horizontal acceleration of 0.12g, which represents the trend of the means of the observed acceleration data at intensity MM VII,

for the Wolf Creek safe shutdown earthquake. Applicants have agreed to design those seismic Category I structures which are outside the standard plant portion of the facility to a safe shutdown acceleration of 0.12g applied at the foundation level. The resultant safe shutdown earthquake acceleration at foundation level for the standard plant portion of the facility would be below the design value of 0.2g, and is therefore acceptable. SER, §2.5.4; Applicants' Site Testimony, pp. 24-27; PSAR Site Addendum, §2.5.2.

250. In reaching its conclusion on the geologic and seismic characteristics of the site, the Licensing Board has considered recent data from an aeromagnetic survey of northeastern Kansas, being undertaken by the Kansas Geological Survey. The survey disclosed the existence of magnetic anomalies north of the WCGS site. The most recent preliminary data indicate that strong magnetic anomalies are present as close as 46 miles from the site. Exhibit June 24, 1976-1. If the magnetic anomalies were found to continue in the same trend, they would include the site. Tr. 5063-5064. In an attempt to better understand the magnetic anomalies, gravity data have been examined to determine whether a correlation exists between the magnetic anomalies and any gravity anomalies. The association of any magnetic anomalies with fairly strong gravity highs could possibly imply faulting or a crustal flaw. While some of the magnetic anomalies north of the site show a correlation with weak gravity highs, other are correlated with weak gravity lows. Exhibit June 24, 1976-1, pp. 4-5. The overall trend of the magnetic anomalies does not correlate with the gravity data. Tr. 5109, 5120. Moreover, there is no evidence at present from the gravity data that faults are associated with the magnetic anomalies. Tr. 5065, 5123-5124. Nor is there any evidence of recent geologic movement on any structures in the region. Stepp/Coplan Affidavit.¹¹³

251. If the magnetic anomalies represented a causative factor for seismic activity, an earthquake trend along the anomalies would have been expected, as indeed has been found in other areas. Tr. 5112, 5114. There does not, however, appear to be any correlation between the trend of the magnetic anomalies and earthquakes. Stepp/Coplan Affidavit, p. 3; Tr. 5111, 5113-5114. It is possible that some small earthquakes up to intensity MM V are associated with magnetic anomalies in Missouri and elsewhere in northeastern Kansas. Tr. 5113. However, WCGS is designed to withstand an intensity MM VII earthquake. Tr. 5113. Thus, even if earthquakes are associated with the magnetic anomalies, the design earthquake for WCGS is two intensities higher than the earthquakes which have occurred in proximity to the anomalies. Tr. 5121. Should the magnetic anomalies trend later to be found to extend to the site, the likelihood that the design earthquake for WCGS would have to be changed is remote. The Licensing Board therefore finds that the safe shutdown earthquake acceleration used for

¹¹³ Affidavit of NRC Staff on Kansas Geological Survey Aeromagnetic Map, J.C. Stepp and S.M. Coplan, following Tr. 5100 (hereinafter "Stepp/Coplan Affidavit").

the design of WCGS is an appropriate basis for seismic design. Stepp/Coplan Affidavit, p. 3; Tr. 5122-5123, 5125-5126.

252. The Licensing Board finds that there are no geologic structures which would tend to localize earthquakes in the site vicinity or cause surface faulting at the site, that the seismic design bases are appropriately conservative for the earthquake potential at the site, and that there are no known geologic features at the site which could present a potential hazard due to solution activity and/or subsidence. The proposed site is therefore acceptable for the Wolf Creek Generating Station, from the standpoint of geological and seismological considerations.

253. The Licensing Board also finds that the foundation engineering design for the plant meets the requirements of Appendix A to 10 CFR Part 100, and is therefore acceptable. SER, §2.6; PSAR Site Addendum, §2.5.4.

254. Applicants and the Staff have both analyzed the response of the facility to certain anticipated operating transients and postulated accidents. SER and SER Supp. 1, §15; SNUPPS PSAR, §15. The potential consequences of such highly unlikely postulated accidents (design basis accidents) as a loss-of-coolant accident, a streamline break accident, a steam generator tube rupture, a fuel handling accident, a rupture of a radioactive gas storage tank in the gaseous radioactive waste treatment system, and a control rod ejection accident have been considered. Conservative analyses of these accidents have revealed that the calculated potential offsite dose that might result in the very unlikely event of their occurrence would be well within the Commission's guidelines for site acceptability in 10 CFR Part 100. *Ibid.*

255. The Licensing Board finds that the proposed site is a suitable location for a nuclear power reactor of the general size and type proposed from the standpoint of radiological health and safety considerations. Further, taking into consideration the particular design proposed for the Wolf Creek Generating Station and the site criteria contained in 10 CFR Part 100, the Licensing Board finds that the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.

C. Design of the Facility

256. The Staff has reviewed the Wolf Creek Generating Station design, fabrication, construction, and testing criteria, and the expected performance characteristics of the structures, systems and components important to safety, to determine that they are in accord with the Commission's General Design Criteria, Quality Assurance Criteria, Regulatory Guides, and other appropriate codes and standards, and that any departure from these criteria, codes and standards has been identified and justified. SER, §1.5.

257. The Wolf Creek Generating Station will utilize a four-loop pressurized

water reactor nuclear steam supply system having a core power level of 3411 MWt. The reactor core will be composed of uranium dioxide pellets enclosed in zircaloy tubes with welded end plugs. The fuel tubes will be grouped and supported in assemblies with a 17 x 17 fuel rod array. SER, §§1.2.1, 4.1. The reactor coolant system will include a reactor vessel and four coolant loops connected in parallel to the vessel. Water will serve as both the moderator and the coolant and will be circulated through the reactor vessel and core by four coolant pumps. The heated water will flow through four steam generators where heat will be transferred to the secondary (steam) system. An electrically heated pressurizer will establish and maintain the reactor coolant pressure, and will provide a surge chamber and a water reserve to accommodate reactor coolant volume changes during operation. The reactor will be controlled by control rod movement and regulation of the boric acid concentration in the reactor coolant. The control elements, whose drive shafts will penetrate the top head of the reactor vessel, will be moved vertically within the core by individual control rod drives. A reactor protection system will be provided that automatically initiates appropriate action whenever a condition monitored by the system approaches preestablished limits. This reactor protection system will act to shut down the reactor, close isolation valves, and initiate operation of the engineered safety features should any or all of these actions be required. SER, §§1.2.1, 4.0, 5.0.

258. The nuclear steam supply system will be housed in a containment structure. An auxiliary building, to be located adjacent to the containment structure, will house components of engineered safety features, and various related auxiliary systems. The fuel handling building, also to be located adjacent to the containment structure, will house a spent fuel pool and new fuel storage facility. The radwaste building, which will be separate from the other structures, will house the radioactive waste treatment systems. SER, §1.2.1.

259. Plant structures, systems and components important to safety, that are required to be designed to withstand the effects of a safe shutdown earthquake (0.2g) and remain functional, have been properly classified as seismic Category I items, and will be designed to withstand the effects of forces imposed by such an earthquake. SER, §§3.2.1, 3.7-3.10; SNUPPS PSAR and PSAR Site Addendum, §3. All seismic Category I structures which will be exposed to wind and tornado forces will be designed to withstand the effects of forces imposed by the design wind (velocity of 100 miles per hour based upon a recurrence interval of 100 years) and by the design basis tornado (tangential wind velocity of 290 miles per hour and translational velocity of 70 miles per hour) specified for the site. SER, §3.3; SNUPPS PSAR, §3. Likewise, seismic Category I structures will be adequately protected during the design flood or the highest groundwater level specified for the plant. SER, §3.4; SNUPPS PSAR and PSAR Site Addendum, §3. The plant will be designed so that postulated missiles generated from

internal sources and from outside of containment do not cause or increase the severity of an accident. SER, §3.5; SNUPPS PSAR, §3. The Staff has concluded, SER §3.1, and the Licensing Board finds, that the proposed facility can be designed, constructed and operated to meet the requirements of the General Design Criteria.

260. Wolf Creek Generating Station will have engineered safety feature systems, the purpose of which is to provide a complete and consistent means of assuring that the plant personnel and the public will be protected from excessive exposure to radioactive materials in the event of a major accident. These engineered safety systems and components will be designed to assure safe shutdown of the reactor under the adverse conditions of various postulated design basis accidents. Designed as seismic Category I, these engineered safety systems and components must function even with complete loss of offsite power and will be provided in sufficient redundancy so that a single failure of any component or system will not result in the loss of the capability to achieve safe shutdown of the reactor. SER, §6.1.

261. One of the engineered safety features of the plant is a steel-lined, prestressed, posttensioned concrete containment structure and associated systems. The containment structure, including its penetrations, is designed to safely confine, within the leakage limit of the containment, the radioactive material that could be released in the event of an accident. A containment spray system will provide borated water containing sodium hydroxide to remove heat and radioactive iodine in the event of an accidental coolant release. The containment cooling system, consisting of four equal capacity fan cooling units, will be used during normal plant operation. During accident conditions, these fan coolers are capable of maintaining the containment pressure below design levels even in the event of a single active failure in either the spray system or the fan cooling system. SER, §§1.2.1, 6.2.

262. Another engineered safety feature is the emergency core cooling system, which is designed to provide emergency core cooling during those postulated accident conditions where it is assumed that mechanical failures occur in the reactor coolant system piping, resulting in loss of coolant from the reactor vessel greater than the available coolant makeup capacity using normal operating equipment. This system, together with the containment, containment cooling system and auxiliary feedwater system, will also be designed to protect against steam line break consequences. Subsequent to the receipt of evidence on the performance of the plant's ECCS system, the Staff advised the Board by letter of recent information based on operating data from Westinghouse facility which indicates that the water temperature in the upper portion of the head of reactors designed by Westinghouse exceeds the temperatures used as input conditions in evaluating ECCS performance. The Staff stated that this increase in upper head water temperature would entail a slight reduction in total permissible

nuclear peaking factor (F_q) and that a revised analysis reflecting this change would be presented to the Board. Such an analysis has been provided in Supplement No. 3 to the SER, dated November 29, 1976. The unopposed^{113a} motion of the Staff of December 10, 1976, for incorporation of this Supplement into the record as Exhibit 32 is granted. The results of the new analysis show that, contrary to the Staff's earlier expectation, a reduction in permissible peaking factor is not necessary and the resulting peak temperature is lower than previously calculated (2148° compared to 2178°). The calculated maximum local metal/water reaction is also slightly lower than previously calculated. These differences are attributed to the use in the current analysis of a modified version of the Westinghouse evaluation model approved by the Staff in May 1976. On the basis of the new Staff evaluation, as well as its previous evaluation, the Staff concluded that the emergency core cooling system conforms to the acceptance criteria of 10 CFR 50.46 and reaffirmed its conclusion that the design of the system complies with the Final Acceptance Criteria. The Board concurs in this assessment.

263. Wolf Creek Generating Station will have radioactive waste management systems and an offsite radiological monitoring program. The radioactive waste management systems will be designed to provide for controlled handling and treatment of liquid, gaseous, and solid wastes.¹¹⁴ On September 2, 1975, the Commission announced¹¹⁵ the availability of an optional method for complying with its guidelines on the releases of radioactive materials in the nuclear power plant effluents (Appendix I to 10 CFR Part 50). That option permits a determination of compliance with Appendix I without making a cost-benefit analysis if the radioactive waste management systems meet the guidelines of the proposed Appendix I used by the Staff before the final Appendix I became effective. Applicants have chosen to select this option of not performing a cost-benefit analysis. SER Supp. 1, §11.1.

264. The Staff has evaluated the design of the systems provided for the control of the radioactive effluents from the Wolf Creek Generating Station and has determined that these systems can control the release of radioactive wastes within the limits of the Commission's standards for protection against radiation, 10 CFR Part 20, and that the equipment to be provided will be capable of being operated by Applicants in such a manner as to reduce radioactive releases to levels that are "as low as is reasonably achievable," as prescribed by the criteria

^{113a}All parties indicated in a conference telephone call with Board on December 6, 1976, that they would have no objection to the Staff's forthcoming motion.

¹¹⁴The radioactive waste management systems are described in SNUPPS PSAR, §11. The offsite radiological monitoring program and the estimated doses due to the anticipated releases of gaseous and liquid radioactive effluents are described in PSAR Site Addendum, §11.

¹¹⁵40 Fed. Reg. 40816 (September 4, 1975).

in Appendix I to 10 CFR Part 50. FES, §3.5; SER, §11; SER Supp. 1, §11; SER Supp. 2, §11 and Appendix B. The Board concurs in the conclusions of the Staff that the proposed liquid and gaseous radioactive waste management systems for the Wolf Creek facility will satisfy the requirements of Appendix I. Therefore, the Board finds that the design of these features is acceptable.

265. The Staff has also evaluated Applicants' radiation protection program. SNUPPS PSAR and PSAR Site Addendum, §12. The review covered Applicants' radiation protection design features, including shielding and the layout of the facility, the area monitoring program, which details radiological and airborne radioactivity monitoring features, the ventilation systems which will be designed to provide a suitable radiological environment, and the health physics program. This review has shown that occupational radiation exposures can be controlled to meet the requirements of 10 CFR Parts 20 and 50. SER, §12.

D. Research and Development

266. The nuclear steam supply systems are similar to other large pressurized water reactors now being designed and built by Westinghouse for plants being constructed under Commission construction permits. The Applicants, the ACRS, and the Staff have identified certain on-going investigations to confirm and finalize the design of certain of the plant systems, which include generic design features. SER, §1.7. Westinghouse is also conducting an integrated test program to confirm the design margins associated with the 17 x 17 fuel assembly design. The review of the additional information on the design and nuclear characteristics of this fuel is being conducted in connection with a number of pending operating license applications and will be completed well before an operating license application is submitted for the Wolf Creek Generating Station. A program to confirm the adequacy of the fire stop design will be carried out. SER, §4.1; Schworer Supplemental Testimony; Tr. 2521-2523.

267. The Staff has concluded, and the Board finds, that Applicants have identified and will perform development tests necessary for verification of the design and safe operation of the Wolf Creek Generating Station on a timely schedule, and that if the results of such tests are not successful, appropriate alternative actions, or restrictions in operation, can be imposed to protect the health and safety of the public. SER, §1.7.

E. Technical Qualifications

268. Applicant Kansas Gas and Electric Company will be responsible for the design, construction and operation of the Wolf Creek Generating Station. KG&E has joined with the other SNUPPS utilities to form a SNUPPS Project Organization, with technical representatives from each utility, to manage the design and procurement of the standard portions of the SNUPPS plants. KG&E has estab-

lished a Nuclear Development Department to be responsible for the design and construction of the Wolf Creek Generating Station. SER, §13.1: PSAR Site Addendum, §§1.4.1, 13.1.1. KG&E will be assisted in the design, construction, and operation of the Wolf Creek Generating Station by technically qualified contractors and agents. The SNUPPS Project Organization, acting on behalf of the SNUPPS utilities, has retained the Bechtel Power Corporation to provide architect-engineer services, including procurement, for the standard portions of the SNUPPS plants. The Westinghouse Electric Corporation has been retained to design, manufacture and deliver to the appropriate site the nuclear steam supply system and the initial core for each of the five SNUPPS units. KG&E has retained Sargent & Lundy as an architect-engineer to provide engineering and technical services for those portions of the Wolf Creek Generating Station. SER, §1.4; SNUPPS PSAR and PSAR Site Addendum, §1.4.

269. The Staff has concluded, SER §21, and the Licensing Board finds, that KG&E is technically qualified to design and construct the proposed facility.¹¹⁶

F. Quality Assurance

270. The SNUPPS Quality Assurance (QA) Committee, consisting of one QA representative from each SNUPPS utility, develops the QA manual of procedures, reviews and approves Bechtel and Westinghouse QA programs and verifies their adequacy for the project, provides formal audits of the SNUPPS Project Organization, and evaluates the effectiveness of the QA program implementation. The SNUPPS Executive Director is responsible for the implementation of the QA program of the SNUPPS Project Organization through the QA Manager. The organizational level of the QA Manager provides him with adequate independence and he reports to a sufficiently high management level to accomplish his objectives. The QA Manager and each member of the QA Committee can initiate stop work action through the SNUPPS Executive Director for the activities managed by the SNUPPS Project Organization. A system of planned and documented audits will be used by the SNUPPS Project Organization to verify compliance with the requirements of the QA program and to assess its effectiveness. Audit results will be reviewed and corrective action taken by responsible management. SER, §17.2; SNUPPS PSAR, §17. The Staff has concluded that the SNUPPS Project Organization QA Program for the standard portion of the SNUPPS plants includes an acceptable QA organization, with adequate policies, procedures and instructions to satisfy the requirements of Appendix B to 10 CFR Part 50. SER, §17.2.

271. Applicant KG&E is organized to control the activities of the SNUPPS

¹¹⁶ Applicants' financial qualifications to construct the proposed facility are addressed in the Board's findings with respect to Contention II-1.

Project Organization and its principal contractors through its membership on the SNUPPS QA Committee. KG&E will directly control activities at the site. SER, §17.5; PSAR Site Addendum, §17. KG&E's QA Director has well defined responsibilities and authority for implementing KG&E's QA Program with documented procedures and instructions. KG&E's QA organization has adequate independence and reports at a sufficiently high management level to accomplish its objectives. KG&E's provisions for implementing its QA program, which has corporate level management involvement, includes a system of inspections and documented audits, with corrective action procedures and acceptable QA enforcement authority, including the authority to stop work. *Ibid.*; Tr. 4805-4825. Based upon its review, the Staff has concluded that KG&E's QA Program complies with Appendix B to 10 CFR Part 50, and is acceptable for the design, procurement, and construction of the Wolf Creek Generating Station. SER, §17.5.

272. The Staff has also evaluated the QA Programs of Bechtel Power Corporation (architect-engineer for the standard plant), Westinghouse Electric Corporation (supplier of the nuclear steam supply system), and Daniel International Corporation (construction contractor), and has found those programs to be in compliance with Appendix B to 10 CFR Part 50. SER, §§17.3, 17.4, 17.6.

273. The Commission's Office of Inspection and Enforcement has conducted inspections to examine the implementation of the QA Programs for the Wolf Creek Generating Station. A nuclear reactor inspector from that Office testified concerning the scope and results of those inspections to date. Supplemental Testimony of Maynard W. Dickerson in Response to Board Request for Results of Inspections Performed by the Office of Inspection and Enforcement, following Tr. 4417. The inspector reported that there are currently no unresolved issues relating to the implementation of the QA programs for the Wolf Creek Generating Station. *Id.*, p. 5; Tr. 4419.

274. The Licensing Board finds that the Wolf Creek QA programs comply with Appendix B to 10 CFR Part 50, and that they are adequate for the design, procurement and construction of the Wolf Creek Generating Station.

G. Conduct of Operations

275. The initial test programs for the plant will be conducted by Applicant KG&E with technical support from the nuclear steam supply system vendor, the architect-engineer, the construction contractor and other vendors. SNUPPS PSAR and PSAR Site Addendum, §14. In general, preoperational testing will be completed prior to fuel loading. As the construction of individual systems is completed, preoperational tests are performed to verify, as nearly as possible, the performance of the system under actual operating conditions. Fuel loading begins when all prerequisite system tests and operations are satisfactorily com-

pleted. While KG&E will provide additional details of its testing program at the operating license stage, the Staff has concluded that an acceptable test and startup program will be implemented by KG&E. SER, §14.

276. The proposed station organization will consist of a technical staff of approximately 65 persons. The shift crew will consist of 6 persons, 2 of whom will be licensed senior operators and 1 of whom will be a licensed operator. The requirements for each job category used at the plant will meet the minimum requirements set forth in American National Standards Institute standard, ANSI N18.1 (1971), "Selection and Training of Personnel for Nuclear Power Plants." Technical support for the plant staff will be provided by the Superintendent of Nuclear Development and his staff. SER, §13.1.

277. A training program will be established to provide plant personnel with sufficient knowledge and operating experience to start up, operate, and maintain the plant in a safe and efficient manner. SER, §13.2. The Staff has concluded that Applicant KG&E has established an acceptable technical organization to implement its responsibilities for the design and construction of the Wolf Creek Generating Station, that the proposed plant organization, the proposed qualifications of personnel, and the proposed plans for offsite technical support are sufficient to provide acceptable staff and technical support for the operation of the plant, and that the proposed training program is acceptable. SER, §§13.1, 13.2. The Board examined KG&E's Vice-President-Operations, to obtain the views and plans of top management for implementation of the QA program and for the operation of the plant, Tr. 4806-4825, and finds that KG&E's preliminary plans for the conduct of operations are adequate for this stage of the Wolf Creek project.

278. Applicants' preliminary plans for coping with emergencies are addressed in the Licensing Board's findings on Contention II-4.

H. Common Defense and Security

279. The activities to be conducted under the permits and licenses applied for will be within the jurisdiction of the United States. All of the directors and principal officers of the Applicants are citizens of the United States. Applicants are not owned, dominated or controlled by an alien, foreign corporation or foreign government.^{116a} The activities to be conducted do not involve any restricted data, but Applicants have agreed to safeguard in accordance with the requirements of 10 CFR Part 50 any such data that might become involved. Applicants will rely upon obtaining fuel as it is needed from sources of supply available for civilian purposes, so that no diversion of special nuclear materials from military purposes is involved. The Staff has concluded, SER, §19, and the

^{116a}This conclusion is based upon a general statement to its effect submitted by Applicant without reference to stockholder lists.

Licensing Board finds, that the activities to be performed will not be inimical to the common defense and security.

V. CONCLUSIONS OF LAW

The Board has reviewed the entire record in this proceeding, including the proposed findings of fact submitted by the parties. Those proposed findings submitted by the parties which are not incorporated directly or inferentially or specifically discussed elsewhere in this Partial Initial Decision are herewith rejected as not being supported by reliable probative and substantial evidence.^{116b}

Based on its review of the record and the foregoing findings of fact, the Licensing Board has concluded as follows:

a. In accordance with the provisions of 10 CFR §50.35(a):

(1) Applicants have described the proposed design of the facility including, but not limited to, the principal architectural and engineering criteria for the design, and have identified the major features or components incorporated therein for the protection of the health and safety of the public;

(2) Such further technical or design information as may be required to complete the safety analysis and which can reasonably be left for later consideration will be supplied in the final safety analysis report;

(3) Safety features or components, if any, which require research and development have been described by Applicants and Applicants have identified, and there will be conducted, a research and development program reasonably designed to resolve any safety questions associated with such features or components; and

(4) On the basis of the foregoing, there is reasonable assurance that (a) such safety questions will be satisfactorily resolved at or before the latest date stated in the application for completion of construction of the proposed facility, and (b) taking into consideration the site criteria contained in 10 CFR Part 100, the proposed facility can be constructed and operated at the proposed location without undue risk to the health and safety of the public.

b. Applicants are technically qualified to design and construct the proposed facility.

c. The issuance of a permit for construction of the facility will not be inimical to the common defense and security or to the health and safety of the public.

^{116b}The Board notes that some portions of Intervenors' proposed findings are arguments rather than findings, making it impractical to respond to the findings not adopted on a paragraph-by-paragraph basis.

d. The requirements of Section 102(2) (A), (C) and (E)¹¹⁷ of NEPA and 10 CFR Part 51 have been complied with in this proceeding;

e. The Board has considered and decided those matters in controversy among the parties within the scope of NEPA and 10 CFR Part 51. We have independently considered the conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken. We have considered the environmental, economic, technical and other benefits against environmental and other costs and have also considered the available alternatives. We have determined that any construction permit or limited work authorization issued pursuant to this Partial Initial Decision shall be subject to the following conditions for the protection of the environment:

1. Applicants shall take the necessary mitigating actions, including those summarized in Section 4.5 of the Final Environmental Statement, during construction of the station and associated transmission lines to avoid unnecessary adverse environmental impacts from construction activities, with the exception that total suspended solids (TSS) will be monitored as follows:

Sufficient sediment control measures must be implemented such that TSS concentrations in Wolf Creek at a point approximately 0.5 miles downstream of the proposed main dam (sampling station #3) remain as low as practicable, but not to exceed a maximum of 200 mg/l above preconstruction ambient levels for all flow conditions up to and including the mean annual flood for station #3 of 2250 cfs. This will require an intensive preconstruction monitoring program in which TSS and rate of flow must be monitored under all conditions at aquatic sampling stations #2 and #3. Using these data, graphs or tables shall be constructed correlating flow with TSS at each station over a wide range of flows. During construction, ambient TSS concentrations shall be determined by comparison of flow rate at station #3 to flow rate-TSS combinations in the tables or graphs developed from the preconstruction monitoring program. In the event that land use practices in the upper watershed beyond the site boundary result in greater TSS concentrations at station #2 than before construction for similar flows, then the allowable concentrations at station #3 may be adjusted by the addition of the difference between preconstruction and construction concentrations for station #2 to the calculated allowable TSS concentrations at station #3. Runoff resulting from activities associated with the construction of the power block

¹¹⁷The Notice of Hearing referred to Subsection (D) of Section 102(2) of NEPA. As a result of amendments to the statute, however, that subsection has been recodified as subsection (E). Pub. L. 94-83, August 9, 1975.

must meet the EPA TSS limitation of 50 mg/l (40 CFR 432.40 *et. seq.*).

2. In addition to the preoperational monitoring programs described in Section 6.1 of the Environmental Report, with amendments, the recommendations included in Section 6.1 of the Final Environmental Statement shall be followed. The recommendations include the six numbered items in §6.1.3.1 of the FES and the additions and corrections of deficiencies in the present monitoring program set forth in the third through sixth paragraphs of §6.1.3.2 of the FES.
3. Applicants shall establish a control program which shall include written procedures and instructions to control all construction activities and shall provide for periodic management audits to determine the adequacy of implementation of environmental conditions. Applicants shall maintain sufficient records to furnish evidence of compliance with all the environmental conditions.
4. Before engaging in a construction activity not evaluated by the Commission, Applicants will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated in the Final Environmental Statement, Applicants shall provide a written evaluation of such activities and obtain prior approval of the Director of Project Management for the activities.
5. If unexpected harmful effects or evidences of irreversible damage are detected during facility construction, Applicants shall provide to the Staff an acceptable analysis of the problem and a plan of action to eliminate or significantly reduce the harmful effects or damage.
6. Applicants shall adhere to their plan for selective basal application of herbicides thereby prohibiting broadcast application from aircraft or ground rigs which might result in serious impacts upon nontarget areas.
7. Applicants shall undertake a feasibility study to explore the possible benefits associated with public access and use of the cooling lake. The completed study shall be contained in the application for an operating license.

f. Any limited work authorization or construction permit issued pursuant to this Partial Initial Decision shall provide that it is subject to modification or revocation pursuant to future action of the Commission in its rule making on "Uranium Fuel Cycle Impacts from Spent Fuel Reprocessing and Radioactive Waste Management." (Docket RM-50-3) as required by the Supplemental

General Statement of Policy, November 5, 1976. The Board further concludes that it has made all of the findings necessary for it to authorize issuance of a construction permit except on the issue of financial qualifications, which is reserved for later decision, and that the findings made include all of those necessary to permit the Director of Nuclear Reactor Regulation to issue a limited work authorization.

VI. ORDER

WHEREFORE, IT IS ORDERED, in accordance with the Atomic Energy Act, as amended, and the Rules and Regulations of the Nuclear Regulatory Commission, particularly Sections 2.760, 2.761a, 2.762, and 2.764(a), that this Partial Initial Decision shall constitute a portion of the ultimate Initial Decision to be issued upon completion of the further proceeding on financial qualifications.

It is further ORDERED that this Partial Initial Decision shall be effective immediately and shall constitute the final action of the Commission thirty days after the date of issuance hereof, subject to any review pursuant to the above referenced rules. Exceptions of this Partial Initial Decision must be filed within seven days after service of the decision. A brief in support of the exceptions must be filed within fifteen days hereafter (twenty days in the case of the NRC Staff). Within fifteen days of the filing and service of the brief by the Appellant (twenty days in the case of the NRC Staff), any other party may file a brief in support of, or in opposition to, the exceptions.

ATOMIC SAFETY AND LICENSING BOARD

George C. Anderson, Member

Lester Kornblith, Jr., Member

Dated at Bethesda, Maryland
this 18th day of January 1977.

Dissenting Opinion by Samuel W. Jensch:

At the outset, I express my concurrence with the majority of the Atomic Safety and Licensing Board that on the premises stated and assumed, there is reasonable assurance that the proposed Wolf Creek facility can be constructed and operated (if adequate funds are available) without undue risk to the health and safety of the public.

My dissent is directed to two aspects of the majority decision: its undue length, and its form which is like an advocate's brief for brief writers, rather than an adjudication.

It is to be emphasized that neither the technical members of the Atomic Safety and Licensing Boards, in general, nor the parties, are to be faulted for the general length and form of this or similar decisions. The problem arises from a lack of specific standards for the review process. As a consequence, the instant Wolf Creek decision consists of verbose evidentiary findings and not ultimate findings as contemplated by the Administrative Procedure Act. The majority decision is almost a line-by-line recital of each page of the evidence in the transcripts. The parties have submitted their proposed findings in this form and the majority decision is substantially, and with few exceptions, a paste-pot performance of extracting section by section of the proposed findings, principally from the Staff, and with scissors and paste, accumulating a total to be typed. A fair analysis of this collection indicates that 75 percent is trivia, which were not the subject of contentions and will not be the base for exceptions. The process of preparation of detailed findings of evidence by the parties, and the selection and adoption of major portions of proposed findings by the Atomic Safety and Licensing Boards, and the majority herein, in particular, is a time-consuming and proceeding-delaying process.

There is a great and continuing endeavor to improve the administrative process, a major effort of which is to improve the quality of decisional work, and one way to accomplish that is to markedly reduce the size and length of an initial decision. A former Commissioner of the Atomic Energy Commission, in his persisting endeavor on quality assurance work in all areas of the energy field, also included positive recommendations for brief and succinct decisions. That effort can be substantially assisted by establishment of definitive review standards. The length and form of the instant decision make it appear that a rambling roving review is expected. The general rule, as most know, is that review or appellate work on decisions is guided, indeed substantially limited, by the contentions made by the parties and the exceptions taken to initial decisions. No such standards, in general, have been established for reviews of initial decisions. In that absence, the parties endeavor to fill the gap by reciting every possible statement of evidence in their proposed findings, and Atomic Safety and Licensing Boards, lacking guidance in the endeavor to fully present only the crucial items of consideration, copy all the proposals for findings consisting of statements reflected in the record of evidence. Even with that process, however, it is not certain that the record prepared in a hearing is sufficiently adequate for an initial decision; one direction given in a recent case, reviewing an initial decision, is to include considerations of reports in the newspapers, rather than solely the evidence in the record, of land sale nearby to a projected nuclear facility (*Commonwealth Edison Company* (La Salle Station), Docket Nos. 50-373,

50-374). That lack of certainty in anticipating what the review work will be subsequently declared to entail, may be persuasive for adopting definite standards for review work.

This dissent suggests, therefore, that if this process of carrying over most if not all of the parties' proposed findings, which are evidentiary recitals, is considered necessary for review work in initial decisions, that the Atomic Safety and Licensing Boards might, with Commission direction and approval, improve the decisional work by issuing only a brief paragraph, of ten or twenty lines, of an ultimate conclusion on safety and environmental matters, and forward all the proposed findings prepared by the parties, with all the detailed evidentiary statements, transcripts, and exhibits, so that the time consuming paste-pot procedure inclusive of specific and detailed record references for each statement, can be eliminated. The opportunity for dissent would permit specific enumeration of deficiencies considered to be warranted for review. The time lag objection to initial decisional work will no longer need be recited at the forum meetings or by other exhortations. This changed procedure might also lessen the length of, if not the time for, the decisions issued on review. It is true, of course, that if sudden or catastrophic items were to be observed or to occur during either the initial decision or review work that special consideration should be given to such items, but with observations from experience, that likelihood will be extremely rare. The substantial portions of all the decisional work should be guided by definite standards, requiring that the determinations be based upon the ultimate findings, which in turn should reflect the considered judgment of the Boards submitting their work for the Commissioners' review and comment. With the increasing maturity of the hearing process at the Commission, and with enlarging public participation, confidence can be given to the possibility, and real probability, that the parties and the Licensing Boards will discover the nuggets of real worth in the proceeding.

Samuel W. Jensch, Chairman

[Attachment A has been omitted from this publication but is available in the NRC Public Document Room, Washington, D.C.]

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman
Victor Gilinsky
Richard T. Kennedy

In the Matter of

Docket Nos. 50-443
50-444PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.

(Seabrook Station, Units 1 and 2)

February 7, 1977

The Commission denies applicant's motion for a further *pendente lite* stay of ALAB-366 (but permits continuation for a limited period of certain excavation work already started) and asks applicant to supply further information and all parties to brief certain issues.

ORDER

On January 24, 1977, the Commission issued an order announcing its intention to review the decision of the Atomic Safety and Licensing Appeal Board in this proceeding. The Appeal Board in ALAB-366 provided that the Seabrook construction permits were to be suspended as of February 4, 1977. In our Order directing review we stayed the effectiveness of ALAB-366 until 6:00 p.m. today, February 7, 1977, and provided that any party believing the decision should be stayed beyond that date should apply for a stay.

Pursuant to our Order, applicant Public Service Company of New Hampshire, on January 31 moved for a further stay of the Appeal Board's decision until the completion of our review. Quite properly, applicant recognized that the effect of our Order was that in the context of this review it bore the burden of justifying a stay.

While applicant seeks a stay of the Appeal Board's order suspending most construction activities, applicant has made clear that it does not presently intend to continue full scale construction at Seabrook. Before the Appeal Board decision was rendered, its Board of Directors had adopted a resolution substantially scaling down construction efforts at Seabrook. With its motion for a stay,

applicant submitted an affidavit of Richard P. Pizzuti, construction manager at Seabrook, dated January 26, 1977. This affidavit outlines the limited activities applicant might undertake at the site during the period ALAB-366 would be stayed.

In the brief submitted to us by the staff, a somewhat different approach was urged. Staff urged us, on the merits, not to suspend the Seabrook construction permits, but to condition them to allow only limited work pending final action by the EPA and further order of the Commission. Staff has not supported the applicant's stay motion, but suggested at oral argument today that it would be appropriate to permit excavation for Unit 1 to continue.

Finally, it should not be lost sight of that the Appeal Board did not order an immediate and total halt to all activity at Seabrook. The Board's order represents a careful effort to allow limited activities on the site to ensure protection of the site and of materials already on the site. ALAB-366 at 69.

The activities applicant proposes to engage in at the site are detailed in paragraphs 3(a)-3(g) of the Pizzuti affidavit. Pizzuti asserts that the activities in paragraphs 3(b)-3(g) are necessary to protect the environment or materials at the site. This language mirrors the Appeal Board's opinion describing permitted actions. ALAB-366 at 69. It is difficult, therefore, for us to understand why a stay of the Appeal Board's order is required in connection with these activities.

Applicant's claim for a stay appears to relate principally to continuation of the activity described in paragraph 3(a) of the Pizzuti affidavit, excavation of the Unit #1 area. At oral argument, applicant emphasized the limited character of this work, suggesting that it would have little further impact on the environment since it consists of deepening a large excavation which is already 50 feet below grade. Counsel for the applicant stated that the excavation is about 80 percent complete, and that the applicant has made a commitment to the State and to the Commission to restore the site should the site finally be determined unsuitable for the nuclear plant (unless use should be made for a coal-fired facility). The applicant made these statements, however, only at oral argument. The staff indicated that, on the basis of these understandings, it now supported continued excavation of Unit #1.

Before we issue our opinion on the merits of this review, including determination of the question of whether completion of the excavation for Unit #1 should be allowed, we need further information from the applicant. In particular, we desire that the applicant confirm and supplement the information given us by counsel as to the state of relative completion of the excavation, the expected completion date, the work force involved, and the cost of continued work. Furthermore, we desire applicant to provide us with information about the costs that would be incurred both directly and indirectly in halting excavation prior to its completion, and information about the environmental effects of continued excavation (including the disposition being made of the fill extracted,

possible construction noise and other effects). A consideration of major significance for the decision today is the avoidance, to the extent possible, of the costs that would be incurred by halting excavation, only to resume it shortly thereafter, but after the work force and equipment may have been moved from the site. Accordingly, excavation may continue on Unit #1 for a limited period, until our opinion on the merits or other Order.

So that we will be able to rule on this matter no later than February 18, 1977, we instruct applicant to have in our hands and those of the parties the information requested above by Thursday, February 10. We ask that any comments that any other party may have on that information be in our hands by February 14.

Our inquiry does not stop at this point. Although applicant characterizes the activities described in paragraphs 3(b) and 3(c) of the Pizzuti affidavit in terms that would bring them within the range permitted by ALAB-366, close reading raises some questions. As described in 3(b), the first of those activities is construction of temporary buildings now under way to be completed by March 15. These buildings are asserted to be needed for storage of equipment and to house supervisory personnel. In paragraph 3(c) Pizzuti discusses preparation of areas to receive, store and protect equipment scheduled to be delivered to the site in the next several months including major components such as the turbine-generator unit and elements of the nuclear steam supply system. While the 3(b) activities may press against the limits of what the Appeal Board would allow, it seems reasonable to allow completion of partially built structures needed to protect material already on site. The case with regard to 3(c) activities is weaker, but even here if substantial economic penalties would be incurred on failure to accept delivery of the materials, then it would be reasonable to allow them to be properly received. We were informed at oral argument that prior notice of any such activities could be given, and any dispute regarding their appropriateness can be resolved by the Appeal Board.

It follows that, subject to the modification of the Board's order indicated above, we have no occasion to stay the decision of the Appeal Board in ALAB-366 pending our decision.

This decision is intended to provide guidance for both the applicant and for the Division of Inspection and Enforcement during the period between now and the time the Commission acts to resolve this proceeding on the merits. It does not reflect any consideration of those merits other than as discussed above.

Should we decide that the hearing concerning the acceptability of the Seabrook site with closed-cycle cooling should go forward, as directed by the Appeal Board, it appears that the Licensing Board will need guidance with respect to certain legal issues that were not addressed by the Appeal Board in ALAB-366 and which were extensively discussed at the oral argument before the Commission. Because these issues were not fully discussed heretofore in this proceeding,

the parties have not yet fully stated their positions. The issues on which we think guidance for the Licensing Board would have to be provided are as follows:

1. What is the legal standard of comparison with reference to which alternate sites should be judged? Must the Board select the "best" site, or is it enough that there is no other site that is clearly superior to the Seabrook site, all relevant factors being taken into consideration?
2. In any comparison of Seabrook with other sites, what are the appropriate costs and time periods to be considered for the Seabrook site?
 - a) The cost and time required to complete Seabrook from its present state?
 - b) The cost and time which might reasonably have been anticipated at the time of the Seabrook CP issuance, as against other sites which had not progressed to the point of decision?
 - c) The cost and time which might reasonably have been anticipated for the Seabrook site once the utility had selected it as its preferred site?
 - d) Some other alternative?

Stated in other terms, the question is to what extent the Commission may consider in comparing alternate sites the fact that one site has been brought closer to final use as a facility site than others. The parties should submit memoranda on these issues to the Secretary by the close of business Monday, February 14. Reply submissions must be received by close of business Thursday, February 17.

It is so ORDERED.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 7th day of February 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman
Victor Gilinsky
Richard T. Kennedy

In the Matter of**Docket Nos. 50-443
50-444****PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.****(Seabrook Station, Units 1 and 2)****February 17, 1977**

Based on information received pursuant to CLI-77-5, the Commission permits certain excavation work to continue pending completion of its review of ALAB-366.

ORDER

On February 7, 1977, we denied applicant's motion for a stay of ALAB-366 and allowed that decision to take effect. CLI-77-5, 5 NRC 403. We modified the decision, however, to permit applicant to continue excavation on Unit No. 1 on an interim basis pending our receipt and consideration of further information concerning that activity.

We have received and considered that information, and the responses submitted by intervenors and staff. The information supplied by the applicant and not controverted by any party¹ can be summarized as follows: (1) the excavation for Unit No. 1 is already 90 percent complete; (2) seventy-five people are presently working on the excavation; (3) the cost of completion will be

¹ SAPL-Audubon does not concede the correctness of the Pizzuti Affidavit and suggests that Pizzuti should have commented on other costs such as the cost of restoring the site and of moving to another site should that be necessary.

While SAPL-Audubon also indicated a desire to cross-examine Pizzuti, it failed to identify any particular item in the Pizzuti Affidavit which is disputed. Our staff, which has regularly inspected the Seabrook site, did not controvert any matter in the affidavit. Under all the circumstances, including the limited and tangential character of the issues raised and the exigencies of decision herein, we are not persuaded that cross-examination is required here.

about \$550,000; (4) delay costs if excavation were halted and then resumed would be no less than \$270,000, \$440,000 and \$695,000 for one-, three- and six-month delays respectively, on the assumption that the contractors would be held in a state of readiness to resume in the interim; and (5) there would be virtually no adverse environmental impacts from continued excavation.²

With this information before us, we see no reason now to halt the proposed excavation for Unit No. 1. No NEPA cost-benefit balance for Seabrook could reasonably be expected to be affected by the relatively small amount of additional investment involved and no significant environmental harm would be averted by halting excavation. Cf. *New York v. NRC, et al.*, ___ F.2d ___, Nos. 75-6115, 76-6022, 76-6081 (2nd Cir. February 14, 1977) (slip opinion at 16-21). On the other hand, small as the relative incremental cost is, it appears that a delay would substantially increase the cost of completing the excavation, should the plant eventually be constructed at Seabrook. Finally, a probable cost of halting excavation now would be to disrupt the employment situations of some 75 people.

We caution that this order is limited solely to the narrow question of whether excavation of Unit No. 1 should be allowed to continue pending our decision on the merits. It reflects no consideration of the merits of our review of ALAB-366. That review is under active consideration and we anticipate issuance of a decision in about two weeks.

It is so ORDERED.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 17th day of February 1977.

² Applicant's newly supplied information is that all material being excavated is being disposed of onsite, eliminating any offsite movement of equipment. Furthermore, since the work is now "substantially below surface level" the noise from drilling and blasting is less than it had been earlier. Pizzuti Affidavit, February 9, 1977, paragraph 6.

We take this occasion to note the statement by applicant's counsel at oral argument before us that applicant has made an undertaking both before the Licensing Board and before the New Hampshire authorities to restore the site to essentially its preconstruction status should Seabrook be ultimately abandoned as a site for a plant either nuclear or coal-fired.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

Docket Nos. STN 50-546
STN 50-547PUBLIC SERVICE COMPANY OF
INDIANA, INC.(Marble Hill Nuclear Generating
Station, Units 1 and 2)

February 4, 1977

The Licensing Board referred to the Appeal Board its ruling (LBP-774) that co-owners of a proposed facility must become co-applicants as well, that an amended notice of hearing would be issued to reflect the status of the co-applicants, and that as a result the scheduled hearing must be postponed. The Appeal Board (1) determines that the hearing might still proceed on issues independent of the co-applicant question or the extent of the ownership interests held by particular entities; (2) vacates (and remands for reconsideration) that portion of the Licensing Board's order which suspended the scheduled hearing; and (3) defers action on the referral, pending further study.

Mr. Harry H. Voigt, Washington, D.C., for the Public Service Company of Indiana, Inc., *applicant*.

MEMORANDUM AND ORDER

The pending application for construction permits for the two-unit Marble Hill facility, to be located near the Ohio River in Jefferson County, Indiana, was filed by the Public Service Company of Indiana. Two other electric utility enterprises are, however, to be co-owners of the facility.¹ During the course of the prehearing phase of the proceeding, the Licensing Board called for briefs on

¹ These are the Wabash Valley Power Association and the East Kentucky Power Cooperative.

the question, raised by the NRC staff, whether these co-owners had to become as well co-applicants (and eventually co-licensees).²

On February 1, 1977, the Licensing Board decided that question in the affirmative. It went on (1) to determine that an amended notice of hearing would be issued to reflect the status of the co-applicants and (2) to rule that the hearing—which was scheduled to begin on February 15, 1977, and to continue for a fairly lengthy period—would “therefore” be postponed.³

Two days later, on February 3rd, the Licensing Board referred its ruling to us.⁴ Its stated reasons for doing so did not include any concern over the impact its ruling had had in terms of the postponement of the hearing. Rather, the Board said only that a Licensing Board had decided the co-applicant question differently in another case and had referred its ruling to us;⁵ the *Marble Hill* Board opined that referral “therefore appears appropriate” in this case also.

Public Service, seeking to avoid what it perceives as a potential delay of many months, has just put before us a request for expedited consideration of the matter. Specifically, it asks that we call immediately for briefs on the question of whether there is a need for an amended notice of hearing (even if the Board below was correct on the merits of the co-applicant question). If we were then to decide that question in Public Service’s favor (and it suggests we might do so within the next ten days to two weeks), it would pave the way for the hearing to proceed while we undertook less hasty review of the co-applicant question.

We take a different approach to the matter, but one which also will serve to avoid any unnecessary delay. We have made no determination whether (1) there is warrant for our accepting referral now of the ruling on the co-applicant matter rather than letting our review of it take place in the ordinary course (at the end of the Licensing Board proceeding),⁶ or (2) the Board below was correct in requiring the joinder of the co-owners. Before passing on either question, we need further time to study the lengthy briefs filed below. Moreover, as appears later in this order, we also need supplemental briefs on two points; it may prove necessary in addition to hold oral argument.

We can say this much at this juncture, however. The Board below ap-

² At one point, it appeared that a fourth utility would also have an ownership interest. It has been stressed in this proceeding that the co-ownership arrangements raise two distinct categories of questions: (1) the legal one of whether co-owners must be co-applicants, and (2) factual ones (e.g., those relating to financial qualifications) stemming from whether, and to what extent, a particular utility will be a co-owner.

³ The Board set no new date for the hearing. Rather, it indicated only that the hearing would “be rescheduled at a later date.”

⁴ See 10 CFR § 2.730(f).

⁵ *Omaha Public Power District* (Fort Calhoun Unit 2), LBP-77-5, 5 NRC 437 (February 2, 1977).

⁶ *Cf. Public Service Co. of New Hampshire* (Seabrook Units 1 and 2), ALAB-293, 2 NRC 660 (1975).

parently believed that its ruling on the co-applicant matter required it not only to issue an amended notice of hearing but also to postpone the start of the hearing. We perceive no reason why this had to be so. Even if the Board were correct both on the merits of its ruling and in issuing an amended notice of hearing, it was not barred from going forward with certain aspects of the hearing. There undoubtedly exist site-related and other issues to be heard which are entirely independent of either the co-applicant question or the question of the precise extent to which entities other than Public Service will have ownership interests in the facility.⁷ Any such unrelated issues could be heard even though the process of bringing in the co-applicants and any new intervenors had not been completed. We can think of only one potential problem—*i.e.*, the need to relitigate certain issues after the new parties appeared—which might arise if this were done; upon examination, this possibility is not serious enough to justify delaying the hearing. In the first place, the co-owners can be made to agree to be bound by whatever transpires prior to their formal entrance into the proceeding, *i.e.*, to waive any claims or defenses not available to Public Service. We assume such an agreement would be readily forthcoming.

To be sure, no similar agreement can be extracted now from new intervenors who might appear in response to the amended notice of hearing and might insist that they be heard on matters previously covered. But it seems unlikely that anyone in that position would have a right to be heard on the issues which had gone before, *i.e.*, those unrelated to the ownership arrangement. Indeed, the amended notice is directed only to those “*whose interest may be affected by the entrance of the [two co-owners] as joint applicants*” (emphasis in original). In short, the renoticing of the hearing should not prove to be a new development of the sort that will trigger any new rights in the public to raise contentions with respect to the types of unrelated issues on which we are suggesting the hearing might proceed. The opportunity to raise those issues was afforded at an earlier stage and presumably will not be resurrected by the amended notice.

Lest we be misunderstood, we are not directing the Licensing Board to proceed to hearing on February 15, or on any other date. We naturally do not have before us all the information bearing upon scheduling which that Board has. There may have been, or may now be, other reasons why the hearing cannot go forward as originally planned. All we say is that it does not follow from the merits of the Board’s ruling or the issuance of the amended notice that the hearing must be postponed.⁸ So long as the Licensing Board recognizes that it is free to proceed, it is for that Board—which has all the facts before it—to decide whether to do so. By the very nature of things, our role in the matter of

⁷ See fn. 2, *supra*.

⁸ Nor does the fact that the Board’s rulings are now before us for possible review bar the commencement of the hearing.

Licensing Board scheduling must be an extremely limited one. We can speak only as to general ground rules; actual scheduling must be left to the Licensing Boards themselves.

The portion of the Licensing Board's order suspending the currently scheduled hearing is *vacated* and the matter *remanded* to that Board for reconsideration in light of the foregoing opinion. Our decision on whether we will accept the rulings referred for review is *deferred* pending our further study of the matter. We will proceed primarily on the basis of the briefs filed below.⁹ All the parties are invited, however, to file with this Board by Friday, February 18, 1977, briefs addressed to (1) whether there are any specific adverse consequences for the administration of the Atomic Energy Act or other statutes which would follow if not all co-owners are required to be co-applicants and co-licensees; and (2) whether an amended notice of hearing was required either by virtue of the merits of the Licensing Board's co-applicant ruling or—even if that ruling were wrong—as a result of the announcement on January 21, 1977, (or for that matter at any time subsequent to the original notice of hearing) of an ownership arrangement different from that reflected in the original notice.

It is so ORDERED.¹⁰

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

⁹If there are any parties who were not given the opportunity to file briefs below, they may file briefs with us on the merits of the co-applicant question as well as on the subjects on which this order calls for additional briefing.

¹⁰In view of (1) the possibility that the original hearing schedule might be salvaged if quick action were taken, and (2) our inability to conceive of any reason why the questions related to the ownership arrangement would bar the hearing from going forward on totally unrelated issues, we acted on Public Service's motion on an *ex parte* basis; in addition, we transmitted the essential terms of this order by telephone to all counsel who could be reached and to the Licensing Board even before the order was ready to be issued formally.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman

In the Matter of

Docket No. 50-548

OMAHA PUBLIC POWER DISTRICT

(Fort Calhoun Station, Unit 2)

February 9, 1977

Upon referral by the Licensing Board of its ruling (LBP-77-5) that co-owners of a proposed facility need not be co-applicants as well, the Appeal Panel Chairman (pursuant to 10 CFR 2.787(b)) determines that Appeal Board consideration of the referral should be deferred.

RULES OF PRACTICE: APPELLATE REVIEW

An appeal board may reject a referral from a licensing board. *Commonwealth Edison Co.* (Zion, Units 1 and 2), ALAB-116, 6 AEC 258 (1973); *Public Service Co. of New Hampshire* (Seabrook, Units 1 and 2), ALAB-293, 2 NRC 660 (1975).

MEMORANDUM AND ORDER

This proceeding involves an application filed by the Omaha Public Power District (OPPD) for a permit to construct Unit 2 of the Fort Calhoun station. In a memorandum and order issued on February 2, 1977,¹ the Licensing Board addressed the question whether, as a matter of law, the application had to be amended to add as a co-applicant the Nebraska Public Power District—an intended joint owner of the proposed facility. The Board answered this question in the negative and referred its ruling for appellate consideration. See 10 CFR 2.730(f). In doing so, it noted that, just one day earlier, another Licensing Board had reached a contrary conclusion respecting whether the Atomic Energy Act requires that all co-owners of a nuclear power facility join in the application for the permit to build the facility (and, if the application is granted, become co-licensees). *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), LBP-77-4, 5 NRC 433 (February 1, 1977).

¹ LBP-77-5, 5 NRC 437.

In combination, a number of factors warrant a deferral for the time being of Appeal Board consideration of the *Fort Calhoun* referral. To begin with, on February 3 the *Marble Hill* Licensing Board referred its February 1 ruling to the Appeal Board assigned to that proceeding. The latter Board has already taken certain preliminary action in connection therewith. See ALAB-371, 5 NRC 409 (February 4, 1977). Should it ultimately decide to accept the referral—a matter on which judgment has been reserved pending further study²—the co-applicant issue presumably will be definitively resolved in *Marble Hill*. Second, the *Marble Hill* applicant is represented by the same law firm as represents OPPD in this case; understandably, therefore, the same position is being espoused in both cases in favor of the proposition that all co-owners need not become co-applicants and co-licensees.³ Third, and of greatest significance, by letter of February 3, 1977, OPPD advised the Licensing Board that all construction contracts for Unit 2 of Fort Calhoun were being cancelled. Although OPPD indicated that it was nonetheless “considering the advisability of obtaining a decision by the Licensing Board on all possible environmental issues and site suitability questions,”⁴ it is obvious that a rapid determination of the co-applicant controversy is not required for the purposes of this case. Needless to say, in the event that it should accept the referral pending before it, the *Marble Hill* Appeal Board will have the benefit of the reasoning which led the *Fort Calhoun* Licensing Board to the conclusion that all co-owners need not be co-applicants.

For the foregoing reasons, action on the referral by the Licensing Board is hereby *deferred* pending further order of the Appeal Panel Chairman⁵ or an appeal board designated by him.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

This action was taken by the Appeal Panel Chairman under the authority of 10 CFR 2.787(b).

² An appeal board may reject a referral. *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-116, 6 AEC 258 (1973); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-293, 2 NRC 660 (1975).

³ An opposite view has been advanced by the NRC staff (and supported by other parties in *Marble Hill*).

⁴ According to OPPD, a “favorable decision on such issues would make the Fort Calhoun site available for future nuclear construction and would substantially expedite consideration of a renewed application, if it is later determined to file one.”

⁵ Or of the Panel Vice-Chairman in the event of the Chairman’s unavailability. See 10 CFR 2.787(b)(3).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Dr. Lawrence R. Quarles
Richard S. Salzman

In the Matter of

Docket Nos. 50-329
50-330

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2)

February 11, 1977

The staff requested directed certification of Licensing Board orders which excluded certain prospective witnesses from the hearing room while other witnesses testified. After considering the Licensing Board's explanation (issued in response to ALAB-365) of its reasons for those orders, the Appeal Board rules that the petition for directed certification will be deemed denied unless a renewal of the request is made by a specified date, accompanied by a supporting memorandum.

MEMORANDUM AND ORDER

We have before us the staff's request that we invoke our extraordinary power to review now a series of interlocutory Licensing Board orders excluding certain prospective witnesses from the hearing room while other witnesses testify. Because, when the matter first came to our attention, we could not ascertain "the Board's precise rationale for the unusual rulings objected to," we held the matter in abeyance and asked the Licensing Board to tell us whether it intended to continue invoking the sequestration rule and, if so, its reasons for doing so. ALAB-365, 5 NRC 37 (January 18, 1977).

On February 7th, the Board furnished us its response. It gave as its reason for continuing to exclude witnesses the statement that "the spontaneity of the person testifying is encouraged by the absence of those who may be known by the witness to agree or disagree with his position." With respect to our question as to whether there was reason to treat the staff witnesses differently than those of other parties (ALAB-365, fn. 2), the Board explained why it sees "no distinction between the presence of staff witnesses or those of other parties."

The Board also opined—probably in response to our statement that “sequestering prospective witnesses in Commission hearings is not common”—that it “had not thought an exclusion order so unique,” for such orders are “commonplace in other forums.” Almost invariably, however, the reason given in those forums for sequestering witnesses where credibility is in issue¹ is to insure that subsequent witnesses do not, subconsciously or otherwise, shape their testimony—whether on direct or cross-examination—to conform to that of witnesses who have preceded them. Had that reason been given here, we would have been inclined, in light of the circumstances of this case, to reject the requests that we review the Board’s rulings, particularly if that Board had decided to impose in all instances what it has characterized as the “more stringent rule” of barring the witnesses from “discussions among themselves and reading of the transcript.”

Be that as it may, the question before us is not whether we would have acted just as the Licensing Board did had we been sitting in its place. That Board is much closer than we are to the problems involved in management of its hearings and must be given broad discretion to conduct the day-to-day proceedings before it in the manner it perceives as best calculated to elicit the truth. Accordingly, if we do not have in our hands by February 18, 1977, a renewal of the pending requests that we intercede, the petition for directed certification will be deemed denied. Any party renewing its request shall furnish us at the same time with a memorandum explaining why, in that party’s view, it was an abuse of discretion for the Board below to conclude that the steps it has been taking, including exclusion of that party’s witnesses, will encourage “the spontaneity of the person testifying” and therefore afford greater assurance that the whole truth is being brought out.² Responses to any renewed requests are to be mailed by March 1, 1977.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹ In this proceeding, counsel for the intervenors supported his request for sequestration by arguing, *inter alia*, that the matters in issue here were such that the credibility of witnesses loomed large. See, *e.g.*, Tr. 198, 595.

² Of course, the memoranda may address such other topics as the parties deem appropriate to bring to our attention. We remind them that we still have their earlier papers; of course, the Board’s rulings at those sessions of the hearing conducted subsequent to the issuance of our order, as well as the Board’s written response to our order, may require that their arguments be cast in somewhat different terms.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Richard S. Salzman, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

Docket Nos. STN 50-546
STN 50-547

PUBLIC SERVICE COMPANY OF
INDIANA, INC.

(Marble Hill Nuclear Generating
Station, Units 1 and 2)

February 11, 1977

Upon motion by certain intervenors for reconsideration of ALAB-371, which remanded to the Licensing Board the question of whether there are issues with which it can proceed while the Appeal Board deals with the "owner/applclicant" question, the Appeal Board reaffirms the substance of, but supplements in light of changed circumstances, its instructions to the Licensing Board. Papers received from another intervenor concerning the merits of the owner/applclicant question are accepted as an early response to the briefing request in ALAB-371.

RULES OF PRACTICE: AUTHORITY OF APPEAL BOARD

The Commission's regulations vest the Appeal Board with authority to review Licensing Board decisions *sua sponte*, both during the course of the proceedings and after an initial decision is issued.

RULES OF PRACTICE: AUTHORITY OF APPEAL BOARD

In appropriate circumstances, an Appeal Board may issue procedural orders without awaiting the views of all parties, but any party adversely affected may request reconsideration, vacation or modification of such action.

Mr. Donald L. Cox, Louisville, Kentucky, for intervenor
City of Louisville.

Mr. Marvin R. O’Koon, Louisville, Kentucky, for intervenor
Jefferson County, Kentucky.

Mr. Thomas M. Dattilo, Madison, Indiana, for intervenor
Save the Valley - Save Marble Hill.

ORDER ON RECONSIDERATION

Intervenors City of Louisville, Kentucky, and Jefferson County, Kentucky, ask us to reconsider our order of last Friday (ALAB-371) directed to the Licensing Board’s February 1 decision in this case cancelling (by divided vote) its hearings previously scheduled to begin on February 15, 1977, because not all the owners of the proposed Marble Hill facility are formal applicants for a Commission construction permit. On February 3, 1977, the Board below referred that “owner/applicant” question to us for review, noting that another Commission Licensing Board in a different case has reached a contrary result.¹

1. In essence, ALAB-371 called for two things: for briefs to us from the parties on the “owner/applicant” issue and for the Licensing Board to consider whether there remained issues in the case unrelated to that legal question still open to consideration at the previously scheduled hearings. Our order contemplated that if there were such independent questions—a matter we left for decision by the Board below—that Board was not constrained from hearing them merely by the pendency of appellate review. We simply wished to have that Board, after hearing from all parties, explain why it is appropriate either to go forward or stand pat with hearings as scheduled.

The petition now before us from the City and County is directed to our instructions to the Licensing Board to reconsider and explain its decision to defer hearings on all issues pending our resolution of one of them. Although intervenors neither raised nor briefed the “owner/applicant” question before the Board below, they believe that we should nevertheless have waited to hear from them before acting.

We now understand, however, that one of the participating utilities has subsequently withdrawn from the project. This action means as a practical matter that the February 15th hearing date must go by the boards in all events. This being so, rather than pass in the first instance ourselves on whether the “owner/applicant” issue pervades all matters to be heard below—the thrust of intervenors’ briefs to us—we think it best to stay our hand until the Licensing Board rules on that question, too. There is now time for it to do so, since the hearing date will have to be reset in light of the change mentioned.

¹ See 10 CFR § § 2.718(i) and 2.730(f) for discretionary authority to refer interlocutory rulings to us for review as well as authorizing us to reach down for significant questions *sua sponte*.

In sum, on reconsideration and in light of the changed circumstances, we reaffirm the substance of our instructions to the Board below: After giving all parties opportunity to be heard, that Board is to decide whether there are issues in the case independent of the "owner/applicant" question which it can fairly try while we have the latter under our appellate review.

Whatever conclusion the Board reaches on this question—and we intimate no position on the matter—the Board should spread the reasons for its ruling on the record and thereafter proceed or not proceed to hearing accordingly. We need only add that nothing in this order (or in ALAB-371) is intended to impinge in any way on the Board's discretion to adjust its hearing schedule to accommodate reasons extraneous to the question referred to us.

2. We also have before us a motion and brief from Intervenor Save the Valley—Save Marble Hill, predicated on the theory that we decided the "owner/applicant" question rather than calling for briefs on that issue. We shall therefore treat Save the Valley's papers as an early response to our briefing request, the filing deadline for which we set in ALAB-371 as February 18, 1977. In light of the misconception under which its counsel was laboring, we invite this intervenor to supplement its views on the question by that date should counsel believe further elucidation by it is warranted.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

Additional views of Mr. Farrar, in which Dr. Buck and Mr. Salzman join (issued February 14, 1977):

I concur in the judgment of my colleagues (rendered earlier in the interest of expedition) who, having reconsidered the matter, adhere to the result reached in ALAB-371. But, in light of the petitions for reconsideration, I believe it is in order to furnish a fuller explanation of what led us to issue ALAB-371 without first soliciting the views of all parties. We must be guided by the adage that "justice must not only be done, it must be seen to be done." Consequently, I add the following to flesh out the bare bones of ALAB-374.

1. The Commission's regulations vest us with authority to review Licensing Board decisions *sua sponte*, both during the course of the proceedings and after

an initial decision is issued. See 10 CFR §§2.718(i), 2.770(a), 2.785. This is a power which those familiar with our practice know we exercise when circumstances warrant. In this instance, a copy of the Licensing Board's February 1st ruling on the ownership questions was promptly delivered to us, as is customary. Similarly, we were immediately told when, two days later, that Board formally referred its order to us. 10 CFR §2.730(f). Of course, the effect of that referral was to place the matter squarely before us for possible review, thereby adding to the likelihood that we would exercise our authority to consider it now.

By virtue of our earlier contact with this case, we have been aware for some time that the *Marble Hill* hearing has been long delayed.¹ For that reason, prior to the time Public Service submitted its motion to us, we had already been contemplating taking action with respect to what appeared to us to be a questionable postponement of the entire hearing. To be sure, Public Service's motion was the catalyst that led to ALAB-371. But, as our order reflects, we took "a different approach to the matter" than the utility had suggested.² Rather than grant the relief which Public Service sought, we proceeded on an independent course.

2. The question remains as to why, even at that, we did not seek to elicit the views of the other parties before acting. As we indicated in ALAB-371 (fn. 10), we perceived a need to act quickly on this matter. And the action we took certainly appeared innocuous—we ordered no hearings to be rescheduled; directed no particular issues to be considered below; and expressed no views on the merits of the ownership issues. Nor did we even suggest, much less order, that the parties could not bring to the Licensing Board's attention any other circumstances which they thought militated against going ahead.

Beyond that, as my colleagues stress, we had examined our copies of the briefs on the merits filed with the Licensing Board and discovered that, as far as our records reflect, no intervenor had bothered to favor the Board below with a brief expressing its views on the merits of the ownership questions covered in that Board's order. From this, we drew what appeared to be the fully justified inference that the intervenors had no interest at all in this matter.³ Thus, we

¹ See ALAB-339, NRCI-76/7 20, 26. There, in the course of upholding the grant of intervention status to certain of the parties now before us (even though they had not shown justification for their late appearance), we noted that the hearing was then scheduled to begin last September.

² 5 NRC 409, 410.

³ At that point, we did not yet have before us copies of the several motions, filed with the Licensing Board near the end of January, which had requested that the hearing be postponed for reasons related in one way or another to the ownership questions. The Licensing Board's orders had not referred to those motions in any way. For all that appeared from the Board's brief orders, it was postponing the hearing solely because it believed that was a necessary consequence of its rulings on the merits.

went ahead to issue what we thought would be an uncontroversial procedural order without the benefit of the intervenors' views.

In parallel circumstances, the courts are permitted to do the same thing. Specifically, Rule 27(b), Federal Rules of Appellate Procedure, provides:

Notwithstanding the provisions of the preceding paragraph as to motions generally, motions for procedural orders . . . may be acted upon at any time, without awaiting a response thereto. Any party adversely affected by such action may request reconsideration, vacation or modification of such action.

The same rule should apply when we take such action, either on the papers of one party or, as here, essentially *sua sponte*.

When it came to the merits, however, we made certain that the intervenors would be heard. First, we invited "all the parties" to file briefs with us on two supplemental questions of particular interest to us.⁴ We went on to take the precaution—in light of the intervenors' failure to file briefs below—of saying that "if there are any parties who were not given the opportunity to file briefs below, they may file briefs with us on the merits of the co-applicant question as well . . ."⁵

3. We now have before us three telegrams from the City and County. The first asks for reconsideration and at least a "minimal opportunity" to be heard; the second and third, captioned respectively "brief in support of request for reconsideration" and "supplemental brief . . .," apparently contain what they wanted to bring to our attention with respect to the validity—or lack thereof—of ALAB-371. We also have a "motion to reconsider" filed by the intervenors Save the Valley - Save Marble Hill.

As my colleagues point out, ALAB-371 contemplated that the several parties would put before the Licensing Board their positions on whether particular issues were, or were not, in our words, "entirely independent" of the ownership questions and otherwise suitable for hearing now. Thus, to the extent the papers before us are addressed to such questions, they should be considered by the Board below. Similarly, that Board can consider in the same context the claims that there is a need for discovery from the co-owners on particular issues.

The City and County's claim that at this stage the overall environmental cost-benefit analysis "cannot be carried out" may well be valid. It does not, however, necessarily establish that there are no safety issues or subsidiary environmental issues that can be heard.

4. The only other point made in the telegraphic briefs is that a line of our decisions stands for the principle that we "should not interfere in matters relat-

⁴ ALAB-371, 5 NRC at 412.

⁵ *Id.*, fn. 9.

ing to the scheduling of hearings” by the licensing boards. Presumably, the claim is we violated that principle. But in none of the cases cited had the board below declined to exercise informed discretion as to the scheduling matter before it.⁶ And in two of them we stressed that it was for those boards “to apply [the factors relevant to deferral of the hearing of a particular issue] to the specific circumstances of the case before it.”⁷ Our order in this case was designed to insure that the Board did just that by focusing on the scheduling of particular issues; what we did not condone was a blanket order—having the potential to cause lengthy and perhaps unwarranted delay in the start of the hearings⁸—issued by the Board without regard to the particular circumstances before it and without any apparent justification.⁹ In this connection, the opinion portion of ALAB-371 concluded by stating:

By the very nature of things, our role in the matter of Licensing Board scheduling must be an extremely limited one. We can speak only as to general ground rules; actual scheduling must be left to the Licensing Boards themselves.

For the foregoing reasons, I concur in the action taken.

⁶ *Northern Indiana Public Service Co.* (Bailly Nuclear-1), ALAB-224, 8 AEC 244, 250 (1974); *Public Service Co. of New Hampshire* (Seabrook Units 1 and 2), ALAB-293, 2 NRC 660, and ALAB-295, 2 NRC 668 (1975).

⁷ 2 NRC at 662 and 670.

⁸ As we have previously observed, albeit with respect to a nearly-completed facility, the public has an interest in “having an early decision” on proposed nuclear plants. For if a plant “is safe and environmentally sound,” it should be “approved promptly”; while, “if, on the other hand, the plant fails to pass muster, the public interest would be served if this fact is known sooner rather than later.” *Allied-General Nuclear Services* (Barnwell Facility), ALAB-296, 2 NRC 671, 684-85 (1975). Of course, the desire for an early decision does not permit boards to force parties to hearing before they have been given an adequate opportunity to prepare. See *Southern California Edison Co.* (San Onofre Units 2 and 3), ALAB-212, 7 AEC 986 (1974).

⁹ As we said in another context, “. . . for each issue before it, the Board must weigh the advantages and disadvantages of proceeding now rather than waiting . . .” *Barnwell* (*supra*, fn. 8), 2 NRC at 682; see also *Potomac Electric Power Company* (Douglas Point Units 1 and 2), ALAB-277, 1 NRC 539 (1975).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson

In the Matter of

Docket Nos. 50-424
50-425

GEORGIA POWER COMPANY

(Alvin W. Vogtle Nuclear Plant,
Units 1 and 2).

February 16, 1977

Upon *sua sponte* review of (1) the supplemental initial decision (LBP-77-2) issued pursuant to the remand of ALAB-285 and ALAB-291 and (2) two earlier initial decisions (LBP-74-39 and LBP-74-48), the Appeal Board finds no error warranting corrective action but defers final judgment on spent fuel reprocessing and waste disposal matters, pending the adoption by the Commission of a new interim fuel cycle regulation.

Licensing Board decisions affirmed except with respect to issues pertaining to the environmental effects of the reprocessing and waste management phases of the uranium fuel cycle.

PARTIAL DECISION

In ALAB-285, 2 NRC 209 (1975), we remanded this proceeding to the Licensing Board for the purpose of conducting a supplemental hearing on those issues directly raised by the then pending applications of the Georgia Power Company for amendments to its construction permits for Units 1 and 2 of the Vogtle Facility.¹ In so doing, we reserved judgment on whether, and if so to what extent, issues unrelated to the proposed permit amendments might appropriately be considered on the remand. This question was subsequently determined in ALAB-291, 2 NRC 404 (1975).

The hearing on remand has now been completed and a supplemental initial decision rendered by the Licensing Board. LBP-77-2, 5 NRC 261 (January 11,

¹The sought amendments would have (1) reflected the proposed sale by the applicant of a partial ownership interest in the two units to certain other entities; and (2) extended the earliest and latest completion dates specified in the permits.

1977). That decision encompasses not only the issues which the Board was required to consider in passing upon the license amendment applications but, additionally, certain other issues placed in controversy by the Georgia Power Project. That organization had sought and (without opposition) had been granted leave to intervene on the remand. All issues, contested as well as uncontested, were resolved in favor of the Georgia Power Company and its proposed Vogtle co-owners.

No exceptions have been filed to the supplemental initial decision. Accordingly, we have reviewed that decision and the underlying record *sua sponte*. That record has disclosed no error warranting corrective action. We therefore can now affirm the decision, except for that portion which deals with the environmental effects of spent fuel reprocessing and waste disposal (5 NRC at 275-277). In conformity with the procedure followed by us in other recent cases, we shall defer final judgment on the reprocessing and waste management matter pending the adoption by the Commission of a new interim fuel cycle regulation. See *e.g.*, *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-367, 5 NRC 92, 105-107 (January 25, 1977).

One further matter warrants mention. On our *sua sponte* review some time ago of the Licensing Board's 1974 initial decision authorizing the issuance of construction permits for the Vogtle units (LBP-74-48, 7 AEC 1166), we raised a question respecting the disposition made therein (*id.* at 1175) of the question of the necessity of requiring that the airborne particulate radioactivity monitoring system be designed to withstand a safe shutdown earthquake. In ALAB-291, we took note that Georgia Power thereafter had informed us of its intention to install a so-designed system in Units 1 and 2 of the Vogtle facility. 2 NRC at 414, fn. 12. It appears from the supplemental initial decision that the Vogtle Preliminary Safety Analysis Report has been amended to reflect that intention. See 5 NRC at 264, fn. 8. In the circumstances, that issue may now be considered as moot. And because our review of both the remainder of LBP-74-48 and a still earlier Licensing Board partial initial decision dealing with environmental and site suitability matters² similarly has revealed no significant error, those decisions also may be affirmed at this time.³

² LBP-74-39, 7 AEC 895 (1974). Review of that decision has likewise been conducted on a *sua sponte* basis.

³ Although our scrutiny of LBP-74-39 and LBP-74-48 was undertaken long ago, we perceived no necessity to announce the result prior to the completion of the proceedings on remand required by the permit amendment applications. Further, between September 1974 and the summer of 1975, there was uncertainty respecting whether Units 1 and 2 would be built or, instead, cancelled. See ALAB-285, *supra*, 2 NRC at 209-10; ALAB-276, 1 NRC 533 (1975).

For the foregoing reasons, we *affirm* (1) LBP-74-39, 7 AEC 895; (2) LBP-74-48, 7 AEC 1166; and (3) LBP-77-2, 5 NRC 261, except with respect to issues pertaining to the environmental effects of the reprocessing and waste management phases of the uranium fuel cycle.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Richard S. Salzman

In the Matter of

Docket Nos. 50-452
50-453

THE DETROIT EDISON COMPANY

(Greenwood Energy Center,
Units 2 and 3)

February 22, 1977

Upon motion requesting an order directing the Licensing Board, in temporarily suspended proceeding, to grant leave to intervene and to provide legal representation, the Appeal Board (1) notes that, unknown to the movant, the Licensing Board on December 29, 1976, had entered an order which denied without prejudice the petitioner's request for affirmative action upon its intervention petition, until such time as licensing activities are actively pursued by the applicant; (2) rules that it has jurisdiction under 10 CFR 2.714a to entertain an appeal from a Licensing Board's failure to take action upon an intervention request; (3) denies the request for legal representation, in accordance with CLI-76-23; (4) rules that the Licensing Board acted within its broad discretion in deciding to postpone ruling on the intervention petition; and (5) suggests a reexamination by the Licensing Board of its December 29 order, from the standpoint of avoiding possible later delay.

Relief sought by the motion denied.

RULES OF PRACTICE: APPELLATE REVIEW

Protracted withholding of action on a petition for intervention may be treated as tantamount to a denial of the request. *Environmental Defense Fund, Inc. v. Harden*, 428 F.2d 1093, 1099 (D.C. Cir. 1970). Such a denial is appealable under 10 CFR 2.714a.

RULES OF PRACTICE: FINANCIAL ASSISTANCE TO PARTICIPANTS

The Commission does not provide direct financial assistance to participants

in individual licensing proceedings. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, NRCI-76/11 494 (November 12, 1976).

LICENSING BOARD: DISCRETION IN MANAGING PROCEEDINGS

Licensing boards have broad discretion with respect to the appropriate time for ruling on petitions and motions filed with them; the standard for review of such matters is whether it clearly appears that there has been an abuse of that discretion.

RULES OF PRACTICE: STANDING TO INTERVENE

Economic interest as a ratepayer of an applicant is not an interest which is cognizable in Commission proceedings. *Portland General Electric Co.* (Pebble Springs, Units 1 and 2), CLI-76-27, NRCI-76/12 610 (December 23, 1976).

Mr. Robert F. Philip, Sanford, Michigan, for the Citizens
for Employment and Energy.

MEMORANDUM AND ORDER

On February 15, 1977, the Citizens for Employment and Energy (CEE) filed a document with us entitled "motion for timely review and relief." The document recited that (1) in July 1976 CCE had filed an untimely petition for leave to intervene in this construction permit proceeding; (2) on December 8, 1976, the organization had moved the Licensing Board to act affirmatively on that petition; but (3) the Licensing Board still has not done so. The relief sought was an order directing the Licensing Board to grant the CEE intervention petition forthwith. CEE also desires to be provided with legal representation in the proceeding.

A copy of CEE's submission to us was served upon the Chairman of the Licensing Board. On February 17, 1977, he wrote a letter to the organization's representative in which he called attention to a December 29, 1976, order entered by the Licensing Board on the December 8 motion. In that order, which through inadvertence had not been served upon CEE at the time of its entry, the Board had denied the motion. Its assigned reason was that, at the request of the applicant, the licensing proceeding was being held in a state of suspension until approximately November 1977. In light of that development, the Board thought it "still premature to rule on CEE's petition for leave to intervene and accordingly such a ruling is held in abeyance until such time as licensing activities are again actively pursued by the Applicant." The Board stressed that its action was "without prejudice to the rights of CEE."

1. We are confronted at the outset with the question of our jurisdiction to entertain the CEE submission to us. Insofar as CEE seeks review of the refusal of the Licensing Board to act at this time upon its intervention petition, we think such jurisdiction to exist by virtue of 10 CFR 2.714a. True, that section in terms authorizes appeals only from orders which grant or deny intervention. The courts have recognized, however, that a protracted withholding of action on a request for relief may be treated as tantamount to a denial of the request. See *e.g. Environmental Defense Fund, Inc. v. Hardin*, 428 F.2d. 1093, 1099 (D.C. Cir. 1970). We perceive no good reason why the same principle should not be applied here, where the claim is made that the failure of the Licensing Board to have acted by now on the intervention petition is both unjustified and prejudicial to CEE.

With respect to CEE's additional request that it be afforded legal representation, the Commission recently ruled against the providing at this time of direct financial assistance to participants in individual licensing proceedings. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, NRCI-76/11 494 (November 12, 1976). That determination is, of course, binding upon us and the licensing boards and it precludes the furnishing of legal assistance at public expense.

2. Although the Licensing Board's deferral of action on the CEE intervention petition has been properly brought before us, we do not find sufficient warrant for overturning the Board's decision to abide the event of the reactivation of the licensing proceeding. Of necessity, broad discretion must be vested in the licensing boards with respect to the appropriate time for ruling on petitions and motions filed with them. We should step in only in circumstances where it clearly appears that an abuse of that discretion is involved. In this instance, such an abuse is not evident. More particularly, CEE's assertions to the contrary notwithstanding, we are unable to discern any substantial prejudice to the cognizable interests of that organization which might result from the holding of the intervention petition in abeyance until such time as the licensing proceeding may be resumed. In this connection, we are not unmindful of CEE's insistence that the Licensing Board should not have permitted the applicant to delay the progress of the proceeding. The only *present* injury which CEE asserts its members might suffer as a result of the delay is to their economic interest as rate-payers of the applicant. But an interest of that character is not cognizable in our proceedings. *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, NRCI-76/12 610 (December 23, 1976). See also, *id.*, ALAB-362, NRCI-76/12 627 (December 29, 1976).

The conclusion that there has not been an abuse of discretion which would justify our intercession should not be taken, however, as reflecting agreement with the Licensing Board's December 29, 1976, order. We appreciate, of course, that the CEE intervention petition (as later amended) has been opposed on several different grounds by the applicant and that, in the interest of economiz-

ing the expenditure of its time, the Licensing Board might have thought it desirable not to pass upon the issues raised by the opposition unless and until the necessity to do so became manifest. But, by the same token, there would appear to be decided advantages attendant to having the matter of CEE's entitlement to intervene definitively resolved *before* the time at which the applicant were to announce its readiness to go forward with the proceeding. Irrespective of how the Licensing Board might rule on the intervention petition, an appeal to us very possibly would follow. Further, the Board might determine that the petition was not satisfactory in its present form but grant CEE leave to amend it to cure the found deficiencies. In either event, the result of the course now being pursued by the Licensing Board might be unnecessary delay in the commencement of the hearing, undue haste in the prosecution of a section 2.714a appeal or the submission of an amended petition, or a combination of those evils.

Once again, in the absence of clear prejudice to CEE flowing from a deferral of decision on the pending petition, we are constrained to leave it to the Licensing Board to balance these competing considerations. We nevertheless commend to the Board a reexamination of its December 29 order from the standpoint of whether the avoidance of possible later delay might constitute an adequate reason for ruling on the intervention petition at this juncture.

The relief sought by the CEE motion is *denied*.
It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Dr. John H. Buck
Dr. Lawrence R. Quarles

In the Matter of

Docket Nos. 50-3
50-247
50-286

CONSOLIDATED EDISON COMPANY
OF NEW YORK, INC.

(Indian Point, Units 1, 2, and 3)

February 23, 1977

Upon petition by the State of New York for cancellation of, or modification of procedures adopted for, the hearing on seismic monitoring called for by ALAB-357 and ALAB-360, the Appeal Board questions whether it now has authority to cancel the hearing (in light of CLI-77-2) and in any event finds no warrant for granting any of the relief requested.

Petition denied.

RULES OF PRACTICE: SCHEDULING

A party must lodge promptly any objection it has to a board's scheduling of the prehearing phase of a proceeding.

Mr. Michael Curley and Ms. Sandra Mitchell Caron, Albany,
New York, for the New York State Energy Office.

MEMORANDUM AND ORDER

On Friday, February 18th, the State of New York transmitted to us a "petition for withdrawal of ALAB-357 and ALAB-360 or for certain alternative relief." That petition reached us yesterday. In view of the imminency of the deadlines which would have to be altered were we to grant the State the relief it requests,¹ we can only outline our reasons for denying the petition in its entirety.

¹ Written testimony is due the day after tomorrow, Friday, February 25th. The hearing is to begin on Tuesday, March 15th.

1. The State would have us cancel the upcoming hearing. But our two decisions calling for a hearing were issued last November 10th and December 23rd, respectively. And, on January 14th, after full review, they were left standing by the Commission, which had before it arguments similar to those pressed by the State now, in the form of (1) the petitions for reconsideration filed with us by other parties and (2) Mr. Farrar's dissenting views. CLI-77-2, 5 NRC 13.

No new developments having taken place, it is entirely too late in the day to seek to have us alter the substance of our decisions calling for a hearing. Moreover, there is substantial question whether we have the power to do so, in light of the Commission's decision. In short, grounds number 1 and 2 appearing on page 3 of the State's petition and the "further request" appearing in the middle of that same page are without merit, for the matters they raise were finally disposed of long ago.²

2. We do have the power to alter the schedule for filing testimony and, specifically, to direct the parties to follow some procedure other than the simultaneous filing now contemplated. But that procedure, too, was adopted long ago. Even under ordinary circumstances, a party must lodge promptly any objection it has to a board's scheduling of the prehearing phase of a proceeding; it cannot wait until testimony is due, and the hearing is imminent, to request that the procedure be changed. The State's request is even less fitting here. The February 25th deadline for filing testimony was set on January 17th. And, for a number of reasons previously articulated, we were forced to say on February 10th that "requests for any further postponement of the time for filing testimony will not be countenanced except under the gravest of *unexpected* circumstances" (emphasis added). The State has not met that test.

The State has not only failed to justify the delay in bringing its complaint to us, but has also not demonstrated that simultaneous filing is prejudicial to its interests. The State has long been supporting the monitoring requirement; it presumably has reasons for doing so and can have its witnesses express them now in written form. Although the ultimate burden of persuasion may be on the utilities to demonstrate that there is no justification for the monitoring condition, that does require them to prove a negative proposition. It is not unheard of for those having the affirmative side of such questions—*e.g.*, those who believe the expanded network is necessary—to present their evidence first even though the ultimate burden of proof is on their opponents. See *Consumers Power Company* (Midland Units 1 and 2) ALAB-315, NRCI-76/2 101, 111 fn. 24 (citing EPA procedures, where those asserting that a pesticide is hazardous proceed first). The procedure we have adopted does not go that far. Here, the

²All three Board members concur in this entire opinion. Because he dissented from ALAB-357 and ALAB-360, however, Mr. Farrar wishes to note specifically that he is in full agreement with paragraph 1.

parties are simply prefiling their written testimony simultaneously; at the hearing, each party, including the State, will have the opportunity to have its witnesses comment upon the substance of other parties' testimony. Accordingly, alternative request number 1 (also appearing on page 3 of the State's petition) is denied as both untimely and unnecessary to the conduct of a fair hearing.³

3. Alternative request number 2 seeks "an order granting the State full discovery. . ." concerning certain studies. But the State does not suggest that the utilities have resisted any attempts at formal or informal discovery at any time since last November, when the State was put on notice that a hearing would be held. In this connection, papers filed earlier by the staff suggest that the contrary is true; *i.e.*, that the licensees have been cooperative. Indeed, to the extent that the motion deals with the need to obtain underlying data supporting the January 31st presentation and the more recently released draft report, we understand the staff to have said those data are being made available voluntarily. If the licensees have been obstinate, the State should have told us about it before this, at least with respect to the January 31st material (the draft report will be taken care of in another manner, as indicated by our February 18th order denying relief to the staff).

4. The press of our other business makes it impossible to grant the State's alternative request that these hearings be held in eastern New York State. We have previously explained to the parties the factors we take into account in determining where to hold hearings and need not expand on them now.

For the foregoing reasons, the State's petition is *denied*.
It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

³The same reasoning calls for the rejection of the State's ground number 3.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Elizabeth S. Bowers, Chairman
Dr. Quentin J. Stober
Dr. Marvin M. Mann

In the Matter of

Docket Nos. STN 50-546
STN 50-547

PUBLIC SERVICE COMPANY
OF INDIANA, INC.

(Marble Hill Nuclear Generating Station,
Units 1 and 2)

February 1, 1977

The Licensing Board determines that co-owners of a proposed nuclear facility are *de facto* co-applicants, that an amended notice of hearing limited to the effects of joining new co-owners must be issued, and that scheduled hearings should be postponed.

Ruling referred to Appeal Board.

ORDER RELATIVE TO CO-APPLICANT ISSUE

In accordance with the Board's request at the December 2, 1976, prehearing conference the Applicant (PSI) and the NRC Staff (Staff) submitted briefs on December 16, 1976, on the question of whether all co-owners of the proposed Marble Hill facility must be co-applicants. Reply briefs were received from both parties on January 12, 1977. The Joint Intervenors, by letter of January 12, 1977, supported the Staff.

Both parties have been explicit in setting forth their positions and those arguments need not be repeated here. In the past it was typical for a utility to file an application for the construction of a nuclear reactor generating station. There is apparently a growing trend for several utilities to join together as co-owners due, no doubt, to inflation and the tight money market. This not only changes the "service area" and the need for power issue but also raises the question of the possibility of additional alternate sites as well as "financial ability." In other proceedings, e.g., Pebble Springs, Jamesport, no question was

raised that the new co-owners were not co-applicants and amended notices of hearing were issued limited to the effect of the new ownership.¹

This Board has determined that the co-owners are *de facto* co-applicants even though PSI chooses to call them "tenants-in-common" or "participants." The co-ownership is the controlling factor not the terminology applied.

Since the Notice of Hearing issued by the Commission on October 8, 1975, refers only to PSI and it is now known by the letter of January 21, 1977, from counsel for PSI that Wabash Valley Power Association will own 17 percent of each unit and East Kentucky Power Cooperative 8 percent of each unit, an amended Notice of Hearing will be issued limited to the effects of this change in ownership.

The evidentiary hearing presently scheduled to commence on February 15, 1977, is therefore postponed and will be rescheduled at a later date. This means, of course, the filing of direct testimony will also be delayed.

IT IS SO ORDERED.

ATOMIC SAFETY AND
LICENSING BOARD PANEL

Elizabeth S. Bowers, Chairman

Quentin J. Stober, Member

Dated at Bethesda, Maryland
this 1st day of February 1977

Dissenting Opinion of Dr. Mann:

For the reasons outlined below I respectfully differ with the conclusions reached by the majority in this matter.

It appears that the majority has based its ruling on the following assumptions:

1. That the existence of co-owners that are not co-applicants would in some way prevent proper consideration of the need for the facility and of alternate sites.
2. That the issue of financial qualifications cannot properly be judged.
3. That co-owners are *de facto* co-applicants.

With regard to the first assumption, I see no bar to full inquiry by the

¹ *Portland General Electric Company, et. al.* (Pebble Springs Nuclear Plant, Units 1 and 2), Docket Nos. 50-514, 50-515. *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2, Docket Nos. 50-516 and 50-517).

parties, or the Board, into the need for power on the applicant's system, or on the systems of the co-owners, or indeed in the region served by a pool of which the Applicant or co-owners may be members.

Further, in this instance it appears that a substantial portion of the output of the proposed plant will be contracted to a utility not a co-owner. So the question of need would appear, as a minimum, to be a function both of owners and customer utilities. So long as firm plans and arrangements exist for use of the power to be generated, and so long as those plans and arrangements appear to be consistent with reasonable forecasts of need, then the "need for power" issue would seem to be subject to adequate treatment.

As for alternate sites, the subject is rather more complex than the presence or absence of co-owners; among other things it has to do with system(s) electrical stability and ease and efficiency of transmission. In any event, where co-owners are present siting must satisfy all owners and customers needs, and again I see no bar to full consideration whether owners or firm customers are or are not applicants.

With regard to financial qualifications of the Applicant and co-owners, a firm contract among the owners, backed by financial information which can be required and obtained from or through the Applicant, seems to me adequate.

As the Applicant points out, 10 CFR 50.33(d)(4) allows an Applicant to act as agent for others. And §50.33(f) requires that the Applicant show that it "possesses the funds necessary . . . or that the Applicant has reasonable assurance of obtaining the necessary funds" It would appear, therefore, that the parties and the Board are in position to conduct such inquiry as may be necessary into financial arrangements, and that, where appropriate, conditions may be imposed on the licensee to assure compliance with requirements.

The Staff argues at some length for a narrow definition of "agent" as used in §50.33(d)(4), namely, that the term is intended to apply only to "turnkey" projects. Although some years ago a number of plants were built under "turnkey" contract I find no instance in which the supplier of the plant acted as applicant and agent for the licensee-to-be. Nor has the Staff cited such a case.

In broader terms the Staff argues that co-owners should be co-applicants because in certain instances hypothesized by the Staff the NRC would, in the Staff's view, encounter some difficulty in taking appropriate action. However, none of the situations envisioned by the Staff appear to be at all related to the central question whether the plant is designed, constructed, and operated in the interest of health and safety. Should a co-owner fail to fulfill its financial obligations I see no problem in regard to health and safety because under the regulations promulgated by the NRC the plant as constructed must comply with standards imposed. If the plant should not meet such standards or be delayed in construction or indeed if construction is not completed no license to operate will issue.

So far as technical qualifications are concerned it makes no difference whether co-owners are co-applicants. In all cases the Applicant, whether he acts as agent for co-owners or co-licensees, is solely responsible for design, construction, and operation of the facility and must demonstrate technical qualifications to discharge those responsibilities.

In summary, in the circumstances of this case it appears to me that so far as the responsibilities and obligations of the NRC are concerned it makes no difference whether co-owners are or are not co-licensees. Therefore, in the absence of clear need that co-owners be co-licensees in order that the NRC properly discharge its responsibilities, to impose such a requirement would be in my view over-regulation.

Marvin M. Mann, Member

February 1, 1977

**REFERRAL OF THE BOARD'S ORDER OF FEBRUARY 1, 1977,
CONCERNING "CO-APPLICANTS"
TO THE ATOMIC SAFETY AND LICENSING APPEAL BOARD**

After this Board issued its order determining that the two new co-owners in Marble Hill are, in fact, co-applicants, the Fort Calhoun Licensing Board issued an order on February 2, 1977, on a similar question but reached a different conclusion.¹ The Fort Calhoun Board referred the matter to the Atomic Safety and Licensing Appeal Board for its consideration. It, therefore, appears appropriate for this Board to also refer its determination to the Appeal Board for review.

The amended notice of hearing was issued in this proceeding on February 2, 1977.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Elizabeth S. Bowers, Chairman

Dated at Bethesda, Maryland
this 3rd day of February 1977

¹ Omaha Public Power District (Fort Calhoun Station, Unit 2), Docket No. 50-548.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Robert M. Lazo, Chairman
Dr. Emmeth A. Luebke
Dr. Quentin J. Stober

In the Matter of

Docket No. 50-548

OMAHA PUBLIC POWER DISTRICT

(Fort Calhoun Station, Unit 2)

February 2, 1977

The Licensing Board determines that co-owners of a proposed nuclear facility need not necessarily be co-applicants and therefore that the application in this proceeding need not be amended to include a co-owner as a co-applicant.

Ruling referred to Appeal Board.

ATOMIC ENERGY ACT: OWNERSHIP

Licensing of naked ownership of a production or utilization facility (as distinguished from acquisition, possession, or use) is not required by § 103 of the Atomic Energy Act.

MEMORANDUM AND ORDER

Opinion of the Board by Messrs. Lazo and Luebke:

By Order dated November 9, 1976, this Atomic Safety and Licensing Board ("Board") directed the parties in the above-captioned matter, Omaha Public Power District ("OPPD" or "Applicant") and the Nuclear Regulatory Commission Staff ("Staff"), to submit briefs setting forth their respective positions on a legal issue raised by the parties at a prehearing conference held in Omaha, Nebraska, on October 27, 1976. The specific question presented is whether the application filed by OPPD for a construction permit for Fort Calhoun Station, Unit 2, must be amended to include as a co-applicant, the co-owner of the proposed facility, Nebraska Public Power District ("NPPD").

Both parties have filed extensive briefs in support of their opposite positions regarding the issue which have been carefully considered by the Board. For

reasons that will be developed in this opinion, we conclude that the Atomic Energy Act of 1954, as amended, does not require a co-owner of a utilization facility to be a co-applicant for a license for that facility and that therefore, the application for Fort Calhoun Station, Unit 2 need not be amended to include NPPD as a co-applicant.

I

A. OPPD filed an application to construct and operate a 1150 MWe pressurized water reactor in Washington County, Nebraska, with the Nuclear Regulatory Commission ("NRC" or "Commission") in September 1975. Fort Calhoun 2 is to be jointly owned by OPPD and NPPD with each district owning an equal share of the unit. Each district is a political subdivision of the State of Nebraska. NPPD is expressly authorized by State statute to delegate authority to OPPD to construct, possess and operate the facility (Nebraska Reissue Revised Statutes of 1943, as amended, §70-628.01 through 70-628.04).

OPPD and NPPD executed a Joint Ownership Agreement on May 1, 1975, in which NPPD authorizes and designates OPPD to act as NPPD's "Agent to design, license, acquire, construct, operate, maintain and decommission" the facility. Agreement §2.07, at 14. In addition, both districts have agreed that OPPD shall have sole "possession and control" of the facility. *Id.* Toward this end, OPPD is empowered to:

take whatever action is necessary or appropriate to seek and obtain all licenses, permits and other rights and regulatory approvals necessary to the construction and operation of the Project. Agreement §5.01, at 21-22.

Consistent with the Agreement, OPPD applied for a license to construct and operate Fort Calhoun 2 "in its own behalf" and "as agent for NPPD" and stated in that application that OPPD "will retain full responsibility for the construction, operation and licensing of the facility." Application for Licenses, filed September 11, 1975, at 2. In addition, OPPD submitted information to the Commission on NPPD's ownership qualifications, need for power, qualification to finance 50 percent of the project and on NPPD's antitrust status pursuant to Appendix L to 10 CFR Part 50 of the Commission's regulations.

Thus, by a fully executed contractual agreement, OPPD and NPPD are to share equally in the ownership, financial support and electrical output of Fort Calhoun Station, Unit 2. Under that ownership agreement OPPD and NPPD each have a 50% ownership interest in the facility. However, the agreement specifies that ownership shares equivalent to up to 20% of the facility ownership will be made available and sold to other entities within the State of Nebraska. In the event that other entities agree to purchase such ownership interests, the shares of OPPD and NPPD will be equally and proportionately reduced. The duties and liabilities of each party to the agreement are intended to be several and not joint

and no party is to be liable for the acts, omissions or liabilities of any other party to the agreement. OPPD alone will be responsible for all licensing, design, acquisition, construction, operation, maintenance and decommissioning activities for Unit 2. In the same vein, OPPD will be the sole applicant for the facility construction permit and operating license despite the fact that NPPD has an ownership interest equal to that of OPPD now and that NPPD together with other Nebraska entities may have total ownership interests greater than that of OPPD in the future.

B. The factual setting and current posture of the application in this proceeding, as recounted above, give rise to a basic question that is fundamental to the scope of the Commission's licensing jurisdiction under the Atomic Energy Act of 1954, as amended¹ (the "Act"). That question, as posed by the Board in its November 9, 1976, Order, is: does the Atomic Energy Act of 1954, as amended, require all co-owners of a utilization facility to be licensees and, therefore, co-applicants for a construction permit for the proposed facility?

II

A. In the view of the Staff, the Atomic Energy Act requires all co-owners to be licensees and accordingly, requires NPPD (as well as any future owners of the facility), as an entity that will share with OPPD in the ownership, financial support, and electrical output of Fort Calhoun Station, Unit 2, to join with OPPD as an applicant for a construction permit for that facility.² The Staff argues that this position is mandated by considerations of the Act itself, the Congressional intent and policy, as shown by the legislative history, the Commission's regulations adopted to implement the Act, and general public policy.

The Applicant in its brief argues that the Commission's authority to license extends only to those who will own *and* operate a facility and that the Atomic Energy Act does not require a mere owner of a facility to secure a license.

B. The relevant provisions of the Atomic Energy Act of 1954, as amended, 42 U.S.C. §2011 *et seq.* (1973) ("the Act"), read as follows:

Sec. 101 It shall be unlawful, except as provided in Section 91, for any person within the United States to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import, or export any utilization or production facility except

¹ 42 U.S.C. §2011 *et seq.* (1970).

² In its brief, the Staff notes that on occasion in the past, the Commission has allowed permit and licensing actions to proceed to the ultimate issuance of a permit or license in situations in which all co-owners of the utilization facility in question were not co-applicants. *See, e.g., Houston Lighting & Power Co. et al.* (South Texas Project Nuclear Generating Station, Units 1 and 2), Docket Nos. 50-498, 50-499; *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), Docket Nos. 50-277, 50-278. However, the Staff believes that the better view is that all co-owners must be licensees.

under and in accordance with a license issued by the Commission pursuant to sections 103 and 104.

Sec. 103 The Commission is authorized to issue licenses to persons applying therefor to transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, possess, use, import, or export under the terms of an agreement for cooperation arranged pursuant to section 123, utilization or production facilities for industrial or commercial purposes. . . .

As readily can be observed from the statutory language, the class of "persons" subject to the Commission's licensing authority is defined in terms of acquisition, possession or usage, not ownership. Congress did not use the word "own" in the facility licensing sections of the Act. Instead, it used the words "acquire," "possess" or "use."

The Staff argues that the word "acquire" is broader than and inclusive of the word "own" and that in common usage, to "acquire" means to "obtain as one's own." However, the word "acquire" connotes only that some rights of ownership have passed. Those rights conveyed may be partial, qualified or nonexclusive. Further, the word is sometimes used in the sense of "procure." It does not necessarily mean that title has passed, but it clearly signifies "possession."

Here, the Applicant and not NPPD, shall have sole possession and control of the facility. This arrangement is required by the Ownership Agreement entered into by and between the Applicant and NPPD which authorizes and designates Applicant as co-owner to "acquire" the facility as agent for NPPD.

Had Congress intended to require licensing of naked ownership of a production or utilization facility it would have included ownership in the list of activities found in §103 just as it did for material licensing addressed by Sections 53 and 81 of the Act, both of which use the terms "acquire," "possess" or "own." Further, had Congress believed ownership to be synonymous with acquisition or possession, it would not have included all three terms in §§ 53 and 81.

C. The references to the legislative history of the Act included in the briefs do not support the Staff's interpretation of §§101 and 103, but rather are consistent with Applicant's view of the Commission's authority to license only those who will own *and* operate a facility. *E.g.*, Senate Debates on Amending the Atomic Energy Act of 1946, July 22, 1954, (100 Cong. Rec. 10898, 10900) as reprinted in *Legislative History of the Atomic Energy Act of 1954*, Vol. 3, p. 3453, 3454, Separate Views of Representative Holifield and Representative Price on H.R. 9757, printed in *U.S. Code Congressional and Administrative News*, 83rd Cong., 2d Sess. (1954), Vol. 2, p. 3496, 3512-3513; see generally NRC Staff's Brief at 7-11.

In construing a statute, one must construe what Congress has written and neither add, subtract, delete nor distort the words used. *62 Cases, More or Less, Each Containing Six Jars of Jam v. United States*, 340 U.S. 593, 596 (1951). The very use of two separate words is an indication that some sort of different meaning is to be ascribed to each of them. This is particularly true when one of the allegedly identical words is omitted in one place and not in another. *Hoffman v. Joint Council of Teamsters No. 38*, 230 F. Supp. 684, 691 (N.D. Calif. 1962) *modified* 338 F.2d 23, 27 (9th Cir. 1964) [legislative history clearly demonstrated that two words were treated as synonymous throughout legislative proceedings]; *cf Ernst & Ernst v. Hockfelder*, 96 S.Ct. 1375, 1384 (1976). When Congress has carefully employed a term in one section of a statute and has excluded it in another it should not be implied where it is excluded. *Diamond Roofing v. Occupational Safety and Health Administration*, 528 F.2d 645, 648 (5th Cir. 1975); *Bott v. American Hydrocarbon Corporation*, 458 F. 2d 229, 233 (5th Cir. 1972); *J. Ray McDermott & Co. v. Vessel Morning Star*, 457 F. 2d 815 (5th Cir.), *cert. denied*, 409 U.S. 948 (1972). To do so is not to construe the Act; but to amend it. *Id.*

Disregard of the distinction between "own" and "possess" overlooks the variety of real property interests which depend upon the difference between ownership and possession, *e.g.*, fee simple *versus* leasehold interests, cooperative *versus* condominium apartments, easements.

D. The Commission's regulations implementing §103 provide indirect support for Applicant's position that it may apply on behalf of itself and as agent for NPPD. Section 50.33(d) (4) of the Commission's regulations expressly recognizes instances in which an applicant will be acting as an agent for other principals in filing the application and requires the applicant to furnish certain information about principals who are not applicants. Neither the regulation nor the accompanying Statement of Consideration; 21 *Fed. Reg.* 355 (1956), support the Staff's attempt to limit that subsection's applicability to turnkey arrangements. Since a turnkey arrangement contemplates a transfer of ownership and control from the agent to the principal upon completion of the facility, it presents a situation inapposite to that involving a co-owner, who receives neither control nor possession of the facility from the applicant.

III

A. One of the purposes of the Act is to effectuate the atomic energy policies established by Congress by providing for "... a program for Government control of the *possession, use, and production* of atomic energy and special nuclear material, whether owned by the Government or others ..." §3c. of the Act; 42 U.S.C.A. §2013(c) (1973) (emphasis added). The concern of the Act is to control those who are actively involved in the production or utilization of

atomic energy and special nuclear material. To require NPPD to become a co-applicant will not further the legitimate aims of the Commission's licensing authority as defined in the Act.

In a multiple ownership situation, where, as here, a single applicant has complete technical responsibility, the safe construction and operation of the facility is assured by the NRC's authority over that applicant. Extending the Commission's regulatory authority in health and safety matters over one whose interests in the facility are purely financial does nothing to strengthen that assurance. In those instances where the applicant's case on such issues as need for power or financial qualifications depends upon information concerning other co-owners, such information may be required, reviewed, and approved as a precondition to licensing.

Similarly, the Commission can fulfill its additional responsibilities under §105 of the Act, 42 U.S.C.A. §2135 (1973), relating to antitrust considerations, without requiring NPPD to become a co-applicant. Under §105, the Commission transmits §103 applications for licenses to the Attorney General for antitrust review. The information forwarded includes responses to twenty questions set forth by the Commission in 10 CFR Part 50, Appendix L. The Attorney General then renders his advice on the antitrust status of the application to the Commission, which in turn makes a finding as to whether the "proposed activities under the license would create or maintain a situation inconsistent with the antitrust laws of the United States."

The two key requirements of §105, therefore, are (1) review of an "application" under §103; and (2) the making of a finding concerning "activities under the license." Those requirements can be fulfilled without making NPPD an applicant for licenses.

The instant application discloses completely the fact of co-ownership of the facility. The Attorney General and the Commission therefore, could, and did review whether such co-ownership would "create or maintain a situation inconsistent with the antitrust laws." Information from NPPD in response to Appendix L was submitted by Applicant and the Attorney General found that co-ownership by NPPD would not create a situation inconsistent with the antitrust laws of the United States. 41 *Fed Reg.* 19786 (1976).

With regard to the second point, it is clear from the agreement and the Application itself that NPPD will not conduct any "activities under the license"; therefore, no review on this issue was actually required. The required information was made available to the Commission by Applicant on its own behalf and as NPPD's agent, without its being necessary for NPPD to become a co-applicant. Therefore, the Commission, has already fully met its antitrust obligations with respect to the proposed license activities without requiring NPPD to become a co-applicant.

In any event, the Commission had the power to eliminate any aspects of the

ownership of Fort Calhoun 2 that might have been in contravention of the antitrust laws by conditioning issuance of the license to OPPD with respect to any objectionable aspects of the unit's ownership.

B. The Commission by its control over Applicant already can require further information concerning co-owners who are not co-applicants and thus fulfill its licensing responsibilities. Applicant has accepted its burden under the National Environmental Policy Act of 1969, 42 U.S.C. §§4321-4347 (1970 and Supp. V. 1975) to provide information on NPPD's need for power and analysis of alternate sites and additional generating capacity and this information is part of the Fort Calhoun 2 Application. If a co-owner who is not a co-applicant, failed to cooperate with an applicant in furnishing information to the Commission, the NRC has the authority and, indeed the responsibility, to withhold favorable action on the application. This is the same power which would be exercised, even if all co-owners were required to be co-applicants.

C. Consistent with the language of the Atomic Energy Act and public policy, only those who plan to conduct or actually perform, activities in relation to a nuclear facility are required to become applicants. In those instances where co-owners have elected to join in the application as co-applicants, only that co-owner which has been so authorized by the other owners to act as agent, has assumed the authority and responsibility for design, construction and operation of the facility. For that reason, only the duly authorized agent has been required to demonstrate technical qualifications necessary to meet the requirements of the Atomic Energy Act and of the Commission's Regulations. Here, NPPD does not contemplate participation in such activities and has expressly so stated in its agreement with Applicant. Further, at no time has Applicant submitted—nor has the NRC Staff requested—information concerning NPPD's technical qualifications to construct or operate the facility. Accordingly, the addition of NPPD as a co-applicant is unwarranted.

IV

For the foregoing reasons, the Licensing Board finds that the Atomic Energy Act of 1954, as amended, and public policy do not require a mere co-owner of a utilization facility to be a co-applicant for a license for that facility and that, therefore, the application for Fort Calhoun 2 need not be amended to include NPPD as a co-applicant.

The Board's ruling hereinabove addresses a basic question that is fundamental to the scope of the Commission's licensing jurisdiction under the Atomic Energy Act of 1954, as amended. In our judgment this legal issue should be presented to the Atomic Safety and Licensing Appeal Board for its prompt

consideration.³ The Licensing Board's ruling is hereby *referred* to the Appeal Board.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Emmeth A. Luebke

Robert M. Lazo

Issued at Bethesda, Maryland
this 2nd day of February 1977.

Separate Opinion of Dr. Stober:

It is my considered opinion that co-owners must be licensees and therefore co-applicants. Such a requirement would serve to increase the effective involvement in the public interest in licensing procedures leading to a more orderly and timely conclusion of the regulatory process, and facilitate NEPA determinations of the need for power, alternative sites and energy sources. That all co-owners be co-applicants would improve the credibility of the licensing procedure from the viewpoint of the public.

However, in this case I concur with my colleagues with the following observations. The Omaha Public Power District (OPPD) is to jointly own Fort Calhoun Station, Unit 2, with the Nebraska Public Power District (NPPD). Both Districts are public corporations and political subdivisions of the State of Nebraska and each will own an equal share of the facility. They will by contractual agreement share equally in the ownership, financial support and electrical output of Fort Calhoun Unit 2. The agreement specifies that ownership shares equivalent to up to 20% of the facility ownership will be made available and sold to other entities within the State of Nebraska. In the event that other entities agree to purchase such ownership interests, the shares of OPPD and NPPD will be equally and proportionately reduced. The duties and liabilities of each party to the agreement are intended to be several and not joint and no party is to be liable for the acts, omissions or liabilities of any other party to the

³In an order issued on February 1, 1977, dealing with the same legal issue under similar circumstances, the Licensing Board in the Marble Hill proceeding reached a result which conflicts with the decision of this Board. *Public Service Company of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 and 2), Order Relative to Co-Applicant Issue (February 1, 1977).

agreement. OPPD alone will be responsible for all licensing, design, acquisition, construction, operation, maintenance and decommissioning activities for Unit 2. In the same vein OPPD will be the sole applicant for the facility construction permit and operating license while NPPD has an ownership equal to that of OPPD. The ownership agreement clearly sets forth in detail the interaction between OPPD and NPPD therefore eliminating the need to require the co-owners of Fort Calhoun Unit 2 to be licensees and therefore co-applicants for a construction permit.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Marshall E. Miller, Chairman
Frederick J. Shon
Dr. Frank Hooper

In the Matter of

Docket Nos. 50-458
50-459

GULF STATES UTILITIES COMPANY

(River Bend Station,
Units 1 and 2)

February 3, 1977

Upon application for construction permits, the Licensing Board issues a third Partial Initial Decision which, pursuant to the *Supplemental General Statement of Policy on the Environmental Effects of the Uranium Fuel Cycle* (41 Fed. Reg. 49898, November 11, 1976), concludes that (1) the use of the revised Table S-3 values would not tilt the cost-benefit balance against issuance of construction permits; (2) any construction permits must be conditioned on the outcome of proceedings in *NRDC v. NRC*, Nos. 74-1385 and 74-1586 (D.C. Cir. July 21, 1976); and (3) authorization for the issuance of construction permits is subject to supplementation of the record on ECCS compliance.

(3d) PARTIAL INITIAL DECISION

(Uranium Fuel Cycle Matters)

Appearances

Troy B. Conner, Jr., Esq., and Mark J. Wetterhahn, Esq., of Washington, D. C., and Stanley Plettman, Esq., of Orgain, Bell & Tucker, Beaumont, Texas, For the Applicant, Gulf States Utilities Company

Richard Troy, Jr., Esq., Assistant Attorney General, and Anthony Z. Roisman and Karin P. Sheldon of Roisman, Kessler & Cashdan, Washington, D.C., For the State of Louisiana

Lawrence Brenner, Esq., and Richard K. Hoefling, Esq.,
Office of The Executive Legal Director, U. S. Nuclear
Regulatory Commission Washington, D. C., For the NRC
Staff

I. INTRODUCTION

1. On September 2, 1976, the Atomic Safety and Licensing Board ("Board") issued its (2d) Partial Initial Decision¹ which addressed primarily the issues pertaining to the radiological health and safety, financial qualifications and the common defense and security related to the application filed with the Nuclear Regulatory Commission ("Commission" or "NRC") by Gulf States Utilities Company ("Applicant") for construction permits and operating licenses for its River Bend Station, Units 1 and 2. That Partial Initial Decision also addressed the Board's findings on the question of fuel utilization efficiency.

2. In that decision, the Board noted that, subsequent to the completion of the receipt of evidence and of all pleadings in this proceeding, the Court of Appeals of the District of Columbia Circuit issued a decision in *Natural Resources Defense Council, et al. v. NRC*, ___ F.2d ___, 9 ERC 1149, Nos. 74-1385 and 74-1586 (July 21, 1976) which held that the Commission's consideration under the National Environmental Policy Act in the rulemaking proceeding on the Environmental Effects of the Uranium Fuel Cycle (Docket RM-50-3) was not adequate as to the environmental impact of fuel reprocessing and waste management. In its General Statement of Policy, dated August 13, 1976 (41 Fed. Reg. 34707), the Commission stated that these two matters would be further considered in the rulemaking docket and that (as applicable to this proceeding) no construction permits would issue until interim rulemaking steps described therein had been taken. The Commission stated that licensing boards should continue to process applications up to the point of, but not including, licensing.²

3. In compliance with that Policy Statement, the Board issued its (2d) Partial Initial Decision, making findings on all other matters, but specifically reopening and deferring ultimate findings on the cost-benefit analysis pending further action by the Commission as contemplated by the above-mentioned General Statement of Policy.

4. On November 5, 1976, the Commission issued a "Supplemental General Statement of Policy on the Environmental Effects of the Uranium Fuel Cycle." (41 Fed. Reg. 49898, November 11, 1976). The Supplemental Policy Statement set forth interim procedures which may permit licensing to resume in appro-

¹ NRCI-76/9, 293 (September 2, 1976).

² *Id.* at 296-7.

priate cases pending the anticipated adoption of an interim fuel cycle rule. The notice of proposed rulemaking, previously published in the Federal Register on October 18, 1976 (41 Fed. Reg. 45849), contained revised values to Table S-3 which were based upon a supplement to the original analysis of the fuel cycle, entitled *Environmental Survey of the Reprocessing and Waste Management Portions of the LWR Fuel Cycle* (NUREG-0116). In the Supplemental Policy Statement, the Commission concluded that

...licensing may resume on a conditional basis using the existing Table S-3 if, but only if, the revised values [set forth in the notice of proposed rulemaking] are examined to determine whether, if those values were used, the result would tilt the cost-benefit balance against the issuance of the license.

As set forth in the Supplemental Policy Statement, the accuracy of the revised values will not be an issue in individual licensing proceedings.

5. The Commission further stated that construction permits "...may be issued in pending cases in advance of the adoption of the interim rule on the basis of the currently effective chemical reprocessing and waste storage values of Table S-3."³ The Commission directed "that such licenses may be issued only if further, specific analysis is performed to determine whether, if the revised chemical reprocessing and waste storage values set forth in the Commission's notice of proposed rulemaking of October 18, 1976, were used, the result would tilt the cost-benefit balance against the issuance of the license."⁴ Further, the Commission required that any construction permit "...must be conditioned in accordance with the [Court of Appeals] order (staying its mandate) dated October 8, 1976."⁵

6. Pursuant to the guidance set forth by the Commission, and as contemplated in the Staff's letter to the Board of November 22, 1976, the Staff submitted its "NRC Staff Evaluation of the Impact of Revised Table S-3 Values on the River Bend Cost-Benefit Balance" on December 14, 1976, to the Board and the parties. Attached to this paper is the Affidavit of Jan A. Norris, the NRC Staff Environmental Project Manager for the River Bend Station, which affirms the truth of the revised Staff S-3 evaluation submitted on December 14, 1976. By mailgram dated January 4, 1977, the State of Louisiana informed the Board that it would "...neither support nor contest the conclusions expressed in [the Staff S-3 evaluation] at this time," and stated further that it will "...neither support nor oppose the expected suggestion that the Board's findings be made without hearing."

7. On January 21, 1977, the NRC Staff moved that the Board admit into

³41 Fed. Reg. 49898, 49899 (November 11, 1976).

⁴*Id.*

⁵*Id.*

evidence the previously submitted "NRC Staff's Evaluation of the Impact of Revised Table S-3 Values on the River Bend Cost-Benefit Balance," and the supporting "Affidavit of Jan A. Norris." The Staff further moved that the Board issue an initial decision on the basis of the Staff's evaluation—finding that inclusion of the revised values for reprocessing and waste management into the River Bend cost-benefit balance would not tilt it against the issuance of construction permits. On January 24, 1977, the Applicant stated it had no objection to the admission of the Staff S-3 Analysis into evidence and joined in the Staff's request to the Board to dispense with a hearing.⁶

8. Having considered the various submittals, the Board hereby admits the Staff S-3 Analysis into evidence as Staff Exhibit 4. In addition, as further discussed below, because of the very small impact of the original Table S-3 on the previously struck cost-benefit balance for the River Bend Station and because of the lack of any significant change in those impacts brought about by the use of revised Table S-3, and in the absence of any request to the contrary, the Board sees no need for, and will dispense with, a hearing on this matter.

II. FINDINGS OF FACT

9. The Board considered the effects of Table S-3 on the River Bend cost-benefit balance in its Partial Initial Decision (Partial Construction Permit Proceeding—Environmental Matters and Site Suitability Only) dated September 2, 1975,⁷ wherein it concluded that the Staff's evaluation was properly performed and that the environmental effects as they pertain to the River Bend Station were negligible.⁸ The Board concluded that the economic benefits from the construction and operation of the proposed facility outweighed environmental, economic and other costs and, therefore, the balancing of these factors favored issuance of construction permits for the proposed facilities.⁹

10. In accordance with the Commission's directive contained in the Supplemental General Statement of Policy, the Staff assessed the effect of using the revised chemical processing and waste storage values set forth in the Commission's Notice of Proposed Rulemaking of October 18, 1976, on the cost-benefit balance for the River Bend facility as previously presented in this proceeding (Staff S-3 Analysis, pp. 1-7 and Table 1). Principal changes from the original Table S-3 include those in the categories of land use, chemical effluents, iodine releases, carbon-14 releases, and buried solids (Staff S-3 Analysis at pp. 3-7). It

⁶ See "NRC Staff Motion to admit into Evidence and Issue a Decision on the Basis of the 'NRC Staff Evaluation of the Impact of the Revised Table S-3 Values on the River Bend Cost-Benefit Balance'" and "Applicant's Response to NRC Staff Motion. . ."

⁷ LBP-75-20, 2 NRC 419, 445 (1975).

⁸ *Id.*

⁹ *Id.* at 456.

concluded that these impacts are so small that there is no significant change in impact from that associated with the effects presented in Table S-3 and, accordingly, the use of the revised values would not tilt the cost-benefit balance against issuance of the license (Staff S-3 Analysis, p. 7).

11. The Board had previously concluded that the environmental effects of the fuel cycle (utilizing Table S-3) as they pertain to the River Bend Station were negligible.¹⁰ The Board has carefully reviewed the Staff's analysis and the supporting documentation, and finds that the impacts are so small that there is no significant change in impact from that associated with the effects presented in Table S-3. The Board further finds that inclusion of the revised values for reprocessing and waste management into the River Bend cost-benefit analysis would not tilt it against the issuance of construction permits.

12. This construction permit proceeding is presently pending before the Appeal Board with respect to all issues decided by this Licensing Board in its Second Partial Initial Decision issued on September 2, 1976 (NRCI-76/9 293). In paragraph 24 of that decision, the Board, based on its review of the Staff analyses, found that the Applicant's evaluation of the ECCS performance for the River Bend Station was performed wholly in compliance with 10 CFR §50.46 and Appendix K to 10 CFR Part 50. Based on the results of that evaluation, the Board concluded that the River Bend ECCS is in conformance with the requirements of those regulations and is therefore acceptable.

13. The Staff has now been informed by the nuclear steam supply system vendor, the General Electric Company, that it has discovered certain calculational errors in the performance evaluation of the River Bend ECCS. As a result of these calculational errors, it appears that the testimony and finding in the record that the Applicant's evaluation of ECCS performance was performed wholly in compliance with §50.46 and Appendix K is not correct. Accordingly, it will be necessary to supplement the hearing record after the Staff has reviewed additional analyses of the effect of the calculational errors, to be provided to the Staff by the Applicant.

III. CONCLUSIONS OF LAW

14. Based upon the findings of fact set forth above, the Board makes the following conclusions of law:

(a) We find that the impacts of the revised uranium fuel cycle values for reprocessing and waste management are so small that there is no significant change in impact from that associated with the effects presented in Table S-3, and accordingly the use of the revised values would not tilt the cost-benefit balance against issuance of construction permits for the River Bend Station.

(b) Authorization for the issuance of construction permits is subject to

¹⁰Note 8, *supra*.

supplementation of the record on ECCS compliance, which matter is currently before the Appeal Board.

(c) In compliance with the Commission's Supplemental Policy Statement which requires that any license issued pursuant to that Statement be conditioned in accordance with the Court of Appeals' order staying its mandate, the following condition must be included in any construction permits:

In accordance with the requirements imposed by the October 8, 1976, Order of the United States Court of Appeals for the District of Columbia Circuit in *Natural Resources Defense Council v. Nuclear Regulatory Commission*, No. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976, and such time when the mandate is issued subject to the outcome of the proceedings herein," the construction permit issued herein shall be subject to the outcome of such proceedings.

15. IT IS ORDERED, in accordance with 10 CFR §§2.760, 2.762, 2.785 and 2.786 that the conclusions reached in this Third Partial Initial Decision shall become effective immediately and shall constitute the final action of the Commission in that respect forty-five (45) days after the date of issuance hereof, subject to any review pursuant to the Commission's Rules of Practice. Exceptions to this Third Partial Initial Decision may be filed by any party within seven (7) days after service of this Third Partial Initial Decision. A brief in support of the exceptions shall be filed within fifteen (15) days thereafter, twenty (20) days in the case of the Staff. Within fifteen (15) days after service of the brief of appellant (twenty (20) days in the case of the Staff), any other party may file a brief in support, or in opposition to, the exceptions.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Frederick J. Shon, Member

Marshall E. Miller, Chairman

[Dr. Hooper concurs but was
unavailable for signature.]

Dated at Bethesda, Maryland
this 3rd day of February 1977.

UNITES STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Douglas V. Rigler, Chairman
John M. Frysiak
Ivan W. Smith

In the Matter of

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Docket Nos. 50-346A
50-500A
50-501A

(Davis-Besse Nuclear Power Station,
Units 1, 2 and 3)

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.

Docket Nos. 50-440A
50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

February 3, 1977

Upon referral from the Appeal Board (ALAB-364) of applicants' motion for a *pendente lite* stay of the antitrust conditions directed to be imposed by LBP-77-1, the Licensing Board rules that the applicants have not demonstrated good cause for granting the extraordinary relief sought. The Board also clarifies one of its license conditions.

Motion denied.

RULES OF PRACTICE: STAY PENDING APPEAL

In assessing a request for a stay pending appeal, adjudicatory boards must consider four factors: (1) has the movant made a strong showing that it is likely to prevail on the merits of its appeal; (2) has the movant shown that without a stay it will be irreparably injured; (3) would issuance of a stay substantially harm other interested parties; and (4) where lies the public interest? *Virginia Petroleum Jobbers Assn. v. FPC*, 295 F.2d 921, 925 (D.C. Cir. 1958); *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-192, 7 AEC 420 (1974); *Public Service Co. of New Hampshire* (Seabrook, Units 1 and 2), ALAB-338, NRCI-76/7 10, 13 (1976).

RULES OF PRACTICE: STAY PENDING APPEAL (BURDEN OF PROOF)

The burden of proof on a motion by applicants for a *pendente lite* stay of certain antitrust license conditions is on the applicants (10 CFR §2.732).

RULES OF PRACTICE: STAY PENDING APPEAL

To meet the *Virginia Petroleum Jobbers* standard of making a strong showing that it is likely to prevail on the merits of its appeal, the movant must do more than merely establish possible grounds for appeal. *Environmental Defense Fund, Inc. v. Froehlke*, 348 F. Supp. 338, 366 (W.D. Mo. 1972), *aff'd.*, 477 F.2d 1033 (8th Cir. 1973). It must demonstrate a strong probability that no ground will remain upon which the Licensing Board's relief can be based.

RULES OF PRACTICE: STAY PENDING APPEAL

The irreparable injury standard of *Virginia Petroleum Jobbers* is not satisfied by "something merely feared as liable to occur at some indefinite time in the future." *Eastern Greyhound Line v. Fusco*, 310 F.2d 632, 634 (6th Cir. 1962).

ATOMIC ENERGY ACT: ANTITRUST RELIEF

Antitrust relief should be fashioned so as to comply with the statutory directives of Section 105(c) of the Atomic Energy Act. It may require a change in the *status quo*. *Northern Securities Co. v. United States*, 193 U.S. 197, 357. It should cure the ill effects of the illegal conduct and assure the public of freedom from its continuance. *United States v. United States Gypsum Co.*, 340 U.S. 76, 88 (1950). Its purpose must be to restore competition, even though that course involves restrictions on a respondent company. *Ford Motor Co. v. United States*, 405 U.S. 562 (1972).

MEMORANDUM AND ORDER ON APPLICANTS' MOTION FOR AN ORDER STAYING, PENDENTE LITE, THE ATTACHMENT OF ANTITRUST CONDITIONS

Contending that they have made a strong showing that they are likely to prevail on the merits of the appeal and that without relief they will be irreparably injured, Applicants, on January 14, 1977, moved the Appeal Board for an order staying, *pendente lite*, the attachment of antitrust conditions to the Davis-Besse and Perry nuclear stations. By order of January 17, 1977, the Appeal Board referred the motion to the Licensing Board. The NRC Staff, the

Department of Justice and the City of Cleveland filed responses opposing the grant of a stay.

Applicants contend, and the other parties agree, that four criteria enumerated in *Virginia Petroleum Jobbers Assn. v. FPC*, 259 F.2d 921 (1958), should be applied to decide this motion. These criteria have been adopted by the Appeal Board. *Northern Indiana Public Service Co.* (Bailly Generating Station, Nuclear 1), ALAB-192, 7 AEC 420; *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-338, NRCI-76/7, 10, 13, July 14, 1976. The burden of proof necessary to carry this motion rests upon Applicants (10 CFR §2.732).

Prior to commencing our assessment, we make one threshold comment. In its responding papers, Justice argues that the request for stay misconceives the nature of the Licensing Board's action and its relation to the statutory scheme. Justice disputes Applicants' contention that the initial decision has cleared the way for issuance of the requested operating licenses and construction permits. We agree that these conditions are not appendages to the licenses but rather are a predicate to the very issuance of the license. Justice points out that the issuance of a license without conditions will not preserve the *status quo* but instead will alter it since power from the nuclear stations will have an immediate impact on competitive conditions within the Combined CAPCO Company Territories (CCCT).

Since operation of the facilities without condition will not preserve the *status quo*, it is our view, for the reasons stated in our decision of January 6, 1977, that activities under a license without immediately effective conditions would create and maintain a situation inconsistent with the antitrust laws. Denial of a stay, on the other hand, will help to preserve the position of competitive entities or potential competitors within the CCCT.

We turn now to an evaluation of Applicants' contentions that their motion meets the criteria set forth in *Virginia Petroleum Jobbers*. The following questions apply.¹

(1) Has the movant made a strong showing that it is likely to prevail on the merits of its appeal?

(2) Has the movant shown that, without such relief, it will be irreparably injured?

(3) Would the issuance of a stay substantially harm other parties interested in the proceeding?

(4) Where lies the public interest?

A. Has the movant made a strong showing that it is likely to prevail on the merits of its appeal? It is the Applicants' burden to make a *strong* showing that it is likely to prevail on the merits of its appeal. Mere establishment of possible grounds for appeal does not meet this standard. *Environmental Defense Fund*,

¹ 259 F.2d at 921, 925.

Inc. v. Froehle, 348 F. Supp. 338, 366 (W.D. Mo. 1972), *aff'd*. 477 F.2d 1033 (8th Cir. 1973).

Applicants have listed nine grounds of possible reversal which we discuss *seriatim*. It should be noted that even in the event the Licensing Board is determined to have been in error with respect to one or more of these grounds, Applicants still might fall short of meeting their overall burden. So long as there remain findings of antitrust law violation as to which the likelihood of reversal is not strong, a sufficient basis for applying relief will be present. Applicants' burden, therefore, is to demonstrate a strong probability that *no* ground of violation will remain upon which to base relief.

One general observation applies. Applicants contend that this is a proceeding of a "ground breaking" nature and they refer to "the relatively unsettled state of the law" as a factor requiring caution in the imposition of license conditions. We cannot agree with this contention of novelty. There is nothing novel in our finding that Applicants' territorial allocation violates the antitrust laws. Neither is there anything novel in holding that customer allocations transgress the requirements of the Sherman Act. There is nothing "ground breaking" in our determination that price fixing is illegal, nor is the law "relatively unsettled" in condemning group boycotts and denial of access to "bottle-neck" facilities. No "substantial" question (the reference mark which the Appeal Board has alerted us to consider) is presented as to the applicability of the antitrust laws to numerous activities of Applicants.

It thus appears that our determination that a situation inconsistent with the antitrust laws exists within the CCCT is well founded in fact and in law. We also believe that our conclusion that activities under the license will create or maintain the anticompetitive situation are supported in ample measure by our findings. The nexus standard we employed was conservative. We held nexus to have been established both on structural grounds and through direct restraints in alienation which Applicants sought to apply to power from Davis-Besse and Perry. We indicated that either ground standing alone would support relief.

It is asserted that there are numerous errors of law and fact apparent in the Licensing Board's initial decision, but Applicants list in summary fashion only nine possible grounds for reversal.

a) Turning now to these broad contentions of error, we address first the Board's asserted failure to take into account "significant economic and legal barriers to competition in the electric utility industry which requires evaluation of antitrust principles other than the procompetitive presumption relied upon by the Board."²

²The reference to a "procompetitive presumption" (Applicants' Motion, p. 7), is somewhat baffling. Although it is possible that we used that term in our initial decision, we have no recollection of having done so, and certainly such a concept was not advanced in

Continued on next page.

Applicants have not specified which significant economic and legal barriers we failed to consider. The record reflects, however, that we considered their argument relating to asserted barriers to electric industry competition at substantial length. LBP-77-1, 5 NRC at 244-249 (January 6, 1977). In addition, we addressed aspects of this argument throughout our findings. See, e.g., *id.*, ff 222, 223, 225-227. Applicants' complaint appears misdirected. It is not that we failed to take into account their arguments, but rather their disagreement occurs as to the result we reached.

Although Applicants are wrong in asserting a failure to consider their position, nonetheless, it may be useful to the Appeal Board for us to comment on the merits of Applicant's argument. Applicants urge that we erred in refusing to hold that legal and economic barriers somehow remove the electric utility industry from the application of the antitrust laws.³ But as long ago as 1950, in *Pennsylvania W. & P. Co. v. Consolidated G., E. L. & P. Co.*, 184 F.2d 552, 559 (4th Cir. 1950), *cert. den.*, 340 U.S. 906 (1951), it was held:

In short, the grant of monopolistic privileges, subject to regulation by governmental body, does not carry an exemption, unless one be expressly granted; from the antitrust laws, or deprive the courts of jurisdiction to enforce them.

This principle of law has been applied not only to public carriers, see *U.S. v. Terminal R. Assn.* 224 U.S. 383, 32 S. Ct. 507, 56 L.Ed. 810; *U.S. v. Reading Co.*, 253 U.S. 26, 40 S. Ct. 425, 64 L.Ed. 760, but in the insurance field, *U.S. v. Southeastern Underwriters Assn.*, 322 U.S. 533, 559, 561, 64 S. Ct. 1162, 88 L.Ed. 1140; in the telephone field, *U.S. Tel. Co. v. Central Union Telephone Co.*, 6 Cir., 202 F. 66; and also in the field of gas and electric energy, *In re American Fuel & Power Co.*, 6 Cir., 122 F.2d 223.

As discussed in our January 6, 1977, decision, the Supreme Court reaffirmed the applicability of antitrust law considerations to the electric utility industry in two decisions during its last term. *Cantor v. Detroit Edison*, ___ U.S. ___, 96 S. Ct. 3110 (1976), and *Conway v. FPC*, 425 U.S. 957, 99 S. Ct. 1999 (1976).

Continued from previous page.

those precise words as a foundation to our decision. If Applicants mean nothing more than that there is a presumption of competition in the electric utility industry, as in all other industries, and that it is their burden to establish the presence and boundaries of any statutory scheme reducing such competition, then Applicants correctly have grasped our position. If Applicants have something else in mind, their unarticulated reference does little to educate us as to what their thinking may have been.

³Of course, Applicants' argument is subject to the basic defect that if legal barriers prohibited competition in the electric utility industry, §105(c) of the Atomic Energy Act of 1954, as amended, would be nullified.

b) Applicants next complain of the failure of the Licensing Board to make any assessment as to whether competition between electric entities in the electric utility industry is, in fact, in the public interest. We were unaware that we are empowered to decide this broad policy issue which we would think is better addressed to Congress than to the NRC. We are aware that this assessment is not the test set forth in Section 105(c) of the Atomic Energy Act of 1954, as amended. We are equally certain that the antitrust laws do not require such an appraisal in cases alleging violations of the Sherman Act. Several of the violations we have found, such as price fixing and territorial allocations, are *per se* in nature, and the Supreme Court has indicated that for this category of offense it is not even necessary to engage in rule of reason analysis.⁴

c) Applicants next cite our failure to follow in a meaningful manner the nexus requirements of the Commission and accuse the Board of adopting a standard that bears no relation to the practicalities of the electric utility industry. Since Applicants have not specified the particulars in which we deviated from the Commission's standard, and since our opinion addresses nexus with reference to and within the context of the Commission's guidelines, we are unable to contribute an evaluation of their chances of prevailing on appeal.

d) and e) It next is asserted that the Licensing Board failed to find and apprise the reviewer of fact whether Applicants possess monopoly power in any relevant market or possess a degree of market power sufficient to suggest a dangerous probability that they will acquire such power. Coupled with this is a charge that we neglected to indicate if the conduct found to be inconsistent with the antitrust laws constituted monopolization, attempted monopolization, or conspiracy to monopolize. In answer, see LBP-77-1, 5 NRC at 255. See also *Id.* pp. 148-150; ff 224, 227. Finally, we note that our opinion ultimately addressed specific questions posed in the eleven issues in controversy which gave structure to the entire evidentiary phase of the proceedings. We also noted that the same activities can constitute violations of Sections 1 and 2 of the Sherman Act and Section 5 of the FTC Act at the same time. *FTC v. Cement Institute*, 333 U.S. 683 (1948).

Applicants would have us examine each anticompetitive act as a separate thread without reference to the fabric as a whole. In our findings we have identified many frayed threads but the sum of the individual acts is a broad blanket of suppressive activities. As noted in our legal discussion, LBP-77-1, 5 NRC at 148, activities, each reasonable in isolation, may violate the Sherman Act where their collective or bundled effect is to work an unreasonable restraint

⁴ However, there are certain agreements or practices which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use. *Northern Pac. R. Co. v. United States*, 356 U.S. 1, 5 (1958) (emphasis added).

on trade. *United States v. International Business Machines*, 1975 Tr. Cas., ¶60, 445 (S.D.N.Y. 1975). We found not only activities unreasonable in their collective effect, but many activities unreasonable even when considered separately.

f) Applicants' sixth allegation is that the Licensing Board did not indicate which of the relevant product markets and geographic markets it designated involved monopolization, attempted monopolization or conspiracy to monopolize. Although we made findings of the existence of three relevant product markets, the overwhelming majority of those findings concerned the bulk power services product market in the geographic market of the CCCT. We believe this to be abundantly clear from our opinion which repeatedly refers in specific terms to restraints affecting bulk power services in the CCCT.

As to the individual Applicant service area markets, the findings relating to each company frequently refer to activities within such service markets or affecting competitors within each such market. In addition, we analyzed Applicants' joint, concerted and combined activities to exclude competition in the CCCT as a whole. For Applicants' Section 1 offenses, it was not necessary for us to define relevant product or geographic markets. Section 1 concerns restraints on interstate commerce. CAPCO itself is engaged in interstate sale and transmission of electrical energy through its member companies.

g) Applicants then criticize the asserted failure of the Licensing Board to determine whether any of the alleged restraints on alienation or alleged refusals to interconnect, wheel power or offer pool membership were unreasonable within the meaning of the antitrust laws.

Applicants' criticism is demonstrably inaccurate. For example, see LBP-77-1, 5' NRC ff. 214, 216, in which the Board holds that TECO's contract provision 8, imposing restraints on the ability of TECO's municipal customers to market power purchased from TECO to customers outside of municipal limits, was unreasonable. We made findings as to the absence of any credible evidence setting forth the necessity of the clause. See also *Id.*, ff. 217-218, 219-220, which did not specifically use the word unreasonable in describing obstacles to wheeling imposed by TECO but which lead to no conclusion other than one of blatant unreasonability. Further, see *id.*, ff. 198, 200, which specifically holds that Ohio Edison failed to act reasonably in negotiations with WCOE relating to bulk power supply options and the denial of wheeling services. The basis for this conclusion was developed at substantial length in the immediate preceding pages of the opinion.

We believe that a monumental case of unreasonable conduct emerges from our findings. Repeating "unreasonable" after the description of each unjustifiable anticompetitive action would add little to the opinion except extra pages. Having identified at least two instances which directly rebut Applicants' contention that no findings of unreasonability were made, there is no need to prolong the exercise by identifying other such findings.

h) Applicants' next complaint relates to the inclusion of numerous findings of fact which they say are not supported by substantial evidence on the record considered as a whole. The impossibility of responding and analyzing Applicants' chances to prevail on this unsupported charge are apparent.

The charge is followed by a footnote which identifies as error "the consistent failure of the Licensing Board even to recognize, let alone grapple with and evaluate, most of the evidence introduced by Applicants" during the hearing. With respect to the complaint that the Board failed to analyze each and every argument and contention advanced in the more than 1000 pages of proposed findings, briefs and rebuttals, suffice to say that Applicants once again are in error. At LBP-77-1, 5 NRC at 254, we stated.

We have reviewed all of the parties' proposed findings and have considered the record as a whole as we developed our findings and conclusions. To the extent that we have not commented upon any particular proposed finding or argument, it is because that discussion is subsumed into material appearing elsewhere in our opinion or because there would be no material effect upon our conclusion and findings were we to accept the argument.

A failure to consider is far different from consideration and rejection of a patently untenable condition. No useful purpose would have been served by repeating testimony in instances where its content would not have altered our findings or where the testimony was unpersuasive.

A fair reading of the opinion will indicate substantial reference to and reliance on many of Applicants' proposed findings of fact and our acceptance, to a point, of many of Applicants' most ardently espoused contentions.⁵ Further, the Board made many specific findings relating to witness credibility. Where appropriate, the Board evaluated the relative credibility of witnesses called by Applicants and by the opposition. See *e.g., id.*, 218, in which the Board sets forth its reasons for discounting the testimony of Applicants' witness Moran and indicating its assignment of credibility to the testimony of opposition witness Lewis. Of similar import is *id.*, ff. 190, p. 194, explaining that Mr. White's

⁵We were careful to indicate, for example, our recognition that wide area power pools can serve a beneficial purpose and that the Applicants' incentive to organize CAPCO resulted largely from unobjectionable factors. Likewise, we recognized that the P/N reserve sharing formula adopted by CAPCO represented an attempt to design a rational method of reserve sharing. We also took into account management inefficiencies and neglect of plant as one reason for the demise of small electric generating entities in the CCCT. These neutral or not anticompetitive factors, however, were offset by other actions motivated by a desire to eliminate competition. The point to be made is that we did not engage in wholesale rejection of Applicants' arguments but carefully weighed these representations against evidence presented by opposition parties. Finally, we note that much of the evidence upon which we relied in making findings adverse to Applicants consisted of documents generated by Applicants and obtained by the opposition parties during the discovery process.

testimony at that point was troublesome and ran counter to logic. Another notable example of our evaluation and rejection of Applicant-sponsored testimony occurs in *id.*, p. 186, pp. 190-191. We measured Mr. White's oral testimony that the territorial allocation maps signed by his company may have been nothing more than study materials for legislative purposes with exhibit DJ 517 wherein the OE Coordinator of Division Distribution Practices advised TECO's President in writing of the operational impact of the maps. Of like effect is DJ 519 which states explicitly that these confidential maps were used in Ohio Edison's day-to-day operations.

Other instances in which we deliberately made no findings based on evidence proffered by Applicants occurred with respect to Pennsylvania Economy League testimony and Department of Justice business review procedures. The Pennsylvania Economy League, an ostensibly independent organization, apparently conducted studies purporting to analyze the status of Pennsylvania municipal electric systems which were considering selling their assets to Duquesne. Aspinwall was such a system. Since the evidence revealed that the League was supported by substantial contributions from Duquesne and other electric utilities and the League's Board of Directors was composed in part of Duquesne executives, we place no weight in the recommendations of the League. We also were aware that the League's "expertise" was thin with respect to electric utility analysis.

Ohio Edison urged that we give substantial or binding weight to the fact that another company—Ohio Power, a non-Applicant—obtained a business review clearance from the Department of Justice with respect to its contract arrangement with Buckeye, a rural electric cooperative. According to Ohio Edison, this insulated it from any charge that its dealings with Buckeye or potential Buckeye customers were anticompetitive with respect to the sale or transmission of Buckeye generated energy. Since Ohio Edison was not the recipient of the clearance and since the clearance by the express terms of the Justice Department's own procedures is nothing more than an assurance that a criminal action will not be instigated based upon facts fully revealed in the request, it would have been improper to reach the conclusion urged by Ohio Edison. This was not a case where we neglected to consider comprehensively Ohio Edison's evidentiary submittal and argument but rather a case where we deemed it unnecessary to discuss the matter in our opinion.

It is true that we did not single out each and every instance in the more than 12,000-page record in which we indicated skepticism with respect to Applicant-sponsored testimony⁶ (or opposition testimony). Such a task is not required nor is it possible if decisions are to be confined to reasonable length.

⁶For example, we did not comment specifically about our concern over the credibility of Mr. Arthur, the Duquesne Light Chairman of the Board. But see page 8375 of the transcript in which the Board advised counsel of its difficulty accepting witness's testimony.

i) Applicants' final assertion as to why they are likely to prevail on the merits concerns only one of the ten license conditions we ordered. Applicants claim that the Licensing Board exceeded its jurisdictional authority and that of the Commission by requiring relief as to future nuclear units not the subject of the present proceeding. Applicants' chances of prevailing on this issue may be assessed by reference to the decision of the Licensing Board in *Waterford*⁷ which required essentially the same relief as that encompassed within the Applicants' complaint. A *Waterford* license provision contemplating access to future units was reviewed and upheld by the Appeal Board.⁸

We conclude that Applicants have not carried their burden in establishing a strong probability of prevailing on the merits in any of the nine areas delineated in their moving papers.

B. Has the movant shown that, without such relief, it will be irreparably injured? Once again, we find Applicants' motion long on polemics and short on specifics. In our attempt to make an assessment which will be of value to the Appeal Board, we have identified only four contentions of harm. The first is that compliance with license conditions may require the filing of appropriate rate schedules with the FPC. This in turn would involve certain costs and expenses involved in the negotiation of contracts with non-Applicant entities. Second, Applicants allege, without support, that they will suffer financial injury because they must yield up to ten percent of the capacity of the Davis-Besse and Perry units. Third, they allege that competing entities might elect to ship some portion of the power they generate out of the CCCT. Fourth, they allege that the required access to their transmission network for wheeling purposes may affect their own preplanned use of that network.⁹

We begin by referring to the explanation of the Court of Appeals in *Virginia Petroleum Jobbers* as to what the test of irreparable injury should be. At page 925 the court stated:

The key word in this consideration is irreparable. Mere injuries, however substantial, in terms of money, and time, and energy necessarily expended in the absence of a stay are not enough.

A stay will not be granted "against something merely feared as liable to incur at some indefinite time in the future." *Eastern Greyhound Line v. Fusco*, 310 F.2d 632, 634 (6th Cir. 1962).

⁷ *Louisiana Power & Light Co.* (Waterford No. 3) 8 AEC 718 (October 24, 1974).

⁸ *Waterford*, supra, (ALAB-258) 1 NRC 45 (February 3, 1975). In fact, the Appeal Board actually drafted a compromise provision specifically relating to access to future units. *Id.* at pp. 47, 48.

⁹ In some of these contentions, Applicants also purport to identify harm to their customers. The possibility of harm to consumers in the CCCT is more appropriately addressed to public interest considerations.

Applicants' argument that compliance with license conditions would require unspecified and inarticulated costs associated with the negotiation and filing of interconnection and sales agreements is unpersuasive. Applicants routinely engage in such negotiations with their wholesale municipal customers, with each other within the confines of the CAPCO agreement, and with outside systems. No special burden, let alone irreparable injury, is foreseen by the license requirements.

With respect to Applicants' protest relating to the requirement that they yield a certain percentage of the capacity of the Davis-Besse and Perry nuclear units, surely Applicants had the same opportunity to request clarification with respect to license conditions as did the City of Cleveland. It strikes us as a matter of bad administrative practice to claim irreparable injury on the basis of their failure to understand a license condition without first seeking an explanation from the forum of initial decision. While we do not believe that other parties regarded our condition as ambiguous, we have no hesitation in explaining the provision of license condition 9(a) to Applicants. That provision means that nonapplicant entities may request and receive a total of 10% of each Davis-Besse or Perry unit's output. No more than 10% of the output need be made available even if the total amount for which requests are received exceeds this figure. It was our intention that requests would be handled on a first-come, first-granted basis. Thus, if one nonapplicant entity requested a 5% share of Davis-Besse 1 and a second nonapplicant entity thereafter requested an 8% share, the second requesting entity would be informed that it could not obtain more than 5% of the unit's capacity.¹⁰

For purposes of additional clarification, we discuss why we selected the 10% figure for Davis-Besse and Perry. Applicants' proposals for access (Ex. A-44, attached to Applicants' motion) offers participation only in "reasonable amounts." Throughout our findings, however, we have indicated that what Applicants advance as reasonable may in fact be unreasonable and anticompetitive. There was evidence of record that Applicants' offers to supply wholesale power to the WCOE group contained limitations tied or related to existing load levels of Ohio Edison wholesale customers. These limitations themselves were anticompetitive in that they gave Applicant companies assurance that any competition for retail customers would be limited. Restrictions also were placed on the use of wholesale energy obtained from Applicant companies to prohibit sale to industrial customers presently served by Applicants. Thus, we encountered a situation in which growth opportunities of Applicants' disadvantaged competitors were restrained. It, therefore, became necessary for the Board to ensure that

¹⁰If the first requesting entity reduced its request prior to the date by which firm commitments need be given, then, of course, the second requesting entity might expect to receive additional capacity.

energy from the Davis-Besse and Perry units be available to competitive entities in amounts we considered reasonable and that this energy be made available without restraints which would limit the owners of the power from competing with Applicants. We selected 10% as a figure not likely to be disruptive of Applicants' intended use of Davis-Besse and Perry power¹¹ while at the same time preventing denial of requests because Applicants label them unreasonable. The difficulty in permitting Applicants to be the arbiter of the reasonability of requests for access should be obvious.

As to the provision that Applicants yield up to 20% of the capacity of future nuclear plants—which provision is effective for only a limited number of years—we perceive no basis for complaint that this license condition frustrates Applicants planning to service future load growth. Applicants have adequate notice of the possibility that up to 20% of the power from any newly proposed plant may be requested by competitive entities. At the same time, we have imposed strict time limitations during which such request must be honored. Thus, well prior to the completion of the license proceeding, Applicants will know exactly how much power must be allocated to competitive entities and their plans will become firm long prior to the operation of the unit.

The reason we selected 20% rather than 10% as the amount of capacity to be made available for future units is because we do not want nonapplicant entities to encounter a ceiling on their ability to compete. As competition is enhanced these entities may need and desire additional generation.

It is anticipated that most of the power which may be requested either from present or future units will be used to supply energy requirements within the CCCT which otherwise would be supplied by Applicants. Thus, we discern a tradeoff between the reduced amount of power which will be available to Applicants and the lesser demands which will be placed upon their systems.

As to the allegation that some of the capacity they may be required to yield in certain nuclear units may result in the ability of their competitors to export power out of the CCCT, Applicants have failed to explain any irreparable injury to their own companies. One of the points of greatest concern throughout these proceedings has been Applicants' unfair and anticompetitive efforts to restrict and control the use of all power generated or transmitted within the CCCT. Our conditions should be read as insistent that power purchased by a competitive entity in a nuclear unit be available for whatever purposes it may designate. It is not Applicants' burden nor their privilege to decide on behalf of other entities where or to whom that power shall be sold.

It also might be noted that Applicants themselves engage in regional power exchange transactions which involve exports of power from the CCCT to neighboring power pools. The CAPCO agreement contemplates such sales and even

¹¹ After all, Applicants purport to be committed to yielding reasonable amounts of such power even under the policy commitments.

provides a mechanism whereby one Applicant company wheels for another to accomplish this result. It is absurd for Applicants to challenge a license condition which does nothing more than make available to their competitors what Applicants long ago obtained through agreement with one another. If irreparable harm results from the export of power from the CCCT, then perhaps Applicants should consider revision or abandonment of the CAPCO agreements.

Applicants' fourth complaint is that the Board's conditions grant "preferential access" to some of their facilities. They state that irreparable financial loss to Applicants will result and they suggest that the Commission is not authorized to grant such relief in any event. Absolutely no facts to support their conjecture as to financial loss are offered. Moreover, financial loss in and of itself does not constitute irreparable injury.

The so-called preferential access which we have required must be analyzed in the context of the situation Applicants have established within the CCCT and with reference to their own conspiratorial self-dealings. Interconnections standing alone give no preferential access. Requirements that Applicants supply emergency and maintenance power are conditioned upon the availability of that power without jeopardy to the supplying system's customer requirements. What Applicants really have in mind when they speak of preferential access is transmission services. The record indicates that there is abundant capacity available to meet license condition requirements. CEI has stipulated capacity to wheel PASNY power to Cleveland. See Applicants' Motion for Summary Disposition, August 15, 1974. Ohio Edison has agreed to sell displacement power to wholesale customers who otherwise would request direct wheeling from Buckeye's Cardinal generating station. TECO purports to be willing to effect transmission services for the Southeastern Michigan Cooperative. Duquesne has only one full requirements wholesale customer remaining. The record is devoid of any showing of hardship associated with our access requirements.

Our conditions reflect concern that Applicants may attempt to use the monopolistic contracts constituting the CAPCO arrangement for continued exclusionary purposes. Our preemption clause merely insures that Applicants will not cut off competitors and potential competitors under the guise of honoring contract commitments with one another, which commitments we deem to be an integral part of Applicants' combined monopolization of bulk power services in the CCCT.

A further point of note is that Applicants are engaged in the planning and construction of new transmission capacity. Their own documents indicate that much of this planning and construction is directly related to the anticipated licensing of the Davis-Besse and Perry stations. Therefore, there is a direct nexus between the operation of those stations and a requirement for transmission services which make the bulk power service option viable. We require that Applicants not be allowed to favor one another and thereby deprive other entities of these services.

As to the contention that we may have exceeded the power of the Commission in ordering this relief, we disagree. We do not agree the NRC is not intended to be a general purpose antitrust enforcement agency. Contrary to the suggestion that we engaged in an all-purpose antitrust review which more properly was under the purview of the Department of Justice in a civil proceeding, we carefully restricted both discovery and the introduction of evidence to those matters bearing upon the resolution of the issues in controversy. For example, our review of Applicants' merger activities concentrate on how specific recent activities affect the structure of the market in the CCCT. We did not engage in any independent section 7 analysis of the literally hundreds of acquisitions consummated by Applicants during the last 75 years.

Applicants seem not to recognize that the conditions specify what they must do in order to obtain a license. If they do not want the license, then they need not observe the conditions. In order to obtain antitrust relief it then would be the burden of the Department of Justice or private parties to institute actions in forums other than the NRC. Before this agency grants any license, however, it must be satisfied that activities under the license not contribute to the maintenance or creation of an anticompetitive situation.

Once the matter is within NRC jurisdiction, then relief should be fashioned so as to comply with the statutory directives of section 105(c). If that relief requires a change in the *status quo* then we are entitled to grant such relief. Indeed, where an anticompetitive situation has existed for a period of years, it is mandatory that the *status quo* be amended.

[I]t would be a novel, not to say absurd, interpretation of the antitrust act to hold that after an unlawful combination is formed and has acquired the power which it has no right to acquire—namely, to restrain commerce by suppressing competition—and is proceeding to use it and execute the purpose for which the combination was formed, it must be left in possession of the power that it has acquired, with full freedom to exercise it. *Northern Securities Co. v. United States*, 193 U.S. 197, 357.

The Supreme Court has stressed that relief should cure the ill effects of the illegal conduct and assure the public of freedom from its continuance. *United States v. United States Gypsum Co.*, 340 U.S. 76, 88 (1950). The purpose of the relief must be to restore competition, even though this involves restrictions on the respondent company. *Ford Motor Co. v. United States*, 405 U.S. 562 (1972).

In summary, no irreparable harm to Applicants has been identified, let alone proven, and Applicants are incorrect as a matter of law with respect to limitations on the ability of the NRC to condition a license upon terms which will not maintain a situation inconsistent with the antitrust laws.

C. Would the issuance of a stay substantially harm other parties interested in the proceeding? Again without specificity, Applicants argue that the only change

in the *status quo* which would result if the operating license were issued without condition would be operation of Davis-Besse 1 and further construction of Perry 1 and 2. The problem is that the *status quo* was determined to be a situation inconsistent with the antitrust laws. Without the Board's conditions being in effect, there is every reason to believe that the anticompetitive situation will continue. The longer the situation continues, the more devastating its effect upon competition and potential competition in the CCCT.

Our findings noted the continuing demise of smaller systems within the CCCT. Cleveland apparently is in desperate straits. The adverse consequences of isolated operation continue to be experienced by the majority of nonapplicant entities within the CCCT. We conclude that the issuance of a stay undoubtedly would harm other parties interested in the proceeding.

It is unnecessary to comment once again upon the inadequacies of Applicants' exhibit A-44, the so-called policy commitments to afford access. The only additional comment we might make is that despite Applicants' assertion to this Board that the policy commitments have become effective irrespective of any action the Commission may take, the existence of this policy was not revealed to those entities which had expressed an interest in access to Davis-Besse or Perry.

D. Where lies the public interest? We confess our astonishment at seeing Applicants don the mantle of defender of the public interest of energy consumers within the CCCT. We have made specific findings of CEI's efforts to raise consumer electric prices by entering into a price fixing agreement with the City of Cleveland. We have observed customer tradeoffs between Applicants pursuant to their territorial allocation agreements, which tradeoffs were made for the convenience and benefit of the Applicant companies and not the affected consumers. Indeed, the consumers had no voice whatsoever in the procedures by which they were allocated to one Applicant or another. We have observed TECO's unreasonable refusal to waive the 90-day total disconnect provision which refusal prevented Napoleon from concluding what it considered to be an economically advantageous contract with Buckeye. Applicant CEI refused to establish synchronous interconnection with the City of Cleveland and imposed unreasonable delays in energizing the nonsynchronous interconnection when Cleveland experienced power outages. In much of the CCCT Applicants resisted the establishment of any interconnection with isolated generating entities.

Whatever the public interest may be, we are certain that it does not lie in the continuation of a pattern of violations which we have found to be massive in content and oppressive in design. We are dealing with violations many of which are *per se* in character and there is no public interest in staying conditions intended to prevent their continuance.

The contention that application of license conditions may raise consumer costs in the CCCT is conjectural. A more likely result is the lowering of costs, or a dampening of such cost increases as may occur by reason of inflation in the economy.

Applicants' charge of "nuclear blackmail" has no substance. Two of the primary opponents of Applicants were the NRC Staff and the Department of Justice, each a public interest agency. Not only do we lack any knowledge or showing of delay instigated by either agency for the purpose of forcing a concession from Applicants, but we can conceive of no reason why either agency would be tempted to engage in such a course of conduct. The charge of nuclear blackmail as applied to the City of Cleveland comes with ill grace from the same Applicants which for a period of years have denied the City access to nuclear facilities.

Because there was no necessity to do so, we made no findings with respect to any delay in the proceedings occasioned by the parties themselves. We might state for the record, however, that on numerous occasions we granted extensive delays to Applicants. One of the earlier but more significant incidents of delay occurred at the conclusion of the first discovery period when, instead of producing relevant documents in Washington as anticipated by the Board and the opposition parties, Applicants on the very last day informed other parties that they were free to journey to miscellaneous cities in the CCCT to inspect documents which had not been indexed to discovery demands or made available in a usable fashion. This necessitated a substantial delay in the commencement of the hearing. See Prehearing Conference Order No. 3, January 14, 1975. We also recall that it was the Board which repeatedly urged Applicants to utilize sufficient counsel to complete in timely fashion the discovery process, and it was the Applicants who advised that the task was being performed by a limited number of lawyers.

Throughout these proceedings, the opposition parties have displayed commendable willingness to meet rigid deadlines imposed by the Board¹² and the Applicants repeatedly have requested delay. We were sympathetic to Applicants' contention that some coordination between individual companies was required and that this coordination takes time. That was the basis upon which we granted numerous extensions to Applicants. In light of these numerous extensions attributed to Applicants, however, it borders on irresponsible to charge that Applicants' opponents have engaged in "blackmail."

CONCLUSION

It is apparent that Applicants have failed to meet any of the four criteria which they concede must govern their application for a stay. Since they have not prevailed on any one criteria, they cannot prevail considering the four criteria as a group.

¹² Opposition parties sometimes requested additional time. These requests were granted though usually for lesser periods than asked. Delays or extensions requested by Applicants substantially exceeded those of opposition parties.

We have written at substantially more length than necessary to reach this resolution. We did so in an attempt to make our familiarity with the record available to reviewing forums. We were mindful of the Appeal Board's January 17, 1977, Order that this matter be determined "on the basis of the papers considered by the Licensing Board, together with the reasons given by the Board for declining itself to grant stay relief." By footnote the Appeal Board indicated that any party may supplement its filing before the Licensing Board "*for the purpose of commenting on those reasons*" (emphasis added).

Obviously this commentary should not include new or additional allegation of error or harm. If additional specifications were made the purpose of the original referral would be frustrated and the task we perform here would be an idle exercise. The Appeal Board would be left to examine substantial portions of the record as a whole without assistance or comment from the trial forum. Parties supporting the Licensing Board position would need opportunity to respond to the new material. Moreover, a situation of second and third chances to articulate a basis for relief would introduce an element of chaos into the administrative process.

It was for this reason that we attempted to deal more expansively with some of the moving parties' allegations than circumstances otherwise would warrant. Some allegations, such as a failure to apply nexus standards properly, did not permit considered analysis. No support was offered for the charge.¹³ Our overall effort, however, has been to treat the matter in a comprehensive manner and to give full consideration to each argument raised.

Our review of Applicants' papers convinces us that no stay is warranted and that such relief would be adverse to the public interest.

Motion denied.

IT IS SO ORDERED.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Douglas V. Rigler, Chairman

John M. Frysiak, Member

Ivan W. Smith, Member

Dated at Bethesda, Maryland;
this 3rd day of February 1977.

¹³The nexus charge is an example of an allegation where additional amplification should be disallowed. Presumably Applicants made their argument in full when they first applied to the Appeal Board for relief. Permitting Applicants to expand or rewrite their supporting material would demean the administrative process.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Douglas V. Rigler, Chairman
John M. Frysiak
Ivan W. Smith

In the Matter of

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.

Docket Nos. 50-346A
50-500A
50-501A

(Davis-Besse Nuclear Power Station,
Units 1, 2, and 3)

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.

Docket Nos. 50-440A
50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

February 3, 1977

Upon motion by the City of Cleveland, the Licensing Board clarifies one of the antitrust conditions set forth in LBP-77-1.

MEMORANDUM OF THE BOARD RELATING
TO THE CITY OF CLEVELAND'S MOTION FOR
CLARIFICATION OF LICENSE CONDITIONS

On January 12, 1977, the City of Cleveland moved the Board to issue an Order clarifying license conditions set forth in its decision of January 6, 1977, by requiring Applicants to make available to entities in the CCCT full and partial requirements power at wholesale. In support of its motion, the City noted the Board's determination that relief focus upon providing access to power from nuclear units in a manner which allows it to be used without restraint and with the availability of necessary bulk power service alternatives. The City indicates that the Board cited the prepared testimony of the Staff's expert witness, Dr. Hughes, NRC 207, p. 32, in support of its determination. The City contends that Dr. Hughes, in turn, referred to the prefiled testimony of Staff's expert witness

Mozer, NRC 205, p. 69-71, for a partial compilation of bulk power services. Since Mr. Mozer included full requirements and partial requirements power at wholesale in his listing, the City contends that license conditions explicitly should make available wholesale power options.

Applicants respond by claiming that they find large numbers of matters addressed in the Initial Decision which require "clarification." However, they neglect to identify any single item which allegedly requires clarification. Applicants further state that the proper course for resolving differences with respect to license conditions is through the administrative appeal process.¹ Applicants' response therefore fails to address or to controvert the City's assertion relating to the need for clarification respecting wholesale sales and Applicants have taken no position as to whether any ambiguity is present in the license conditions of January 6, 1977.

Justice indicates without amplification that it supports the City's motion for the reasons stated therein. The Staff concurs in the result of the City's motion but indicates that present license conditions, properly interpreted, already contemplate the relief sought by the City. The Staff refers to License Condition 10 which states that preemption of options to heretofore deprived entities shall be regarded as inconsistent with the purpose and intent of these conditions.

In fashioning the License Conditions of January 6, 1977, the Board considered the attachment of a condition specifically requiring Applicants to sell all requirements and partial requirements wholesale power to other entities in the CCCT. We agree that both types of sale commitment properly may be included within the definition of a bulk power services market. As noted in our opinion, that market consists of a grouping or bundling of services which provides alternatives for generating and distribution entities to design a low-cost and efficient method of overall power supply. Options may be tailored to meet the individual requirements of differing entities.

It was our intention to set license conditions which provide for a necessary array of bulk power services sufficient to enable previously deprived entities to overcome artificial restraints which have been applied against them. At the same time, it should be apparent that we have not included each and every separate component making up the bulk power services array as an item of relief specifically ordered in the license conditions. For example, we have not required Applicants to engage in staggered construction either singly or jointly with other entities in the CCCT. Rather, with reference to the record as a whole, we tried to

¹We can appreciate a conclusion that for conditions which Applicants contend are unnecessary or inappropriate, application for relief should be addressed to the Appeal Board. Clarification of conditions, however, seems the type of issue which in the initial instance might be addressed to the Licensing Board.

select those components of the bulk power services market which would be effective in renewing competitive opportunities.

We have made available a mechanism whereby Applicants' competitors can obtain access to nuclear power. We have made that option viable by assuring these entities that they can obtain maintenance power and emergency power. We have required Applicants to provide transmission services necessary to allow competing entities to coordinate with one another and thus increase the utility of their nuclear power option. The inclusion of transmission services also gives these competing entities an opportunity to market excess power elsewhere, to enter into economy interchanges, and to obtain partial firm requirements from outside sources. In addition, we have provided for membership in CAPCO so that if competitive entities conclude that the CAPCO agreement is discriminatory in providing benefits to CAPCO members which other entities cannot achieve even with access to additional bulk power service options, they can avail themselves of the benefits provided under the CAPCO agreements.

It is correct that we did not specifically require Applicants to sell wholesale all requirements power. Such a license condition may have been appropriate were we convinced that its absence at this time would work to the detriment of competitive entities in the CCCT. It is our understanding, however, that all Applicant companies now make available wholesale power under rate schedules filed with the FPC. Ohio Edison, for example, sells to numerous communities within its service area. Toledo Edison likewise offers wholesale contracts to a sizable number of municipal systems. Duquesne now sells full requirements wholesale power to Pitcairn, the only remaining independent entity within its service area. Pennsylvania Power sells to a small number of municipal systems in its area. Since June 30, 1976, CEI has been supplying the City of Cleveland with wholesale power pursuant to a tariff on file with the FPC.² Thus, at the time we fashioned our License Conditions, we were not aware of any deprivation arising through a refusal to sell all requirements wholesale power.³

In contending that no "situation inconsistent" will be created or maintained by the licensed activities, Applicants argue that the best and cheapest access to the benefits of nuclear generation for nonapplicant entities is by wholesale purchases from Applicants. App. ff. 38.03. Applicants assert that those entities who "choose to take wholesale from Applicants pursuant to FPC approved rates

²Controversies may remain with respect to the terms and conditions under which such power is offered. Without some showing of greater impact on these proceedings, it is our view that the FPC is the proper forum for resolution of any such differences.

³We assume that the CEI wholesale schedule will permit Painesville to utilize this option. However, even if CEI is not obligated to offer direct wholesale service to Painesville we have required the establishment of an interconnection and the availability of emergency and maintenance power. The transmission requirement also allows Painesville to purchase firm power from Cleveland or entities other than CEI if it so desires.

receive their power at Applicants' systemwide average embedded costs (A-190, Pace, 10)." They say that in this manner access to the benefits of nuclear generation is provided. Applicants state further that, "The availability of the wholesale power option to existing electric entities precludes a finding of maintenance [of a situation inconsistent with the antitrust laws]." *Id.* In addition, the clear import of Applicants' economist witness, Dr. Pace, is that wholesale power is and will be freely available to the nonapplicant CCCT entities. App. 190, pp. 7-18.

Moreover, in their Reply Brief at page 10, Applicants assure the Board that "... the savings which Applicants realize by virtue of this lower cost factor [cost of nuclear units] will be passed through equally to *all* of Applicants' wholesale customers in the wholesale rate" [citations omitted and emphasis supplied].

The foregoing are only examples of Applicants' assurances that the option is available to nonapplicant entities within the CCCT to purchase full requirements wholesale power upon terms which they contend are functionally equal to direct access to nuclear units. This argument has pervaded Applicants' case. The Board has taken Applicants at their word. We conclude that Applicants have a policy, and have represented such a policy to this Board, that they will continue to sell power at wholesale to entities within the CCCT. In an effort to impose license conditions no more restrictive than reasonable to afford the required relief, the Board has depended upon the Applicants' good faith in these representations. If we have erred in so doing to the future detriment of Applicants' competitors we would foresee a requirement that the license conditions be modified to provide specifically for wholesale power sales. But we do not believe it is essential now to anticipate a breach of Applicants' assurances.

Although the omission of an express requirement that Applicants sell full requirements wholesale power was deliberate, the City's motion for clarification has suggested to us the need for further comment in one particular area. We refer to any condition imposed by Applicants on the sale of wholesale power that the purchaser take full requirements or nothing. The record in these proceedings fully supports a finding that such a condition is anticompetitive and would tend to create and maintain a situation inconsistent with the antitrust laws. Section 3 of the Clayton Act, 15 U.S.C. §14, prohibits conditioning the sale of supplies and commodities upon the condition, agreement, or understanding that the purchaser not use or deal in the supplies or commodities of a competitor where the effect of such condition may be to substantially lessen competition or tend to create a monopoly in any line of commerce. Such conditions also may constitute agreements in restraint of trade in violation of Section 1 of the Sherman Act, 15 U.S.C. §1. A refusal to sell partial requirements power thereby would maintain an anticompetitive situation because it would discourage competitive entities from the gradual buildup of their system. Moreover, those entities on the

borderline of meeting their present demands and requiring some additional power during a transition period in which additional supply sources are brought on line might be forced to abandon generation altogether.

Applicants' actions in the CCCT in the past have had such an intense dampening effect on competition as to cause us to nurture any fledgling competition and to preserve such competition as already exists. Otherwise, nuclear power from Davis-Besse and Perry will contribute to and strengthen the monopolization of bulk power services in the CCCT.

Accordingly, we do extend clarification to License Condition 1(b) which prohibits Applicants from entering into any agreement or understanding requiring the receiving entity to give up any other bulk power service option or to deny itself any market opportunity. An insistence that a wholesale power sale be on an all or nothing basis would violate Condition 1(b).

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Douglas V. Rigler, Chairman

John M. Frysiak, Member

Ivan W. Smith, Member

**Dated this 3rd day of February 1977
At Bethesda, Maryland.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Edward Luton, Chairman

Ernest E. Hill

Dr. John R. Lyman

In the Matter of

Docket Nos. 50-354
50-355PUBLIC SERVICE ELECTRIC AND
GAS COMPANY

ATLANTIC CITY ELECTRIC COMPANY

(Hope Creek Generating Station,
Units 1 and 2)

February 7, 1977

Upon petition for intervention filed over 2 years after the period prescribed for intervention, the Licensing Board rules that (1) although the petition is timely on the issue of license suspension based on recent court decisions on the environmental effects of the reprocessing and waste disposal portions of the fuel cycle, the Commission's order in CLI-76-18 precludes further consideration of that issue, pending the adoption of an interim fuel cycle rule; and (2) the remainder of the petition is not timely, no good cause has been shown for the failure to file on time, and intervention is not warranted as a result of consideration of the four factors which 10 CFR §2.714(a) provides are to be taken into account in passing upon an untimely intervention petition. A request for financial assistance is also denied, pursuant to CLI-76-23.

Petition for leave to intervene and request for financial assistance denied.

MEMORANDUM AND ORDER

By its Order dated January 14, 1977, the Atomic Safety and Licensing Board rejected the petition to intervene in this case submitted by the Environmental Coalition on Nuclear Power ("ECNP"). The Board indicated in its Order that it would set forth the reasons for that disposition of the petition at a later time. Those reasons are set forth herein.

The ECNP petition was apparently prompted by two fairly recent decisions

of the U.S. Court of Appeals for the District of Columbia Circuit, *Natural Resources Defense Council, et al. v. NRC*, Nos. 74-1385 and 74-1586; *Aeschliman, et al. v. NRC*, Nos. 73-1776 and 73-1867; and a "General Statement of Policy" (41 Fed. Reg. 34707) issued by the Commission on August 13, 1976.¹ But the contentions sought to be asserted are not limited to the matters dealt with in the referenced court decisions or in the General Statement of Policy.²

The ECNP petition is undated but was docketed in the Office of the Secretary of the Commission on August 25, 1976. This was long after the originally prescribed period for the submission of petitions to intervene.³ Even so, the petition was submitted at a time when the Commission's General Statement of Policy clearly contemplated the filing of petitions seeking the suspension of previously issued licenses on the authority of *Natural Resources Defense Council, supra*, and *Aeschliman, supra*. In that regard, the General Statement of Policy expressed the Commission's determination to conduct a reopened rulemaking proceeding on the effects of the uranium fuel cycle and stated that "While the extended rulemaking is in progress, the Commission and its licensing boards will be called upon to decide whether nuclear reactor licenses can issue, and whether previously granted licenses should be suspended, modified, or set aside." The General Statement of Policy set no time certain as the deadline for the filing of timely petitions seeking license suspension. Therefore, to the extent the ECNP petition seeks license suspension on the authority of *Natural Resources Defense Council, supra*, and *Aeschliman, supra*, we view the petition as having been timely submitted.

Petitioners contend that "due to the above unresolved issues regarding compliance with Section 102 of the National Environmental Policy Act by the Commission, the construction permit for Hope Creek 1 and 2 should be rescinded immediately, and construction halted pending resumption of public hearings and resolution of these matters." We construe the quoted language as contending that construction activities under the Hope Creek construction permits should be suspended pending resolution of the reprocessing and waste

¹The petition states the following: "Due to the recent decisions of the United States Court of Appeals, District of Columbia Circuit, 73-1776, 73-1867, 74-1385, and 74-1586 . . . the Coalition . . . feel[s] the continued operation of Hope Creek 1 and 2 is illegal because the construction permit for the facility was issued without proper consideration of the 'alternative' of energy conservation . . . and . . . [the] problem of radioactive waste disposal."

²For example, paragraph number 2 of the petition argues that "the cost-benefit analysis of the Applicant and the Commission is faulty because the recipients of the 'costs' and 'benefits' have not been properly identified."

³The relevant notice required the submission of intervention petitions no later than January 7, 1974.

disposal issues raised by *Natural Resources Defense Council, supra*.⁴ In our view, this matter is governed by the Commission's November 5, 1976, Memorandum and Order expressly applicable to nine cases, one of which is the *Hope Creek* case. In its November 5 Memorandum and Order the Commission directed, for the reasons set forth therein, that any proceeding concerned with suspension of the Hope Creek construction permits on fuel cycle grounds itself be suspended. As we understand it, pending the adoption of an interim fuel cycle rule and possible further direction from the Commission, no new proceeding concerned with license suspension on fuel cycle grounds is to be begun. We therefore deny the request of ECNP to intervene on fuel cycle grounds.

The remainder of the petition is to be measured squarely against the Commission's Rules of Practice. With respect to late filings, Section 2.714 of those rules provides, in part, that, "Nontimely filings will not be entertained absent a determination by the . . . board . . . that the petitioner has made a substantial showing of good cause for the failure to file on time . . ." Petitioner does not expressly address the "good cause" requirement. Rather, we are left to divine for ourselves, if we can, just how that requirement may have been met. In this connection, no reasonable excuse for the late filing is even remotely suggested by anything made available to us by petitioners. The Regulatory Staff suggests that sufficient justification for the late filing of this petition could perhaps be found if the matters asserted related solely to the issues raised by the cited court decisions. Assuming for purposes of this case that that is so, upon careful analysis, we are of the view that none of the remaining ECNP assertions raises any issue that is now pertinent for consideration as a result of *Natural Resources Defense Council, supra*, or *Aeschliman, supra*. Consequently, we are unable to say that the rendering of those court decisions provides "good cause" for these untimely assertions.

We have examined the "four factors" listed under section 2.714 that are required to be considered in acting upon a late filed petition.⁵ Those factors are:

- (1) The availability of other means whereby petitioner's interests will be protected.
- (2) The extent to which petitioner's participation may reasonably be expected to assist in developing a sound record.
- (3) The extent to which petitioner's interests will be represented by existing parties.
- (4) The extent to which petitioner's participation will broaden the issues or delay the proceeding.

⁴The subject of the *Aeschliman* decision, i.e., energy conservation, was explicitly dealt with by the Licensing Board in its Initial Decision. See 8 AEC 761-2.

⁵*Nuclear Fuel Services, Inc.* (West Valley Fuel Reprocessing Plant), CLI-75-4, 1 NRC 273 (April 17, 1975).

We are not aware of any means other than this proceeding whereby "petitioner's interests will be protected." Nor are we persuaded that the interest asserted by petitioners "will be represented by existing parties." However, there is absolutely nothing before us which even remotely suggests that ECNP participation will materially contribute to the development of an improved evidentiary record in this case. Finally, it is plain that ECNP participation would greatly broaden the issues before the Licensing Board⁶ and could cause a considerable delay in completion of the proceedings. While we do not read section 2.714(a) as declaring that *any delay at all is intolerable*, the magnitude of the threatened delay causes us to conclude that this factor should weigh against the petitioner's late intervention attempt.

Being mindful of the Commission's teaching in *West Valley, supra*, that favorable findings on some or all of the "four factors" do not necessarily outweigh the effect of inexcusable tardiness, we conclude that the remaining ECNP assertions must be rejected as having been untimely made with there being no good cause for the lateness.

Finally, the ECNP petition contains a request for financial assistance from the Commission in "the amount necessary in order to meet legal, technical and procedural expenses" of participation. The request is hereby denied.⁷

SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Edward Luton, Chairman

Dated at Bethesda, Maryland
this 7th day of February 1977.

⁶ ALAB-251, December 31, 1974, remanded this case to the Board so that it could reevaluate its initial determination that the design bases for Hope Creek conform to the requirements of 10 CFR Part 50, Appendix A.

⁷ *Nuclear Regulatory Commission (Financial Assistance to Participants in Commission Proceedings)*, CLI-76-23, NRCI-76/11, 494 (November 12, 1976).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Edward Luton, Chairman
Ernest E. Hill
Dr. John R. Lyman

In the Matter of

Docket No. 50-320

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER & LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY

(Three Mile Island Nuclear Station,
Unit 2)

February 14, 1977

Upon untimely petition to intervene, the Licensing Board rules that (1) based on substantial good cause for the lateness of the filing, the contention concerning energy conservation as an alternative is accepted as an issue in controversy; (2) the issue seeking suspension on the basis of court decisions on the environmental effects of the fuel cycle is governed by CLI-76-18, which precludes further consideration of that issue pending the adoption of an interim fuel cycle rule; (3) no good cause has been shown for the failure to file other contentions on time; and (4) the request for financial assistance is denied, pursuant to CLI-76-23.

Petition granted as to conservation issue, denied without prejudice as to fuel cycle issue, and denied with prejudice as to other contentions. Request for financial assistance denied.

MEMORANDUM AND ORDER

Pending before us is a petition to intervene submitted on behalf of the Environmental Coalition on Nuclear Power ("ECNP"). The petition is undated but was docketed in the Office of the Secretary of the Commission on August 25, 1976. This filing comes long after the originally prescribed period for the submission of petitions to intervene. However, the "substantial showing of good cause" for the late filing is expressly stated to derive from two fairly recent

decisions of the U.S. Court of Appeals for the District of Columbia Circuit, *Natural Resources Defense Council, et al. v. NRC* Nos. 74-1385 and 74-1586, and *Aeschliman, et al. v. NRC*, Nos. 73-1776 and 73-1867.¹

For its statement of interest, the petition states that certain named members of the Environmental Coalition live within approximately 20 miles of Three Mile Island, Unit 2, and these members "feel that the operation of this facility would pose an undue threat to their lives and material possessions." We accept that as a sufficient statement of petitioner's interest in this proceeding.

The contentions sought to be asserted are not limited to the matters dealt with in either of the referenced court decisions.² To the extent that this is so, it seems to us that neither of those decisions can reasonably be viewed as providing "good cause" for the failure to file on time. Upon a careful reading of the petition, we are of the view that only two of the ECNP assertions raise issues that are pertinent for consideration as a result of *Natural Resources Defense Council, supra*, or *Aeschliman, supra*. The first of these is the contention numbered 5 in the petition. *Aeschliman, supra*, insofar as is pertinent here, holds that the possibility of energy conservation must be considered by the Commission as an alternative to the construction of a nuclear power reactor. We read contention number 5 as raising that issue in a particular manner.³ This contention states:

The petitioners contend that the rate structure of the Applicant is a promotional rate structure designed to increase the consumption of electricity by offering declining rates for increased consumption. Such a rate structure minimizes the possibility and practicality of worthwhile energy conservation efforts. Petitioners contend that a flat rate structure—one price for all levels of consumption for all customers—or a declining block rate structure would make conservation a viable and practicable alternative to Three Mile Island, Unit 2.

We find there to be "substantial good cause" for the late filing of this contention, and it is hereby accepted as an issue in controversy in this proceeding.

Next, petitioners contend that "due to the above unresolved issues regarding compliance with Section 102 of the National Environmental Policy Act by the Commission, the construction permit for Three Mile Island, Unit 2, should be

¹ Tr. p. 83-84.

² For example, in the paragraph numbered 2, the petitioner argues that "the cost-benefit analysis of the Applicant and the Commission is faulty because the recipients of the 'costs' and 'benefits' have not been properly identified."

³ Energy conservation as an alternative to the proposed plant was not considered by the Staff in either its Final Environmental Statement or its Draft Supplement to the Final Environmental Statement. These were the only environmental statements that had been published by the Staff at the time this petition was filed.

rescinded immediately, and construction halted pending resumption of public hearings and resolution of these matters." We construe the quoted language as contending that construction activities under the Three Mile Island, Unit 2, construction permit should be suspended pending resolution of the reprocessing and waste disposal issues raised by *Natural Resources Defense Council, supra*. In our view, this matter is governed by the Commission's November 5, 1976, Memorandum and Order expressly applicable to nine cases, one of which is the Three Mile Island, Unit 2, case. In its November 5 Memorandum and Order the Commission directed, for the reasons set forth therein, that any proceeding concerned with suspension of the Three Mile Island, Unit 2, construction permit on fuel cycle grounds itself be suspended. As we understand it, pending the adoption of an interim fuel cycle rule and possible further direction from the Commission, no new proceeding concerned with license suspension on fuel cycle grounds is to be begun. We therefore deny the request of ECNP to intervene on fuel cycle grounds. This denial, however, is without prejudice to ECNP's right to refile this contention within a reasonable time following the adoption of an interim fuel cycle rule by the Commission.

Finally, the ECNP petition contains a request for financial assistance from the Commission in "the amount necessary in order to meet legal, technical and procedural expenses" of participation. The request is hereby denied.⁴

Petitioners are admitted as intervenors as hereinabove set forth.
SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Edward Luton, Chairman

Dated at Bethesda, Maryland
this 14th day of February 1977.

⁴ *Nuclear Regulatory Commission (Financial Assistance to Participants in Commission Proceedings)*, CLI-76-23, NRCI-76/11, 494 (November 12, 1976).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

John M. Frysiak, Chairman
Daniel M. Head
Frederick J. Shon

In the Matter of

Docket No. 50-322

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station,
Unit 1)

February 22, 1977

Upon consideration of a joint second amended petition of two groups for leave to intervene, the Licensing Board rules that (1) absent express authorization (which here has not been provided), groups cannot represent persons other than their own members; (2) a group may not participate in a Commission proceeding as a private attorney-general; (3) newly raised contentions should be dismissed without prejudice, until petitioners establish good cause for untimely filing as required by 10 CFR 2.714(a); (4) the contentions which were previously raised by petitioners but which were not reiterated in the second amended petition are considered as waived; (5) one specific contention meets the minimal requirements therefor; and (6) the remaining contentions are referred to the Licensing Board designated to preside at the hearing.

Petition granted; petition of New York Energy Office to intervene as a representative of an interested state pursuant to 10 CFR 2.715(c) is also granted.

RULES OF PRACTICE: REPRESENTATION

An organization which is a party to an NRC proceeding cannot represent persons other than its own members in that proceeding unless it presents proof of its express authority to do so. *Gulf States Utilities Co.* River Bend, Units 1 and 2), ALAB-183, 7 AEC 222, 223 n. 4 (1974); *Allied-General Nuclear Services* (Barnwell Fuel Receiving and Storage Station), LBP-75-60, 2 NRC 687, 690 (1975).

RULES OF PRACTICE: REPRESENTATION

There is no provision in the Commission's regulations for parties to act as private attorneys-general. *Portland General Electric Co.* (Pebble Springs, Units 1 and 2), ALAB-333, NRCI-76/6 804, 806 n. 6 (June 22, 1976).

MEMORANDUM AND ORDER

The Licensing Board has before it the second amended petition of the Oil Heat Institute of Long Island, Inc., (OHILI) and the North Shore Committee Against Nuclear and Thermal Pollution (North Shore) for leave to intervene. The background is as follows:

On March 18, 1976, the U.S. Nuclear Regulatory Commission (the Commission) published in the Federal Register a notice of hearing on application for operating license in the above-captioned matter.

Timely petitions for leave to intervene were filed by OHILI and North Shore pursuant to Section 2.714 of the Commission's Rules of Practice, 10 CFR Part 2. In addition, a petition was filed by the New York State Atomic Energy Council¹ seeking leave to intervene as a representative of an interested state pursuant to Section 2.715(c) of the Commission's Rules of Practice and pursuant to Section 274 of the Atomic Energy Act of 1954, as amended.

The NRC Staff and the Applicant opposed the OHILI and North Shore petitions on the grounds that they did not meet the requirements of 10 CFR 2.714.

In its Order of May 7, 1976, the Board ruled the petitions of OHILI and North Shore to be defective in form but granted the petitioners an opportunity to file amended petitions complying with the requirements of section 2.714 and curing the defects as to standing addressed in the Order. The Board deferred ruling on the petition of the New York Energy Office until final disposition of the OHILI and North Shore petitions.

In response to the Board's Order petitioners OHILI and North Shore filed amended petitions for leave to intervene, each dated June 14, 1976. The NRC Staff and the Applicant opposed the granting of the amended petitions on the grounds that petitioners again failed to set forth with particularity both the facts pertaining to their respective interests and the bases for their contentions. An oral argument was held in Centereach, Long Island, New York, on November 10, 1976, on the petitions and amended petitions to intervene.

At the oral argument the parties entered into three stipulations:

¹We are advised that on August 25, 1976, New York legislation creating the energy office abolished the State Atomic Energy Council and transferred its function to the Energy Office (Energy Law, Section 7-101, as amended).

1. that OHILI would withdraw its claim to standing based on economic interest;
2. that it was agreed that OHILI had made an adequate showing of interest based on environmental concerns, subject to verification of such environmental concerns by an affidavit of an appropriate OHILI member; and
3. that the interests of OHILI and North Shore be consolidated for purpose of intervention.

The Board approved these stipulations. Because petitioners were unprepared to respond at the oral argument to objections previously raised in writing to their contentions, the Board agreed to permit petitioners to file a second amended petition. In essence, the Board allowed petitioners a third attempt to particularize the bases for their contentions.

Petitioners OHILI and North Shore filed a joint second amended petition with annexed affidavit on December 10, 1976. The joint second amended petition is a two-page document which addresses standing and incorporates by reference the contentions cited in the annexed affidavit.

On the question of standing petitioner OHILI alleges that it is a trade association which represents some 300 home heating oil dealers who maintain their businesses within the counties of Nassau and Suffolk and seeks to protect its member-dealers and their employees and customers "from the unresolved problems associated with the increasing use of nuclear power." It also seeks "to act as a private attorney general in order to protect the public interest in these unresolved problems."

Petitioner North Shore alleges that it has in excess of 100 members, all of whom are residents in near proximity to the proposed Shoreham Nuclear Power Station and that it is acting on behalf of its members, their families and all other persons within the vicinity of the Shoreham Power Station.

Although Staff and Applicant concede that petitioners OHILI and North Shore have satisfied the requirements as to interest, they object to either petitioner representing persons other than its respective members on the grounds that neither petitioner has presented any evidence that it is authorized to do so and further that there is no provision in the NRC regulations for private attorneys general.

It is a basic legal principle that one party may not represent another without express authority to do so. Petitioners OHILI and North Shore have not presented any evidence that they are authorized to represent persons other than their own members and in the absence of such proof their respective claims that they represent persons other than their members must be rejected. See *Gulf States Utilities Company* (River Bend Station, Units 1 and 2), ALAB-183, 7 AEC 222, 223 fn. 4 (March 12, 1974); *Allied-General Nuclear Service* (Barnwell Fuel Receiving and Storage Station), LBP-75-60, 2 NRC 687, 690 (October 1,

1975). OHIL's claim that it acts as private attorney general must also be denied. There simply is no provision in the Commission's regulations for parties to act as private attorneys general. See *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), ALAB-333, NRCI-76/6, 804, 806 fn. 6 (June 22, 1976); cf *Allied-General Nuclear Service, supra* at 690.

On the question of contentions, Applicant argues that the joint second amended petition contains without good cause shown three or four contentions not previously advanced and that the balance of the contentions still fall short of the particularity required by 10 CFR 2.714(a). However, Applicant does not request that the petition for intervention be denied but rather that the petitioners be required to particularize further each of their timely contentions.

Staff argues that the joint second amended petition raises without justification four new contentions, drops some contentions previously raised and except for one contention fails to particularize the remaining contentions to the degree required by 10 CFR 2.714(a). Staff advocates that the Board should summarily reject the new contentions raised and should deem waived contentions raised in the original petition and the amended petition but which were dropped from the second amended petition.

The Staff advocates further that intervention be granted to the petitioners on the basis of Contention 7(a)(ii) and (iii) and as for the remaining contentions the Staff recommends that they be not dismissed at this time but that the Board should refer them for consideration to the Licensing Board designated to preside at the hearing.

Contentions newly raised in counsel's affidavit attached to the joint second amended petition are:

Contention 7(a)(i) which addresses excessive load growth projections in the context of need for the facility; Contention 7(b) which addresses technical qualifications; Contention 7(c) which addresses financial qualifications, and Contention 7(f) which addresses radiological releases.

Although the foregoing contentions are newly raised no explanation is offered as to why they have not been timely filed as required by 10 CFR 2.714(a). Accordingly, these newly raised contentions are hereby dismissed without prejudice, until petitioners establish good cause for untimely filing as required by 10 CFR 2.714(a).

The Board considers the contentions which have been raised by petitioners in the first petition and the amended petition but have not been reiterated in the joint second amended petition to be waived by the petitioners and they are hereby dismissed.

Petitioners' Contention 7(a) alleges that the requirements of the National Environmental Policy Act (NEPA) have not been met in that the Applicant has not demonstrated the need for the power to be generated by the Shoreham

Facility as evidenced by (ii) inadequate consideration of the effects of energy conservation and of programs designed to bring about such effects and (iii) inadequate consideration of alternate energy sources, specifically solar energy, wind energy, geothermal energy, and refuse burning. The Board agrees with the Staff's view that Contention 7(a) with its associated bases contained in subsections (ii) and (iii) meets the minimal requirements for an acceptable contention in this proceeding.

Both Staff and Applicant argue that the remaining contentions are defective in that they do not comply with the bases requirement of section 2.714(a). However, both Staff and Applicant advise that these remaining contentions be not dismissed but that the petitioners be required to particularize the aforementioned contentions. The Board refers said remaining contentions for consideration to the Licensing Board designated to preside at the hearing. For intervention purposes it suffices that the petitioners have articulated adequately one contention as required by 10 CFR 2.714(a)

Therefore, the Board grants the OHILI and North Shore joint second amended petition to intervene and request for a hearing pursuant to 10 CFR 2.714.

The Board also grants the New York Energy Office petition to intervene as a representative of an interested state pursuant to 10 CFR 2.715(c).

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Daniel M. Head, Member

Frederick J. Shon, Member

John M. Frysiak, Chairman

Dated this 22nd day of February 1977
At Bethesda, Maryland.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Edward Luton, Chairman
Dr. Kenneth A. McCollom
Dr. Ernest O. Salo

In the Matter of

Docket Nos. 50-277
50-278

PHILADELPHIA ELECTRIC COMPANY

(Peach Bottom Atomic Power Station,
Units 2 and 3)

February 22, 1977

Upon petition by intervenor, treated as a motion to add new contentions, the Licensing Board rules that (1) based on substantial good cause for the lateness of the filing, the contention concerning energy conservation as an alternative is accepted as an issue in controversy; (2) the issue seeking suspension on the basis of court decisions on the environmental effects of the fuel cycle is governed by CLI-76-18, which precludes further consideration of that issue pending the adoption of an interim fuel cycle rule; (3) no good cause has been shown for the failure to file other contentions on time; and (4) the request for financial assistance is denied, pursuant to CLI-76-23.

Petition granted as to conservation issue, denied without prejudice as to fuel cycle issue, and denied with prejudice as to other contentions. Request for financial assistance denied.

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

Nontimely filings are not to be entertained absent a finding of "good cause" for the lateness. 10 CFR §2.714.

MEMORANDUM AND ORDER

The Environmental Coalition on Nuclear Power ("ECNP"), already a party to these proceedings, has submitted what is called a "Petition to Intervene." We construe the petition as a motion to permit addition of the newly asserted contentions to the listing of ECNP contentions filed earlier.

The motion is undated but was docketed in the Office of the Secretary of the Commission on August 25, 1976. This was long after the originally prescribed period for the submission of timely contentions. Nontimely filings are not to be entertained absent a finding of "good cause" for the lateness.¹

The ECNP motion was apparently prompted by two fairly recent decisions of the U. S. Court of Appeals for the District of Columbia Circuit, *Natural Resources Defense Council, et al. v NRC*, Nos. 74-1385 and 74-1586, and *Aeschliman, et al. v. NRC*, Nos 73-1776 and 73-1867; and a "General Statement of Policy" (41 Fed. Reg. 34707), issued by the Commission on August 13, 1976.² But the contentions sought to be asserted are not limited to the matters dealt with in either of the referenced court decisions.³ To the extent that this is so, it seems to us that neither of those decisions can reasonably be viewed as providing "good cause" for the failure to file on time. Upon a careful reading of the motion, we are of the view that only two of the ECNP assertions raise issues that are pertinent for consideration as a result of *Natural Resources Defense Council, supra*, or *Aeschliman, supra*. The remaining newly asserted contentions are hereby rejected as having been untimely filed with there being no showing of good cause for the lateness.

The first of the two contentions raising an issue pertinent for consideration as a result of the court decisions is the contention numbered 5 in the motion. *Aeschliman, supra*, insofar as is pertinent here, holds that the possibility of energy conservation must be considered by the Commission as an alternative to the construction or operation of a nuclear power reactor. We read contention number 5 as raising that issue in a particular manner. This contention states:

The petitioners contend that the rate structure of the Applicant is a promotional rate structure designed to increase the consumption of electricity by offering declining rates for increased consumption. Such a rate structure minimizes the possibility and practicality of worthwhile energy conservation effort. Petitioners contend that a flat rate structure . . . one price for all levels of consumption for all customers . . . or a declining block rate structure would make conservation a viable and practical alternative to Peach Bottom 2 and 3.

¹ 10 CFR Section 2.714.

²The motion states the following: "Due to the recent decisions of the U. S. Court of Appeals for the District of Columbia Circuit, 73-1776, 73-1867, 74-1385 and 74-1586 . . . the Coalition . . . feel[s] the continued operation of Peach Bottom 2 and 3 is illegal because the construction permit for the facility was issued without proper consideration of the 'alternative' of energy conservation . . . and . . . [the] problem of radioactive waste disposal."

³For example, in the paragraph numbered 2, the petitioner argues that "the cost-benefit analysis of the Applicant and the Commission is faulty because the recipients of the 'costs' and 'benefits' have not been properly identified."

The contention is hereby accepted as an issue in controversy in this proceeding.

Next, ECNP contends that "due to the above unresolved issues regarding compliance with Sec. 102 of the National Environmental Policy Act by the Commission, the construction permit for Peach Bottom 2 and 3 should be rescinded immediately, and construction halted pending resumption of public hearings and resolution of these matters." We construe the quoted language as contending that construction or operation of Peach Bottom, Units 2 and 3, should be suspended pending resolution of the reprocessing and waste disposal issues raised by *Natural Resources Defense Council, supra*. In our view, this matter is governed by the Commission's November 5 Memorandum and Order expressly applicable to, *inter alia*, Peach Bottom, Units 2 and 3. In its November 5 Memorandum and Order the Commission directed, for the reasons set forth therein, that any proceeding concerned with the suspension of construction or operation of the Peach Bottom, Units 2 and 3, on fuel cycle grounds itself be suspended. As we understand it, pending the adoption of an interim fuel cycle rule and possible further direction from the Commission, no new proceeding concerned with license suspension on fuel cycle grounds is to be begun. Thus, this contention is hereby rejected. This rejection is without prejudice to ECNP's right to refile this contention within a reasonable time following the adoption of an interim fuel cycle rule by the Commission.

Finally, the ECNP motion contains a request for financial assistance from the Commission in "the amount necessary in order to meet legal, technical and procedural expenses" of participation. The request is hereby denied.⁴

IT IS SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Edward Luton, Chairman

Dated at Bethesda, Maryland
this 22nd day of February 1977.

⁴*Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, NRCI-76/11 494 (November 12, 1976).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Robert M. Lazo, Chairman
Dr. A. Dixon Callihan
Dr. Richard F. Cole

In the Matter of

Docket No. 70-1729

ALLIED-GENERAL NUCLEAR SERVICES
ALLIED CHEMICAL NUCLEAR PRODUCTS, INC.
GENERAL ATOMIC COMPANY

(Barnwell Fuel Receiving and
Storage Station)

February 24, 1977

The Licensing Board denies intervenor's motion to compel discovery on the ground that the information sought via the contested interrogatories is not relevant to the subject matter of the proceeding or likely to lead to the discovery of admissible evidence.

RULES OF PRACTICE: DISCOVERY

Parties may obtain discovery only of information which is relevant to those matters in controversy which have been identified by the Commission or the presiding officer in the prehearing order. 10 CFR §2.740(b)(1).

RULES OF PRACTICE: DISCOVERY

Since 10 CFR §2.740 is patterned after Rule 26 of the Federal Rules of Civil Procedure, the legal authorities and Federal court decisions involving Rule 26 provide appropriate guidelines for interpreting the Commission's discovery standards. *Commonwealth Edison Co.* (Zion, Units 1 and 2), ALAB-196, 7 AEC 457, 460 (1974); *Boston Edison Co.* (Pilgrim, Unit 2), LBP-75-30, 1 NRC 579, 581 (1975).

RULES OF PRACTICE: DISCOVERY

In pursuing discovery, parties may not “roam in the shadow zones of relevancy” and “explore matter which does not presently appear germane on the theory that it might conceivably become so.” *Broadway & Ninety-Sixth St. Realty Co. v. Loew’s Inc.*, 21 F.R.D. 347, 352 (S.D.N.Y. 1958).

ORDER CONCERNING APPLICANTS’ OBJECTIONS TO ENVIRONMENTALISTS, INC., INTERROGATORIES – SET II

On November 29, 1976, Environmentalists, Inc., one of the three organizations participating in the above-identified proceeding as joint intervenors, filed a set of interrogatories to the applicants identified as “Set II” interrogatories. On December 16, 1976, applicants objected to Interrogatories 1 and 2. A motion to compel applicants to respond to the two interrogatories objected to, was filed by Environmentalists, Inc., on December 27, 1976. The Board’s determinations concerning these interrogatories and the objections thereto are set forth below.

Interrogatory 1. Specify all companies with which AGNS has contracts for the reprocessing of spent fuel.

Interrogatory 2. With respect to each contract identified in the answer to the previous question, please provide the following information or alternatively, provide a copy of the contract:

- a. When is AGNS required to accept fuel for reprocessing?
- b. What liabilities will AGNS incur if it is not able to accept fuel for reprocessing as of that time because:
 - (1) it has no license for the BFRSS?
 - (2) it has no capacity for the storage of spent fuel prior to reprocessing?
 - (3) other reasons?
- c. How long prior to reprocessing does the contract require AGNS to accept fuel?
- d. Is the term for acceptance of fuel for storage prior to reprocessing renewable and, if so, for how long and under what conditions?
- e. What quantity of spent fuel is AGNS required to accept?
- f. To what extent is the price paid to AGNS for reprocessing dependent upon:
 - (1) length of spent fuel storage?
 - (2) quantity of storage?
 - (3) date when storage begins?
 - (4) date when storage ends?
 - (5) reprocessing of the spent fuel?

- g. With respect to each part of "F" which you answered yes, describe in detail how the price paid to AGNS is affected by that factor.
- h. Does the contract include an obligation to accept spent fuel from reactors which are not yet in operation?
- i. If the answer to "h" is yes, does the planned capacity of the BFRSS include space for this spent fuel?
- j. To what extent does the contract allow AGNS to allocate space in the BFRSS to reactors most in need of storage space?

Applicants object to the two interrogatories in part on the ground that they do not meet the fundamental requirement that the discovery sought must be relevant to the subject matter involved in the proceeding or must be reasonably calculated to lead to the discovery of admissible evidence. In addition Applicants assert that the information sought concerning reprocessing contract terms is customarily treated on a business confidential basis and any need for its disclosure has not been shown by Environmentalists, Inc.

In its "Motion to Compel Discovery," Environmentalists, Inc., urged the Board to require that answers to the two contested interrogatories be furnished because information concerning the expected use of the facility is critical to a determination of the "justification for the Barnwell Fuel Receiving and Storage Station" (BFRSS).

We are not persuaded that the information sought via the two contested interrogatories is relevant or necessary for a proper decision in this proceeding nor of substantive value to Environmentalists, Inc., in the preparation of its case. In its rules of practice the Commission has expressly provided, in 10 CFR §2.740(b)(1), that:

Parties may obtain discovery regarding any matter, not privileged, *which is relevant to the subject matter involved in the proceeding*, whether it relates to the claim or defense of the party seeking discovery or to the claim or defense of any other party. . . . In a proceeding on an application for a construction permit or an operating license for a production or utilization facility, *discovery shall begin only after the prehearing conference . . . and shall relate only to those matters in controversy which have been identified by the Commission or the presiding officer in the prehearing order entered at the conclusion of that prehearing conference. . . . It is not ground for objection that the information sought will be inadmissible at the hearing if the information sought appears reasonably calculated to lead to the discovery of admissible evidence.* [Emphasis supplied.]¹

¹ Docket No. 70-1729 is a Part 70 licensing proceeding, rather than a Part 50 proceeding to which 10 CFR 2.740(b)(1) expressly refers when it speaks of "a proceeding on an application for a construction permit or an operating license for a production or utilization facility." But the general relevancy standard and the further limitation that discovery "shall

Continued on next page.

Since 10 CFR §2.740(b)(1) only permits discovery of information or documents "relevant to the subject matter involved in the proceeding," and then further qualifies and limits the term "subject matter" to the contentions admitted by the presiding officer in the proceeding, it is accordingly evident that Environmentalists, Inc.'s, attempt to obtain the names of all companies with which Applicant has reprocessing contracts and the terms of those reprocessing contracts falls outside the bounds of the discovery permitted by the Commission's rules.

The Appeal Board has recognized that 10 CFR §2.740 is patterned after and parallels Rule 26 of the Federal Rules of Civil Procedure. *Commonwealth Edison Company* (Zion Station, Units 1 and 2), ALAB-196, 7 AEC 457, 460 (1974). Accordingly, the legal authorities and Federal court decisions involving Rule 26 illuminate, and provide appropriate guidelines for interpreting, the discovery standards set forth in the Commission's rules. *Boston Edison Company* (Pilgrim Nuclear Generating Station, Unit 2), LBP-75-30, 1 NRC 579, 581 (June 6, 1975).

In considering the question of relevancy under Rule 26 of the Federal Rules of Civil Procedure, the Federal courts have long recognized that discovery processes must be kept within workable bounds on a proper and logical basis for the determination of the relevancy of that which is sought to be discovered. When the information sought is irrelevant to the proceeding, the Federal courts will not hesitate to sustain objections to such interrogatories. *Massachusetts Bonding & Ins. Co. v. Harrisburg Trust Co.*, 2 F.R.D. 197, 198 (M.D. Pa. 1941). See *Dunbar v. United States*, 502 F.2d 506, 509-510 (5th Cir. 1974); *Goodman v. International Business Machine Corp.*, 59 F.R.D. 278, 279 (N.D. Ill. 1973); *Griffin v. Memphis Sales & Manufacturing Co.*, 38 F.R.D. 54, 57 (N.D. Miss. 1965). As the district court stated in *Broadway & Ninety-Sixth St. Realty Co. v. Loew's Inc.*, 21 F.R.D. 347, 352 (S.D. N.Y. 1958):

practical consideration dictate that the parties should not be permitted to roam in shadow zones of relevancy and to explore matter which does not presently appear germane on the theory that it might conceivably become so.

This proceeding involves storage of spent fuel, not reprocessing. Reprocess-

Continued from previous page.

relate only to those matters in controversy which have been identified by the Commission or the presiding officer in the prehearing order" are equally applicable to the present proceeding. This not only is so because of the equal applicability of the principle involved, but it also appears to be so as a literal matter because the Commission's rules of practice govern "the conduct of all proceedings under the Atomic Energy Act of 1954, as amended" (10 CFR §2.1), and 10 CFR §2.740 is one of the Commission's "Rules of General Applicability" which "set forth general rules applicable to all types of proceedings except rulemaking," 10 CFR §2.2.

ing is a matter which is pending in the separate licensing proceeding in Docket No. 50-332, involving the Separations Facility at Barnwell. But here, in Docket No. 70-1729, the function to be covered by the proposed license would be the storage operation, and the license to operate the Fuel Receiving and Storage Station would cover such storage as might be undertaken during an interim period without regard to whether or exactly when the Separations Facility would be licensed to operate.

In previous interrogatories served in the present proceeding, Environmentalists, Inc., have inquired as to the terms of the contracts which applicants have in effect with respect to such proposed storage. The answers filed by applicants on September 30, 1976, showed that applicants do not have any contracts for the storage of fuel and that the existing contracts for reprocessing between applicants and their customers contemplate only normal marshalling of spent fuel in the BFRSS preparatory to reprocessing, not the extended storage of spent fuel which could be permitted under the license sought in this proceeding. Moreover, in the answers they have furnished to the interrogatories, applicants have disclosed in general, various terms which they would expect to include in contractual arrangements for storage over any extended period, if and when such contractual arrangements are negotiated. Counsel for applicants has stated² that if and when applicants do conclude any contractual arrangements for storage covering an extended period at the BFRSS prior to licensing of the Separation Facility, the applicants would plan to notify the Board and the parties to this proceeding that such contractual arrangement has been entered into.

For the reasons stated above, the objections to the interrogatories set forth above are sustained in the manner and for the reasons stated and, accordingly, said interrogatories need not be answered.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Robert M. Lazo, Chairman

Dated at Bethesda, Maryland
this 24th day of February 1977.

² "Applicants' Opposition To Environmentalists, Inc., Motion To Compel Discovery" dated January 7, 1977.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Edward Luton, Chairman
Ernest E. Hill
Dr. David R. Schink

In the Matter of

Docket Nos. 50-553
50-554

TENNESSEE VALLEY AUTHORITY

(Phipps Bend Nuclear Plant
Units 1 and 2)

February 28, 1977

Upon motion by applicant requesting an order declaring that TVA's determination as to certain environmental issues is conclusive and supersedes NRC's NEPA authority over those issues, the Licensing Board rules that the TVA Act does not confer exclusive jurisdiction upon the TVA with respect to such NEPA matters, that no impermissible statutory conflict exists between the TVA Act and NEPA, and that the usual NEPA review is to be performed by NRC.

Motion denied.

NEPA: JURISDICTION

The TVA's jurisdiction over environmental matters is not exclusive where the TVA seeks a license from another Federal agency to which Congress has also given the full range of NEPA duties.

NUCLEAR REGULATORY COMMISSION: ENVIRONMENTAL RESPONSIBILITIES

The NRC is obliged, where appropriate under NEPA, to impose conditions designed to mitigate adverse environmental consequences upon any permit or license which it issues.

ATOMIC ENERGY ACT: SECTION 271

Section 271 of the Atomic Energy Act places no limitation upon the NRC's authority to condition its permits and licenses pursuant to NEPA; rather, it

simply preserves the regulatory jurisdiction of other Federal, state, and local agencies over the generation, sale, and transmission of electric power. *Maun v. U.S.* 347 F.2d 970 (9th Cir. 1965); *Detroit Edison Co.* (Greenwood, Units 2 and 3), ALAB-247, 8 AEC 936 (1974).

MEMORANDUM AND ORDER

Applicant Tennessee Valley Authority (TVA) has moved the Board for an order declaring that "TVA's determination of the need for the proposed Phipps Bend Nuclear Plant, the size, type, and location of the facilities required for the project, the rates which TVA will charge for its power, and actions taken to mitigate the socioeconomic impacts of the project must be accepted by the NRC as conclusive," and that NRC "is without authority to impose" on any permits or licenses for the plant environmental conditions relating to "the need for or the generation, sale, or transmission of TVA power or the socioeconomic impacts resulting from TVA activities." The motion is opposed by the State of Tennessee and by the NRC Regulatory Staff. We deny the motion.

Central to the motion is the TVA assertion that the board of directors of that Federal agency "has the sole statutory discretion and authority" under the Tennessee Valley Authority Act of 1933, 48 Stat. 58, as amended, 16 U.S.C. §§831-831dd (1970; Supp. V, 1975) to make the judgments that are the subjects of the motion. Those judgments, it is claimed, are reviewable neither by other administrative agencies nor by the courts. Placing particular reliance upon *United States v. SCRAP*, 412 U.S. 669 (1973) (NEPA neither amended nor repealed any specific grant of jurisdictional authority) and *Flint Ridge Development Co. v. Scenic Rivers Association*, 49 L.Ed. 2d 205 (1976) (where a clear and unavoidable conflict in statutory authority exists, NEPA must give way), the TVA claims that NEPA cannot be construed as amending the exclusive jurisdiction of the TVA Board of Directors under the TVA Act. To so construe NEPA would expressly contravene *SCRAP*, *supra*, and would, it is argued, create a potential conflict in statutory authority. The potential conflict becomes actual where, for example, NRC's judgment pursuant to NEPA concerning TVA's need for the power from the proposed plant is contrary to the judgment of the TVA Board with respect to that same matter. Applicant TVA claims that in these circumstances, any NEPA jurisdiction in NRC "must give way to" the "preexisting authority of TVA under the TVA Act," it being "clear that the TVA Act has priority where the TVA Act and NEPA come into potential conflict."

At page 6 of its brief, the Applicant asserts that the TVA Act "explicitly vests in TVA broad, substantive and *exclusive* jurisdiction . . . over the generation, sale, and transmission of electric power by TVA in the region where it conducts its activities." (emphasis supplied) The quoted language is ambiguous. It could reasonably be understood as stating that the TVA Act, by its express terms, vests "exclusive" jurisdiction in the TVA over the various matters. On the

other hand, the language could be understood as stating that the TVA Act, by its express terms, vests jurisdiction in the TVA over the various matters, a jurisdiction which is "exclusive," but exclusive for some reason other than the existence of an express statutory provision. The first must not have been the intended meaning, for we are nowhere referred to the particular statutory language "explicitly" stating that the various grants of authority are "exclusive." Nor do we find any such language anywhere in the statute.

As we understand it, the Applicant claims that its asserted jurisdictional exclusiveness is to be implied from the nature of the TVA program and the breadth of the Congressional grants of power to TVA for the effectuation of that program. At page 6 of its brief, the Applicant provides the following Congressional description of the TVA program:

Today, the TVA regional resource development program is known and acclaimed as one of the most successful governmental public improvement projects ever undertaken. The whole world knows of TVA's work in harnessing a great river for navigation, power production, and other uses such as recreation; in preventing devastating floods; in helping through the introduction of new fertilizers and farm practices and the use of scientific soil-conserving farm practices; in encouraging the conservation and proper utilization of a great forest resource; in providing adequate supplies of economical electric power; and, through all these activities, in helping an economically depressed region to take advantage of its opportunities to industrialize and to make the best use of its resources in improving its economy [S. Rep. No. 94-461, 94th Cong., 1st Sess. 2 (1975); H. R. Rep. No. 94-510, 94th Cong., 1st Sess. 2 (1975)].

More particularly, we are told in the brief that "TVA has a statutory utility responsibility for electric power supply in" an 80,000 square mile area; that the TVA Act "requires TVA to '[a]ssure an *ample supply* of electric power' for the purposes of 'the advancement of the national defense and the physical, social and economic development of the area'"; Congress has recognized the benefits of the TVA power supply program; to carry out this program TVA has broad discretionary powers, among them the power to 1) borrow funds, 2) build power plants, and 3) "construct, lease, purchase, or authorize the construction of transmission lines." At pages 15-16 of its brief, the Applicant cites *U.S. ex rel. TVA v. Welch*, 327 U.S. 546 (1946) for the proposition that TVA "had express statutory authority; prior to and independent of NEPA, to consider and mitigate the socioeconomic impacts of its authorized development projects." The authority is claimed to be "exclusive" ("The TVA Board has sole authority for the mitigation of socioeconomic impacts from TVA projects") but, again, we are referred to no specific statutory provision stating that the grant of authority is meant to be "exclusive."

There is no doubt that the TVA Act makes broad grants of power and places broad responsibilities upon the TVA. Indeed, that statute would be an unusual organic act if it did not do exactly that. We fail to see anything about the TVA Act which sets it apart as unique, or even special, in any way pertinent to the present inquiry. The Congress has not specifically addressed the situation in NEPA, the TVA Act, or elsewhere, in which the TVA is seeking a license from another Federal agency having its own independent NEPA responsibilities. The most reasonable implication to be drawn from this, we believe, is that Congress did not intend TVA jurisdiction to be inviolable where the TVA seeks a license from another Federal agency to whom the Congress has also given the full range of NEPA duties, and we so hold. Thus, this appears to us to be a case in which the usual NEPA review is to be performed by the NRC Regulatory Staff. The TVA Act not having conferred exclusive jurisdiction upon the TVA with respect to these NEPA matters, no impermissible statutory conflict will exist.

The TVA argues that NEPA creates no jurisdiction in NRC with respect to the challenged matters. We think that argument is effectively addressed by the following excerpt from the Staff's brief:

Rather, as the U. S. Court of Appeals for the D. C. Circuit stated in the landmark case of *Calvert Cliffs Coordinating Committee, Inc., et al. v. AEC*, 449 F.2d 1109, 1112 (D. C. Cir. 1971). . .

[The then AEC] is not only permitted, but compelled, to take environmental values into account. Perhaps the greatest importance of NEPA is to require the Atomic Energy Commission and other agencies to *consider environmental issues as they consider other matters within their mandates* [citations omitted].

Citing §105 of NEPA and the *Calvert Cliffs* opinion, *supra*, the Atomic Safety and Licensing Appeal Board (Appeal Board) in *Detroit Edison Company* (Greenwood Energy Center, Units 2 and 3) ALAB-247, 8 AEC 936, 938 (1974), confirmed that NEPA expanded the Commission's regulatory jurisdiction beyond that conferred by the [Atomic Energy Act] and/or the [Energy Reorganization Act], to embrace environmental concerns stemming from the licensing of nuclear power plants:

NEPA's enactment substantially broadened the environmental responsibilities of the Federal Government by making the policies of that Act "supplementary to those set forth in existing authorizations of Federal Agencies." 42 U.S.C. §4335. The Atomic Energy Commission was not excepted In short, every Federal agency—including this one—is obliged to evaluate the "reasonably foreseeable environmental impact" of its proposed actions. It must then decide in light of those ramifications whether any given action should be allowed to go forward. (Cita-

tion and footnote omitted). *Accord, Kansas Gas and Electric Company and Kansas City Power and Light Company* (Wolf Creek, Unit No. 1), ALAB-321, NRCI-76/4 293 (1976): [The Commission's NEPA jurisdiction is not confined solely to consideration of those aspects of a proposed nuclear project involving radiation hazards and, hence, within the ambit of the Commission's jurisdiction pursuant to the [Atomic Energy Act]. *Wolf Creek, supra*, at 306.]

Additionally, we are satisfied that the Commission has a statutory obligation under NEPA to impose conditions designed to mitigate adverse environmental consequences upon any permit or license which it may issue to the Applicant in this case. *Wolf Creek, supra*, ALAB-321. In this connection, we expressly reject the Applicant's argument that the placing of environmental conditions by the NRC on any permit or license which may issue would constitute a "violation of the Congressional prohibition in Section 271 of the Atomic Energy Act." In our opinion, that section of the Atomic Energy Act places no limitation upon the authority of the NRC to condition its permits and licenses pursuant to NEPA; rather, it simply preserves the regulatory jurisdiction of other Federal, state and local agencies over the generation, sale, and transmission of electric power. *Maun v. U.S.*, 347 F.2d 970 (1965); *Greenwood, supra*, ALAB-247.¹

Finally in regard to this matter, the Commission's *Clinch River* decision, *United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), CLI-76-13, NRCI-76/8 67 (August 27, 1976), is extensively argued to us as a "conflict of statutes" case (Applicant's Brief, p. 23), in which the Commission properly deferred to the judgment of the Energy Research and Development Administration on the need for the liquid metal fast breeder reactor project. The argument appears to be that any construction of NEPA which gives the NRC authority over the subjects of this motion (decisions concerning which applicant claims are committed *solely* to the discretion of TVA) would create an impermissible statutory conflict and that, consistent with the Commission's action in *Clinch River, supra*, the NRC must defer to TVA's judgments in these areas. We have already rejected the notion of any conflict between pertinent Congressional enactments concerning the matters involved on the instant motion. Thus, *Clinch River, supra*, is neither wholly nor partly dispositive of any issue before us.

¹That section provides: "Nothing in this chapter shall be construed to affect the authority or regulations of any Federal, state, or local agency with respect to the generation, sale, or transmission of electric power produced through the use of nuclear facilities licensed by the Commission: *Provided*, That this section shall not be deemed to confer upon any Federal, state, or local agency any authority to regulate, control, or restrict any activities of the Commission." 42 U.S.C. § 2018.

For the foregoing reasons, the Applicant's motion is hereby denied.
SO ORDERED.

THE ATOMIC SAFETY AND
LICENSING BOARD

Edward Luton, Chairman

Dated at Bethesda, Maryland
this 28th day of February 1977.

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

2. The second part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

3. The third part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman

Victor Gilinsky

Richard T. Kennedy

In the Matter of

Docket Nos. 50-329
50-330

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2)

March 18, 1977

As a result of several Commission orders, a licensing board was reconvened to hear certain issues remanded to the Commission in *Aeschliman, et al. v. NRC*, Nos. 73-1776, 73-1867 (D.C. Cir. July 21, 1976). Upon motion by the applicant to stay those orders, founded upon the United States Supreme Court's grant of certiorari in that case on February 22, 1977, the Commission, pursuant to 10 CFR §2.785, delegates its authority to act on the motion to the Appeal Board.

ORDER

On March 4, 1977, Consumers Power Company filed a motion with the Commission requesting that the Commission stay the orders it issued in this proceeding on August 16, 1976 (CLI-76-11, NRCI-76/8, 65); September 14, 1976 (CLI-76-14, NRCI-76/9, 163); September 14, 1976 (unreported); and November 5, 1976 (CLI-76-19, NRCI-76/11, 474). These opinions ordered the reconvening of a licensing board to hear certain issues remanded to the Commission by the United States Court of Appeals for the District of Columbia Circuit in *Aeschliman, et al v. NRC*, Nos. 73-1776, 73-1867 (July 21, 1976). Consumers Power's motion is grounded on the fact that the United States Supreme Court granted certiorari in the above-named case on February 22, 1977.

On March 15, 1977, the Intervenor (other than Dow Chemical Company) filed a motion with the Commission requesting that the Commission immediately suspend construction of the Midland facility. The Intervenor's motion is based on an allegation that further hearings on a number of issues are required and that these hearings should be "unfettered and uncompromised by the continuation of construction."

Although the Commission would normally rule on these motions, the Commission is delegating its authority to act in these instances to the Atomic Safety and Licensing Appeal Board, pursuant to 10 CFR § 2.785. This action is being taken because Chairman Rowden has in the past disqualified himself from participating in this proceeding because of his prior service as Associate General Counsel of the Atomic Energy Commission during the pendency of this proceeding. Absent a showing of necessity not present here, the Chairman does not believe that he should participate on the merits of these motions. His withdrawal leaves the Commission without a quorum to rule on the merits of the motions. See 42 U.S.C. § 5841(a). The Chairman is participating for the limited purpose of delegating these matters to the Appeal Board because his presence is required to establish the necessary quorum of three. Otherwise, no action could be taken on the motions.

The Chairman of the Appeal Panel, pursuant to 10 CFR § 2.787(a), shall designate three members of the Board to act on these motions.

It is so ORDERED.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 18th day of March 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman
Victor Gilinsky
Richard T. Kennedy

In the Matter of**Docket Nos. 50-443
50-444****PUBLIC SERVICE COMPANY OF
NEW HAMPSHIRE, et al.****(Seabrook Station, Units 1 and 2)****March 31, 1977**

Upon review of ALAB-366, 5 NRC 39, which suspended the effectiveness of the outstanding construction permits for the facility because of uncertainties introduced by the Environmental Protection Agency's (EPA) continuing consideration of the facility's cooling system, the Commission (1) rules that the case is appropriate for review; (2) concludes that the construction permits providing for once-through cooling must be suspended in light of the uncertainty concerning EPA's course of action and the inadequacy of the record and the Licensing Board's findings with respect to closed-cycle cooling; (3) outlines how the Licensing Board should conduct the additional site comparison called for; and (4) outlines the circumstances under which construction may resume.

Appeal Board decision affirmed with modifications discussed in prior orders; matter remanded to Licensing Board.

RULES OF PRACTICE: APPELLATE REVIEW

While 10 CFR 2.786 states the ordinary practice for Commission review, the Commission has inherent supervisory authority over the adjudicatory proceedings before it; it may step into a proceeding to provide guidance on important issues of law or policy. *Clinch River*, CLI-76-13, NRCI-76/8 67, 75-76.

RULES OF PRACTICE: APPELLATE REVIEW

The Commission does not generally sit to review factual determinations made by its subordinate panels. *Public Service Company of New Hampshire* (Seabrook, Units 1 and 2), CLI-76-17, NRCI-76/11 451, 467;

NEPA: CONSIDERATION OF ALTERNATIVES

While a particular type of cooling system might be excluded by NRC for safety reasons, the environmental preferability of an alternative cooling system is not enough to exclude an option which may be required for extrinsic reasons.

NEPA: CONSIDERATION OF ALTERNATIVES

The test to be employed in assessing whether a proposed site is to be rejected in favor of any of the alternative sites considered is whether an alternate site is obviously superior to the proposed site.

NEPA: CONSIDERATION OF ALTERNATIVES

The fact that a competent and responsible state authority has approved the environmental acceptability of a site or a project after extensive and thorough environmentally sensitive hearings is entitled to "substantial weight" in the NRC's NEPA analysis. *Virginia Electric and Power Co.* (North Anna, Units 1 and 2), LBP-75-50, 2 NRC 879, 890 (1975), *aff'd*, ALAB-325, 3 NRC 404 (1976); *pet. for rev. pending*, *Culpeper League for Protection v. NRC*, Nos. 76-1484 and 76-1532 (D.C. Cir.).

NEPA: CONSIDERATION OF ALTERNATIVES

In considering alternatives, NEPA does not require an unbalanced weighting of environmental over other factors such as economic considerations or the possible health and safety advantages of particular locations.

NEPA: CONSIDERATION OF ALTERNATIVES

In comparing applicant's proposed site to alternative sites, adjudicatory boards must consider the cost and time actually required to complete the facility at the proposed site, compared to the cost and time required to complete the facility at each alternative site, assuming that the NEPA process has been generally sound up to the point of comparison.

NEPA: RULE OF REASON

The fact that a possible alternative is beyond the Commission's power to implement does not absolve the NRC of the duty to consider it, but that duty is subject to a "rule of reason." *NRDC v. Morton*, 458 F.2d 827 (D.C. Cir. 1972); *Concerned about Trident v. Rumsfeld*, ___ F.2d ___, 9 ERC 1370, 1380 (D.C. Cir. 1975).

Cir. 1976). Factors to be considered in applying the "rule of reason" to alternate site analyses include the distance from the facility to the load center, the possible institutional and legal obstacles associated with construction at an alternate site, and various technical considerations.

NUCLEAR REGULATORY COMMISSION: ENVIRONMENTAL RESPONSIBILITIES

The scope and focus of any NEPA analysis depend upon the nature of the particular proposal being considered and the factual predicate existing at the time the analysis must be performed by the agency. NEPA is more demanding in a case involving direct Federal action than in a case involving Federal approval of private action; in the Federal approval cases, NEPA seeks only to assure environmental consideration during the formulation of a position on the proposal submitted by private parties. *Kleppe v. Sierra Club*, ___ U.S. ___, 49 L. Ed. 2d 576, 595-96 n. 1 (1976)(Marshall, J., concurring and dissenting).

FWPCA: EPA AUTHORITY

Pursuant to Section 511 (c)(2) of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1371(c)(2), the Commission must accept the Environmental Protection Agency's determination on effluent limitations for each facility. The Commission must either license or not license an EPA-approved cooling system but cannot require it to be modified.

EPA AUTHORITY: INTERPRETATION

The opinion of the General Counsel of the Environmental Protection Agency is final for purposes of EPA adjudicatory hearings. 40 CFR 125.36(m). Thus, the Commission may properly defer to a construction of EPA's authority by the General Counsel of that agency.

FWPCA: SECTION 401 CERTIFICATION

The NRC cannot issue a construction permit without having in hand a certificate from the state, under Section 401 of the Federal Water Pollution Control Act (33 U.S.C. §1341). But the Commission may not review the "adequacy" of such a certificate (33 U.S.C. 1371(c)(2)(A)).

Appearances

Thomas G. Dignan, Jr., and John A. Ritscher, for the Applicant, Public Service Company of New Hampshire

Anthony Z. Roisman, for the Intervenor, New England Coalition on Nuclear Pollution

Robert A. Backus, for the Intervenors, Seacoast Anti-Pollution League and Audubon Society of New Hampshire

Ellyn R. Weiss, for the Commonwealth of Massachusetts

Martin G. Malsch and Richard C. Browne, for the Regulatory Staff

MEMORANDUM AND ORDER

I. FACTUAL AND PROCEDURAL BACKGROUND

The Public Service Company of New Hampshire proposes to build a two-unit nuclear electric generating station near the seacoast of New Hampshire in the Town of Seabrook. An application for construction permits was tendered to the former Atomic Energy Commission March of 1973. Following a preliminary review for completeness by the Commission staff, the initial application was rejected in May 1973 for lack of sufficient information. Additional information was thereafter submitted and the application was found acceptable for docketing in July 1973. In accordance with Section 189(a) of the Atomic Energy Act, the Commission issued a "Notice of Hearing on Application for Construction Permits," which was published in the *Federal Register* in August 1973. 38 *Fed. Reg.* 21519.

The Act provides that in connection with an application for a reactor construction permit, we shall grant a hearing "upon the request of any person whose interest may be affected" and that any such person shall be admitted as a party to the proceeding. Requests for hearing and petitions for leave to intervene were received from several individuals, organizations and governmental bodies. Admitted as parties were two private individuals, the State and Attorney General of New Hampshire, the Audubon Society of New Hampshire, the Society for Protection of New Hampshire Forests, the New England Coalition on Nuclear Pollution and the Seacoast Anti-Pollution League. In addition, the Commonwealth of Massachusetts was granted leave to participate as an interested state pursuant to 10 CFR 2.715(c). Prehearing conferences were held in October 1973, March, May and December 1974, and April 1975. The Board admitted into controversy a broad range of issues, including eight categories of issues arising under the Atomic Energy Act and sixteen under the National Environmental Policy Act. Illustrating the range and complexity of this proceeding, the following categories of environmental issues were admitted into controversy:

- Consideration of alternative sites
- Need for power
- Alternative energy sources
- Aquatic effects of the condenser cooling system
- Location of transmission lines
- Reliability of operation
- Impact on tourism
- Consideration of effects of turbidity and water runoff during construction
- Consideration of effects on wildfowl
- Effects of decommissioning
- Consideration of aesthetic effects
- Archaeology of the site
- Effect on access to public lands
- Effect on fishing industry
- Effect on clam flats
- Cost-benefit analysis

Evidentiary hearings were held at various places in New Hampshire between May and November 1975. The record was reopened for additional hearings on certain seismic issues in February 1976. The Board conducted evidentiary hearings for a total of 61 days, compiling a massive record of direct testimony, cross-examination and exhibits.

The Atomic Safety and Licensing Board rendered its initial decision authorizing issuance of construction permits in June 1976. The permits were issued in July, and construction activities at the site commenced shortly thereafter (10 CFR 2.764).

The parties filed numerous exceptions to the initial decision with the Atomic Safety and Licensing Appeal Board, supported by extensive briefs. The Appeal Board twice denied applications for a stay of construction pending resolution of the appeals. ALAB-338, NRCI-76/7 10; ALAB-356, NRCI-76/11 525. The movants for a stay sought review of the stay denials in the United States Court of Appeals for the First Circuit. That court has declined to review the stay denials pending further agency consideration of aspects of this case we will describe in greater detail hereafter, notably the doubt presently surrounding the kind of cooling system that will be required for the Seabrook facility. *Audubon Society of New Hampshire v. NRC*, No. 76-1347 (1st Cir. December 17, 1976) (slip op. at 12).

Although most of the issues raised by the numerous appeals from the Licensing Board's initial decision have not yet been decided by the Appeal Board—additional oral argument was heard on one issue earlier this month—we have before us for review an Appeal Board decision suspending the effectiveness of the outstanding construction permits for the Seabrook facility. ALAB-366, 5

NRC 39 (January 21, 1977).¹ This is the second such decision we have reviewed in the space of a few months. Our earlier review concerned the Appeal Board order in ALAB-349, NRCI-76/9 235 (1976) which suspended the permits for reasons which a majority of the Appeal Board found to flow from problems concerning environmental assessment of the effects of the uranium fuel cycle in the reactor licensing context. We set aside the Board decision primarily on the basis of subsequent events. See *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-76-17, NRCI-76/11 451.

The present review also concerns a divided Appeal Board decision. Here, a majority of the Board voted to suspend the outstanding construction permits because of uncertainties introduced by the Environmental Protection Agency's (EPA) continuing consideration of the type of cooling system appropriate for the Seabrook facility. This decision follows oral argument before the Appeal Board on the merits of the initial decision, but, as noted above, does not resolve all pending issues. A number of other contentions respecting the Seabrook facility, including seismic and emergency evacuation plan concerns, remain before the Appeal Board for decision.

We see no need to catalog the complex background and procedural history of the matter presently before us; the relevant facts are set forth at some length in the decision under review. Aspects of the factual background require at least brief summary, however, to place the issues before us in perspective.

Modern nuclear power plants require large quantities of cooling water. For example, the two Seabrook units would cycle approximately 1.2 billion gallons of water per day through their heat dissipation systems. As proposed by the applicants, Seabrook would have a "once-through" cooling system. The system would employ sea water that would be drawn from the ocean, channeled through the facility to absorb waste heat, and discharged about 39 Fahrenheit degrees warmer than its intake temperature through a system of tunnels back into the ocean at a point some distance from shore. The discharge of such heated water into rivers, lakes, or the ocean—commonly called "thermal pollution"—can cause significant environmental harm in some situations. Alternative cooling systems exist which depend on evaporation for cooling; these "closed-cycle" systems take in much less water and return water to its source with little net heat addition. They have, however, other possibly significant environmental impacts.

Under the present Federal statutory regime, this Commission, the EPA, and state agencies share regulatory authority over the discharge of waste heat from nuclear power plants. This elaborate (and sometimes, as here, difficult) regulatory scheme was described at length by the Appeal Board in ALAB-366, 5 NRC at 48-53, and we adopt their description as our own. Suffice it to say here that

¹ [This footnote, which referred to citations of the slip opinion of ALAB-366, is being omitted since citations herein are to the published version of ALAB-366.]

EPA has the leading role in determining the type of cooling system to be used at a nuclear plant, through its controls over thermal discharges. And it was the uncertainty surrounding the nature of the cooling system that EPA would require that led a majority of the Appeal Board to conclude that the outstanding construction permits for Seabrook should be suspended.

Until November of last year, when the responsible EPA official reversed himself on the cooling system question, this complex case has proceeded on the assumption that Seabrook would operate with once-through cooling. Recognizing that a once-through cooling system would require an exemption from the EPA regulation mandating closed-cycle (no thermal discharge) systems, the applicant sought the necessary EPA exemptions in August 1974. In June and November 1975, the Regional Administrator of EPA made initial determinations in which he approved the use of once-through cooling for Seabrook. The staff's environmental statement and the testimony at the hearing focused primarily on once-through cooling. And it was with the assumption that once-through cooling would be finally approved by EPA that the Licensing Board reached its conclusion that NEPA cost-benefit analysis favored the proposed Seabrook facility.

The initial EPA determination was challenged in that agency by several parties who are also intervenors here, and they received an adjudicatory hearing before the EPA Regional Administrator. On November 9, 1976, several months after our Licensing Board's initial decision and commencement of construction, the EPA Regional Administrator rendered a second decision vacating his earlier determinations. He held, in substance, that the applicant had not borne its burden of proof in demonstrating that once-through cooling, as proposed, would be environmentally acceptable at Seabrook. The Administrator of EPA has undertaken to review that decision. However, the Administrator's decision may not be forthcoming for some time, and any decision which is taken may simply precipitate more hearings. As a result, there is now considerable doubt concerning what position EPA will ultimately take as to the cooling system required for the Seabrook facility, at least should the applicant adhere to its preference for once-through cooling.

EPA was not the only other agency from which the applicant was required to secure permission.² One year before it filed an application with the Commission, the applicant sought approval of the Seabrook site from the Site Evaluation Committee of the New Hampshire Public Utilities Commission. After a two-year proceeding, including 32 days of hearings with cross-examination resulting in 5800 pages of testimony involving approximately 120 witnesses and 200 exhibits, the Seabrook site was approved.

Furthermore, before we may issue a construction permit we must receive a

²In the Applicant's Environmental Report (ER), it listed 43 separate licenses, permits and approvals which applicant believed were necessary in connection with Seabrook. 2 ER 12.2.

certificate from state authorities certifying that proposed operations at the proposed site will meet applicable Federal water quality standards, and any additional standards which state law may impose. In this case, this certificate, issued pursuant to Section 401 of the Federal Water Pollution Control Act (FWPCA), was the result of a proceeding before the New Hampshire Water Supply and Pollution Control Commission. That Commission decided in May and October 1975, that the proposed facility complied with the relevant provisions of the FWPCA. No site other than Seabrook was apparently presented to or qualified by that Commission. The 401 certificate was issued:

[i]n light of, and conditioned upon, the provisions of EPA "*Determinations*," relative to Sections 316(a) and 316(b), FWPCA, as regards the condenser cooling system, issued on March 18, 1975, and modified by letter dated May 16, 1975.³

Neither the New Hampshire Commission nor the state has acted to rescind the certificate which, at this writing, remains in force.

Strongly related to the cooling system question, and an integral part of the NEPA analysis in this case, is the analysis of possible sites for the proposed plant. The plant is to be designed, constructed and operated by the lead applicant, Public Service Company of New Hampshire, pursuant to an Agreement for Joint Ownership, Construction and Operations of New Hampshire Nuclear Units, on behalf of a group of utility joint owners. Eleven separate utilities—all members of the New England Power Pool—are parties to the agreement. However, Public Service Co. of New Hampshire, as a 50% owner of the facility, has by far the largest ownership share. Three other utilities would have ownership shares of 20%, 12% and 9%, respectively. The remaining seven utilities would have very small ownership interests, ranging from 2.5% to less than 1%. In light of this distribution of ownership interests, the Public Service Company's environmental report and the staff's environmental statement confined consideration of alternative sites to sites located in or near the lead applicant's service area.

Within that area, 19 possible sites in New Hampshire and on the southernmost seacoast of Maine were reviewed, with four alternatives receiving particularly close attention. The staff's environmental statement discusses alternate sites in some detail and includes the following summary of areas considered:

Nineteen potential locations for siting a nuclear power station have been considered. None of the five potential seacoast locations in Maine were adjudged suitable. Three estuarine locations in New Hampshire were evaluated and rejected. Offshore locations, either floating nuclear stations or a station sited on one of the Isles of Shoals, were likewise considered and found to be

³The somewhat complicated history of this 401 certificate is discussed in ALAB-366, 5 NRC at 55-56.

unsuitable. Four seacoast locations in New Hampshire were considered; of these, Seabrook was considered to be the best choice. Six inland sites in New Hampshire were evaluated of which two were found to be potentially suitable and were then compared with the Seabrook site (Table 9.2). Final Environmental Statement 9-10; *see id.* at 9-4 to 9-10.

It is in the nature of these applications that the site chosen by the applicant receives the most intensive analysis—it is this site which must be certificated by State and EPA authorities and evaluated as safe and environmentally suitable by our own staff. Here, that effort required detailed environmental information about the Seabrook site comprising several hundred pages of the applicant's environmental report.⁴ Four other sites were examined with some care, as reflected in the environmental report and the Licensing Board's initial decision.⁵

This focussed analysis is, however, the result of a process which injects our staff and the public at stages well before actual hearing. As explained in greater detail within, the Commission's staff may be consulted even before an application is filed, at a time when significantly less of a commitment attaches to any particular site. Public awareness of a proposed site and possible alternatives to it begins no later than the simultaneous docketing of an application and the applicant's environmental report, and the public's opportunity to participate in the process of evaluation and choice begins at the same moment. The staff's draft environmental statement (DES) provides a further opportunity for public comment; and the licensing hearing following publication of the Final Environmental Statement (FES) is a final check.

The sufficiency of the alternate site analysis and the adequacy of the Seabrook site—both individually and comparatively—for closed-cycle cooling are now central to the review proceeding before us. Before proceeding to the merits of these and related issues, a brief recapitulation of the Licensing and Appeal Board determinations on these points is warranted.

The Licensing Board was urged both by our staff and by the applicant to find Seabrook suitable for closed-cycle as well as open-cycle cooling. By a divided vote it found the site suitable for once-through cooling—member Salo concluding in dissent that Seabrook was unacceptable with once-through cooling. The Board unanimously concluded that the site was unacceptable for closed-

⁴See Environmental Report, Seabrook Station, Vols. I-III.

⁵These were the sites located at Litchfield, Rollins Farm, Gerrish Island and Moore Pond. The advantages and disadvantages of each of these sites relative to Seabrook are summarized at some length, including consideration of transmission lines, cooling water requirements, impact on biota, population distribution, loss of productive farmland, aesthetics, and several other factors. *See Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2)*, LBP-76-26, 3 NRC 857, 907-11 (June 29, 1976).

cycle cooling, albeit with little in the way of supportive findings or reasoning.⁶ Apparently for this reason, it made comparisons with alternative sites only on the assumption that open-cycle cooling would be employed at the Seabrook facility.

So far as comparative sites are concerned, the Board concluded, without specific reference to sites distant from the applicant's service area, that "there had been adequate consideration of alternative sites." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-76-26, 3 NRC 857, 911 (June 29, 1976).

Each of these rulings was taken up on review. The Appeal Board was unanimous in rejecting the Licensing Board's finding that the Seabrook site was unacceptable with closed-cycle cooling, as unsupported by the record and based upon an improper legal analysis. The Board also unanimously concluded that the record did not contain adequate consideration of the environmental acceptability of Seabrook as a closed-cycle site both with regard to Seabrook itself and compared with other sites. The Board unanimously held that further hearings were necessary to remedy that deficiency. On the question of *which* alternative sites were to be compared with Seabrook, the Appeal Board majority found that any possible need to consider sites distant from the applicant's service area had been pretermitted by the intervenor's failure to raise these contentions in a timely fashion. The dissenter, going beyond this procedural ruling, found a basis in the record for concluding that considerations of load distribution made intervenors' choice of sites in the southern New England region unreasonable.

Perhaps the principal disagreement between the Appeal Board majority and the dissenting member concerned the impact of the present uncertainty concerning what kind of cooling system EPA will ultimately approve for Seabrook. The majority concluded that an adequate NEPA cost-benefit analysis could not be performed until the uncertainty had been finally resolved and that, in the circumstances, the permits must be suspended. This was so because, as they read FWPCA, the EPA Administrator might ultimately allow once-through cooling, but on the basis of different technical parameters and consequent higher cost. The resulting cost differences might be enough to tilt the NEPA cost-benefit analysis away from Seabrook and toward some alternate site or to make the costs of Seabrook outweigh its benefits. While agreeing that the record did not contain an

⁶ See 3 NRC at 897, 929, 939. The majority referred, without elaboration, to "cost, the major aesthetic impact, and other environmental impacts, and the fact that the Seabrook site was chosen originally because of the availability of the ocean for cooling water" in concluding that "use of natural-draft cooling towers [at Seabrook] is unacceptable." The Board went on to state, without explanation, that "closed-cycle cooling of any type should not be employed for the Seabrook Station." *Id.* at 929. Dr. Salo in dissent stated merely that he agreed with the majority that "cooling towers are not compatible with the Seabrook site." *Id.* at 939.

adequate analysis of closed-cycle cooling, the dissenter concluded that EPA would have to approve a closed-cycle system, if one were proposed by the applicant.⁷ On the basis of that legal analysis, he reasoned that a licensing board could perform a "worst-case" analysis, under which the higher cost of a closed-cycle system would be used. Should that analysis favor continued construction of Seabrook, even under the majority's reasoning, construction could be resumed prior to a definitive EPA ruling on the cooling system question.

On January 24, 1977, we issued an order taking review of ALAB-366, and calling for briefs from the parties. The effect of the Appeal Board's decision was stayed briefly, until the oral argument and until we had an opportunity to review any further stay applications.⁸ In addition, we transmitted a copy of ALAB-366 to the General Counsel of EPA, asking particularly for comment on the question whether that agency would be authorized to require an applicant to use once-through cooling, rejecting its closed-cycle proposals.⁹ Briefs and reply briefs were received from the parties, and oral argument was heard February 7, 1977. That same day, we issued an order denying the applicant's request for a further stay of the Appeal Board decision and allowing the Appeal Board's suspension order to go into effect, with minor modifications.¹⁰ At the same

⁷See notes 9 and 49 *infra*.

⁸In that same order, we asked the Appeal Board to identify the remaining issues on the merits of the appeals before it which it had suggested in ALAB-366 might be "troublesome" and to provide us with a statement of their seriousness and the competing considerations involved. The Appeal Board responded on January 27, 1977, stating that "at this juncture we are still unable to forecast the probable result on the still unresolved questions." It noted that some of the unresolved issues may have no bearing on siting—whether a nuclear plant should be built at Seabrook as distinguished from another location. The Board listed five specific issues which it then viewed as "troublesome" in the sense of "difficult" or "close." The Board concluded with a caveat that it was "intimating no opinion at this time as to what ultimate conclusions will be reached on any of . . ." the listed issues. *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-368, 5 NRC 124.

⁹The General Counsel of the EPA responded on February 2, 1977. A copy of his letter is included as an appendix to this opinion. The General Counsel was of the view that EPA did not have the authority to reject an applicant's proposal for closed-cycle cooling. The letter stated, among other things:

. . . In short, EPA does not have the authority under the Federal Water Pollution Control Act to prohibit *per se* a closed-cycle cooling system at an existing source such as Seabrook. EPA only has authority to establish maximum effluent limitations guidelines for pollutants such as heat. A discharger may apply any technology which allows it to comply with the applicable effluent limitation guidelines. Such technology may result in an even greater degree of control on the discharge than required by the effluent limitation. Thus EPA cannot preclude a discharger from doing more than the permit condition requires to limit its discharge.

¹⁰The Board's order allows the applicant to continue to conduct activities at the site to the extent necessary to ensure the protection of (1) the environmental integrity of the site and (2) buildings, materials or personnel at the site. By our orders of February 7 and 17, we

(continued on next page)

time, we invited the parties to respond to questions which had troubled us in the course of oral argument, and which we address at length in the pages within.¹¹

The pages that follow show our reasoning in reaching the following conclusions:

First, the case is appropriately before us for review. It fits the relevant portions of our rules and, in any event, has a significance fully warranting Commission attention.

Second, we affirm the Appeal Board's basic conclusions in this case: that the construction permit for Seabrook with once-through cooling must be suspended in light of the present uncertainty concerning EPA's future course and the absence of a finding that the Seabrook site is acceptable for closed-cycle cooling; that the Licensing Board's analysis and the record before it does not establish that the Seabrook site is either acceptable or unacceptable for closed-cycle cooling; and that any analysis of closed-cycle cooling at Seabrook must include comparison with other sites.

Third, we outline how the Licensing Board should conduct the additional site comparison called for. In particular, we instruct that an application should not be denied on the basis of a comparison between the applicant's proposed site and an alternative site unless the alternative site appears to be obviously superior to the proposed site. We also hold that it is permissible for the cost-benefit comparison between an applicant's proposed site and any alternative site to reflect the actual cost and time necessary to complete a facility at each of the locations in question. We provide that the Licensing Board must decide whether to consider as additional alternative

(continued from previous page)

construed this order to permit new materials to be brought on site if a substantial economic penalty could be shown for failure to do so, and also allowed the applicant to continue excavation for Unit 1 pending the decision. Upon further consideration and for the reasons set forth in our order of February 17, the applicant will be allowed to complete that excavation.

¹¹ Those questions were:

1. What is the legal standard of comparison with reference to which alternative sites should be judged? Must the Board select the "best" site, or is it enough that there is no other site that is clearly superior to the Seabrook site, all relevant factors being taken into consideration?
2. In any comparison of Seabrook with other sites, what are the appropriate costs and time periods to be considered for the Seabrook site?
 - a) The cost and time required to complete Seabrook from its present state?
 - b) The cost and time which might reasonably have been anticipated at the time of the Seabrook CP [construction permit] issuance, as against other sites which had not progressed to the point of decision?
 - c) The cost and time which might reasonably have been anticipated for the Seabrook site once the utility had selected it as its preferred site?
 - d) Some other alternative?

sites, sites in New England where other nuclear plants either exist or were planned, and give guidance as to the bases for that Board decision and the scope of such added alternative site consideration as the Board may undertake. This section of the opinion concludes with a brief discussion of the significance of the recent case of *Kleppe v. Sierra Club*, ___ U.S. ___, 49 L.Ed.2d 576 (1976), which we find supports each of these conclusions.

Finally, we outline the circumstances in which construction at Seabrook may resume. We provide that if there has not been final determination by EPA of what cooling system may be used at Seabrook, and if the Licensing Board finds that Seabrook is an acceptable site for a facility with a closed-cycle cooling system both by itself and in comparison with alternate sites, then construction may resume on all portions of the facility except for the cooling system. If, alternatively, EPA were to decide that once-through cooling as planned at Seabrook is acceptable, the barriers to construction reflected in this opinion would largely disappear. In either event, any resumption of construction will possibly be affected by the resolution of other issues concerning the facility, issues still pending before our Appeal Board.

Overall, the sense with which we leave this case is that the parties and the law as it has been developing have placed too much emphasis on the procedure by which the Licensing Board reaches its conclusions after hearing, and too little on the process of environmental analysis by which proposals for licensing action are developed. By this opinion and through other means, the Commission seeks to stress the need for early efficient and environmentally sensitive resolution of site-related issues. We seek to do this by minimizing unnecessary and wasteful procedural burdens and by other means including as appropriate reliance on the judgment of other governmental bodies also called upon to make site acceptability determinations.

II. APPROPRIATENESS OF COMMISSION REVIEW

Initially we face a suggestion by counsel for the New England Coalition on Nuclear Pollution (NECNP) and the Seacoast Anti-Pollution League (SAPL) that it would be inappropriate for us to review the Appeal Board's order, or to speak to the two questions which we identified in our Order of February 7. Counsel views ALAB-366 as limited to its facts and presenting no issues of general importance warranting Commission review. As to the two identified questions, which obviously do have such significance, he urges us "to refrain from reaching any decision on or stating any tentative thoughts on the two issues identified in its Order at least until the ASLB has had an opportunity, with the benefit of the

parties, to more properly frame the issues consistent with the facts of this case.” We reject these suggestions. We think it is entirely appropriate that this important case be reviewed now at the Commission level and that we provide as much guidance as we can for the further proceedings that are required.

Counsel’s first argument proceeds from a judicial analogy which has only partial application in our licensing proceedings. While we may deal with matters before us in adjudicatory hearings only on the basis of the record which has been compiled, the Nuclear Regulatory Commission is not a court constrained to the “passive virtues” of judicial action, which can afford in every instance to wait for the better-framed issue or fully developed argumentation. We have a regulatory responsibility which includes the avoidance of unnecessary delay or excessive inquiry in our licensing proceedings. Nor can we regard the proceedings of our appellate and hearing tribunals with the detachment the Supreme Court may bring to trial and intermediate appellate action; the analogy is imperfect. Ultimately the members of the Commission are responsible for the actions and policy of this agency; and for that reason we have inherent authority to review and act upon any adjudicatory matter before a Commission tribunal—subject only to the constraints of action on the record and reasoned explanation of the conclusions—constraints imposed on all agencies by the Congress.

To be sure, as counsel notes, our normal practice for review is stated in 10 CFR 2.786(a).¹² Our election to review this decision is fully warranted by that rule. As already remarked, this has been a sharply contested case, one in which both hearing panel and appeal board have been divided in their approach. The Appeal Board directed a new hearing, but divided over both the course and the outcome of that hearing and, as we will develop, failed to give the guidance necessary to keep that hearing within appropriate bounds.

More importantly, however, our authority to intervene and provide guidance in a pending proceeding is not limited by the terms of 10 CFR 2.786(a). As we stated in the recent *Clinch River* proceeding, while that rule “states the ordinary practice for review, it does not—and could not—interfere with our inherent supervisory authority over the conduct of adjudicatory proceedings before this Commission.” We noted further that “in the interest of orderly resolution of disputes, there is every reason why the Commission should be empowered to step into a proceeding and provide guidance on important issues

¹²That regulation provides in part:

... the Commission ... may on its own motion direct that the record of the proceeding be certified to it for review on the ground that the decision or action of the Atomic Safety and Licensing Appeal Board (1) is, with respect to an important matter, in conflict with statute, regulation, case precedent, or established Commission policy, and (2)(i) could significantly and adversely affect the public health and safety or the common defense and security, or (ii) involves an important question of public policy. The effect of the Atomic Safety and Licensing Appeal Board’s decision or action is then stayed until the Commission’s review of the proceeding has been completed.

of law or policy." *United States Energy Research and Development Administration* (Clinch River Breeder Reactor Plant), (hereinafter *Clinch River*), CLI-76-13, NRCI-76/8 67, 75-76 (August 27, 1976).

In this light, we are not disposed to accept counsel's suggestion that we leave the question of what standards are to govern the NEPA analysis directed on remand to resolution in the first instance by the hearing board. The questions we asked counsel to address are of obvious significance, and of the character to which appellate bodies regularly speak when they conclude their guidance may be useful in avoiding further error or misunderstanding. *See, e.g., Aeschliman v. NRC*, 547 F.2d 622 (D.C. Cir. 1976), *cert. granted*, 45 U.S.L.W. 3570 (February 22, 1977). The questions are not fact-dependent, and resolution of them now could materially shorten these proceedings and guide the conduct of other pending proceedings. It would be wasteful and possibly counterproductive to send the matter back to the Licensing Board without any guidance on these questions. The Board will have full authority to develop an appropriate factual record in the light of the guidance we are providing.

This case has been widely depicted as a serious failure of governmental process to resolve central issues in a timely and coordinated way—a paradigm of fragmented and uncoordinated government decisionmaking on energy matters and of a system strangling itself and the economy in red tape.¹³ This is a matter of obvious and appropriate concern at the Commission level. In reviewing this case and providing such guidance as we can from the present perspective, we seek to promote a more coordinated and rational approach to the regulatory process, within the constraints imposed upon us by present Federal legislation.

¹³In ALAB-366 at 51-54, the Appeal Board described how the responsibilities of the Commission and EPA are supposed to mesh in passing upon an applicant's proposal. Normally, pursuant to the Second Memorandum of Understanding between EPA and the NRC, 40 *Fed. Reg.* 60115 (December 31, 1975), EPA will have completed its determinations relating to cooling systems in advance of issuance of the FES and so well in advance of Licensing Board action. The Second Memorandum is to be applied "to the maximum extent practical" to pending proceedings such as Seabrook. 40 *Fed. Reg.* at 60120. *See* ALAB-366 at 52 n. 21. Even the Second Memorandum will not eliminate problems in situations similar to Seabrook in which applicants seek an exemption from EPA regulations pursuant to Section 316 of the FWPCA. At oral argument the Staff informed us that several applicants for construction permits were currently seeking such exemptions from EPA.

Although the Second Memorandum was intended to speed EPA decisionmaking rather than to delay that of the NRC, it is possible that the Commission may in some cases be delayed if it waits until EPA and the state have made their determinations as to the acceptability of proposed cooling systems. However, since, as we indicate below, the existence of those approvals has weight for NEPA purposes, by ensuring that those approvals are given before deciding on licenses, the vulnerabilities of applications on NEPA grounds will be lessened. Even so, NEPA analyses will continue to be required for all applications and in particular cases the results of such analyses may require denial or modification of applications.

III. ADEQUACY OF THE RECORD ON CLOSED-CYCLE COOLING AT SEABROOK

On the merits, the major question before us concerns the adequacy of the record with respect to the use of closed-cycle cooling at the Seabrook facility. This possibility was analyzed in the environmental documents submitted by the applicant and by the staff, although not with the thoroughness attending the preferred open-cycle design. If it could be concluded on this record either that the site was unacceptable with closed-cycle cooling, or that it was qualified as a closed-cycle site, the need for further proceedings would be sharply reduced.

On this issue the Licensing Board concluded that Seabrook would be unacceptable with closed-cycle cooling; it conditioned the construction permits on the use of once-through cooling. The Appeal Board was unanimous that the record was insufficient to support that conclusion, noting that necessary factual findings had not been made. ALAB-366 at 63. The Appeal Board was also unanimous that the opposite finding, that the use of closed-cycle cooling was acceptable, also could not be made on the basis of the present record, although it divided over the degree of effort that would be required to produce a record on which either finding could be based. *Compare id.* with *id.* at 81-82. The disagreement principally concerns the suitability of the Seabrook site for closed-cycle cooling, which the dissenter regards as essentially established. Comparison of a closed-cycle cooling Seabrook facility with alternative sites, all agree, remains to be done.

We have not closely reviewed the Appeal Board's determination in this respect. "As a general matter, this Commission does not sit to review factual determinations made by its subordinate panels." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-76-17, *supra* NRCI-76/11 at 467. Hearings are required, and findings must be made, both as to the acceptability of closed-cycle cooling at the Seabrook site, *per se*,¹⁴ and as to the characteristics of that site vis-a-vis others if such cooling is employed. The outcome of the hearings will depend on the entire record, and we believe the Licensing Board on remand must be free to secure whatever information it deems required to resolve the issues before it.

In this context, and intending no limitation on its proceedings, we note our own impression after limited review that, as the dissenting Appeal Board member noted, the record already contains much helpful analysis. A substantial body of material appears to show that the most appropriate closed-cycle cooling

¹⁴The Licensing Board's error may have arisen from the belief that if once-through cooling was preferable at Seabrook, no alternative cooling system was acceptable. While closed-cycle cooling might be excluded, for example, for reasons of safety, the environmental preferability of an alternative is not enough to exclude an option which may be required for extrinsic reasons—here, EPA decisions.

system for Seabrook would be wet natural-draft cooling towers.¹⁵ The FES also contains analysis supporting a conclusion that wet natural-draft towers would be environmentally acceptable for Seabrook, subject to appropriate development and analysis of location and design particulars in the normal course of licensing.¹⁶ In reaching its conclusion that wet natural-draft towers would be an acceptable alternative to once-through cooling, the staff took into account increased costs for the towers over once-through, loss of overall plant efficiency, and increased air and land impacts, as well as the fact that the reduced volume and temperature of the water returned to the ocean would decrease the aquatic impact as compared with a once-through system¹⁷ (FES 11.9.2.3 and Table 11.6).

¹⁵ Alternative closed-cycle cooling systems were rejected, upon analysis, for various reasons:

- (a) Applicant and staff rejected wet mechanical-draft towers because salt deposition (with seawater cooling) and fogging and icing could be major problems. Noise would be at levels viewed as unacceptable by HUD over an approximately 2.8 square-mile area (in which 473 people lived in 1970) (FES 9.2.1.2, 11.9.2.1 and Table 11.6). These drawbacks were judged to be controlling, in spite of advantages offered by the mechanical-draft towers, viz., that, being lower than natural-draft (60 ft. v. 500 ft.), they would be less visible and less likely to have birds collide with them; and that they would cost about \$14 million less than natural-draft, though about \$46 million more than the once-through design proposed (FES 9.2, 11.9 and Table 11.6; ASLB Transcript at 5795-5796, 6199-6203).
- (b) Dry cooling towers were eliminated by the staff as "not a practical alternative" for Seabrook, because the loss of power-generation efficiency that they would entail would lead to about 15 percent higher electric energy cost (at the bus bar) than with wet towers and would require development of new turbine design (FES 9.2.1.3).
- (c) Cooling ponds were rejected for their large impacts on land use and the salt marshes (FES 9.2.1.4).
- (d) Spray ponds and canals were rejected on the grounds that their probable environmental effects, of fogging, icing and salt drift, would outweigh a small economic advantage (FES 9.2.1.5).

¹⁶ The following two paragraphs, quoted from the Final Environmental Statement are particularly relevant here:

- (a) The impacts . . . are deemed sufficiently minor that it is concluded that natural-draft cooling towers would be an acceptable alternative, environmentally, to the once-through cooling system (FES 11.9.2.2).
- (b) It is concluded that the benefit/cost ratio considering only the environmental impacts of the natural-draft tower is not appreciably altered compared to the preferred once-through cooling system. Although the benefit/cost ratio of the natural-draft tower considering economics is reduced compared to that of the preferred once-through cooling system (Table 11.6), the benefit/cost ratio remains sufficiently attractive to warrant construction (FES 11.9.2.3).

¹⁷ Specific impacts considered include water use (ALAB Tr. at 10519, 10873, and FES 11.9.2.3), appearance of the towers and the esthetic impact of that appearance (FES 9.2.1.1, 11.9.2.2; and ALAB Tr. at 5778, 5793-5797), visible plumes from the towers (FES 11.9.2.2; Applicant's Environmental Report, Table 10.1-3), fog probability (FES 11.9.2.2; Applicant's ER, Table 10.1-5), saline drift (FES 11.9.2.2; Applicant's ER, Table 10.1-2), and noise (FES 11.9.2.2). Impact on wildfowl, though not noted in the FES, was discussed at the ASLB hearing (Tr. at 6199-6203).

On the other hand, the staff, a unanimous Appeal Board, and every party except the applicant, all recognize, in varying degree, significant deficiencies in the record. The record does not appear to contain detail sufficient for (a) assessment of the most important impacts to permit adequate overall comparison of Seabrook with alternative sites,¹⁸ and (b) assessment of the impacts of specifics of the design of a closed-cycle system, such as should occur in the normal course of licensing (e.g., locations and general design of towers, intake and discharge systems, and nature and impact of effluents). In this respect, we find the Appeal Board dissent's analysis of the deficiencies helpful, but would not view them as definitive. The Licensing Board, with the help of the parties, may well find modification of the list of deficiencies to be appropriate.

The Appeal Board and the parties are divided over what the status of the Seabrook construction permits should be in the interim pending the determinations of the Licensing Board on remand. The Appeal Board majority carefully analyzed prior Commission precedent and the case of *Hodder v. NRC*, No. 76-1709 (D.C. Cir. 1976) (unpublished *per curiam* order), before concluding that "... it makes no sense for construction now to proceed at Seabrook when there remains not just a theoretical but a manifestly real possibility that the site will ultimately be rejected in favor of some alternative to it." ALAB-366 at 72; see *Id.* at 68-72. The Appeal Board majority declined to employ the approach suggested by our staff—an approach we had ordered to be used in considering *pendente lite* suspension of permits in the quite different setting considered by us in our General Statement of Policy on fuel cycle issues (GSP), 41 *Fed. Reg.* 34707 (August 10, 1976). Dr. Buck would have employed the GSP test, and would not have suspended the permits. ALAB-366 at 84-91. The practical urgency of this question has been greatly reduced by the decision of the applicant to scale down substantially its activities at Seabrook pending resolution of the cooling system question.

Were it generally applicable—a matter disputed by both staff and the applicants—the approach suggested by the court's order in the *Hodder* case would seem to require suspension of outstanding construction permits whenever the NEPA requirement of consideration of alternate sites was found not to have

¹⁸The staff's comparison of alternate sites was based on cooling systems deemed (at the time of making the comparisons) the most appropriate for each site. Thus, for inland sites natural-draft wet cooling towers were postulated; for coastal sites, notably Seabrook, once-through systems using seawater were posited. This was consistent with the general view that inland sites would take closed-cycle cooling unless proved otherwise in a particular case (ASLB Tr. 10514).

been met. We do not need to decide whether that approach is applicable here.¹⁹ It suffices to agree with the view, implicit in both opinions below, that the question of suspension of the permits herein must at the least be decided on the basis of (1) traditional balancing of equities and (2) consideration of any likely prejudice to further decisions that might be called for by the remand. This test is to be distinguished from the more stringent test of *Virginia Petroleum Jobbers' Association v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958), which has been used in ruling on stays pending review. See, e.g., *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-338, NRCI-76/7 10, 13 (1976).

Wholly apart from issues of comparison in this case there remains open the question whether Seabrook is an acceptable site if closed-cycle cooling is required by EPA, as it well may be. That fact is decisive. Neither this Commission, nor any of its subordinate tribunals, has yet determined that Seabrook is an acceptable site for construction of a facility employing a closed-cycle cooling system and until such a finding is made, we cannot permit construction to continue when use of such a system which could render the site unacceptable may be required. Before construction may be resumed at Seabrook, the open question of site acceptability as well as other open issues, must be resolved in the fashion discussed in Part IV.B. of our opinion below, and we therefore conclude that construction activities beyond those already authorized, n. 10, *supra*, must remain suspended pending the resolution of that question, and the further issues of comparison.

IV. SITE COMPARISON AND PROVISIONAL RESUMPTION OF CONSTRUCTION

If the Licensing Board should again conclude, in this instance with detailed findings, that—wholly apart from issues of comparison—closed-cycle cooling is unacceptable for the Seabrook facility, that finding would bring this aspect of the proceeding to an end. Construction of the facility could continue only if and when final EPA approval to proceed with once-through cooling had been obtained.²⁰ However, if closed-cycle cooling at Seabrook proves environmentally

¹⁹We note that there are major distinctions between the *Hodder* case and this case. In particular, in *Hodder* the Appeal Board found that the FES treated the alternate site analysis in a "cavalier and misleading fashion" which appeared to reflect significant failures of effort by responsible parties. *Florida Light and Power Company* (St. Lucie Nuclear Power Plant, Unit No. 2), ALAB-335, 3 NRC 830, 839-40 (1976). Here, the problem arises from the Licensing Board's statements regarding closed-cycle acceptability and EPA's unanticipated about-face.

²⁰At oral argument one of the intervenors suggested that we must defer action until after completion of judicial review of the final EPA action. We believe, however, that we may rely on a presumption of administrative regularity in this respect. Cf. K. Davis, *Administrative Law Treatise*, § 11.06 (1958), See text accompanying n. 50, *infra*.

acceptable, but nevertheless imposes an economic and environmental penalty, this will give rise to the need to reassess the attractiveness of the site with this added burden, in comparison to other possible locations for nuclear facilities. It will also raise the question whether, and under what circumstances, construction of the facility could resume in advance of a final EPA decision. It is these issues—site comparison and provisional resumption of construction—with which we are principally concerned.

A. Site Comparison

The need to compare the Seabrook facility with other possible sites arises directly from NEPA, which requires that the cognizant Federal agency consider alternatives to a proposed major Federal action. Section 102(2)(C)(iii); 42 U.S.C. 4332(c)(iii). Consideration of alternatives has been called the “linchpin” of environmental analysis. See *Monroe County Conservation Society, Inc. v. Volpe*, 472 F.2d 693, 697-698 (2nd Cir. 1972). Beyond consideration of alternatives, the courts have found an additional requirement for a cost-benefit analysis in which the need for the proposed action is weighed against its environmental costs. See, e.g., *Calvert Cliffs' Coordinating Committee v. AEC*, 449 F.2d 1109 (D.C. Cir. 1971).

In the nuclear power reactor licensing setting, the siting of proposed nuclear power plants has frequently been the most vigorously contested issue. Disputes over proposed sites have often had both absolute and relative aspects—absolute, in the sense that the site itself is challenged as unsuitable for a nuclear plant on either environmental or safety grounds (or suitable only if specified measures are taken to preserve identified safety or environmental values); relative, in the sense that alternative sites are argued to be more advantageous from an environmental or safety point of view.

It is the latter comparison which we address in this section of our opinion. We have an undoubted obligation to consider possible alternative sites for proposed nuclear reactors, and both applicants and our staff recognize that obligation in their preparation of environmental impact analyses. What has proved less clear, however, is the basis on which this comparison is to occur—whether we may approve a proposed reactor only if the proposed site proves the most advantageous among those considered, *i.e.*, the optimal site, or whether some less rigorous standard is appropriate. A further issue is to what, if any, extent we may consider, in making the requisite comparison, that the proposed site may have been brought closer to fruition than alternatives which have been proposed. Both issues were posed to the parties following oral argument in this case, and both issues, discussed below, have proved to be difficult. Finally, we consider a question raised by intervenors before the Appeal Board and before us—whether the search for alternative sites was sufficiently broad, or should have extended to additional sites relatively distant from the lead applicant's service area.

Each of these issues bears on the reasonableness of the Commission's process for implementing NEPA. It is therefore appropriate to begin with a fuller description of that process as it relates to site selection and comparison, and as it occurred in this case. Particularly with respect to the latter aspect, we are conscious that the Licensing Board is far better aware than we of the history of site analysis in this case and, indeed, that the dissenting member of that Board appears to have doubted the adequacy of our staff's pursuit of site-related issues. In stressing, then, in the pages that follow, the importance of process to the conclusions we reach, we should not be understood as finding that the process in this case did meet the standards which should be achieved.

While the Licensing Board's hearing and decision mark the first adjudicatory consideration of a proposed license, that consideration, in fact, comes late in our licensing process. The full range of NEPA considerations, including technological alternatives to a facility and alternate sites for a facility are ventilated and considered in a lengthy and environmentally sensitive process that begins well before an application is formally docketed with the Commission. A Commission regulatory guide, Regulatory Guide 4.2, establishes guidelines as to the type of information and analysis an applicant should provide in an application for purposes of facilitating NEPA review. These guidelines are designed to sensitize the applicant to environmental considerations at the very outset of the applicant's preparation of a possible application.

A formal proposal for "major Federal action," in the NEPA sense, does not exist until an application has been docketed and brought to the point where the staff must determine whether it can support the application. Interactions with our staff, however, begin at a much earlier point, and the staff may discourage or reject proposed sites at an earlier stage. Our procedures are designed to encourage that result when appropriate. Section 2.101 of our regulations, 10 CFR 2.101, provides procedures by which prospective applicants may confer informally with the staff prior to filing an application, so that the staff may preliminarily review the application.²¹ All applications for construction permits or operating licenses, whether or not they were informally discussed with the

²¹The staff has long encouraged prospective applicants to inform it of a planned application as much as twelve months in advance of actually tendering the application. Beginning in the summer of 1974, our staff has routinely been sending a letter to prospective applicants requesting that pre-tender notice include certain specified information, including information about the proposed facility's location; population densities; nearby transportation, industrial and military facilities; foundation characteristics; seismology; meteorology generally for the area; the proposed date on which applicant intends to initiate data collection for the proposed site; and hydrology. Our study of the record in this case does not indicate whether or when preapplication information may have been submitted to the Commission, or whether any meetings to discuss the intended application occurred, other than those associated with the initial tendering of the application in March 1973, its rejection and subsequent retendering and docketing.

staff at an earlier point, are subjected to an initial format review for completeness and conformity with Commission requirements before being formally docketed. The application in this case was initially tendered in March, 1973, and rejected on May 7, 1973, following such a preliminary review for completeness. The staff's letter to the applicant, on file in our Washington, D.C., Public Document Room, indicates that among the reasons for this rejection was that the proffered environmental data lacked "information and detailed evaluation of alternate sites for the Seabrook station including sufficient data and justification to allow the staff to perform an independent evaluation of alternate sites." The application was refiled on June 29, 1973, with the submission of additional information, and on July 9, 1973, found acceptable and docketed. See 3 NRC at 850.

At the time of docketing of the application the applicant files its environmental report (ER). This document must follow the format for an Environmental Impact Statement. 10 CFR 51.20. It is placed in our Public Document Room as well as in state, regional and metropolitan clearinghouses in the vicinity of the proposed facility. 10 CFR 51.50. Filing of the application and the ER initiates an intensive staff review of the proposal during which the staff must assure itself that adequate consideration has been given to environmental concerns, again including alternatives to the proposed activity. This process takes place through exchange with the applicant which often lead to the filing of supplements to the ER, and through collection of information which may be in the hands of others, such as other governmental bodies; written comments on the ER may be received.²² In this case, applicants submitted "Supplementary Information" to the Environmental Report in October 1973 and on December 15, 1973; additional information, captioned "Supplemental Environmental Information" was submitted under cover of a letter dated May 5, 1975, and in July 1975. These supplements contained further exploration of environmental site-related concerns. For example, the staff requested, among other information, that applicant supply ecological and other data appropriate for staff analysis of site alternatives to the Seabrook site, *see, e.g.*, question 9.3 (December 15, 1973).

The hearing process begins at the same time. A Licensing Board is established after docketing, and the parties to the hearing (including intervenors, if any) begin a parallel process of review of the adequacy and accuracy of the ER through the medium of prehearing discovery, including interrogatories. In the Seabrook application, we note that extensive interrogatories were filed between

²²The record in the Commission's Washington, D.C., Public Document Room shows that comments on the ER were received from the State of New Hampshire and from the Advisory Council on Historic Preservation. Review of the record indicates staff contacts with other state bodies in a position to provide relevant information. *Infra*, p. 525 and p. 526 n. 23.

the applicant, staff and the various intervenors on environmental matters, including issues pertinent to site selection, *see, e.g.*, interrogatories dated November 8 and 21, 1973; January 5, 7, 14, 15, 18, 22, 30 and 31, 1974; February 1, 4, and 20, 1974; March 14, 21, 25 and 26, 1974.

Subsequent issuance of a Draft Environmental Statement (DES)—typically 12 months after docketing—marks the first stage at which the staff formally indicates its views on the development of the environmental review of the proposal. The DES may indicate staff doubts about the proposal. Indeed, if the staff believes that inadequate data about environmental considerations is available or that reasonable alternatives have not been adequately explored, it can and should decline to issue a DES. During the preparation of the DES the staff may and should, to the extent appropriate under the circumstances, conduct independent analysis of the environmental questions that arise in connection with the proposed facility. We note that the record indicates that, with respect to the Seabrook application, the staff and its consultants reviewed, apart from material prepared by or for the applicant, a number of independent studies and sources on the issue of alternate sites (Tr. 10420, 10421) and spoke to members of the New Hampshire Site Evaluation Committee, State Fish and Game personnel and the Southeastern New Hampshire Planning Commission on this matter. In addition to the proposed site itself, the following sites were visited by staff: Lamprey Pond, Philbrick Pond, Gerrish Island, Moore Pond (on two occasions), Litchfield, Garvins Falls, Odiornes Point, Rollins Farm and southern Maine coastal sites as far north as Kennebunkport. Testimony indicates that of these, the sites at Lamprey Pond, Philbrick Pond, and on the Androscoggin River, were visited at the instigation of the staff. The staff also surveyed generally the Connecticut River area.

The DES is itself subject to public comment. Specifically, as required by NEPA, the DES is circulated for comment to the Council on Environmental Quality, Federal agencies with special expertise or jurisdiction by law with respect to any environmental impacts involved, the Environmental Protection Agency, appropriate state and local agencies, the relevant public document rooms and clearinghouses, and all parties to the pertinent proceeding. Additional public comment is encouraged through news releases provided local newspapers, and notice in the *Federal Register*. For the Seabrook DES, *see* 39 *Fed. Reg.* 13305 (April 12, 1974), a press release (AEC # T-164) was issued to approximately 3,250 recipients of daily and weekly AEC mailings, including newspapers, other media and the general public.

After receipt of this round of comment the staff prepares and releases a Final Environmental Statement (FES). It is the obligation of the staff in the FES to "make a meaningful reference to the existence of any responsible opposing view not adequately discussed" in the DES, "indicating the response to the issues raised." 10 CFR 51.26(b). All substantive comments received are attached

to the FES, whether or not that comment is individually discussed in the test of the FES. 10 CFR 51.40(b).²³ The Licensing Board hearing follows publication of the FES.

Previous rulings of this Commission have emphasized the continuum of environmental review which is outlined above. In rejecting arguments that a Licensing Board should have independently reexamined all of the issues of an environmental nature covered by an FES, the Appeal Board has made clear the importance of staff review and the nature of the Licensing Board's role as a final check in the NRC NEPA process.

A licensing board in a construction permit proceeding such as this is expected to evaluate independently and resolve the appropriate contentions of the various parties, to assure itself that the regulatory staff's review has been adequate, and to inquire further into areas where it may perceive problems or find a need for elaboration. If it finds itself not satisfied with the adequacy or completeness of the staff review, or of the evidence presented in support of the license application, it may, for example, reject the application, or may require further development of the record to support such application. In that connection, it may issue an order which in effect requires one or more of the parties to perform additional research. But for the Board to duplicate the role of the staff, or for it to perform independent basic research, is inconsistent with its adjudicatory role and beyond the scope of its delegated authority. *Consumers Power Company* (Midland Plant, Units 1 and 2) ("Midland"), ALAB-123, 6 AEC 331, 334, *rev'd. on other grounds sub nom., Aeschliman v. NRC, supra.*

This emphasis on process appropriately reflects both the fundamentally procedural character of NEPA, and the inevitable development in a proposal which will have occurred during the lengthy and arduous review process.

1. Standard of Comparison

In this context, we conclude that our staff has correctly stated the test to be employed in assessing whether a proposed site is to be rejected in favor of any of the alternative sites considered, namely, whether an alternate site is obviously superior to the site which the applicant had proposed (ALAB Tr. 10530). This conclusion is particularly appropriate where, as here, applicants' proposed site was earlier approved in a state proceeding, in which one required finding was that construction of the facility "will not have an unreasonable adverse effect on esthetics, historic sites, air and water quality, the natural environment and the

²³The FES indicates that comments were received on alternate site issues from the Attorney General of New Hampshire, the Society for the Protection of New Hampshire Forests, L. Beers and J. Willcox Brown, members of the public.

public health and safety." N.H. Rev. Stat. Ann. 162-F:8 (Chapter 357 of the Laws of 1971). The fact that a competent and responsible state authority has approved the environmental acceptability of a site or a project after extensive and thorough environmentally sensitive hearings is properly entitled to "substantial weight" in the conduct of our own NEPA analysis. *Virginia Electric and Power Company* (North Anna Nuclear Power Station, Units 1 and 2), LBP-75-50, 2 NRC 879, 890 (1975), *aff'd.*, ALAB-325, 3 NRC 404 (1976); *pet. for rev. pending*, *Culpeper League for Protection v. NRC*, No. 76-1484 and 76-1532 (D.C. Cir.). Such limited reliance is clearly acceptable under NEPA. *Cf. Essex County Preservation Association v. Campbell*, 536 F.2d 956, 959-60 (1st Cir. 1976).

We are urged by intervenors, however, that only "that ideal alternative which would achieve all the goals of the project and all of the environmental goals established by NEPA" may be approved. NECNP response to Commission Order of February 7, 1977, at 11 (February 14, 1977). The proposition urged on us is that the "... environmentally preferable alternatives [should] be preferred over Seabrook unless Seabrook is substantially better on other grounds..." *Id.* at 13. This assertion is easily answered. NEPA does not require such an unbalanced weighting of environmental over other factors such as economic considerations or the possible health and safety advantages of particular locations. In the Seabrook record, for example, the advantages of the Moore Pond site are primarily environmental. The population near the site is significantly lower than that near the Seabrook site, and the site has lesser potential for aquatic impact. However, the remoteness of the site would lead to increased construction costs and require about 370 miles of additional transmission lines, and rail access is difficult.²⁴ Similarly, an environmentally attractive site may be somewhat more active seismically than an alternative location. Even though design measures with attendant increased costs could be taken that would make the more active site acceptable from a safety perspective, it would be unreasonable to say that the environmental advantages must automatically take precedence.

The purpose of the National Environmental Policy Act was to insure that

²⁴There may be costs in placing a generating unit on a site which, though it is environmentally attractive, is, for example, remote from population centers. Even if one were able to ignore the cost of constructing additional transmission lines it is necessary to consider that when power is transmitted, some portion of it is lost from the transmission lines. The longer the transmission line, the greater the loss. This cost, which is capable of quantification, was noted as a disadvantage with respect to the Moore Pond site. *And see Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244 (1974). Additionally, transmission lines themselves give rise to environmental costs in terms of additional land use and aesthetics. *See, e.g., Virginia Electric and Power Company* (North Anna Power Station, Units 1 and 2), LBP-75-70, 2 NRC 879 (1975).

agencies of the United States give *appropriate* consideration to environmental values in the decisionmaking “along with economic and technical considerations.” Section 102(2)(b). Having found that government agencies, by and large, had been giving little or no weight to the environmental consequences of their actions, the Congress mandated a reordering of priorities “so that environmental costs and benefits will assume their *proper* place along with other considerations.” *Calvert Cliffs*, *supra*, 449 F.2d at 1112 (emphasis added). But, as the *Calvert Cliffs* decision noted, “Congress did not establish environmental protection as an exclusive goal.” *Id.* at 1112.²⁵

Two significant realities of the NEPA process support the use of the standard of obvious superiority—the inherent imprecision of cost/benefit analysis and the probability that more adverse information has been developed respecting the closely examined proposed site than any alternates. The imprecision springs from the nature of the cost/benefit analysis the Commission must perform: in the nuclear licensing context the factors to be compared range from broad concerns of system planning, safety, engineering, economic and institutional factors to environmental concerns, including ecological, biological, aesthetic, sociological, recreational, and so forth. Much of the underlying cost-benefit data is difficult of articulation, much less quantification. Given these difficulties, any evaluation of a particular site must inevitably have a wide margin of uncertainty.²⁶ If accurate overall assessments of these diverse factors were realistically available, one could appropriately employ a fairly strict standard of comparison and still have a high degree of confidence that the correct result had been reached. But where the data to be compared necessarily present a wide margin of uncertainty, one site must appear to be substantially “better.” To reject an application—the only means available for indicating the preferability of an alternate site—at this late stage in the licensing process requires substantial

²⁵The *Calvert Cliffs* decision contains the often quoted statement that “[o]nly in that fashion is it likely that the most intelligent, optimally beneficial decision will ultimately be made.” 449 F.2d at 1114. We agree with the staff that, taken in context, the *Calvert Cliffs* Court was “suggesting that ‘optimally beneficial’ decisions are the hoped for result of a government decisionmaking process that complies with the procedural requirements” of NEPA. In any event, appropriate distinctions may be drawn between those environmentally protective measures which can be achieved by agency action, as through conditioning a granted license, and those which may merely be hoped for. Where rejection followed by reapplication is the alternative indicated by environmental analysis, the agency’s inability to assure optimum benefit may be taken into account.

²⁶Attempts in previous licensing proceedings to assign values to, for example, flora and fauna have not been notably successful, and illustrate the imprecision with which we must necessarily work in this area. See *Consumers Power Company* (Midland Plant, Units 1 and 2), LBP-72-34, 5 AEC 214, 224 (1972), where intervenors attempted to place values on bird and animal life, assigning values of \$10 per sparrow and \$10 per mouse, and alleging a total “conservative” value of \$36,000,000 to the wildlife to be disturbed by construction.

confidence that one's judgment is correct—a confidence that can only arise where an alternate site is obviously superior.

This conclusion appears the stronger when one considers that the applicant's proposed site comes before the Board after having been intensively studied by the applicant, staff and intervenors for a period of years. The applicant is required to have produced an inventory of information about the geology, hydrology, meteorology and ecology of the proposed site. Through this required monitoring it is hoped that every major environmental impact that may result from construction of the facility will have been located and the potential problems with the site will have been identified. The alternate sites to which the proposed site is compared have undergone no comparable study. Common sense teaches that the more closely a site is analyzed, the more adverse environmental impacts are likely to be discovered.²⁷ It would, therefore, be mistaken to conclude that an alternate site which appeared marginally superior to the proposed site, would remain superior upon further investigation, considering all of the possible but unknown disadvantages of the alternate site. Nor does, as one intervenor has suggested, the solution to this problem lie in requiring more intensive analysis of alternate sites by applicants before they submit their applications. Absent a mechanism which would permit banking of any sites which might be previously approved—a mechanism this Commission has sought legislatively—the costs of that approach could not conscionably be imposed on private applicants and their ratepayers.²⁸

Our acceptance of the "obviously superior" standard for site selection derives, as well, from the reality of our situation in passing on license applications. The licensing process is structured for rejection or acceptance of the proposed site rather than choice of sites. If one of our licensing boards disapproves a proffered site, it lacks authority to require an application to be filed for a facility at another location. Rather, the applicant must choose to do so and the whole process of staff review leading to hearing must be rerun if the facility is to be at the alternate site.²⁹ The Board's powers in this respect stand in contrast

²⁷The Tennessee snail darter, for example, was found only as the result of close environmental examination. *Hill v. TVA*, ___ F.2d ___, No. 76-211 (6th Cir. January 31, 1977).

²⁸Even if applicants did submit exhaustive analyses of several alternative sites along with their application, the Commission would still have to consider additional alternatives raised by the staff or, as here, by the intervenors. It would be impossible to generate the necessary information on each of those sites to allow an equal comparison between them and the proposed site.

²⁹The Commission has long encouraged, as a legislative or regulatory matter, measures which would permit site approvals in advance of particular reactor applications and in this manner permit creation of a "bank" of qualified sites. See S. 1717 and H.R. 7002, 94th Cong., 1st Sess. (1975); S. 3286 and H.R. 13512, 94th Cong., 2nd Sess. (1976); and see the proposed rule making entitled "Early Site Reviews and Limited Work Authorizations," 41

(continued on next page)

with its authority to require environmentally protective measures at the particular location site proposed in the application. In granting a proposed license, the Board may condition it upon some precautionary measures required at the chosen site. Such conditions are comprehended within the proposed licensing action; selection of an alternative site is not, and that influences the nature of the review. In sum, we think it appropriate that a licensing board refuse to take the proposed "major Federal action," *i.e.*, deny the requested license, not when some alternative site appears marginally "better" but only when the alternative site is obviously superior.³⁰

2. Comparison of Facility Completion Costs

One component in cost-benefit analysis is the cost of a proposal in purely economic terms. During oral argument we realized that a possibly significant issue in connection with performing the comparative cost-benefit analyses called for by ALAB-366 would be the manner in which the time and costs of completing a facility at Seabrook would be compared to the time and costs of constructing such a facility at alternate sites. Accordingly, we asked the parties to address the question:

In any comparison of Seabrook with other sites, what are the appropriate costs and time periods to be considered for the Seabrook site?

- a. The cost and time required to complete Seabrook from its present state?
- b. The cost and time which might reasonably have been anticipated at the time of the Seabrook CP issuance, as against other sites which had not progressed to the point of decision?

(continued from previous page)

Fed. Reg. 16835 (April 16, 1976). These proposals all focus on early and separate review of facility sites as one of the best means to eliminate unnecessary delays and improve the licensing process.

In this regard, our staff is now conducting a study of Federal and state functions and their overlap in nuclear power plant siting. After completion of this study, practical licensing reforms—in particular, those relating to early site review—can be addressed more comprehensively by the Commission and Congress. We expect this study, to be completed within the next two months, will result in specific recommendations for reforms to lessen duplicative Federal and state reviews, to make environmental reviews more efficient, and to aid more effective public participation in the siting process.

³⁰ In so ruling, we do not wish to be misunderstood as suggesting that the obligations of NEPA analysis are any less than have previously been required by our staff with respect to alternate sites, or that the standard adopted above is appropriate for deciding whether to condition a proposed license. NEPA requires that the performance of the analysis which has been done, and the thoroughness and good faith of that analysis to remain an issue to be resolved before a license may issue. In its early dealings with applicants, particularly, we expect our staff to assure that preliminary analyses of possible sites are thorough and even-handed, so that the site applied for is likely, in fact, to prove superior.

- c. The cost and time which might reasonably have been anticipated for the Seabrook site once the utility had selected it as its preferred site?
- d. Some other alternative?

Stated in other terms, the question is to what extent the Commission may consider in comparing alternate sites the fact that one site has been brought closer to final use as a facility site than others.

The positions of the parties on this question may be summarized as follows. Applicant would accept the first alternative. So also would the staff. The intervenors take somewhat different approaches. Audubon-SAPL would have the Commission ignore the economic and time advantages of completing Seabrook in comparison to a fresh start at another site and consider Seabrook as a *tabula rasa*,³¹ that is, as if no time and effort had been expended there. NECNP, apparently differing somewhat from their position at oral argument, believes that, "possible delay from implementing a preferable alternative is irrelevant" and, "economic costs should be disregarded." NECNP submission of February 14, 1977, at 13, 16. Massachusetts takes a more flexible position and while disregarding the economic advantages of continuing at the present site would apparently permit some consideration of any delay necessitated by shifting to an alternative site.

We find that, for the ordinary case, the position of staff and applicants is more convincing both as a matter of policy and of law, although we would modify it somewhat as discussed below. To adopt any of the other alternatives referred to in the question quoted above (including Audubon's *tabula rasa*) would compel us to require the Licensing Board on remand to strike a cost-benefit balance based on a set of assumptions that no longer fairly described the facts as they are.

We reach this conclusion in two steps, the first of which takes us to the point of initial license issuance. It is inevitable that in any licensing proceeding, a proposed site will be substantially closer to completion, and hence less costly and time-consuming in comparison with otherwise comparable alternates. In order to bring the site to the point of hearing, the applicant will have had to conduct geological and seismic analyses, prepare environmental surveys, hire architects and engineers to prepare a plant design, obtain other state, local and Federal approvals, and so forth. If the applicant does not undertake them, its application will automatically be denied. Therefore, they are realistically the factual predicate for any Federal action, *i.e.*, NRC licensing, at all. Each of these expenses and events is to some degree site specific and considering them in a comparison between applicant's preferred site and alternative sites necessarily favors applicant's site. Our staff and the public may and should work with the

³¹ This term was suggested by a Commissioner at oral argument and was adopted by Audubon-SAPL to describe its position.

applicant to identify significant environmental deficiencies at an early stage, when this weighting will not be as pronounced and alternative courses can be taken with less loss and waste motion. But in the usual case, where our NEPA processes have worked as they should, these realities may be considered at the hearing stage, subject to the cautions expressed within.

More difficult than the question of whether time and money expended may weigh in favor of the proposed site at hearing is whether such a rule should apply when, as here, appellate review of a licensing board's judgment leads to the conclusion that further analysis of the alternative site question is required. A rule which takes account of work done on the proposed site for purposes of doing a new NEPA analysis is troubling where the NEPA deficiency calling for the new analysis arises from an inadequate consideration of alternative sites, for such a rule necessarily disadvantages these very alternatives. Moreover, such a rule, by giving "credit" for any work done after issuance of a construction permit, would seem inconsistent with our policy that although licensing board decisions are immediately effective, 10 CFR 2.764, any work done in reliance on the unreviewed decision is done at the applicant's risk.

Nevertheless, it is simply not rational where our NEPA process has generally been sound, to disregard these realities.³² Unless reason for the contrary course can be shown, the NEPA analysis on remand should be done on the basis of the factual predicate existing at the time of the analysis. This means that in comparing construction costs of the proposed site and at alternate sites, actual completion costs should be used. To compare actual completion costs merely emphasizes, once again, the necessary costs of choice—the importance of the Commission's NEPA process as process, requiring expenditures of time and money, and the importance of early involvement of and participation by the public as well as our staff to insure that the process fulfills its functions.³³

³²In normal cases the absolute amount irrevocably committed to the applicant's site at the pre-CP stage will not be a major portion of the cost of the facility. There was some discussion at oral argument of an affidavit by applicant indicating that it had spent or committed some \$200 million on Seabrook before issuance of the CP. Presumably, much of this expense was for planning and equipment that could be used at an alternate site as well as at Seabrook.

³³Our disposition of the issues before us in this proceeding must also be considered in a broader context. Matters relating to considerations of alternative sites are already under review by our staff as a distinct component of a broad reexamination of reactor siting policy and process now in progress. A Commission statement or proposed rule will result, further articulating Commission policy on these matters. N. 29, *supra*.

The adjudicatory setting here largely constrains us to take the structure of our licensing process as we find it. Rule making normally provides the opportunity for major revisions and adjustments to the licensing process, itself, if these appear warranted. Thus, insofar as it sets out new principles for our licensing process generally, we regard today's decision as providing guidance embodying the Commission's current views on the issues raised which may be subject to adjustment during the course of our on-going general review of siting matters.

Indeed, our conclusion substantially depends on the integrity of the NEPA process which leads up to the point of hearing. Where that integrity is absent—where time and money have been *misspent*—it may be proper to restrike a NEPA analysis on the basis of a set of facts no longer existing, *i.e.*, as though those expenditures had not been made, which would put the proposed site and alternatives on a more equal albeit somewhat unrealistic footing. Staff submission of February 14, 1977, at 23. The cost to society of making a decision on information known to be distorted from reality might be justifiable, if use of the existing set of facts would be unjust—for example, because an applicant intentionally withheld significant information about deleterious environmental consequences of construction at its proposed site. In such circumstances, a NEPA cost-benefit analysis based on existing conditions would allow the applicant to profit by its wrongdoing; to ignore the realities in such cases would also have a useful deterrent effect on others. Any such decision, however, should be made only after a careful weighing of the need to protect the integrity of the Commission's NEPA process, and the possible cost to the public in basing a decision on completion cost assumptions that do not reflect existing circumstances.

In this case, the factors of which we are aware argue for the realistic approach, that comparison of alternatives on remand should consider the actual forward costs of completion of applicants' facility at the proposed sites and of the alternatives at the time of the comparison. Here the NEPA process, from the point of initiation, appears to have been fundamentally sound, with vigorous and continuing public as well as staff participation.³⁴ Parallel intensive state siting proceedings reached the same result. The occasion for requiring additional NEPA review is ascribable principally to external events, the complications introduced by EPA's *volte face*, and it may yet prove permissible for a once-through cooling system to be employed—for which the present analysis largely suffices. *Prima facie*, then, we believe the approach which applicant and the staff support to be the more appropriate.³⁵

The policy we adopt today is supported by the few cases squarely on point. In *Aeschliman v. NRC*, *supra*, the court remanded a construction permit to the Commission for, *inter alia*, restriking of NEPA balances. The court noted (547 F.2d at 628) that "agencies . . . may deal with circumstances 'as they exist and

³⁴We repeat that these remarks are intended as observations on the state of the record as it appears to us, and that the Licensing Board is free to substitute its more thorough knowledge of the record and proceedings.

³⁵In any event we are very doubtful that consideration of the difference between the forward costs of Seabrook at the time of issuance of its construction permit in July and the present completion will itself be the decisive factor in a comparison between Seabrook and an alternate. On remand, the Licensing Board should, however, make separate findings as to the completion costs of Seabrook in July versus alternative sites and that comparison as of the present.

are likely to exist,” citing *Carolina Environmental Study Group v. United States*, 510 F.2d 796 (D.C. Cir. 1975). The court gave specific instructions on how the NEPA balance would be struck on remand. Quoting from *Union of Concerned Scientists v. AEC*, 499 F.2d 1069, 1084 n. 37 (D.C. Cir. 1974), the court said:

An alternative to be considered is complete abandonment of the project, just as it was at both the construction and full-power operating license stages. [Citation to record omitted.] As at those stages, sunk costs are not appropriately considered costs of abandonment, although replacement costs may be if construction of a substitute facility could reasonably be expected as a consequence of abandonment.

Aeschliman, *supra*, 547 F.2d at 632 n. 20.

The abandonment the court referred to in *Aeschliman* is to be distinguished from the possible abandonment considered when the cost-benefit balance for the facility itself is considered. In the latter case abandonment refers to the “no plant” alternative. In comparing the alternative of no plant to completion of Seabrook, moneys already spent are clearly not relevant. Money spent is spent. But in the context of alternate site analysis, abandonment of Seabrook means building another plant somewhere else. In that analysis, *Aeschliman* tells us, we may properly consider the fact that at another site, reviews and work already completed at Seabrook will have to be duplicated.

The other component referred to in the second question addressed to the parties, comparative time until completion, has also been the subject of a recent judicial decision. Again, the decision was that, in comparing one site with another, it is appropriate to consider that one may be brought into operation more easily than another. In *Porter County Chapter of the Izaak Walton League v. AEC*, 533 F.2d 1011, 1017, n. 10 (7th Cir. 1976), the court noted:

The chief economic disadvantage of Schahfer was found to be the delay associated with moving there, estimated to be from two to four years. RAI-74-4, 624. Petitioners urge that this factor should not have been considered, since it was the result of NIPSCO’s choice of the Bailly site. This argument is not without force, but we conclude that AEC did not abuse its discretion in deciding to consider this factor, having in mind the public interest in avoiding future shortages of power and the estimates as to when the additional power to be generated by the nuclear facility would be needed.

The discretion approved of in *Porter County* is the same discretion that must be employed in deciding whether in any particular case to make site comparisons on a completion-cost basis for purposes of restriking the NEPA balance. *And see Steubing v. Brinegar*, 511 F.2d 489, 497 (2d Cir. 1975).

In connection with the delay factor, we note that delay is not a factor which carries uniform weight in all circumstances. If the delay would result in an inability to construct the plant in time to meet a predicted need for power, then delay is a factor to be weighed against an alternative. If there is no such problem, then delay may figure only as a cause of additional cost, and then only if it does in fact cause costs to increase. The need for power question as it relates to Seabrook is presently before the Appeal Board. After the Appeal Board's decision and review, if any, by the Commission, the Licensing Board would be better able to evaluate the significance of delay in comparing Seabrook with alternative sites. However, it does not follow that the Licensing Board should wait for the final resolution of that issue. Particularly if consideration of the other factors indicates to the board that the need for power issue is not decisive, it should proceed without awaiting that further guidance.³⁶

The issues of forward cost and of delay are individual factors among the many to be considered in reaching an overall assessment of alternative sites. We remark, again, that this assessment process is necessarily imprecise, and that it must be influenced, as well, by our inability to require the licensee to relocate his facility at an alternative site or even to know at the time of our action that such a site will ultimately prove licensable if applied for. We can only reject the site for which application has been made. Despite these difficulties, we would be concerned if a proposed site with severe handicaps vis-a-vis others were to prevail merely because lower completion costs and shorter completion times at the proposed site appeared to outweigh these handicaps.

Accordingly, on remand the Licensing Board should first determine if any alternative to the Seabrook site with either once-through or closed-cycle cooling is obviously superior to it without regard to the fact that a facility at Seabrook is closer to completion. Only then should the Board consider whether the advantage of the Seabrook site's being closer to fruition, an advantage the Board should attempt to assess with precision, is sufficient to overcome this obvious superiority. If after this assessment an alternative retains an obvious superiority over the Seabrook site, the latter should be rejected. Of course, it may well be that the initial screening noted above will reveal that no alternative site is obviously superior to Seabrook. In such an event it would not be necessary to

³⁶We emphasize that the foregoing discussion applies only in the context of our responsibility under NEPA. Under the Atomic Energy Act, 42 U.S.C. 2011 *et seq.*, our responsibility to protect the public health and safety is such that we may not consider to any extent any investment that an applicant has made in a facility when we are passing on the safety of the plant. This is true even at the operating license stage when an adverse safety finding may mean that an applicant's investment of billions of dollars "may go for naught." *Power Reactor Development Company v. International Union of Electrical, Radio and Machine Workers*, 367 U.S. 396, 415 (1961).

reach the question of the weight to be given Seabrook's lower forward costs. A similar process must be followed by the Board in any case in which the differences in forward costs or completion times resulting from the advanced state of development of a particular proposal appear to be the decisive element in the conclusion that no other site is obviously superior. Should such a situation be concretely found to exist, the Commission expects to give very close attention to the reasoning that led the Board to the acceptance of the otherwise disadvantaged site.

3. Southern New England Sites

We come now to an issue raised by intervenors claiming error in ALAB-366. The Appeal Board held that in its further deliberations, the Licensing Board need consider, for comparison purposes, no more than the 19 alternative sites in or near the lead applicant's service area in New Hampshire and Maine, which were identified in the FES (ALAB-366 at p. 65). Intervenors had suggested before the Appeal Board that consideration of alternate sites should have included sites in southern New England, including "sites on the Connecticut River, sites where other units had been proposed and were postponed, sites where other units already exist and sites where other units are postponed." NECNP Memorandum in Support of Partial Affirmance of and Partial Reversal of ALAB-366, at 4.³⁷ The basis for the Appeal Board decision was agreement with the applicants that "the [contrary] assertion was concretely advanced far too late in the proceeding below."³⁸ Thus, the Appeal Board distinguished this

³⁷NECNP's exceptions to the Licensing Board's decision state the defect they perceived as follows: "the staff . . . did not require consideration of sites other than in New Hampshire and Southern Maine . . . although the load centers to be served were also in Massachusetts and Rhode Island . . . and did not consider sites previously selected for nuclear plants in New England where construction had been deferred (Tr. 10327). Neither the staff nor the Board took a 'hard look' at the question of alternate sites." NECNP Brief in Support of Exceptions, September 17, 1976, at 22.

Similarly, see *Brief Submitted on Behalf of Seacoast Anti-Pollution League and Audubon Society of New Hampshire* (September 14, 1976) at 52-54. "The Seabrook project forms an integral part of a coordinated plan to deal with the problems of supply and energy to the New England region. Therefore, because of its size and scope, the range of alternatives which must be thoroughly and carefully evaluated are more numerous than those alternatives which have been studied to date." (Citation omitted).

³⁸The Appeal Board noted that the assertion "apparently first surfaced in October 1975 during cross-examination of witnesses for the applicant and staff at a late stage of the trial itself (Tr. 10313). Long before that time, in mid-1974, SAPL-Audubon and the Coalition received, and took advantage of, the opportunity to comment upon the Draft Environmental Statement. None of their comments contained the slightest suggestion that the staff's alternate site analysis should have included scrutiny of possible southern New England sites. FES, pp. A-52, *et seq.* and A-94, *et seq.*"

case from the situation in *Aeschliman v. NRC*, *supra*, where the intervenors' comments on the draft environmental statement had been found to have raised a "colorable alternative not presently considered therein" in a manner which brought "sufficient attention to the issue to stimulate the Commission's consideration of it." The Appeal Board found "no hint" in the *Aeschliman* opinion "that an intervenor can await the commencement of the actual trial and then come forward with a claim that the staff's environmental review culminating in the FES should have explored specific alternatives beyond those identified in the DES."³⁹

The intervenors have renewed their arguments on this issue in our review of ALAB-366. They emphasize the relationship of the applicant to the New England power pool, an interconnected group of utilities serving most of the New England region:

We are dealing with an integrated region. And who owns the plants in New England, or who has title to the property in which they stand isn't a particularly relevant situation. The question is who gets the power

SAPL-Audubon Brief at 9. NECNP also asserts that the question of southern New England sites had been raised prior to publication of the FES, citing comments of the State of New Hampshire (FES A-34 to A-35) and two letters it had submitted after the comment period on the DES had closed but shortly before publication of the FES. NECNP Brief at 3 and Appendices.⁴⁰ These letters referred to alternate sites at the locus of other proposed nuclear power plants, in the context of pursuing issues concerning the need for the power to be generated by the proposed Seabrook plant. NECNP also argues, on the merits, that the dissent's treatment cannot be the basis for a finding against these sites.

Applicant agrees with the Appeal Board that the issue of alternate sites

³⁹ALAB-366 at p. 66. While not deciding the question on such grounds, the Appeal Board also implied that there were substantive reasons why the objections were properly rejected. Citing the *Bailly* opinion, *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-224, 8 AEC 244 (1974), the Board noted that alternative site analysis normally "rightly" focuses on the territory within or in the vicinity of the service area of the utility which is to build and operate the plant. Normally, only "special considerations" warrant looking farther afield. "If SAPL-Audubon and the Coalition believes there to be such considerations here, the proper time for bringing them to the fore was clearly the comment period on the DES," when there would have been adequate time for the staff to explore the notion. *See also Clinch River*, *supra* at 92 n. 30.

⁴⁰The most important letter, dated November 18, 1974, was received about two weeks before the December 7 publication of the FES; the second letter was dated December 6, 1974, and received December 11.

distant from its service area was not raised in a timely fashion.⁴¹ But applicant also points out that merely because the proposed Seabrook reactors would be linked to a power pool does not mean, as a practical matter, that the reactors could be built anywhere in the pool area. The pool, it says, does not put up money to build plants; the companies do. Since the applicant here will own 50 percent of the plant—the next largest share is twenty percent—it might be expected to prefer a site in or near its own service area in northern New England. Moreover, it contends that the other sites suggested by intervenors are simply not available to it. Applicant's Reply Brief to NECNP at 2.

In its written submission, the staff's position was that the "timeliness of the assertion need not be faced since exclusion of the sites in southern New England from the prior . . . alternate site analysis was based on substantive reasons amply supported by the record." Staff brief at p. 28. In oral argument, however, the staff position changed somewhat; there, staff conceded that the issue had been raised in timely fashion, and urged that the "matter be disposed of on the basis of the record, as referenced by Dr. Buck in his dissent." Tr. at 126.⁴²

⁴¹ Applicant argues that the intervenors were presented with the opportunity to raise these issues when they were asked, through interrogatories, to suggest alternative sites which should be considered; applicant suggests that intervenors then recommended the exploration of certain sites. Each of the sites suggested by intervenors was investigated and was among the 19 sites considered in the FES and by the Licensing Board. Brief of Applicant in Opposition to Certain Exceptions of Other Parties at 16-19 (November 12, 1976), cited to this Commission in Applicant's Reply to "New England Coalition on Nuclear Pollution Memorandum in Support of Partial Affirmance of and Partial Reversal of ALAB-366" (February 3, 1977). Further opportunity in this regard came when the DES was circulated for comment. Applicant says that at no time, until cross-examination, was there suggested any site in "or even a general exploration of possible sites in Massachusetts, Connecticut or Rhode Island, nor was there any suggestion of exploring the use of an already developed site." *Id.*

⁴² Dr. Buck's review of the record led him to state the relevant evidence as follows: "[t]he Licensing Board found, the Seabrook facility will be owned by several New England utilities, each of which is a participant in the New England Power Pool (NEPOOL). The need for Seabrook is related to the requirements both of NEPOOL and of the lead applicant, Public Service Co. (3 NRC at 899). A NEPOOL witness testified that NEPOOL views it as important, for technical reasons that

the generation and load be fairly evenly distributed so as to minimize the very heavy flow from one end of the grid to another, and to enhance the reliability system by reducing the dependence on long transmission lines which will have the greatest exposure to the kind of problems that led to, for example the 1965 blackout [Tr. 10166].

Accordingly, NEPOOL has divided the New England area into eight subareas (Tr. 10168). New Hampshire is one of these subareas, and the record indicates that by 1982 it will be deficient in generating capacity absent a new facility such as Seabrook (Applicants' Direct Testimony No. 14, fol. Tr. 10162, pp. 20-23). Furthermore, no nuclear capacity other than Seabrook is planned for that subarea (*Id.* at 23). [In sum, according to a NEPOOL witness] . . .

Our necessarily limited review of the facts indicates that the Appeal Board majority's determination of untimeliness has support in the record. Normally, as *Aeschliman* implies, 547 F.2d at 627-28, the stage at which intervenors must raise additional alternatives is the DES comment period. See ALAB-366 at 66-67 nn. 46 and 47. The early opportunities afforded the public to participate in siting considerations, as we have noted, make appropriate what is in practical effect an increasing burden of justification for forcing consideration of new site alternatives. However, the fact is that this case must be remanded to the Licensing Board on other grounds for a new comparison of Seabrook with possible alternate sites, on the assumption of closed-cycle cooling. Nor is it clear what attention the Appeal Board panel gave the late-filed comments of NECNP. Although late in terms of filing, these comments may have been timely responses to developing circumstances. Our staff was in any event made aware of the more important of these shortly before publication of the FES. Our conclusion is that it would be improper to rely on timeliness grounds to exclude the issues raised by NECNP regarding sites where units already exist, and sites where planned units have been postponed⁴³ unless that suggestion can be shown to have been unreasonably delayed rather than a prompt response to developing events.

In so ruling, we do not exclude the possibility that the Licensing Board will find, on the basis of evidence already in the record and other relevant factors, that a limit on alternate site consideration to the area in or near the lead applicant's service area is appropriate in the context of this application. Careful examination of the substance of the intervenors' claims about Southern New England sites indicates that a large part of their argument deals with ways in which the applicant might satisfy its power requirements without being lead applicant for a power facility. For when the applicant indicates legal and technical barriers to its obtaining sites outside the 19 that were considered in the FES, the intervenor suggests that the plant might be built elsewhere by another utility, in which case applicant presumably may buy a share of that other plant, or purchase power from it. But this Commission sits to license, or not to license, a nuclear power plant proposed by a particular applicant. It is not within our

(continued from previous page)

It's clear that where we really needed the capacity was in this area north of Boston and up in New Hampshire, and so we were definitely encouraging locations in the Seabrook area.

Tr. 10184. Even discounting the accuracy of the need-for-power figures advanced by the applicants, it appears that the limitation of the area for examination of sites in this case is technically well founded and should be accepted by us as dispositive of the general claim that southern New England sites should have been explored."

⁴³New Hampshire's comment respecting Connecticut River sites south of Lebanon, N.H., was not pursued by the state, which has approved the Seabrook site, and may well have been limited to New Hampshire locations.

power to order that a different plant be built by another utility. The fact that a possible alternative is beyond this Commission's power to implement, does not absolve us of any duty to consider it, but our duty is subject to a "rule of reason," *NRDC v. Morton*, 458 F.2d 827 (D.C. Cir. 1972); *Concerned About Trident v. Rumsfeld*, ___ F.2d ___, 9 ERC 1370, 1380 (D.C. Cir. 1976). And NEPA does not require that we reformulate a discrete licensing question in terms as broadly as intervenors suggest.

Application of the "rule of reason" here may well justify exclusion or but limited treatment of the suggested sites. We leave this decision in the first instance, to the Licensing Board, but note the several factors which bear on it.

First, alternative sites in or near the load centers to be served by the facility have obvious practical advantages for the applicant and its ratepayers.⁴⁴ Construction at a relatively distant site—here, a southern New England site—may necessitate longer transmission lines, with consequent greater expense, aesthetic affront and loss of power. See *Northern Indiana Public Service Company* (Bailly Generating Station), ALAB-224, 8 AEC 244, 267-268 (1974). We note that the 19 sites already considered cover a broad geographic area including sites on the southern Maine coastline, and that the general area of northern Massachusetts along the Merrimack River and the Commonwealth's northeast corner had also been considered at an earlier stage in the alternate site exploration. FES 9.1.2; ASLB Tr. 2935. It is also appropriate for the Board, in applying the "rule of reason," to consider the possible institutional and legal obstacles associated with construction at an alternate site, such as the lack of franchise privileges and eminent domain powers and the need to restructure existing financial and business arrangements. The record indicates that while the Massachusetts area, where the lead applicant enjoyed neither franchise privileges nor eminent domain powers, was eliminated as offering no advantage over New Hampshire, some consideration was nevertheless given it. See FES at 9-5, 9-7. Finally, as the Appeal Board dissent noted, if Seabrook is needed primarily for power in New Hampshire and northern Massachusetts, and usefully balances NEPOOL's transmission system, those factors, and other technical considerations such as system reliability, may also limit the "reasonableness" of considering sites in southern New England. The Licensing Board may conclude that these factors make consideration of any existing or planned unit sites "unreasonable," or it may reach particular sites and compare them with Seabrook, depending on the record made before it. Should the Licensing Board conclude that an individual comparison of

⁴⁴We have suggested consideration of out-of-service area sites in another case, where co-applicants included a Federally owned utility and an agency of the Executive Branch—each of which had undoubted NEPA responsibilities to conduct full alternative reviews. *Clinch River*, *supra* at 92 n. 30. Even in that context we stated that "consideration of [out-of-service] alternatives need go no further than to establish whether or not substantially better alternatives are likely to be available." *Id.*

Seabrook with one or more of these sites is called for in the present circumstances, that comparison should be undertaken whether closed-cycle or once-through cooling is to be employed at Seabrook.

4. Kleppe v. Sierra Club

We are reinforced in our conclusions by the recent decision of the Supreme Court in *Kleppe v. Sierra Club*, ___ U.S. ___, 49 L. Ed. 2d 576 (1976) which fully supports the results we have reached above. In *Kleppe*, the Court started with the proposition that NEPA obligations arise only in connection with a "recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment." NEPA Section 102(2)(C). The Court made clear that that obligation does not arise until there is a proposal, and a proposal for major *Federal* action. We must keep a clear focus on what the "major Federal action" is in this case. That action is "Federal approval of private action rather than Federal initiation of its own project." *Kleppe, supra*, at 595-96 n. 1 (Marshall, J. concurring and dissenting): As Justice Marshall noted in *Kleppe*, NEPA is more demanding in a case involving direct Federal action than in a case involving Federal approval of private action. *See also Aberdeen & Rockfish R.R. v. SCRAP*, 422 U.S. 289, 320 (1975). In Federal approval cases, "NEPA seeks only to assure [environmental] consideration 'during the formulation of a position on the proposal submitted by private parties,'" *Kleppe*, 49 L.Ed.2d, *supra* at 595-96 n. 1 (Marshall, J.) quoting in part from *Kleppe, supra* at 590 (opinion of the court)(emphasis supplied).

The Court noted "the kind of impact statement required depends on the kind of 'Federal action' being taken." *Id.* at 586 n. 14. That proposition is a specific application of the general approach we have taken above, that the scope and focus of any NEPA analysis depends upon the nature of the particular proposal being considered and the factual predicate existing at the time the analysis must be performed by the agency. This proposition has consequences for all three facets of our decision discussed above. A formal proposal exists only when an application is docketed; it becomes a proposal for Federal action only when our staff has completed environmental (and other) analyses and decided to support the application in the hearing process.

To ignore the factual predicate that exists when a specific application comes before us would be to convert the Commission's NEPA analysis from one appropriate for Federal licensing action to one appropriate for primary Federal activity. If the "Federal action" being taken were *construction* of Seabrook, not licensing, NEPA would assure environmental consideration at the *outset* of the project and would require consideration of a wide range of alternate sites or technologies. *See id., supra* at 595-96 n. 1 (Marshall, J.). But the "Federal action" here is licensing, not constructing Seabrook, and that means that NEPA

requires environmental consideration primarily of those issues which could preclude the requested license, or which could be affected by license conditions. *Id.* Necessarily that means that our NEPA analysis must and should be more limited and should focus on "the proposal submitted by private parties" rather than on some broader but ill-defined concept extrapolated from that proposal. The broader issues are relevant but only insofar as they affect our decision on the Seabrook application. They do not define the perimeters within which we must evaluate that application.

To hold otherwise—to require that an agency when acting on a request for a license must consider the situation as it was before the applicant ever did anything at all and must consider all possible alternatives to the proposed action—would make compliance with NEPA an obligation of private parties. An applicant would then have to do a NEPA analysis before beginning any course of action that might ultimately require some government approval or other action. *Kleppe* confirms that NEPA distinguishes between direct Federal action and Federal approval of private action and that NEPA requires an analysis appropriate for the proposal and not the maximum possible environmental analysis for every proposal. A statute that imposed the requirements of NEPA on private parties might be a beneficial complement to NEPA, but it would not be NEPA. NEPA is addressed to the Federal government alone and we are not inclined to use the pretext of "liberal construction" or "*tabula rasa*" as a means of extending it to private parties. See *Gage v. AEC*, 479 F.2d 1214, 1219-1220 (D.C. Cir. 1973).

B. Provisional Resumption of Construction

There remains one final question. Assuming that the Licensing Board on remand determines that the Seabrook site is suitable for a facility with closed-cycle cooling and also concludes after the NEPA alternate site analysis discussed above that it can approve a construction permit for Seabrook (for either once-through or closed-cycle cooling), what authority does the Board have to act if (1) a final decision has been reached by EPA; or (2) if no final decision has yet been reached by EPA?⁴⁵

⁴⁵The consequences of other contingencies such as, e.g., the results of the Appeal Board's consideration of the remaining issues still before it, will not be addressed herein. We assume that the Appeal Board will have spoken to those issues before the Licensing Board issues its decision and that decision will necessarily take full account of the Appeal Board's action and any Commission review. Should those other issues not have been finally resolved within the Commission by the time the Licensing Board is prepared to decide, it may proceed to decision, recognizing that its decision is subject to the usual appellate remedies, including possible stay.

1. Final EPA Action

It is possible—and entirely desirable—that EPA will have taken final action on the Seabrook cooling system before the Licensing Board has to act. Such action might take the form of reversing the Regional Administrator's decision outright, and reinstating EPA approval of the once-through system already approved by the Licensing Board. It might take the form of requiring the applicant, if it is to use once-through cooling, to use a particular set of intake and discharge locations that would be significantly more expensive to construct than the two sets approved by the Licensing Board.⁴⁶ Finally, the EPA might provide the applicant could use only a closed-cycle system. Pursuant to Section 511(c)(2) of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1371(c)(2), the Commission must accept EPA's determination on effluent limitations. As a practical matter, then, the Commission must either license or not license an EPA-approved cooling system but cannot require it to be modified. Accordingly, whatever decision EPA reaches will be binding on the Licensing Board.

Should EPA reverse the Regional Administrator, as the Appeal Board noted in ALAB-366 at 67, applicant could rely on the cost-benefit analysis already performed by the Licensing Board, which is still subject, however, to review by the Appeal Board and possibly by the Commission.⁴⁷ If that analysis is not overturned on review (or the permits are not denied or suspended for other reasons), then EPA action would permit a virtually immediate end to the suspension of the permits. If EPA should order applicant to choose between a new once-through system or a closed-cycle system, or should it find that only closed-cycle cooling is acceptable at Seabrook, it would be up to the applicant either to propose the new once-through system approved by EPA or a closed-cycle system to the Board. Should the applicant propose a specific EPA-approved once-through cooling system, the Licensing Board would have to do a new NEPA analysis of that system, including alternate site consideration.⁴⁸ Should the

⁴⁶If the EPA Administrator simply affirmed the Regional Administrator, still further EPA proceedings would be required before the Regional Administrator before either an open-cycle system is approved or closed-cycle cooling is ordered. Regional Administrator's Decision at 78-79. The termination of these further proceedings is the final EPA action referred to in the text.

⁴⁷The Appeal Board in ALAB-366 at 67-68 indicated that it was deferring review of that analysis pending final EPA action. While such deferral would have the benefits the Appeal Board outlined, we would prefer the Board to make that review at the same time as it reviews the other currently outstanding issues in this proceeding.

⁴⁸Such an analysis should consider only the incremental consequences of the changes between the EPA-approved once-through system and the ones previously considered by the Board. Because of the obvious significance of any proposed change to the cooling system at Seabrook it is appropriate in this case that the Licensing Board immediately address itself to any such change, rather than waiting until the staff brings the matter to the attention of the Board as normal under Part 2 of our rules.

applicant propose a specific closed-cycle system, the Board need only refine the "worst-case" analysis of such a system that it will already be performing.

2. No Final EPA Action

The majority and the dissent in ALAB-366 disagreed on what the Licensing Board might do if there has been no final EPA action when the Board reaches the point of decision. The majority found no absolute bar to a Licensing Board's issuing an initial decision before EPA made its final decision on the facility's cooling system. ALAB-366 at 57-58. However, the majority did hold that a balancing test must be employed to determine "whether on balance the public interest warrants the Licensing Board in going ahead." *Id.* Employing that test, the Appeal Board found that the uncertainties over whether the EPA Regional Administrator's decision would be affirmed by the Administrator and, more generally, what cooling system EPA would eventually approve for Seabrook, were so great as to preclude the Licensing Board from approving the Seabrook site prior to final EPA action. *Id.* at 67-68. The Appeal Board noted that the maximum economic cost and environmental impact of a closed-cycle system at Seabrook could be determined even though the precise contours of a particular system had not been fixed. *Id.* at 67 n. 48. However, the Appeal Board held that this could not be done with respect to a once-through system since the cost and environmental impact of such a system depend to a high degree on the location of the intake and discharge structures for such a system, and there was no way for the Commission to limit this range of locations which might be selected by EPA. *Id.* at 67. Since the Appeal Board felt that EPA might have the authority to reject a proposed closed-cycle system and order a once-through system to be used, *id.* at 54-55, 68 n. 49, it felt that no upper limit could be placed on the possible costs and impacts of the Seabrook cooling system and, therefore, the Licensing Board could not approve Seabrook until EPA resolved the cooling system controversy.

The dissent to ALAB-366 took issue with the majority's interpretation of EPA's authority,⁴⁹ believing that EPA lacked authority to disapprove of all closed-cycle systems for a facility. ALAB-366 at 74. The dissent suggested that the applicant be permitted to demonstrate on a "worst-case" basis what the costs and environmental impacts of closed-cycle cooling at Seabrook would be. If the Licensing Board found that Seabrook with the "worst-case" closed-cycle system "survives an environmental balancing vis-a-vis both alternate sites and the need for the plant," construction permits could be authorized. *Id.*

⁴⁹The majority did not say that EPA had the authority in question; it said that EPA might have it and that possibility introduced further uncertainty into the proceeding. ALAB-366 at 55.

We felt that resolution of the question of EPA authority was crucial to determination of this facet of the case and addressed a request for comment to the General Counsel of EPA. The reply to that request was made available to the parties before oral argument and was addressed at that argument. The EPA reply is quoted above, but it may briefly be summarized as agreeing with the interpretation of EPA regulations expressed in the dissent to ALAB-366. The consequence of that reply is that it means that the Licensing Board will be able to determine an upper limit for the environmental and economic costs of the Seabrook facility. As Dr. Buck's dissent to ALAB-366 recognized if such a worst case survived "environmental balancing," then certainly an actual Seabrook would also be acceptable. EPA regulations implementing the National Pollutant Discharge Elimination System under the FWPCA indicate that the opinion of the General Counsel on legal questions is final for purposes of EPA adjudicatory hearings. 40 CFR 125.36(m). We may properly defer to a construction of EPA's authority by the General Counsel of that agency.⁵⁰

The applicant originally sought approval from the Licensing Board for a proposal to construct Seabrook with once-through cooling unless the cost of that system exceeded that of a closed-cycle system in which case it would use closed-cycle. Applicant's Proposed Finding, paragraphs W 82-84, GG-2(b). We intend that the Licensing Board should adopt a somewhat similar approach, if at the time it is prepared to render a decision on this remand, EPA has not finally acted. The Licensing Board should make a NEPA analysis of Seabrook with closed-cycle cooling on a worst-case basis with regard to both cost and environmental impact. Should it determine that approval of construction permits for Seabrook would still be justified, it should issue conditioned permits for construction of Seabrook provided, however, that the applicant could not construct any portion of the cooling system at all until after final EPA action. After that final EPA action the applicant could determine whether to construct the particular once-through systems approved by EPA, if any such system is approved, or to construct a closed-cycle system. Should EPA authorize once-through cooling, the license condition should provide for Commission approval of the applicant's selection following economic and environmental analysis⁵¹ before construction on the cooling system could begin, unless EPA approves a once-through system substantially similar to what has already been approved by the Board.⁵²

⁵⁰ *And see* n. 20, *supra*.

⁵¹ Acting initially through our Licensing and Appeal Boards as is customary under our rules. *See also* n. 48, *supra*.

⁵² In *Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2), ALAB-262, 1 NRC 163, 199-205, *pet for review denied*, 524 F.2d 1403 (3d Cir. 1975), the same panel of the Appeal Board that decided ALAB-366 authorized issuance of a construc-

(continued on next page)

Two other points need to be discussed. We approve of the Appeal Board's analysis of the issue concerning the 401 certificate issued by New Hampshire herein. ALAB-366 at 55-57. We agree that the certificate indicates a "willingness on the part of the State to defer to EPA's judgment" *Id.* at 56.

The Appeal Board correctly noted that Section 511(c)(2)(A) of the Water Pollution Control Act Amendments of 1972 prevents the Commission from reviewing the "adequacy" of a 401 certificate. *Id.* at 56. However, the Board recognized that the proposal for a 401 certificate which was submitted to New Hampshire involved once-through cooling and the State approval was evinced in that context. As the Board noted, in a discussion which we adopt as our own, it is an open question whether New Hampshire could rescind the outstanding 401 certificate should applicant propose, EPA require or the Licensing Board permit, construction of Seabrook with closed-cycle cooling. *See* ALAB-366 at 57 nn. 30 and 32. New Hampshire has not indicated any belief that its 401 certificate is no longer valid, *id.*, and the question of its possible authority to rescind the 401 certification will have to be resolved only if one of the three events mentioned above should happen and then not until the Licensing Board receives some

(continued from previous page)

tion permit for the Limerick facility on the basis of a particular system for supply water to the facility. There were two other proposed water supply systems and no final decision had been made by applicant amongst the three. One of the other two systems was clearly environmentally superior to the system upon which approval was based and imposed no additional economic or operating costs, but it required construction of a major project which was not assured. The other alternative would have increased environmental costs but would have allowed more efficient operation of the facility. The Appeal Board approved issuance of the permit recognizing that should the first alternate system become available, or should the second be determined to increase the *net* benefit of the facility,

nothing will stand in the path of a direction to the applicant [to employ one of them].

This will be true even if, by that time, the construction of Limerick has been substantially completed. *Id.* at 201-02.

This issuance of a permit on the basis of a "worst case" with recognition that should a superior alternative become available, it must be adopted, is exactly what we are instructing the Licensing Board to do on remand should it in fact determine that issuance of construction permits for Seabrook on the basis of a "worst-case" closed-cycle system is justifiable.

The parties addressed the *Limerick* case in their briefs. Intervenors suggested that *Limerick* was distinguishable from Seabrook because the various alternatives and their respective impacts were known at the time of the *Limerick* decision while the impact of a "worse case" closed-cycle system at Seabrook is not now known. This is true, but it misses the point. Only after those impacts are evaluated, and only if those impacts are found to permit licensing of Seabrook, will "worst case" conditioned permits be issued. At that time the analogy with *Limerick* will be complete.

official indication of a desire on the part of New Hampshire to rescind the certificate.⁵³

We also note that at oral argument applicant's counsel said that the cooling system at Seabrook was now the "critical path" item. We understand this to mean that any delay in construction of the cooling system will cause a corresponding delay in completion of the facility. Obviously, this reduces the utility of the permission to construct other portions of the facility since, according to applicant, that work cannot advance final completion. At oral argument, however, the applicant's counsel called our attention to the obvious consideration that advance on other portions of the facility may still be helpful in avoiding unanticipated delays, the need for costly overtime, and the like, and indicated that the applicant would wish to proceed on the basis of the conditioned permit if that were found to be permissible. The decision whether or not to use any conditioned permit will be applicant's to make as it sees fit.

V. CONCLUSION

For the reasons set forth above the decision of the Appeal Board in ALAB-366 is affirmed with the modifications discussed in our prior orders of February 7 and 17. The Licensing Board is directed to proceed expeditiously with the further proceedings called for by this decision.

It is so ORDERED.

By the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 31st day of March 1977.

⁵³We note, however, that a 401 certificate is the state's certification that discharges will comply with Sections 301, 302, 306 and 307 of the FWPCA. Those sections all deal with discharges of pollutants, including heat, into the water. There appears to be general agreement by the parties that the environmental impact of discharges into the water resulting from a closed-cycle cooling system is much less than that of an once-through system such as those New Hampshire has already approved for Seabrook by issuing the outstanding 401 certificate.

Commissioner Kennedy concurring:

I join in the Commission's opinion. I would have preferred, however, to go further in one respect. For me, it does not suffice to justify rejection of an applied-for site on the grounds that some other site appears to be "obviously superior." Under the test the Commission adopts today, an applicant may have his site found acceptable by a licensing board after a full review, only to have it rejected because an "obviously superior" site is put forward, perhaps at a later time. The "obviously superior" test applies not only where a recomparison of sites is being made, but also in initial selection. The opinion asserts that NEPA mandates not only a comparison of alternative sites, but that it also mandates rejection by the Federal agency of wholly acceptable sites when much better ones can be found.

Analysis of alternative sites is valuable, in my view, as a means of illustrating the advantages and disadvantages of the proposed site. Comparison of the proposed site with alternatives may point up evident and irremediable deficiencies which would so handicap a proposed site from an environmental or other perspective as to make it unacceptable. In such a case the application should be rejected. If on the other hand, the site applied for does not in itself prove unacceptable, I think it dubious to find a sufficient basis for rejecting the application in the fact that some other site appears to be "obviously superior." I believe we should take that step only when the application itself is flawed.

It is in fact "acceptability vs unacceptability" which I suggest should be the standard of comparison. Of a selection of 15 sites, for example, some will be found unacceptable for reasons of environmental characteristics, seismicity, population density, etc. But others may be found to be acceptable in all respects. Within the acceptable group one or more may be "obviously superior" to the others. But it does not necessarily follow that those "obviously superior" sites must always be the first approved for use by the Commission. Nor does it follow that the other "acceptable" sites must be reserved for use only after all "obviously superior" sites have been utilized. In fact, any of the sites found "acceptable" would be allowed for use.

The approach taken in the opinion appears to threaten acceptable sites with a continuing comparison against an unlimited range of sites in order to determine whether "obviously superior" sites exist. An environmentally acceptable site should not be forced to run a gauntlet of additional alternative sites, sites which may be put forward relatively late in the application process. Late identified sites are particularly unlikely to have been given the same rigorous analysis by applicant, staff and intervenors to which the proposed site and its original alternatives were subjected. Yet any one of these additional alternatives could later be determined "obviously superior." Both on initial selection and on reconsideration of site analysis, such as is occurring in this case, only evidence of

inherent "unacceptability" should lead the Commission to reject an applicant's site. This approach seems to me to be a fair recognition of our limited authority to affect siting choices under law, yet it fully illuminates the consequences of the proposed Federal action as NEPA demands.

I recognize that this approach which I suggest may depart from current understandings of NEPA held by our staff and varies from what some believe has been established by the courts, notably the court of appeals decision in the Calvert Cliffs case. It is for that reason that I join my colleagues today. In our staff's continuing review of our NEPA responsibilities and procedures, however, this alternative course should receive full consideration. Early, full and candid assessment of siting alternatives is our responsibility.

The process I have outlined could assure that that responsibility is fulfilled. It could also assure that we avoid unnecessary, encumbering, and expensive procedures which add unwarranted time and costs to the licensing process—costs which the public must ultimately pay.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Marcus A. Rowden, Chairman

Victor Gilinsky

Richard T. Kennedy

In the Matter of

NATURAL RESOURCES DEFENSE COUNCIL

**(Request Concerning ERDA High Level
Waste Storage Facilities)**

March 31, 1977

Upon request by NRDC that the Commission (1) reconsider its determination that two FY 1976 ERDA high level waste storage projects are not subject to the licensing requirements of the Atomic Energy Act and (2) consider whether two similar FY 1977 projects are subject to those requirements, the Commission reconsiders its earlier decision and determines that none of the four projects is subject to the Act's licensing requirements.

ENERGY REORGANIZATION ACT: NRC LICENSING OF ERDA FACILITIES

Commission licensing of new ERDA waste facilities is required only if they come within the scope of Section 202(4) of the Energy Reorganization Act of 1974, 42 U.S.C. § 5842(4).

MEMORANDUM AND ORDER

By letter of December 10, 1976, the Natural Resources Defense Council (NRDC) requested that:

(1) The Commission review the September 14, 1976, determination of Mr. Gossick, Executive Director for Operations of the Commission, that two high

level waste storage projects¹ under construction by the Energy Research and Development Administration (ERDA), Project 76-8-b at Hanford, Washington, and Project 76-8-a at Savannah River, South Carolina, are not subject to Section 202(4) of the Energy Reorganization Act of 1974, 42 U.S.C. § 5842(4);

(2) The Commission consider whether two additional ERDA projects, Project 77-13-e at Richland and 77-13-d at Savannah River, are subject to Section 202(4).

The Commission has reviewed and reconsidered the earlier decision and has determined that none of the four projects is within the scope of the licensing authority of Section 202(4) at the present time. Our conclusion is based on the legislative history of the Authorization Act for the 1976 projects, P.L. 94-187, on ERDA's assurances to Congress and the Commission concerning these facilities, and on the legislative history of Section 202(4) of the Energy Reorganization Act of 1974, 42 U.S.C. § 5842(4).

NRDC by letter dated August 7, 1975, originally requested that the Commission license ERDA waste storage tanks at Hanford, Savannah River, and Idaho National Engineering Laboratories (INEL). Responding to NRDC's request, which was also presented to ERDA, ERDA informed the Commission by letter of February 5, 1976, that it intended to use the facilities in question for storage of wastes for less than 20 years. The Commission, after carefully reviewing the matter, determined not to license the facilities on the grounds that they did not come within the scope of Section 202(4).² NRDC was informed of this determination by letter of September 14 from Mr. Lee V. Gossick, Executive Director for Operations. ERDA was also informed by letter of September 14 of this determination and of the Commission's intention to reassess the matter within 10 years. ERDA responded by letter of January 17, 1977, that it would inform the Commission of any changes in plans for the tanks and that it agreed to a reassessment within 10 years. In response to NRDC's December 10 request for reconsideration, the Commission on February 11, 1977, solicited the views of ERDA and the NRC staff. ERDA responded on February 17 and the staff responded on March 8, 1977, both indicating that the facilities in question are beyond the scope of Section 202(4). The staff, however, stated reservations with

¹ NRDC's original request of August 7, 1975, sought to have the Commission license three projects under Section 202(4): Project 76-6-b at Richland, Washington; Project 76-6-a at Savannah River, South Carolina; and Project 74-1-c at Idaho National Engineering Laboratories (INEL), Idaho. The first two were incorrectly described in the original request, the correct numbers for the projects being 76-8-b at Hanford Reservation, Washington, and 76-8-a at Savannah River, South Carolina. The request for reconsideration uses the correct project numbers for Hanford and Savannah River, but makes no mention of the INEL Project. We assume, therefore, that NRDC no longer insists that the INEL project comes within the scope of Section 202(4).

² The determination was made by the Commission at a policy session on July 8, 1976. The subsequent letter from the Executive Director for Operations reflected this determination.

respect to removing wastes from the tanks and requested further information on the 1977 tanks.

The record before the Commission consists of some 300 pages of correspondence and submissions, which are described above. The Commission also takes note of the generic environmental statements on the Hanford and Savannah River facilities, which are referenced in ERDA's correspondence and which have been available to all parties.

The projects in question concern the construction of underground tank facilities for the storage of high level radioactive wastes generated by ERDA and its predecessor, the Atomic Energy Commission (AEC), in the production of plutonium for use in the nation's defense program. High level radioactive wastes consist of the aqueous and concentrated radioactive byproducts of the solvent extraction process utilized in the production of plutonium or in reprocessing spent reactor fuels. See 10 CFR Part 50, Appendix F. (Spent fuel from naval reactors is reprocessed at Idaho National Engineering Laboratories, facilities which are not discussed herein.) Plutonium is produced at Savannah River and the Hanford Reservation, and the waste byproducts are stored at these sites. See NRDC Memorandum of Points and Authorities, filed with NRDC Request of August 7, 1975, and refiled with the December 10 Request, pp. 2-3.

At Hanford there are 156 underground storage tanks presently in use. They vary in size from 54,000 gallons to 1,000,000 gallons, and date from 1943 to 1975. All tanks built since 1953 are of 1,000,000 gallon capacity, and those built since 1968 (7 tanks) are double walled for improved leak protection. Wastes stored are presently in excess of 50 million gallons. The FY 1976 and FY 1977 construction projects would add 12 new, double walled, million gallon tanks to the facilities, primarily to replace older tanks from which leaks are possible. Final Environmental Statement, Waste Management Operations, Hanford Reservation, ERDA-1538 (December 1975), Vol. 1, pp. II. 1-36; V-1 to V-5.

At Savannah River there are 37 tanks in use or nearing completion, dating from 1951 to the present. Tank capacity varies from 720,000 gallons for the earliest tanks to 1,300,000 gallons for the latest tanks. Thirteen tanks, seven nearing completion, are double walled. Total volume of wastes presently stored at Savannah River is in excess of 20 million gallons, and plans are to retain liquid and solid wastes at approximately 20 million gallons. The FY 1976 and FY 1977 construction projects would add 10 new, double walled tanks of 1,300,000 gallon capacity each, primarily to replace older leaking tanks. Draft Environmental Statement, Waste Management Operations, Savannah River Plant, ERDA-1537 (October 1976), pp. II-64 to II-96.

Certainly, the major issue raised by the NRDC petition is a legal question. Since ERDA facilities are generally exempt from the licensing requirements of the Atomic Energy Act, 42 U.S.C. §2140, licensing the new ERDA waste tanks is required only if they come within the scope of Section 202(4) of the Energy

Reorganization Act of 1974, 42 U.S.C. §5842(4). Under this section, NRC has licensing authority over:

Retrievable Surface Storage Facilities and other facilities authorized for the express purpose of subsequent long term storage of high level radioactive waste generated by the Administration . . .

Since "Retrievable Surface Storage Facility" is in initial caps, reference to a specific type of facility planned for the 1980's is evidenced.³ Indeed, NRDC concedes this point (NRDC Memorandum of Points and Authorities, p. 45, n.99), and insists instead that wastes cannot be retrieved from the facilities in question. NRDC Request of December 10 at p. 4.

NRDC argues that the ERDA waste tanks are "other facilities authorized for the express purpose of subsequent long term storage." NRDC reads this language as applying to any facility authorized on the date of enactment, or subsequent thereto, which is for the purpose of storing wastes for a period in excess of 20 years. NRDC Memorandum of Points and Authorities, pp. 41-65. The NRDC argument fails to adequately explain the passage in the Senate Report which states the purpose of Sections 202(3) (governing facilities for storing commercially generated wastes) and 202(4):

These two paragraphs [(3) and (4) of Section.202] *anticipate* the time, *probably in the 1980's*, when commercial nuclear power reactors will generate more high level radioactive waste material than reactors in the Government sector, including those used in the weapons program. At present, most of the wastes which are leaking from *temporary tanks* in AEC storage facilities are from the weapons program. The committee intends that new facilities now being planned for long term storage of commercial wastes will meet strict licensing standards of [NRC]. (Emphasis added.) S. Rep. No. 93-980, 93rd Cong., 2d Sess. at 60 (1974).

This passage evidences Congress' intention that Section 202(4) applies to a new generation of facilities which have yet to be designed, and that Congress considers existing ERDA tanks to be temporary, not long term facilities.

This interpretation is reinforced by language in the Conference Report describing Section 202(4):

The conference substitute also retains the Senate language with respect to licensing of "retrievable surface storage facilities" and other facilities for long term storage of high level radioactive waste. Such facilities are not now in existence but will be developed in the near future for long term, possibly permanent, storage of high level radioactive wastes, including wastes from the licensed sector. H.R. Rep. No. 93-1445, 93rd Cong., 2d Sess. 34 (1974).

³See *Hearings on S. 2135 and S. 2744 Before the Subcomm. on Reorganization, Research and Int'l Organization of the Sen. Com. on Government Operations*, 93rd Cong., 2d Sess., at 338, 345 (1974).

We read this language as looking to the future at facilities yet to be designed which will handle wastes from the licensed sector as well as defense wastes.

Although we are of the opinion that, in enacting Section 202(4), Congress had in mind facilities of future design for use in the 1980's, we are of the opinion that Section 202(4) would nevertheless apply to facilities constructed prior to that time using an existing design if it could be shown that they were "authorized for the express purpose of subsequent long term storage."⁴ The plain meaning of the statute requires this much. But the "authorized for the express purpose" phrase seems to indicate that examination of subsequent authorization acts is appropriate in ascertaining the applicability of Section 202(4). Turning to the 1976 Fiscal Year Authorization Act for the tanks in question, P.L. 94-187, we find nothing to indicate an intent that the authorized facilities are for long term storage of radioactive wastes. Indeed, the opposite is the case. As ERDA has repeatedly pointed out, ERDA letter of February 5, 1976; ERDA letter of February 17, 1977, the Senate Report on the 1976 Authorization Act states:

... these facilities for short term storage of radioactive waste are not required to be licensed by the Nuclear Regulatory Commission. S. Rep. No. 94-514, 94th Cong., 1st Sess. 75 (1975).

Accordingly, the 1976 projects are beyond the scope of Section 202(4). Similarly, in the absence of language in the 1977 authorization statute indicating that the facilities are authorized for the express purpose of long term storage, we would be reluctant to rule that the facilities are subject to Section 202(4), particularly in light of the legislative history reflecting a concern for a new generation of facilities.

The present record supports the conclusion that the storage tanks authorized for FY 1976 and FY 1977 are part of the present generation of interim waste management facilities, not a new generation of long term storage facilities. ERDA has repeatedly referred to its waste programs at Hanford and Savannah River as "interim" or "short term."⁵ The program at Hanford entails the evaporation of existing aqueous wastes to "salt cake," "sludge," and residual liquids to decrease the volume of wastes that must be stored and minimize potential leaks. ERDA-1538, *supra* at V-2. Current plans call for completion of the solidification program and transfer of residual liquids to new double walled tanks by the early 1980's. In the meantime, ERDA plans to conduct research, development, and demonstration programs for ultimate disposal of the wastes in facilities yet to be designed. *Id.* at V-13 to V-15. Selection of an ultimate disposal technique, which would be subject to NRC licensing, is planned for 1980. *Id.* at V-13. Operations at Savannah River are similar, with completion of

⁴We find it unnecessary to define what is meant by "long term," although we note that had Congress intended a precise number of years to be determinative, it hardly could have chosen a more imprecise means of saying so. See S. Rep. *supra* at 59-60.

⁵See *Hearings, supra*, note 3 at 321-322; 337-347; 41 FR 45901 (October 18, 1976).

the solidification program schedule for the mid-1980's. ERDA-1537, *supra* pp. II-64 to II-79. A technical alternatives document assessing alternative disposal plans for wastes from both sites (and INEL) will be published by ERDA in 1977 as the first step in preparing an environmental statement on these plans. See 41 FR 45901 (October 18, 1976). ERDA's planned long term facilities seem to be a proper subject for licensing under Section 202(4), while its present interim programs at Savannah River and Hanford are beyond the scope of this section.

We are aware of our staff's concern that the technology for complete removal of neutralized waste has not been convincingly demonstrated. It is clear, however, that the tanks have been designed for such removal and that Congress has authorized them with such design in view. Wholly apart from the consideration that the possibility of contaminating residues would not make these tanks long term storage facilities, the question of our mandatory licensing jurisdiction is settled by Congress' actions.

We turn finally to the staff's statement that it would be advisable to obtain more information on the FY 1977 tanks. We do not agree with the staff that additional information is necessary to a decision on the scope of Section 202(4). The environmental statements describe the design characteristics of waste storage tanks in detail, and they indicate that the FY 1977 tanks are not of a different design. ERDA-1538, *supra* p. V-3; ERDA-1537, *supra* p. II-69.

In summary, we observe that the present controversy chiefly involves a dispute over the scope of Section 202(4) and Congress' intentions in enacting this section of the Energy Reorganization Act. Further proceedings on this matter could not meaningfully add to the record on this question, the parties having fully expressed their views on the legal interpretations to be given the legislative history of Section 202(4). Accordingly, and in light of the representations made by ERDA in prior correspondence, we deny NRDC's request for further proceedings, we reaffirm our earlier determination that the ERDA waste tanks authorized by FY 1976 are beyond the scope of Section 202(4), and we determine that the FY 1977 tanks are similarly beyond the scope of Section 202(4).

It is so ORDERED.

Commissioner Gilinsky concurs in the result.

For the Commission

Samuel J. Chilk
Secretary of the Commission

Dated at Washington, D.C.
this 31st day of March 1977

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

THE TOLEDO EDISON COMPANY	Docket Nos. 50-346A
THE CLEVELAND ELECTRIC	50-500A
ILLUMINATING COMPANY	50-501A

(Davis-Besse Nuclear Power
Station, Units 1, 2, and 3)

THE CLEVELAND ELECTRIC	Docket Nos. 50-440A
ILLUMINATING COMPANY, et al.	50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

March 1, 1977

The City of Cleveland seeks to disqualify a law firm from representing one of the applicants in this antitrust proceeding. Upon appeal by the City from the decision of the Special Board convened pursuant to 10 CFR §2.713(c) (LBP-76-40, NRCI-76/11 561) and from the Antitrust Board's order dismissing the disqualification proceeding on the ground of collateral estoppel, the Appeal Board rules that (1) the doctrine of collateral estoppel is applicable in disqualification proceedings; (2) the Special Board was correct in its determination that all of the preconditions to application of collateral estoppel are present in this case.

Decision of the Special Board and order of the Antitrust Board affirmed; jurisdiction over the disqualification matter retained by Appeal Board pending the outcome of the appeal taken from the Federal district court decision upon which collateral estoppel was based.

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

Collateral estoppel precludes the relitigation of issues of law or fact which have been finally adjudicated by a tribunal of competent jurisdiction in a proceeding involving the same parties or their privies. *Alabama Power Co.* (Farley, Units 1 and 2), ALAB-182, 7 AEC 210, 212-13 (1974).

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

Collateral estoppel applies in administrative adjudicatory proceedings. *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 214 (1974); *United States v. Utah Construction and Mining Co.*, 384 U.S. 394, 421-22 (1966).

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

Subject to certain exceptions, a judicial decision is entitled to the same collateral estoppel effect in a later administrative proceeding as it would be accorded in a subsequent judicial proceeding. 2 Davis, *Administrative Law Treatise*, §18.11 at p. 619 (1958), citing *Lentin v. Commissioner*, 226 F.2d 695 (7th Cir. 1955), *certiorari denied*, 350 U.S. 934 (1956).

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

“When the legislative intent is to vest primary power to make particular determinations concerning a subject matter in a particular agency, a court’s decision concerning that subject may be without binding effect upon that agency.” 2 Davis, *Administrative Law Treatise*, §18.12 at pp. 627-28. *Cf. United States v. Radio Corporation of America*, 358 U.S. 334, 347-52 (1959).

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

The issue of whether a law firm, because of its prior representation of a city in connection with municipal bond matters, should be precluded from later representing the city’s adversary in an antitrust proceeding, is not one for which Congress has expressed an intent that the NRC should resolve, independent of a court’s resolution of the same issue in an antitrust proceeding involving the same parties. Nor does application of collateral estoppel in such circumstances constitute an unwarranted intrusion into the ability of the Commission to control its internal proceedings.

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

The application of collateral estoppel does not hinge on the correctness of the decision or the interlocutory rulings of the first tribunal; it is enough that that tribunal had jurisdiction to render the decision. 1B *Moore's Federal Practice*, Pars. 0.405[1] and [4.-1] at p. 629 and pp. 634-37 (2d ed. 1974).

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

With respect to *res judicata*, "it is no objection that the former action included parties not joined in the present action, or vice versa, so long as the judgment was rendered on the merits, the cause of action was the same and the party against whom the doctrine is asserted was a party to the former litigation." *Dreyfus v. First National Bank of Chicago*, 424 F.2d 1171, 1175 (7th Cir.), *certiorari denied*, 400 U.S. 832 (1970); *Hummel v. Equitable Assurance Soc.*, 151 F.2d 994, 996 (7th Cir. 1945). The same principle applies where collateral estoppel is involved.

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

Collateral estoppel applies to both factual and legal questions which have been previously adjudicated. *Safir v. Gibson*, 432 F.2d 137, 142-43 (2d Cir. 1970), *certiorari denied*, 400 U.S. 850 and 942 (1970).

Messrs. Malcolm C. Douglas, Acting Director of Law, and Robert D. Hart, 1st Assistant Director of Law, Cleveland, Ohio, for the City of Cleveland.

Mr. Michael R. Gallagher, Cleveland, Ohio, for Squire, Sanders & Dempsey.

Messrs. Joseph Rutberg and Michael B. Blume for the Nuclear Regulatory Commission staff.

DECISION

Opinion of the Board by Mr. Rosenthal, in which Messrs. Salzman and Sharfman join:

Coming before us for a second time is the attempt of the City of Cleveland, founded upon 10 CFR 2.713(c), to disqualify the law firm of Squire, Sanders and Dempsey from representing the Cleveland Electric Illuminating Company in this antitrust proceeding. On the previous occasion, we were confronted with an

order by the Licensing Board conducting the antitrust proceeding (the "Anti-trust Board") which had directed the disqualification of the law firm. This order had been entered notwithstanding the contrary conclusion on the disqualification question reached by a differently constituted special Licensing Board (the "Special Board"), convened under Section 2.713(c) for the express purpose of considering whether the charges preferred by the City against the law firm were meritorious and warranted the firm's suspension from the proceeding. Following our review of the matter, we held that, in cases such as this, Section 2.713(c) requires the special board to decide the disqualification matter in its entirety, "the initial board's function thereafter [being] limited to the carrying out of the ministerial duty of promptly entering an order giving effect to the special board's decision." ALAB-332, NRCI-76/6 785, 794 (June 11, 1976). We went on to conclude, however, that the determination of the Special Board in this instance was infected with errors of law and, further, that the law firm was entitled to an evidentiary hearing before that Board. *Id.* at 794-802. Accordingly, we remanded the case to the Special Board for further proceedings consistent with the views expressed by us.

What is now at issue is an order by the Special Board on the remand, granting by a divided vote the motion of the law firm to dismiss the disqualification proceeding on the ground of collateral estoppel. LBP-76-40, NRCI-76/11 561 (November 5, 1976).¹ For its basis, the motion had relied upon a district court decision, after an evidentiary hearing, rejecting Cleveland's endeavor to disqualify Squire, Sanders and Dempsey from representing the Cleveland Electric Illuminating Company in a civil antitrust proceeding in that court which had been instituted by the City against that utility and others in 1975. *City of Cleveland v. The Cleveland Electric Illuminating Co.*, Civil Action No. C75-560 (N.D. Ohio, August 3, 1976). Agreeing with the law firm that a party in an administrative proceeding may be estopped from relitigating issues decided adversely to it in a judicial proceeding, the Special Board then determined that the decision of the district court addressed and resolved the same basic issue as was raised by the City in seeking the firm's disqualification from our antitrust proceeding.

On a full consideration of the papers submitted to us in support of and in opposition to the appeal taken by the City from both the Special Board's order and the order of the Antitrust Board giving effect thereto,² we affirm. Because, however, we have been told that the district court's decision is now pending

¹ As required by ALAB-332, the Antitrust Board gave automatic effect to the Special Board's action in a brief unpublished order entered on November 23, 1976.

² We have also scrutinized with care the 41-page decision of the district court, which was appended to the law firm's August 6, 1976, motion seeking a temporary stay of further discovery.

before the Court of Appeals for the Sixth Circuit on the City's appeal, we are retaining jurisdiction over the matter. Should the Sixth Circuit reverse, vacate or significantly modify the district court's ruling, within thirty days, thereafter the City may file a motion with us requesting such relief as it may deem appropriate in light of that development. *Cf. Occidental Life Ins. Co. v. Nichols*, 216 F.2d 839 (5th Cir. 1954); *Ray v. Hasley*, 214 F.2d 366, 368-69 (5th Cir. 1954); *Walz v. Agricultural Ins. Co.* 282 Fed. 646, 649 (E.D. Mich. 1922).

A. The essential ingredients of the doctrine of collateral estoppel are well established and, having been accurately summarized by the Special Board (NRCI-76/11 at 565), need not be rehearsed at length here. Suffice it to say that the doctrine precludes the relitigation of issues of law or fact which have been finally adjudicated by a tribunal of competent jurisdiction in a proceeding involving the same parties or their privies. *Alabama Power Co.* (Joseph M. Farley Nuclear Plant; Units 1 and 2), ALAB-182, 7 AEC 210, 212-13, *remanded on other grounds*, CLI-74-12, 7 AEC 203 (1974).³

It is equally settled that collateral estoppel is as applicable in administrative adjudicatory proceedings as it is in the judicial arena. *Id.* at 214, citing, *inter alia*, *United States v. Utah Construction and Mining Co.*, 384 U.S. 394, 421-22 (1966): Further, as a general matter, a judicial decision is entitled to precisely the same collateral estoppel effect in a later administrative proceeding as it would be accorded in a subsequent judicial proceeding. 2 Davis, *Administrative Law Treatise*, §18.11 at p. 619 (1958), citing *Lentin v. Commissioner*, 226 F.2d 695 (7th Cir. 1955), *certiorari denied*, 350 U.S. 934 (1956).

It is quite true that "when the legislative intent is to vest primary power to make particular determinations concerning a subject matter in a particular agency, a court's decision concerning that subject matter may be without binding effect upon that agency." 2 Davis, *supra*, §18.12 at pp. 627-28. *Cf. United States v. Radio Corporation of America*, 358 U.S. 334, 347-52 (1959). We agree, however, with the majority of the Special Board (NRCI-76/11 at 566) that that principle does not come into play in this case. At bottom, the issue on the merits before the Special Board was whether, essentially by reason of its prior representation of the City in connection with municipal bond matters, the law firm should be precluded from now representing the City's adversary in an antitrust proceeding. We discern no legislative purpose that this Commission resolve such an issue independently of a court's resolution of the same issue in an antitrust proceeding before it involving the same parties.

Nor do we subscribe to the belief of the dissenting member of the Special Board that the application of collateral estoppel in this case would constitute an

³In recent years, however, the courts have shown a tendency to retreat from the requirement of mutuality in certain circumstances. See, e.g., *Blonder-Tongue Laboratories v. University of Illinois Foundation*, 402 U.S. 313 (1971).

unwarranted intrusion into the ability of the Commission to control its internal proceedings and, as such, would be contrary to public policy. NRCI-76/11 at 570. That line of reasoning might well have had force were the Special Board here concerned with the manner in which the law firm had conducted itself during the course of our antitrust proceeding. Assuredly, the Commission's adjudicatory boards must be free to take appropriate measures—including debarment from a proceeding—against any counsel whose actions threaten the orderly and proper course of the proceeding, whether or not like conduct by the same counsel has been deemed cause for disciplinary action in a related judicial proceeding. And, conceivably, there may be other types of situations in which it would be important for the Commission to reserve to itself decision in a proceeding involving allegations of unethical conduct by attorneys practicing before it. But it is difficult to fathom why the Commission's ability “to control its internal proceedings” would be imperiled to any material extent were collateral estoppel effect accorded to a judicial determination respecting whether the Code of Professional Responsibility permits a law firm to represent a particular client in specified circumstances.⁴

B. Having thus concluded that the doctrine of collateral estoppel is applicable in a Section 2.713(c) proceeding such as that at bar, we now turn to consider whether the Special Board was right in its determination that all of the preconditions to its application are present in this instance. We answer this question in the affirmative.

Our reading of the district court's August 3, 1976, decision in *City of Cleveland v. The Cleveland Electric Illuminating Co.*, *supra*, leaves us in no doubt that the issue there considered and decided (after the evidentiary hearing in which both the City and Squire, Sanders and Dempsey participated) is precisely that which the Special Board had before it. To repeat, that common issue is whether the Code of Professional Responsibility interdicts Squire, Sanders and Dempsey's representation of the Cleveland Electric Illuminating Company in now ongoing antitrust proceedings by reason of the firm's prior representation of another and adverse party to those proceedings (the City) in connection with different matters.

It is, of course, of no present moment whether the court properly decided the issue; *i.e.*, whether its findings of fact and conclusions of law were well

⁴The foregoing discussion should not be taken to mean that this Commission is authorized to disqualify an attorney only for unprofessional conduct directly interfering with the course of our own proceedings. Indeed, in ALAB-332, *supra*, we considered and explicitly rejected an earlier holding to that effect by the Special Board (as then constituted). See NRCI-76/6 at 794-96. What we are concerned with here is not whether 10 CFR 2.713(c) reaches the violation of the Code of Professional Responsibility asserted by the City but, rather, with the entirely different question whether the determination of the district court adverse to the City is to be given collateral estoppel effect.

founded. Nor is it pivotal whether, as the City maintains, the court erred in its rulings on discovery matters. As the doctrine of collateral estoppel has been formulated, its application does not hinge upon a demonstration that the decision of the first tribunal, as well as all of its interlocutory rulings, were correct; it is enough that that tribunal had jurisdiction to render the decision.⁵ 1B *Moore's Federal Practice*, Pars. 0.405[1] and [4.-1] at p. 629 and pp. 634-37 (2nd ed. 1974), and cases there cited. In any event, as previously noted, the City has appealed the district court's decision to the Sixth Circuit; should that appeal prove successful, the City will be in a position to ask that it be relieved of the estoppel created by the district court's decision.

Finally, the City's contrary view notwithstanding, it is irrelevant that the NRC staff and the Department of Justice are parties to our antitrust proceeding but not to the district court proceeding. With respect to *res judicata*, "... it is no objection that the former action included parties not joined in the present action, or vice versa, so long as the judgment was rendered on the merits, the cause of action was the same and the party against whom the doctrine is asserted was a party to the former litigation." *Dreyfus v. First National Bank of Chicago*, 424 F.2d 1171, 1175 (7th Cir.), *certiorari denied*, 400 U.S. 832 (1970); *Hummel v. Equitable Assur. Soc.*, 151 F.2d 994, 996 (7th Cir. 1945). There is no readily apparent reason why a different principle should obtain where collateral estoppel is involved. Thus, irrespective of whether the staff and the Department of Justice might be deemed parties to the disqualification matter because it arises out of the antitrust proceeding,⁶ the district court's decision is fully binding upon the City.⁷

⁵ It might be noted that, although the City strenuously insists that the district court committed various errors, there is no claim that those errors amounted to a denial of due process. Rather, the City's sole assertion of a deprivation of due process is advanced in the context of the dismissal of the proceeding before the Special Board on collateral estoppel grounds. The City apparently reasons that that dismissal stripped it of procedural rights (such as discovery and a full evidentiary hearing) guaranteed by our decision in ALAB-332. The City is mistaken. The portion of ALAB-332 relied upon was addressed to the procedures to be followed by the Special Board on the then-justified assumption that that Board would be called upon to decide the disqualification matter on the merits. Nothing in our earlier opinion can be reasonably construed as conferring any vested right to an evidentiary hearing in the event that, because of the occurrence of new developments, Special Board consideration of the merits of the controversy should become inappropriate as a matter of law.

⁶ The staff, but not the Department, has involved itself in the disqualification matter.

⁷ Although the NRC staff joins the law firm in urging affirmance of the result reached by the Special Board, it does not agree with the totality of that Board's reasoning. In essence, the staff's position is that (1) we held in *Farley*, ALAB-182, *supra*, that the application of collateral estoppel is a matter of discretion insofar as an administrative agency is concerned; (2) in the circumstances here, collateral estoppel should not be applied with respect to the "ultimate question of disqualification" but, rather, only with respect to the crucial findings

(continued on next page)

For the foregoing reasons, the November 5, 1976, decision of the Special Board, and the November 23, 1976, order of the Antitrust Board entered on the basis of that decision, are *affirmed*. This Board shall, however, retain jurisdiction over the disqualification matter pending the decision of the Court of Appeals for the Sixth Circuit on the appeal taken by the City of Cleveland from the August 3, 1976, decision of the District Court for the Northern District of Ohio in *City of Cleveland v. The Cleveland Electric Illuminating Co., supra*. Within thirty days of its rendition, the City may bring the Sixth Circuit's decision to our attention and, in connection therewith, apply for such relief as may seem appropriate in light of that decision. In the absence of such an application within the prescribed period, this Board's jurisdiction over the disqualification proceeding shall terminate automatically without our further order.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

(continued from previous page)

of fact made by the district court; and (3) on the facts as found by that court, the legal conclusion perforce follows that the law firm should not be disqualified.

We cannot accept this analysis. In the first place, nothing said by us in *Farley* suggests that, absent overriding competing public policy considerations (and here none has been shown), an administrative agency is free to withhold the application of collateral estoppel as a discretionary matter. Secondly, the staff cites no authority for its seeming belief that, for collateral estoppel purposes, a distinction is to be drawn between issues of fact and issues of law. The prevailing view would appear to be otherwise: if the doctrine comes into play at all in the particular case, it reaches previously adjudicated factual and legal questions alike. See, e.g., *Safir v. Gibson*, 432 F.2d 137, 142-43 (2nd Cir., Friendly J.), *certiorari denied*, 400 U.S. 850 and 942 (1970).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Dr. Lawrence R. Quarles
Richard S. Salzman

In the Matter of

Docket Nos. 50-329
50-330

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2)

March 4, 1977

Upon renewed motion for directed certification by the staff, seeking interlocutory review of Licensing Board rulings which excluded prospective staff witnesses from the hearing room while other parties' witnesses testified, the Appeal Board considers the explanation provided by the Licensing Board in response to ALAB-365, and rules that that Board abused its discretion and must abandon its exclusionary practices with respect to staff witnesses.

Motion for certification granted; Licensing Board directed to conform further proceedings before it to the views expressed in this opinion.

RULES OF PRACTICE: CERTIFICATION

An appeal board is justified in reviewing, through directed certification, interlocutory rulings of a licensing board which threaten to impede the full development of the record.

RULES OF PRACTICE: GUIDANCE FROM JUDICIAL PROCEEDINGS

While an NRC adjudicatory board may take guidance from rules and practices of Federal courts, there must first be inquiry into whether the situations are truly similar. *Duke Power Co.* (Catawba, Units 1 and 2), ALAB-355, NRCI-76/10 397, 402-05 (1976).

RULES OF PRACTICE: SEQUESTERING OF WITNESSES

Counsel in NRC proceedings may need the aid of several expert assistants during cross-examination of other parties' witnesses, and should not be denied

that aid except for serious reason. This is so even if the experts may later become witnesses.

ADJUDICATORY PROCEEDINGS: STATUS OF NRC STAFF

The particular status of the NRC staff does not entitle it to be treated any differently from other parties to a proceeding. Where staff witnesses are in a different position vis-a-vis a particular issue than other parties' witnesses, however, disparate treatment may be warranted.

Mr. Myron M. Cherry, Chicago, Illinois, for the intervenors,
Saginaw Valley Nuclear Study Group, *et al.*

Messrs. Milton J. Grossman and James Lieberman for the
Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

The staff has renewed its request that we step into this postconstruction permit proceeding¹ in the midst of trial and disapprove the Licensing Board's practice of excluding prospective staff witnesses from the hearing room while other parties' witnesses testify.² We have an aversion to interfering with a trial board's conduct of a hearing. Here, however, there appears to be no warrant for the Board's sequestration of staff witnesses; more importantly, its continuing series of rulings threatens to impede rather than to assist the search for truth. We reluctantly conclude that the Board below has abused its discretion and that the public interest requires corrective action now; accordingly, we instruct the Board to abandon the course it has thus far followed with respect to the exclusion of staff witnesses.³

1. When this matter first came before us⁴ we surmised that the Board was sequestering all parties' prospective witnesses for the customary purpose of "insur[ing] the credibility of subsequent witnesses by preventing them from

¹ The proceeding was convened by the Commission in the wake of *Aeschliman v. NRC*, 547 F.2d 622 (D.C. Cir., July 21, 1976), *certiorari granted*, ___ U.S.3570, February 22, 1977.

² The request comes to us by way of a motion for directed certification (a procedure first held permissible in *Public Service Co. of New Hampshire* (Seabrook Units 1 and 2), ALAB-271, 1 NRC 478 (1975)).

³ The Board has excluded other parties' prospective witnesses as well. Those parties, however, have not pursued the matter before us (see fn. 9, *infra*).

⁴ The staff's original motion was filed on December 17, 1976, after less than a week of hearings had taken place.

deliberately fashioning their testimony in such a way as to support the testimony of those who preceded them.”⁵ Because other considerations—e.g., the Board’s failure to impose the usual restraints against the witnesses’ reading the transcript of prior testimony—left us unsure that this traditional reasoning underlay the Board’s action, we remanded the matter to the Board so that it could inform us of the “precise rationale for the unusual rulings objected to.”⁶ In that connection, we suggested that, in light of the particular circumstances of the case, there might be a distinction drawn between the witnesses for the staff and the witnesses for other parties.⁷

On February 7th, after another two weeks of hearing had been held, the Board responded by declaring that it was continuing to exclude witnesses for all parties because in its view “the spontaneity of the person testifying is encouraged by the absence of those who may be known by the witness to agree or disagree with his position.”⁸ It thought that a “more revealing account” of the past and future course of the “Dow-Consumers relationship” (which is at the heart of one aspect of the present proceeding) might thereby be obtained. The Board added that it perceived “no distinction between the presence of Staff witnesses” and “those of other parties.”

In renewing its motion with us, the staff attacks the Board’s rulings both in the abstract and as applied to its witnesses. The utility company, which initially joined in the staff’s motion and asked that we grant relief to its witnesses also, has not renewed its motion.⁹ We therefore consider the impact of the Board’s rulings only insofar as they affect the staff.

2. We stress at the outset that if the only adverse impact of those rulings was that they were inconveniencing the staff witnesses we would not be inclined here either (1) to exercise our authority to intercede in Licensing Board proceedings

⁵ ALAB-365, 5 NRC 37, 38 (January 18, 1977).

⁶ *Id.* at 38.

⁷ Consumers Power had filed a short statement joining in the staff’s motion and asking that relief be extended to its witnesses as well.

⁸ In some instances, the Board below seems to be taking a more traditional approach to sequestration, *i.e.*, using it for what the commentators say is the purpose of “preventing one prospective witness from being taught by hearing another’s testimony.” See VI *Wigmore* (3rd ed.) § 1838, p. 352. Specifically, it has informed us that “when the witnesses closest to the Dow-Consumers relationship have testified, we have imposed a more stringent rule; [in addition to excluding them from the hearing room] we have barred discussions among themselves and reading of the transcript.” Nothing said in this decision should be taken as being in any way critical of that practice in those circumstances.

⁹ On February 11th, we told the parties that the requests for certification would be deemed denied unless renewed by February 18th. ALAB-373, 5 NRC 415. The staff, but not Consumers Power, renewed its motion. Before it did, several more days of trial had taken place. The hearings have since been in recess and are scheduled to resume on March 7th.

on an interlocutory basis or (2) to reverse the rulings of the Board below. As to the first point, the need to conserve our own time and resources, as well as our respect for the need of the trial boards to be free from undue interference in the conduct of their proceedings, call for us to exercise our authority only in extraordinary situations. Secondly, even a large degree of disaccommodation of the parties and their witnesses is a tolerable price to pay for a measure which a Board has reason to believe might aid it in ferreting out the truth; that the measure causes inconvenience does not of itself justify our inquiring into whether it is necessary or even useful.

What is involved here, however, is not merely inconvenience. On the contrary, the Board's rulings threaten to impede rather than aid the full development of the record. There is, then, justification both to review these rulings now and, as it turns out, to reverse them.¹⁰

a. We begin by analyzing the differences between the practices usually followed at our hearings and those familiarly employed in adjudication elsewhere. The Board below apparently did not attach great significance to any such differences, for it said indiscriminately that sequestration orders are "commonplace in other forums." That they may be. Indeed, as the Board noted, such orders may even have to be granted now as a matter of right, not just of discretion, in the Federal courts.¹¹ But this overlooks that even in the courts parties are free to argue that expert assistants should be permitted to remain.¹² Moreover, in any event it misses the point—judicial procedures should not be imported into the administrative arena uncritically,¹³ and the sequestration rule is one that has

¹⁰The intervenors, at whose behest the sequestration rulings have been issued, suggest that we should not become involved at this interlocutory stage because "the issue here is not novel nor unique." We disagree. Sequestration for the reason given and under the conditions established by the Board is, to our knowledge, unique in the annals of nuclear licensing and perhaps in other forums as well. Neither the Board below nor the intervenors have cited to us any other instance in which witnesses have been excluded from a hearing room for the reason stated by the Board and without any limitations being placed upon their conversing among themselves or reviewing the transcripts.

¹¹Rule 615, Federal Rules of Evidence, and the accompanying Advisory Committee's Note.

¹²See 3 *Weinstein's Evidence* ¶ 615[01], p. 615-8, commenting on who may be exempted from the exclusionary rule: "Experts needed to advise counsel on technical matters, as for instance in tax or patent litigation, might also qualify . . ." under the exemption for "a person whose presence is shown by a party to be essential to the presentation of his cause." This exemption appears to place no limit on the number of persons who might qualify under it.

¹³Of course, we have ourselves often been guided by the rules and practices followed by Federal courts. See, e.g., *Public Service Co. of Indiana* (Marble Hill Units 1 and 2), ALAB-374, 5 NRC 417, 421 (February 11, 1977) (additional views of Mr. Farrar, joined in by the entire Board). But before guidance can be taken from judicial proceedings, there must be inquiry into whether the situations are truly similar. See, e.g., *Duke Power Co.* (Catawba Units 1 and 2), ALAB-355, NRCI-76/10 397, 402-05.

to be applied with a sensitive concern for the special nature of our proceedings.

In this connection, the direct testimony of witnesses in nuclear licensing hearings is usually prefiled in written form so that all the other parties—as well as all potential witnesses—know in advance the basic position to be taken by each witness. In many instances the direct testimony is prepared and presented not by just one person but by a panel of witnesses, no one of whom possesses the variety of skills and experience necessary to permit him to endorse and to explain the entire testimony. For similar reasons, counsel conducting the cross-examination of a witness or a panel of witnesses often needs the assistance of his own battery of experts. As all concerned recognize, under longstanding Federal court practice one representative of a party that is not a natural person is routinely exempt from sequestration even in the simplest of cases in order that he may assist counsel.¹⁴ The Board below accordingly exempted one such person here. But in our proceedings—as well as in complex litigation elsewhere—it is not usually the presence of any one person which counsel needs; rather, he needs the assistance of several experts, collectively skilled in all the topics under discussion.

It is for precisely this reason that the staff is challenging the Board's rulings. The staff claims that it is not sufficient for it to have just one expert available during the cross-examination of the other parties' witnesses. Nor does the staff believe it remedies the situation for the Board to permit (as it has done) the staff's other experts to read the transcript of the proceedings after each day's session, for at that point it may be too late to suggest alternate lines of inquiry that might expose deficiencies in the testimony.

We agree with all the staff says in this regard. The highly technical and complex nature of our proceedings will in many instances demand that counsel have a number of expert assistants ready to aid him during cross-examination of other parties' witnesses. Counsel is entitled to this aid unless there is serious reason justifying the denial of it.

In short, the Board's rulings could hamper the staff's ability to contribute to the development of a sound record. Those rulings can remain standing, then, only if there is some countervailing purpose which they serve, *i.e.*, if in some other way they might enhance full disclosure of all relevant evidence.

b. We frankly do not perceive any such useful purpose here. To be sure, one might envision situations in which a witness could be deterred from testifying fully by the presence in the courtroom of those able and likely to take physical

¹⁴ See *Weinstein* (fn. 12, *supra*) at pp. 615-1 - 615-2, quoting the Senate Judiciary Committee's clarifying statement on the purpose of the exemption, granted by both past practice and the Rule, to "an officer or employee of a party which is not a natural person designated as its representative by its attorney."

or economic reprisals against him. But we fail to see how the staff could be placed in this category. And in any event the Board's rulings were not carefully drawn to eliminate the presence of persons who might fit into it. Instead, the rulings were both too broad and too narrow to be suitable for that purpose.

Specifically, they were overbroad because they were addressed to all prospective witnesses, without regard to what their relationship to the witness testifying might have been. Thus, while the rulings might have hit some potential targets (e.g., the supervisors of Dow or Consumers employee-witnesses),¹⁵ they also bore heavily—and unnecessarily—upon staff witnesses who have in no way been shown to be in a position to exert a chilling effect upon any other witnesses.¹⁶ At the same time, the rulings were too limited, for they might have missed other persons who, although (at least theoretically) in a position to apply an undue influence on a witness, would not be excluded because they were not themselves scheduled to appear as witnesses.

In sum, insofar as the staff's prospective witnesses are concerned, we discern no basis upon which it could fairly have been concluded that their removal from the hearing room during other witnesses' testimony might in any measure encourage spontaneity. Nor will it otherwise lead to the development of a better record.¹⁷ Rather, as we have seen, there is serious reason to believe that their absence could have precisely the opposite effect.¹⁸ Accordingly, we must in-

¹⁵We refer to people in such positions for illustrative purposes only, *i.e.*, to exemplify the type of relationship that could conceivably give rise to the danger the Board was attempting to avoid. In no way do we wish to be understood as expressing an opinion as to whether any sinister influence has resulted from the involvement in this case of any particular individuals.

¹⁶The Board has not attempted to justify the exclusion of *staff* witnesses under the traditional type of sequestration order. Compare fn. 8, *supra*. For all that appears, the crucial matter now in controversy before the Board—*i.e.*, the course of the Dow-Consumers relationship—involves testimony as to past events as to which the staff was not a participant. Thus, the traditional purpose to be served by a sequestration rule would not appear to be furthered by exclusion of staff witnesses in this case. But we do not place any prospective limits on the exercise of the Board's discretion in this respect, other than to say that, of course, any invocation of the rule against the staff witnesses must be justifiable under—and carefully explained in light of—the appropriate governing principles, including those discussed in this opinion.

¹⁷In seeking the orders now being challenged, intervenors argued that credibility is important here. It may well be that the credibility of witnesses on essentially factual matters (as contrasted with the validity of their expert opinions on technical subjects) takes on more significance here than in the ordinary case. But if that is true, and if there is a danger of improper collaboration on testimony, the measures challenged by the staff are not the ones to employ to avert that danger (see fn. 8, *supra*).

¹⁸We have in the past repeatedly made the point that its particular status does not entitle the staff to be treated any differently from the other parties to these proceedings.

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struct the Board to abandon the course it has followed when it has excluded staff witnesses.¹⁹

The staff's motion for certification is *granted*; further proceedings before the Licensing Board shall conform to the views expressed herein.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

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See *Consolidated Edison Co. of New York* (Indian Point Units 1, 2 and 3), ALAB-304, NRCI-76/1 1, 6 (text accompanying fns. 13-15) and cases there cited. (But cf. *Public Service Co. of New Hampshire* (Seabrook Units 1 and 2), CLI-76-17, NRCI-76/11 451, 462, dealing with the Commission's consideration, in connection with a motion to suspend construction permits, of a "revised environmental survey" of the fuel cycle carried out by the staff-independent of its participation in any particular licensing proceeding—"at the explicit direction of the Commission . . . focused along lines set forth by the Commission, and . . . subject to ongoing Commission guidance during its preparation.") In this instance, however, their witnesses are in a different position with respect to the issue being tried than are the witnesses of Consumers and Dow. This justifies their being given disparate treatment for the limited purpose under discussion.

¹⁹ Intervenors, who had little to say about why we should not interfere at this stage (see fn. 10, *supra*), have furnished us with virtually no defense of the merits of the Board's rulings. While they do assert that "the record below discloses multiple events of a lack of candor on behalf of" the staff, they made no effort to point us to even one of those events. We are disinclined to credit an unsupported assertion of this nature; in any event, even if true it would not support the Board's rationale.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. Lawrence R. Quarles
Jerome E. Sharfman

In the Matter of

Docket Nos. STN 50-518
STN 50-519
STN 50-520
STN 50-521

TENNESSEE VALLEY AUTHORITY

(Hartsville Nuclear Plant
Units 1A, 2A, 1B and 2B)

March 11, 1977

Upon appeal by the applicant and the NRC staff from that part of LBP-76-35, NRCI-76/9 353, which modified an existing limited work authorization (LWA) to "exclude permission to clear, grub, and construct facility transmission lines" outside the plant site, the Appeal Board rules that (1) offsite activities such as construction of transmission lines may properly be included in an LWA and (2) once the Licensing Board has made all the findings requisite for an LWA, the Director of Nuclear Reactor Regulation may permit an applicant, through an LWA, to clear, grub, and construct offsite facility transmission lines.

Licensing Board decision reversed.

NUCLEAR REGULATORY COMMISSION: ENVIRONMENTAL RESPONSIBILITIES

Licensing boards have independent responsibilities in the realm of the enforcement of the NEPA command; *i.e.*, their role is not confined to the arbitration of those environmental controversies as may happen to have been raised by the litigants in the particular case.

LWA: SCOPE

A "site" for purposes of 10 CFR §50.10 means all the land on which the plant and its necessary accouterments, including transmission lines and access ways, are to be located; the reach of NEPA makes any distinction between onsite and offsite construction impermissible. *Kansas Gas and Electric Co.* (Wolf Creek, Unit 1), CLI-77-1, 5 NRC 1, 9 (January 12, 1977).

NEPA: GENERIC ISSUES

Environmental issues may be decided generically, in rulemaking proceedings, as well as on an *ad hoc* basis in adjudicatory proceedings.

NEPA: COST-BENEFIT BALANCE

The environmental cost-benefit balance on whether or not to build the plant must be distinguished from the balance on whether construction of some facilities should be permitted after the former balance has been made (favorably to the project) but before issuance of a construction permit. NEPA requires the latter balance to be made with respect to limited work authorizations, but the Commission has done so generically, by rule.

LWA: SCOPE

Once a licensing board has made all the findings on environmental questions required by 10 CFR §51.52(b) and (c) and has found that the site is a suitable location, from the standpoint of radiological health and safety, for the proposed reactor, the Director of Nuclear Reactor Regulation may, pursuant to 10 CFR §50.10(e), authorize an applicant to conduct any of various specified types of activities, including clearing, grubbing, and construction of offsite transmission lines.

Messrs. Herbert S. Sanger, Jr., General Counsel, David G. Powell, Assistant General Counsel, Alvin H. Gutterman and Nicholas A. Della Volpe, of Knoxville, Tennessee, for the applicant.

Mr. William D. Paton for the Nuclear Regulatory Commission staff.

DECISION

The applicant and the NRC staff appeal from so much of the Licensing Board's First Supplemental Partial Initial Decision dated September 30, 1976,¹ as modifies the amended limited work authorization issued pursuant to 10 CFR §50.10(e)(1) and (2) ("LWA-1")² "to exclude permission to clear, grub and

¹ LBP-76-35, NRCI-76/9 353.

² There is another type of limited work authorization (known as an "LWA-2") which may be issued under §50.10(e)(3). An LWA-2 was issued in this proceeding on December 27, 1976, but there is no issue concerning it on this appeal.

construct facility transmission lines" outside the actual plant site.³ No other party has chosen to file a brief with us in support of the Licensing Board's decision. For the reasons which follow, we reverse.

On April 20, 1976, the Licensing Board issued a partial initial decision ("PID")⁴ in which it decided all environmental issues posed by the application for a construction permit, making all of the findings required by 10 CFR §51.52(b) and (c), and found "that there is reasonable assurance that the proposed site is a suitable location for the four nuclear power reactors of the general size and type proposed from the standpoint of radiological health and safety considerations under the Atomic Energy Act and the rules and regulations promulgated by the Nuclear Regulatory Commission pursuant thereto."⁵ In that decision, the Licensing Board discussed at some length the environmental impact of the offsite transmission lines, concluded that said impact would "be adequately mitigated by adoption of the Staff's conditions in the FES and as modified (following Tr. 2738)" and required that those conditions "be included in any construction permit which may issue."⁶ The Board further found that the benefit of the plant would outweigh its environmental costs⁷ and required "that any Limited Work Authorization . . . be conditioned to include all the mitigating action planned by the Applicant and recommended by the Staff, except as modified herein . . ."⁸ On January 25, 1977,⁹ we affirmed the partial initial decision except for two issues not here relevant.

An LWA-1 was issued on April 22, 1976.¹⁰ By letter dated June 1, 1976,¹¹ the applicant requested that the staff amend the LWA-1 to authorize TVA to "clear, grub, and construct the facility transmission lines." No reason was given for the request other than that TVA "is planning to begin construction of permanent facility transmission lines in the near future." The staff subsequently authorized the amendment.

At an evidentiary hearing on August 17, 1976, with respect to the other matters decided in its September 30th decision, the Licensing Board raised *sua sponte* the question of whether construction of the offsite transmission lines "could appropriately be undertaken as part of LWA-1 activities."¹² In its deci-

³ Par. 37, *id.* at 361. For purposes of this opinion, we use the term "site" to mean the territory within the plant's exclusion area as defined in 10 CFR § 100.3(a).

⁴ LBP-76-16, 3 NRC 485.

⁵ Par. 284, *id.* at 545.

⁶ *Id.* at 529-31.

⁷ Par. 364, *id.* at 561.

⁸ Par. 363, *id.* at 561.

⁹ ALAB-367, 5 NRC 92.

¹⁰ See 41 Fed. Reg. 17980 (April 29, 1976).

¹¹ A copy of this letter was appended as Attachment A to the applicant's brief and we take official notice of it.

¹² Par. 21, NRCI-76/9 at 359.

sion, it answered that question in the negative and ordered the authorization to build the transmission lines stricken.

The Licensing Board gave basically two reasons for its determination. We shall consider them *seriatim*. As will appear, we are compelled to the conclusion that neither reason withstands close analysis. Our disagreement with the Board below on the result that it reached should not be allowed, however, to obscure the fact that, in inquiring on its own initiative into the transmission line question, that Board was discharging an important function assigned to it. Licensing boards have independent responsibilities in the realm of the enforcement of the NEPA command; *i.e.*, their role is not confined to the arbitration of those environmental controversies as may happen to have been placed before them by the litigants in the particular case. The Board here appears to have been aware of those responsibilities and sensitive to their fulfillment; for this it is deserving of commendation irrespective of whether the determinations made in the course of carrying out its mission receive the endorsement of reviewing tribunals.

1. The first of the two reasons assigned by the Licensing Board was the following:¹³

The Board finds that such extensive offsite activities [*i.e.*, clearing, grubbing and construction of transmission lines affecting 7800 acres of land¹⁴] are not intended to be included in limited work authorizations. The Statement of Consideration published on April 24, 1974, clearly indicates that preconstruction permit activities were intended to be primarily onsite activities.

While it is true that the statement of considerations accompanying the adoption of §50.10(e) discusses only onsite activities, the reason for this is rooted in history. As the statement itself shows, prior to the enactment of the National Environmental Policy Act (NEPA) "site excavation for safety-related structures was generally permitted to be undertaken by applicants without any prior Commission review."¹⁵ Although actual construction of such structures "on a site on which the facility is to be operated" was prohibited by 10 CFR §50.10(b),¹⁶ there was no restriction at all either on construction of onsite

¹³ Par. 25, NRCI-76/9 at 359.

¹⁴ The figure of 7800 acres is taken from par. 21 of the September 30th decision. *Ibid*. In its PID of April 20, 1976, however, the Licensing Board found that only 5400 acres are needed as rights-of-way for transmission lines which would not have to be built but for construction of the Hartsville plant and that, of these, 450 acres are now being used for existing transmission facilities. Par 209, 3 NRC at 530.

¹⁵ 39 Fed. Reg. 14506, 14507 (April 24, 1974); *accord*, *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3 and 4), CLI-74-22, 7 AEC 939, 943 (1974).

¹⁶ *Kansas Gas & Electric Co.* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-321, 3 NRC 293, 310 (1976), *aff'd*, CLI-77-1, 5 NRC 1 (January 12, 1977).

facilities which were not safety-related or on offsite activities of any kind.¹⁷ This was because the Commission's pre-NEPA jurisdiction was "confined to scrutiny of and protection against hazards from radiation." *New Hampshire v. AEC*, 406 F.2d 170, 175 (1st Cir.), *cert. denied*, 395 U.S. 962 (1969). It followed logically that the Commission's prohibition of preconstruction permit activities should be limited to onsite activities because offsite activities, with some exceptions not here relevant,¹⁸ had no bearing upon radiological health and safety.

In 1972, §50.10(c) was added to the regulation and made applicable to all production or utilization facilities requiring an environmental impact statement. While very similar in content to §50.10(b), it

was important because it went on to define "commencement of construction" broadly to include "any clearing of land, excavation or other substantial action that would adversely affect the natural environment of a site." It thus had the effect of banning much of what had previously been permitted.¹⁹

Nevertheless, the broader prohibition remained limited to onsite work. Even though the Commission by this time had general environmental jurisdiction under NEPA, the focus was still on the site because the amendment to the regulation was designed to correct what had been an obvious violation of NEPA in the prior regulation—unqualified permission to do site preparation without any consideration of its environmental effects or of the benefits and environmental costs of the plant as a whole. As the Commission stressed in its statement of considerations accompanying the issuance of the 1972 amendments:²⁰

Since site preparation constitutes a key point, from the standpoint of environmental impact, in connection with the licensing of nuclear facilities and materials, these amendments will facilitate consideration and balancing of a

¹⁷ See the first sentence of 10 CFR §50.10(b), limiting its prohibition of construction to the site, and §50.10(b)(3) which excepts from the term "construction" "construction of nonnuclear facilities (such as turbogenerators and turbine buildings) and temporary buildings (such as construction equipment storage sheds) for use in connection with the construction of the facility." The last sentence of §50.10(b), which made that regulation inapplicable to facilities subject to the requirement of an environmental impact statement, was added when §50.10(c) was added in 1972. *Prohibition of Site Preparation and Related Activities*, 37 Fed. Reg. 5745, 5748 (1972).

¹⁸ One such exception was "procurement or manufacture of components of the facility," which was permitted nevertheless. See 10 CFR §50.10(b)(2). See also *Detroit Edison Co.* (Greenwood Energy Center, Units 2 and 3), ALAB-247, 8 AEC 936, 942 (1974).

¹⁹ *Wolf Creek*, *supra*, n. 16, at 310. The word "natural" has since been dropped from §50.10(c). This change is not significant for our purposes.

²⁰ 37 Fed. Reg. 5745, 5746 (1972) (emphasis added).

broader range of realistic alternatives and provide a more significant mechanism for protecting the environment during the earlier stages of a project for which a facility or materials license is being sought.

The prohibitions of §50.10(c), however, were not absolute. The Commission described the procedure for escape from them under the 1972 regulations as follows:²¹

The Commission under its present regulations has retained the authority to grant exemptions from these requirements of §50.10(c) on a case-by-case basis and thereby permit the conduct of certain onsite activities prior to issuance of a construction permit. Under §50.12(a) the Commission may grant such exemptions where it determines that this would be authorized by law and will not endanger life or property or the common defense and security, and would otherwise be in the public interest, after considering and balancing specified factors relating to environmental impact, redress of any adverse environmental impact, foreclosure of alternatives, and effect of delay in commencement of construction on the public interest, including power needs.

One difficulty with this procedure was that it might result in work being done which might have a substantial effect on the environment before the balancing of the benefits against the environmental costs of the proposed plant which NEPA required the Commission to do. Consequently, in 1974, the Commission again amended §50.10 by adding subsection (e) to permit issuance by the Director of Nuclear Reactor Regulation of limited work authorizations, prior to the grant of the construction permit, which would allow specified types of work (otherwise prohibited by subsection (c)) to be done.²²

²¹ Notice of proposed rulemaking, 39 Fed. Reg. 4582 (1974).

²² The relevant portions of it for purposes of this appeal are the first two paragraphs which are as follows:

(1) The Director of Nuclear Reactor Regulation may authorize an applicant for a construction permit for a nuclear power reactor subject to the provisions of §51.5(a) of this chapter to conduct the following activities: (i) Preparation of the site for construction of the facility (including such activities as clearing, grading, construction of temporary access roads and borrow areas); (ii) installation of temporary construction support facilities (including such items as warehouse and shop facilities, utilities, concrete mixing plants, docking and unloading facilities, and construction support buildings); (iii) excavation for facility structures; (iv) construction of service facilities (including such facilities as roadways, paving, railroad spurs, fencing, exterior utility and lighting systems, transmission lines and sanitary sewerage treatment facilities); and (v) the construction of structures, systems, and components which are not subject to the provisions of Appendix B. No such authorization shall be granted unless the staff has completed a final
(continued on next page)

Although some of the activities permitted under §50.10(e)(1) are not by their literal terms limited to the site, until recently it might have been persuasively argued that such a limitation should be implied because subsection (e)'s only purpose is to permit, after the conclusion of an environmental review, what subsection (c) prohibits and, as we have seen, subsection (c) is limited by its terms to onsite activities. However, this argument, which leads to the same conclusion reached in this case by the Licensing Board, is no longer tenable. In its recent *Wolf Creek* decision, the Commission, after referring to the ambiguity created by the use of the word "site" in subsections (b) and (c) and the use of language in subsection (e) which is not so limited, stated:²³

But beyond the semantics of the rule, we must of course interpret it in the light of our responsibilities to implement NEPA. We believe, as does the staff, that if we are to discharge fully our NEPA responsibilities, a "site" for purposes of Section 50.10 must mean all the land on which the plant and its necessary accouterments, including transmission lines and access ways, are to be located.

It is true that the question in that case was whether certain offsite construction might be undertaken prior to the environmental review and the issuance of a limited work authorization and we have here the different question of whether offsite construction may be authorized in a limited work authorization after completion of the environmental review. The *Wolf Creek* decision is nevertheless dispositive. What it means is that, despite the lack of attention paid to offsite construction when the various amendments to §50.10 were adopted, the reach of NEPA itself makes any distinction between onsite and offsite construction impermissible. The first reason given for the Licensing Board's decision must therefore be rejected.

2. The second reason offered in support of the decision below is explained in the following way in the Licensing Board's opinion:²⁴

(continued from previous page)

environmental impact statement on the issuance of the construction permit as required by Part 51 of this chapter.

(2) Such an authorization shall be granted only after the presiding officer in the proceeding on the construction permit application (i) has made all the findings required by §51.52(b) and (c) of this chapter to be made prior to issuance of the construction permit for the facility, and (ii) has determined that, based upon the available information and review to date, there is reasonable assurance that the proposed site is a suitable location for a nuclear power reactor of the general size and type proposed from the standpoint of radiological health and safety considerations under the Act and rules and regulations promulgated by the Commission pursuant thereto.

²³*Kansas Gas and Electric Co.* (Wolf Creek Nuclear Generating Station, Unit No. 1), CLI-77-1, 5 NRC 1, 9 (January 12, 1977), *aff'g* ALAB-321, 3 NRC 293, 312 (1976).

²⁴Pars. 26-28, NRCI-76/9 at 359-60 (paragraph numbers and footnote omitted).

From an environmental standpoint, construction of these offsite lines will affect adversely a large geographic area. When such construction is done under an LWA, the adverse effect differs considerably from that which results from the same kind of construction after a construction permit has been issued. In the former situation, the adverse environmental effect is felt sooner and includes the risk that it will have been unnecessary if the permit is not granted.

Environmental costs resulting from construction of these lines after the construction permit has been issued is balanced against the primary benefit. At the LWA stage, the situation is radically different. Whether or not the primary benefit will be obtained is still unknown because the decision to issue a construction permit has not been made. The LWA allows certain environmental costs to be incurred. These costs, though extensive, are intended to be local in nature, *i.e.*, mainly onsite. These costs are balanced against an early start of construction of the plant in order to meet the need for power, the primary benefit for building the plant.

Furthermore, if the construction of these transmission lines were permitted by the regulations, as part of an LWA, the Atomic Safety and Licensing Board would be required under NEPA to consider the environmental impact of such construction "to the fullest extent possible. . . ."

The Board added that, although it had decided that construction of the transmission lines should not begin until after the issuance of a construction permit, the applicant could renew its request to be allowed to begin it under the LWA if the facts change. It said: "This Board would then be required to balance the environmental impact of any such activities against the benefit to be derived."²⁵

The Licensing Board is perfectly correct in distinguishing between an environmental cost-benefit balance on the question of whether or not to build the plant and an environmental cost-benefit balance on the question of whether construction of some facilities should be permitted after the former balance has been made (favorably to the proposed plant) but before issuance of the construction permit. These are different types of environmental assessments. The Licensing Board is also correct in its conclusion that NEPA requires the latter type of assessment to be made with respect to the issuance of LWAs. It has erred, however, in its failure to recognize that environmental issues may be decided in rulemaking proceedings as well as in adjudicatory proceedings; indeed, "generic proceedings are a more efficient forum in which to develop these issues without needless repetition and potential for delay." *Natural Resources Defense Council v. NRC*, 547 F.2d 633, 641 n. 17 (D.C. Cir. 1976), *cert.*

²⁵ Par. 31, *id.* at 361.

granted, 45 U.S.L.W. 3570 (February 22, 1977); accord, *Ecology Action v. AEC*, 492 F.2d 998, 1002 (2d Cir. 1974) (Friendly, J.); see *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 84-85 (1974).

The Commission has decided in what circumstances and for what kinds of activities an LWA-1 may be issued. It did so in the rulemaking proceeding leading to the adoption of §50.10(e)(1) and (2). It there amended 10 CFR Part 2 to require that, in construction permit proceedings, there be separate and prompt hearings and initial decisions on NEPA and site suitability issues.²⁶ It provided that, once the licensing board has made all the findings on environmental questions required by 10 CFR §51.52(b) and (c) and has found that the site is a suitable location, from the standpoint of radiological health and safety, for the proposed reactor, the Director of Nuclear Reactor Regulation may authorize an applicant to conduct any of various types of activities. Implicit in the Commission's adoption of this regulation was a judgment that the benefits of permitting these categories of work to be done after a favorable environmental review of the proposed plant but before award of a construction permit would yield benefits which outweigh any attendant environmental costs or risks. Thus, it noted in its statement of considerations:²⁷

Consideration of the instant amendments arises at a time of deep national concern over energy sources and supply—a concern which the Commission fully shares. The amendments should reduce the time required to bring on line nuclear power plants which satisfy all environmental and safety requirements.

This policy judgment of the Commission must be respected by licensing boards. If the Commission had wanted to have the licensing board in each case balance the benefits against the risks of each particular early construction activity proposed it would have given effect to this desire in its regulation. The regulation which it did promulgate does no such thing; it permits the LWA-1 to issue as soon as the licensing board makes the specified findings.²⁸

²⁶ See 10 CFR §2.761a, 39 Fed. Reg. 14506, 14508 (1974). There was an exception to this requirement if "the parties agree otherwise or the rights of any party would be prejudiced thereby." *Ibid.*

²⁷ *Ibid.*

²⁸ We do not intend by our decision in this case that a licensing board would have no jurisdiction to countermand the unlawful issuance of an LWA. As the Director's action in this case was completely lawful, that question need not be dealt with here.

For these reasons, the decision below is *reversed* and the Director of Nuclear Reactor Regulation is authorized to amend the LWA-1 so as to authorize the construction of offsite transmission lines.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

Docket Nos. 50-498A
50-499A

HOUSTON LIGHTING AND POWER COMPANY
THE CITY OF SAN ANTONIO
THE CITY OF AUSTIN
CENTRAL POWER AND LIGHT COMPANY

(South Texas Project,
Unit Nos. 1 and 2)

March 18, 1977

Upon appeal by the staff from LBP-76-41, NRCI-76/11 571, which granted an untimely antitrust intervention petition filed after the termination of the construction permit proceeding, the Appeal Board rules that the Licensing Board did not have jurisdiction to consider such a petition once the construction permit proceeding had concluded.

Licensing Board decision reversed; petition dismissed for want of subject matter jurisdiction.

RULES OF PRACTICE: NONTIMELY ANTITRUST INTERVENTION PETITIONS

The Commission itself has the power to initiate an antitrust proceeding even when no construction permit proceeding or operating license proceeding is pending.

RULES OF PRACTICE: NONTIMELY ANTITRUST INTERVENTION PETITIONS

The Director of Nuclear Reactor Regulation may treat an antitrust intervention petition filed after the termination of a construction permit proceeding as a request under 10 CFR §2.206 for the institution, through the issuance of show

cause order under 10 CFR §2.202, of a proceeding to modify an outstanding construction permit by the addition of antitrust conditions.

RULES OF PRACTICE: ORDER TO SHOW CAUSE

The staff may institute a show cause proceeding pursuant to 10 CFR §2.202 not only where it has reached the conclusion that relief is appropriate but also where it has determined that there is sufficient reason to look further into the matter of license modification, suspension or revocation. *Consolidated Edison Co. of New York* (Indian Point, Unit Nos. 1, 2 and 3), CLI-75-8, 2 NRC 173, 177 (1975).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

The total regulatory scheme, as described in 10 CFR §§2.717(a), 2.202, and 50.90, does not allow for the reopening by a licensing board of a terminated licensing proceeding in the event of a later material change in circumstances.

LICENSING BOARD: JURISDICTION

Licensing boards do not have jurisdiction to direct a hearing on antitrust matters in the absence of a pending construction permit or operating license proceeding.

RULES OF PRACTICE: ANTITRUST HEARINGS

The antitrust review conducted by the NRC is an integral part of the adjudication of the construction permit (or operating license) application itself.

Mr. J. A. Bouknight, Jr., Washington, D. C. (with whom Messrs. **Firris E. Cowan, Charles G. Thrash, Jr., J. Gregory Copeland, R. Gordon Gooch, John P. Mathis and Robert Lowenstein** were on the brief) for the Houston Lighting and Power Company.

Mr. Joseph Gallo, Washington, D. C. (with whom **Mr. Michael I. Miller** was on the brief) for the Central Power and Light Company.

Messrs. John C. Wood and W. Roger Wilson, San Antonio, Texas, filed a memorandum on behalf of the City Public Service Board of San Antonio.

Mr. Martin G. Malsch (with whom Messrs. Joseph Rutberg, Benjamin H. Vogler, and Frederic D. Chanania were on the brief) for the Nuclear Regulatory Commission staff.

DECISION

Opinion of the Board by Mr. Rosenthal, in which Mr. Salzman joins:

I

1. Over a year ago, we affirmed the initial decision of the Licensing Board authorizing the issuance of permits to, *inter alia*, the Houston Lighting and Power Company (Houston) and the Central Power and Light Company (Central) for the construction of Units 1 and 2 of the South Texas Project. ALAB-306, 3 NRC 14 (January 14, 1976), *affirming* LBP-75-71, 2 NRC 894 (1975). The Commission did not choose to exercise its power under 10 CFR 2.786 to review ALAB-306 *sua sponte*. Nor was judicial review sought by any party to the construction permit proceeding within the time prescribed by law. Accordingly, or at least so it then appeared, that proceeding had come to an end.

The application for the construction permits had been filed in May 1974. As required by Section 105c(1) of the Atomic Energy Act, as amended, 42 U.S.C. 2135(c)(1), a copy of the application had been transmitted to the Attorney General of the United States for his advice respecting whether a hearing should be held to consider possible antitrust implications. By letter of October 22, 1974, the Attorney General had responded in the negative. The text of that letter had been duly published in the Federal Register, together with a notice of opportunity for any interested person to file a petition for leave to intervene and to request a hearing on the antitrust aspects of the application. 39 Fed. Reg. 39078 (November 5, 1974). No such petition had been filed within the thirty day period provided by the notice. Thus, in light of the Attorney General's advice, no antitrust hearing had been initiated.

2. In May 1976, after the time for seeking judicial review of ALAB-306 had elapsed, Houston undertook to break off certain interconnections between its system and the systems of other utilities, including Central. Why this was done is not of present moment.¹ What is of significance here is that Central's distress

¹Suffice it to say that when Central and Houston filed their joint application with the Commission for the South Texas Project, both utilities had restricted their electric power generation and distribution operations to the State of Texas and neither was connected with any utility or power grid in interstate commerce. Subsequently, Central interconnected its electric power distribution system with certain out-of-state utilities, an action which apparently subjects aspects of its operations to Federal Power Commission regulation. The making of that interstate connection appears to have been what triggered Houston's disengagement of its transmission facilities from those of Central.

over this development prompted it to file a petition with the Commission the following month in response to the antitrust notice published some 19 months earlier. Acknowledging the lateness of the hour, Central nonetheless maintained that good cause existed for allowing it to intervene and request an antitrust hearing at this juncture. See 10 CFR 2.714(a). In this connection, it insisted that Houston's actions the month before constituted a supervening development warranting the imposition of antitrust conditions.

The Central petition was routinely referred to a Licensing Board for consideration. Responses to it were filed by both Houston and the NRC staff. Houston urged deferral of decision on the petition for at least a year to await possible resolution in another forum of some or all of the issues raised by Central.² The staff sought outright denial of the petition on jurisdictional grounds. In essence, its position was that (1) an antitrust hearing may be conducted only as an adjunct to a construction permit or an operating license proceeding; (2) the construction permit proceeding had been terminated and was not subject to being reopened for the purpose of considering antitrust or any other issues; and (3) the operating license application stage is the appropriate time for the consideration of new developments with potential antitrust implications which have occurred after the close of the construction permit proceeding. The staff went on to note, however, that there nonetheless was an avenue available to Central to seek relief on the allegations of its petition in advance of the filing of the operating license application: as a joint licensee, it might file a request under 10 CFR 50.90 for an amendment to the construction permits to include the antitrust conditions proposed in the petition.

3. On September 9, 1976, the Licensing Board entered an unpublished order granting Central's petition. The staff thereafter filed a petition for reconsideration or clarification, in which it renewed its jurisdictional arguments and asked the Board either (1) to deny the Central petition or (2) to indicate specifically whether intervention was being granted in connection with the concluded construction permit proceeding or, rather, in connection with the operating license application which, as the Board had noted in its September 9 order, Houston had agreed to expedite for the purpose of facilitating a prompt determination of antitrust matters.³

²Houston called attention to the fact that aspects of the controversy had been brought before a Federal district court, the Securities and Exchange Commission and the Federal Power Commission. It stated that there was "reason to believe" that the SEC would take "some initial action" within a year.

³Despite its initial position that decision on the Central petition should be deferred, Houston apparently later determined that there should be an expeditious antitrust hearing tied to an operating license application. As will be seen, that is the stance taken by Houston before our Board and the Commission itself.

By order of November 15, 1976, the Licensing Board denied reconsideration. LBP-76-41, NRCI-76/11 571. It expressed the view that Section 2.714(a) of the Rules of Practice, 10 CFR 2.714(a), confers jurisdiction upon a "duly established intervention [licensing] board" to rule on an untimely antitrust petition irrespective of whether a construction permit or operating license proceeding is then pending. *Id.* at 575. It further opined, *inter alia*, that the staff's position could not be squared with "the public policy mandate for antitrust review" and that "[i]t is unrealistic to rigidly define two separate insulated boxes, one defined as a construction permit proceeding and the other as an operating license proceeding, and mechanically view a permissible antitrust proceeding as unavailable if it falls into a hiatus box." *Ibid.* With respect to the staff's alternative request for clarification, however, the Board stated that "[t]o the extent that an antitrust intervention sought under Section 2.714 must come within the rubric of either [a construction permit or operating license] proceeding, we hold that the nontimely petition is cognizable under the construction permit proceedings." *Id.* at 579.

4. Invoking 10 CFR 2.714a, the staff appealed the grant of the Central petition to us, advancing essentially the same jurisdictional arguments it had presented below. Responses to the brief filed by the staff in support of the appeal were submitted by both Central and Houston⁴ and we held oral arguments in which all three of the parties participated. The Department of Justice was invited by us to submit an *amicus curiae* brief but elected not to do so.

Shortly before the date of oral argument, however, the Attorney General did make his views known on the warrant for an antitrust hearing on the allegations of Central's petition. Responding to an inquiry made last August in the wake of the filing of that petition, the Attorney General (through the Assistant Attorney General in charge of the Antitrust Division) informed the Commission that his Department believed that a hearing should be held and that it should "proceed at this time, rather than awaiting the filing of the application for an operating license."

5. On the basis of what was said in their briefs and at oral argument, it appears that all three parties are in present agreement with the Department of Justice that an antitrust hearing should be held at the earliest possible opportunity. The difference among them relates instead to the appropriate procedure for accomplishing this objective. Central understandably endorses the Licensing Board's action in granting its intervention petition and request for an antitrust hearing. The staff would have resort made to the provisions of 10 CFR 50.90, which authorize a holder of a license or construction permit to apply to the

⁴In addition, the City Public Service Board of San Antonio filed a short memorandum on behalf of that City (a co-applicant) in which it expressed disagreement with the result below.

Commission for an amendment to the license or permit. To this end, the staff informed us at oral argument that it would recommend promptly to the Commission that the Central petition be treated as such an application and that a hearing be directed thereon. The Director of Nuclear Reactor Regulation took this step by memorandum dated February 14, 1977, to which was attached a proposed notice of an antitrust hearing.

For its part, Houston suggested yet another course—the early filing of an operating license application and the institution of an antitrust proceeding in connection therewith. As Houston recognized, 10 CFR 50.34(b) requires that an operating license application be accompanied by the Final Safety Analysis Report for the facility; in the case of South Texas, that document has not been prepared (or at least completed). To overcome this possible obstacle to the adoption of its suggested procedure, on February 10, 1977, Houston petitioned the Commission for, alternatively, (1) a declaration that, for the limited purpose of triggering consideration of antitrust matters, the Director of Nuclear Reactor Regulation may accept applications for South Texas operating licenses in the absence of the FSAR; and (2) a waiver of the Section 50.34(b) requirement in this case.

II

As the foregoing background recitation makes apparent, in its current posture this case presents a most unusual situation. Notwithstanding their sharp disagreement respecting whether the Licensing Board correctly determined that it had jurisdiction to consider the Central petition on its merits (and by granting it to initiate an antitrust hearing), all parties have told us (1) that such a hearing should be held expeditiously; and (2) that, under the Commission's regulations, there is at least some means available for bringing about that result.

To this point, the Commission has not taken any decisive action on the papers recently filed with it by the staff and Houston in the implementation of the respective procedures which those two parties assert should be utilized to achieve the common goal. It is not difficult to perceive the likely reason for this inaction. As matters now stand, there is an outstanding determination of the Licensing Board that Central is entitled to an antitrust hearing on the strength of its intervention petition.⁵ If that Board be correct, there is no compelling necessity for the Commission to act at all on the submissions before it—which seek to accomplish the same ultimate objective, albeit by other routes. The Commission might, of course, have elected to exercise its undisputed authority to bring immediately before itself the Licensing Board's ruling,⁶ thereby bypassing our

⁵ In accordance with that determination, the Licensing Board issued a notice of antitrust hearing on September 9, 1976. Because of the pendency of this appeal, however, the Board has not as yet caused the notice to be published in the Federal Register.

⁶ See *Niagara Mohawk Power Corp.* (Nine Mile Point, Unit No. 2), CLI-73-28, 6 AEC 995 (1973).

consideration of the staff's appeal from that ruling. That the Commission did not avail itself of that option fairly gives rise to the inference that it believes it advisable to come to grips with the staff and Houston submissions only after, and in the light of, our disposition of the appeal.⁷ Consequently, our duty is clear: the appeal must be decided now.

In embarking upon this task, it should be stressed at the outset that what we are called upon to determine is confined to the jurisdictional issue which the Licensing Board decided. No questions have been brought to us pertaining to whether, assuming the existence of the requisite jurisdiction to grant the Central petition, the Licensing Board should have denied it on other grounds (e.g., untimely filing without good cause). Nor need we explore whether, assuming the nonexistence of the requisite jurisdiction, it is desirable to initiate an antitrust hearing in either the manner proposed by the staff or that advocated by Houston. That matter will be for the Commission to rule upon, should it eventually find it necessary to do so.

The tenor of much of the Licensing Board's discussion in its order on reconsideration prompts some other preliminary observations respecting the scope of the question before us. To begin with, we are not here concerned with whether *any* component of this agency has the requisite authority to direct the initiation of an antitrust hearing at this time. Plainly, such power does reside in the Commission itself (although whether it should be exercised is, as just noted, not for us to say). Beyond that, it would seem equally apparent that, had he wished to do so, the Director of Nuclear Reactor Regulation could have treated the Central petition as a request under 10 CFR 2.206 for the institution, through the issuance of an order to show cause under 10 CFR 2.202, of a proceeding to modify the outstanding South Texas construction permits by the addition of antitrust conditions. Although, for reasons of doubtful validity, that official has chosen not to resort to that authority,⁸ none of the parties (the staff included) disclaims its existence.

⁷Needless to say, no matter what we should conclude on the appeal, the Commission will be empowered to review what we have held.

⁸Our understanding on the basis of what was said by its counsel at oral argument is that the staff is concerned that the issuance of a show cause order would be taken as reflecting an at least tentative conclusion on its part that the antitrust conditions sought by Central are warranted. But we find nothing in Section 2.202 which suggests that such an order properly may be issued only in circumstances where the staff has already reached the conclusion that some relief is likely appropriate. Rather, as the Commission has held, the section allows the triggering of a show cause proceeding upon a staff determination simply that there is sufficient reason to look further into the matter of license modification, suspension or revocation. *Consolidated Edison Co. of New York* (Indian Point, Units Nos. 1, 2 and 3), CLI-75-8, 2 NRC 173, 177 (1975). See also *Environmental Defense Fund v. Ruckelshaus*, 439 F.2d 584, 594-95 (D.C. Cir. 1971). Needless to say, in fashioning a show cause order the staff is perfectly free to state explicitly the basis of the order and thus obviate the possibility that too much might be read into it.

What is involved here at bottom is instead whether the authority has been vested in the Board below to call for an antitrust hearing on the basis of the Central petition placed before it. And this question cannot be answered simply by referring to the terms of 10 CFR 2.714(a). True, Section 2.714(a) clothed the Board with the power to entertain the petition. But it scarcely follows that the section necessarily also conferred upon the Board the power to grant the petition and to order a hearing on the issues raised by it.

Just a year ago, we had occasion to examine a similar question respecting the reach of Section 2.714(a). *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167 (March 3, 1976). There, an intervention petition was filed seeking to raise antitrust matters in a licensing board hearing convened to consider the radiological health and safety and environmental aspects of a construction permit application. After entertaining the petition, the Licensing Board denied it on the sole ground of lack of jurisdiction over the subject matter. Specifically, the Board rules that it had not been empowered by the Commission to hear and decide antitrust matters in a hearing instituted to deal with health and safety and environmental issues.⁹

We affirmed on the basis of what we found to be a clearly expressed Commission policy to hold hearings on antitrust aspects of license applications "separately from the hearing on matters of radiological health and safety . . ." ¹⁰ This policy, we noted, was implemented by the provision in the Rules of Practice to the effect that, in the absence of contrary Commission direction, a hearing on the antitrust aspects of an application will be conducted separately from the one which is convened to hear environmental and safety matters.¹¹ Although acknowledging that, if it so chose, the Commission could direct a licensing board to hold a combined antitrust-safety/environmental hearing, we thought it manifest that such a board lacks the authority to do so absent Commission approval. In this regard, we quoted our observation in an earlier decision¹² that "[e]xcept where it recuses itself in a particular case, a licensing board's actions can neither enlarge nor contract the jurisdiction conferred by the Commission." 3 NRC at 171.

The teaching of *Marble Hill* is thus that the grant of an intervention petition must have a jurisdictional foundation apart from Section 2.714(a). Applied to the present case, this means that the inquiry comes down to whether (1) licensing boards have been given by Commission regulation the power to reopen a

⁹ A notice of opportunity for an antitrust hearing had previously been published but no intervention petitions had been filed in response thereto. See 3 NRC at 169.

¹⁰ 10 CFR Part 2, Appendix A, Section X(e).

¹¹ 10 CFR 2.104(d).

¹² *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-235, 8 AEC 645, 647 (1974).

concluded construction permit proceeding for the purpose of commencing a hearing to determine if antitrust conditions should be imposed upon the permit; and (2) if not, whether a board may order such a hearing in the absence of a pending construction permit or operating license proceeding. If the answer to both questions is in the negative, the Board's Section 2.714(a) function was the same as that in *Marble Hill*: to dismiss the Central petition for lack of jurisdiction over the subject matter.

1. The matter of the authority of the Licensing Board to reopen the construction permit proceeding is readily susceptible of resolution on the basis of the terms of one of the Rules of Practice. 10 CFR 2.717(a) provides without qualification that:

... The presiding officer's jurisdiction in each proceeding will terminate upon the expiration of the period within which the Commission may direct that the record be certified to it for final decision, or when the Commission renders a final decision, or when the presiding officer shall have withdrawn himself from the case upon considering himself disqualified, whichever is earliest.

Any lingering doubt that the Commission meant precisely what it said is dispelled by the statement of considerations which accompanied the amendments to various provisions of the Rules of Practice made on September 30, 1966, including Section 2.717(a).¹³ The statement contained this explanation:

The amendment of §2.717(a) set out below provides that the jurisdiction of presiding officers in adjudicatory proceedings shall terminate when the initial decision becomes the final action of the Commission in the absence of review, or when the Commission, after review, renders a final decision, or when the presiding officer withdraws from the case upon considering himself disqualified, whichever is earliest. *The amendment makes clear that presiding officers, who exercise quasi-judicial function, would have no authority or responsibility to take any action after that time.* [Emphasis supplied.]

In light of Section 2.717(a), there would, of course, be no room for a serious claim that it would now be within the power of the Licensing Board (*i.e.*, presiding officer) which had been assigned to the South Texas construction permit proceeding to reopen that proceeding at this late date *for any reason*. The Board below appreciated that consideration but seemingly thought that the limitations on the construction permit board had no application to a board later convened to rule on a tardy intervention petition. See NRCI-76/11 at 575. We think otherwise. In our view, the Section 2.717(a) command manifestly may not

¹³ 31 Fed. Reg. 12774 (1966).

be cast aside in this instance because of the happenstance that, reopening having been sought on antitrust (rather than safety or environmental) grounds, the Central petition was assigned to a differently constituted Licensing Board for appropriate disposition.

Underlying Section 2.717(a) is a recognition of the obvious fact that there must be an end to litigation sometime. The section reflects the Commission's policy judgment that the terminal point is appropriately reached when a final decision has been rendered in the proceeding. We would hardly be according the respect to which articulated Commission policy is entitled were we to rule that, once the Licensing Board which heard and decided the construction permit proceeding has lost jurisdiction over it, another Licensing Board then is free to assume jurisdiction and to order that proceeding reopened to consider whether additional conditions should be placed on the permits involved. This is so whether these conditions are of an antitrust nature or rather, in the realm of health and safety or environmental protection. Indeed, Central itself at least implicitly conceded at oral argument (App. Tr. 95-96) that, for present purposes, no distinction can be drawn along those lines: if a Licensing Board were able to reopen a terminated construction permit proceeding and thereby assume jurisdiction over antitrust questions brought to the fore by supervening developments, it would necessarily follow that it could reopen to examine a new safety or environmental question which surfaced after the final curtain fell on the proceeding.¹⁴

It need be added in this connection only that the enforcement of the terms of Section 2.717(a) does not have the effect of precluding the early adjudicatory consideration of developments subsequent to the construction permit proceeding which have a possible bearing upon the continuation or modification of the permit. As we have seen, by 10 CFR 2.202 the Commission has authorized the institution of a show cause proceeding to accommodate such developments. Beyond that, as also seen, 10 CFR 50.90 accords the holder of a permit or license the right to seek at any time an amendment of its terms. These considerations tend to confirm that the total regulatory scheme does not contemplate the resurrection of a terminated construction permit proceeding in the event of a later material change in circumstances. At the very least, given these other available remedies, it cannot be said that the fulfillment of what the Licensing Board characterized as the "public policy mandate for antitrust review"—or for that matter of any other mandate to be found in the Congressional enactments which this Commission must administer—hinges upon an adjudicatory proceeding remaining susceptible of reopening indefinitely.

¹⁴What has just been said applies to reopening by appeal boards as well. See *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 13-14 (1975).

2. We experience no greater difficulty in concluding that a licensing board has not been bestowed with jurisdiction to direct a hearing on antitrust matters—by a grant of an intervention petition or otherwise—in the absence of a pending construction permit or operating license proceeding.

As no one appears to dispute, the licensing boards have no independent authority to initiate any form of adjudicatory proceeding. What is required is the prior issuance, by some other component of the Commission, of one of the five types of orders or notices specified in 10 CFR 2.700: (1) an order to show cause (10 CFR 2.202); (2) an order calling for a hearing on the imposition of civil penalties (10 CFR 2.205(e)); (3) a notice of hearing on an application which must (or in the public interest should) be heard (10 CFR 2.104); (4) a notice of opportunity for hearing on an application not coming within Section 2.104 (10 CFR 2.105); and (5) a notice of opportunity for hearing on antitrust matters following receipt of the Attorney General's advice (10 CFR 2.102(d)(3)). It follows that, if at all, the Licensing Board could call for the commencement of an antitrust hearing here only on the basis of the notice issued by the Commission in November 1974 under Section 2.102(d)(3)—which brought attention to the Attorney General's South Texas advice letter and invited the filing of petitions for intervention and requests for an antitrust hearing. See p. 584, *supra*. Central seems to have acknowledged as much; as earlier noted, it expressly tied its intervention petition to the 1974 notice.

This being so, the question becomes whether the 1974 notice survived the absolute termination of the construction permit proceeding—with the consequence that it can now serve to allow a Licensing Board to bring into existence an entirely new proceeding. We conclude not.

The background and legislative history of the antitrust provisions added to Section 105c of the Atomic Energy Act in 1970 were canvassed in our decision last year in *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Unit 1), ALAB-323, 3 NRC 331 (April 14, 1976). As there appears, the legislative purpose was to establish formal procedures for the administrative review of the antitrust aspects of applications for construction permits (and in some instances operating licenses as well). And, with limited exceptions not of concern here, Congress has required that these review procedures be completed before a construction permit might issue—with a view toward insuring that, when and if the permit does issue in response to a grant of the application, it is laden with any conditions found necessary to obviate or rectify a situation inconsistent with the antitrust laws.

Thus, in no respect of present significance does an antitrust review stand on a different footing than the safety and environmental review of the same application. Both are conducted in connection with the adjudication of the construction permit (or operating license) application; both must be completed before the permit or license is issued; and both may or may not lead to the imposition

of permit or license conditions. To be sure, the antitrust hearing (if there is one) is before a licensing board other than the board assigned to hear the environmental and safety aspects of the application. But this does not mean that the antitrust review is other than an integral part of the adjudication of the construction permit (or operating license) application itself. As pointed out in *Marble Hill*, ALAB-316, *supra*, the practice of convening separate boards to conduct different phases of the review of the same application was established in the interest of the avoidance of lengthy and costly delays in the licensing process, as well as in recognition that the "expertise needed to decide complex antitrust matters does not necessarily encompass the knowledge required to resolve equally difficult technical and scientific issues." 3 NRC at 172. There is no indication anywhere that also underlying adoption of the practice was a belief that the antitrust review falls outside of the perimeter of the proceeding on the construction permit (or operating license) application; *i.e.*, is something more than just one of the several phases of that proceeding.

We do not understand the Board below to suggest that once the safety and environmental phases of a construction permit proceeding have come to a close, a person might invoke the notice of hearing which had initiated that proceeding for the purpose of instituting a new proceeding to consider additional safety or environmental matters. To the contrary, even assuming there to have been supervening developments bringing into legitimate question either the warrant for the construction permit or the need for its modification, this path would appear to be totally foreclosed. Under our regulatory scheme, if the person were not prepared to abide the arrival of the operating license stage, his remedy would lie in seeking the issuance of an order—not by a licensing board but by the appropriate official on the NRC staff—which would trigger a show cause proceeding (*i.e.*, one of the types of proceedings expressly provided for in the Rules of Practice).¹⁵ All things considered, there is no reason why a different rule might possibly obtain where, as here, it is new antitrust questions which are involved.

The short of the matter at hand is that, following receipt of the Attorney General's 1974 advice letter,¹⁶ an opportunity was provided to interested persons to seek an antitrust hearing on the construction permit application. Had one or more persons successfully availed themselves of that opportunity, a precondition to the issuance of the South Texas permits would have been the completion of an antitrust hearing in addition to the mandatory safety and

¹⁵ Alternatively, in the rare case where it is a holder of a permit which desires relief, an application for permit modification might be filed under 10 CFR 50.90. It too would not be filed with a licensing board but, rather, would be addressed to the "Commission" (*i.e.*, "the Nuclear Regulatory Commission or its duly authorized representatives" (see 10 CFR 50.2(h))).

¹⁶ See p. 584, *supra*.

environmental hearing.¹⁷ No antitrust hearing having been requested, the construction permit proceeding properly moved forward solely on the safety and environmental aspects of the application. When the Commission elected not to review this Board's affirmance of the initial decision authorizing the issuance of the permits, by virtue of 10 CFR 2.717(a) the adjudication of the application reached the terminal point. Necessarily, all notices of hearing or opportunity for hearing related to that adjudication then lost their force and effect. Accordingly, no petition for intervention could now be granted, or hearing instituted, on the authority of the 1974 antitrust notice.¹⁸

For the foregoing reasons,¹⁹ the order of the Licensing Board granting the Central petition for leave to intervene and for an antitrust hearing is *reversed* and the petition is *dismissed* for want of jurisdiction over the subject matter.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹⁷ *Kansas Gas & Electric Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-279, 1 NRC 559, 565 (1975).*

¹⁸ Our concurring colleague reaches the same result, albeit by another route. See pp. 595-602, *infra*. We are not persuaded that, to the extent there are differences between the two approaches, the one offered by him is acceptable, much less preferable. Because of the uniformity of ultimate conclusion, however, we need not extend this opinion by a detailed consideration of his analysis. It is enough to note that central to that analysis is the premise that antitrust issues are not considered as a part of the construction permit proceeding, but rather give rise to an entirely discrete proceeding. As has been seen, we reject that premise. To what has already been said, we would add only that it cannot possibly be squared with 10 CFR 2.104(d), which authorized the Commission to direct that the antitrust issues be heard along with the safety and environmental issues instead of "at another hearing" (emphasis supplied). See also 10 CFR Part 2, Appendix A, Section X(e), which observes that "generally" the antitrust hearing "will be held separately from the hearing on matters of radiological health and safety . . ." Thus, however our colleague may view the antitrust review, it is totally clear that the Commission looks upon it as a part of the construction permit proceeding—to be conducted in a separate hearing within the framework of that proceeding unless the Commission orders otherwise.

¹⁹ We have not found it necessary to reach the additional, interesting question whether an applicant for an NRC license may ever "intervene" in a proceeding involving its own application. In light of our practice of making co-applicants automatically parties to Commission proceedings concerned with their application, the matter is scarcely free from doubt.

Concurring Opinion of Mr. Sharfman:

I concur in the result reached by my brethren but not in all of the reasoning which leads them to it. I therefore feel compelled to explain the reasons for my disagreement and to set forth my own views on the questions here presented.

I

The majority starts its analysis with the Appeal Board decision in *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167 (March 3, 1976), which it states involved "a similar question respecting the reach of Section 2.714(a)."¹ The question involved in that case was not at all similar to the one at bar. *Marble Hill* simply held that a licensing board constituted for the purpose of hearing environmental and radiological health and safety issues may not also hear antitrust issues. This was a manifestly correct decision because both the Commission's regulations and §105c of the Atomic Energy Act contemplate that antitrust issues will be tried separately before a separate licensing board which may be composed of members possessing different qualifications from those possessed by technical members of boards designated to hear health, safety and environmental issues.² Thus, the

¹ P. 589, *supra*.

² I disagree with the *dictum* in *Marble Hill* (alluded to by the majority at p. 589, *supra*), stating: "We harbor no doubt that, if it so chose, the Commission could direct a licensing board to hold a combined antitrust-construction permit hearing." 3 NRC at 171. No authority is cited in support of it and a sentence in the Joint Committee on Atomic Energy's report on the bill containing §105c (quoted and italicized at p. 172 of the *Marble Hill* opinion) is expressly to the contrary. It states: "clearly a separate board or boards should be utilized in the implementation of paragraphs (5) and (6) of subsection 105c." The word "should" is not precatory. The fact that the requirement of separate hearings is not written into the statute is not determinative; it may be read into the statute by implication where the legislative intent is clear. See *Samson v. United States*, 79 F. Supp. 406, 408 (S.D.N.Y. 1947).

The majority (in footnote 18 at p. 594, *supra*) suggests that my view is contrary to Commission regulations. They point to 10 CFR §2.104(d) which provides that a notice of an antitrust hearing "will, unless the Commission determines otherwise, state" various things, including that radiological health and safety and environmental issues "will be considered at another hearing for which a notice will be published pursuant to paragraphs (a) and (b) of this section . . ." They deduce from this a Commission intent to reserve the right to order combined hearings for antitrust, safety and health, and environmental issues should it at some point choose to do so. While they characterize this inference as "totally clear," I submit that it is not justified. There are two other much more likely situations which the Commission might have had in mind where the notice would not state that radiological safety and health and environmental issues "will be considered at another hearing for which

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fact that the intervention petition in *Marble Hill* was filed late, as was true in the case at bar, had no bearing on the decision.

The majority opinion goes on to say: "The teaching of *Marble Hill* is thus that the grant of an intervention petition must have a jurisdictional foundation apart from Section 2.714(a)."³ That is true but the ready answer is that such a foundation is arguably provided by 10 CFR §2.102(d)(3), pursuant to which the November 5, 1974, notice of opportunity to intervene and request an antitrust hearing was issued. The majority opinion waits five pages before recognizing that.⁴

My colleagues' first major reason for reversing the decision below is that 10 CFR §2.217(a) prohibited the licensing board from reopening "the construction permit proceeding."⁵ I disagree.

At the outset, I must disassociate myself from the view that there is such a thing as a "construction permit proceeding" which encompasses the antitrust as well as the environmental and radiological health and safety hearings. My brethren argue:

There is no indication anywhere that also underlying adoption of the practice [of having separate antitrust hearings before different boards] was a belief that the antitrust review falls outside of the perimeter of the proceed-

(continued from previous page)

a notice will be published." One is the case in which the notice of hearing on health, safety and environmental issues has been published before the notice of hearing on antitrust issues. The other is the case where an antitrust hearing is being noticed at the operating license stage and no one has asked for a hearing on environmental or radiological health and safety issues in connection with the issuance of the operating license. In interpreting the intent behind the Commission's regulation reserving to itself the power to vary the statements in the notice of the antitrust hearing, it is not proper to presume an intent which is inconsistent with statutory requirements when other reasons consistent with the statute may have constituted the motivation.

The majority also adverts (in that same footnote) to Section X(e) of Appendix A to 10 CFR Part 2. It states that an antitrust hearing "will generally be held separately from the hearing held on matters of radiological health and safety" My colleagues argue that the word "generally" implies an intent to permit combined hearings in some cases. I believe they are making too much of this word. "Generally" is the kind of hedging word which is so often the hallmark of the literary style of government agencies. It is used by virtue of strongly ingrained habit so that the cautious government agency is not committing itself to do anything always or absolutely. It is therefore hardly fair to read into it an intent to do otherwise than what is represented will "generally" be done. Indeed, the fact that the Commission has never held anything but separate hearings on antitrust issues is strong reason for not jumping to the conclusion reached by the majority.

³P. 589, *supra*.

⁴P. 592, *supra*. The reference to "five pages" is based on the pagination of the slip opinion.

⁵P. 590-591, *supra*.

ing on the construction permit (or operating license) application; *i.e.*, is something more than just one of the several phases of that proceeding.⁶

However, they are able to cite nothing in the legislative history which states that these various hearings are all part of the same "proceeding," in the narrow, technical sense of the term as they use it. All that the legislative history tells us is that the antitrust review goes on simultaneously with the safety, health and environmental review but before a different board. To be sure, the relief in both of these proceedings is reflected in the denial or award of a construction permit (or operating license) with or without conditions which is ultimately reviewable by the Commission.⁷ But that does not mean that the proceeding is the same. The procedure contemplated by Congress suggests to me that the proceedings are different, albeit closely related. Surely, such a procedural scheme is not unheard of in our legal system. For example, a bankruptcy normally entails multiple proceedings concerning the claims of creditors, the recovery of the bankrupt's assets,⁸ the administration of the bankrupt estate and reclamation proceedings for the recovery of identifiable assets in the trustee's possession which allegedly are not property of the bankrupt. Yet, all of these proceedings are conducted under the same caption and docket number and before the same bankruptcy judge. Even were the bankruptcy judge to issue a notice of hearing stating that several of these proceedings in the same bankruptcy will be heard on the same given morning, a practice which is not uncommon, that would not make them into one proceeding.

Viewed in this light, §2.717(a) plainly does not apply to the situation presented in this case. The relevant sentence of it states:

The presiding officer's jurisdiction in each proceeding will terminate upon the expiration of the period within which the Commission may direct that the record be certified to it for final decision, or when the Commission renders a final decision, or when the presiding officer shall have withdrawn himself from the case upon considering himself disqualified, whichever is earliest.

There has been no antitrust decision which was susceptible to review by the Commission, there was no final antitrust decision by the Commission and there was no disqualification of a presiding officer from the antitrust proceeding. I am

⁶ P. 593, *supra*.

⁷ Even the appeal board which reviews the antitrust decision may not be the same as that which reviews the health, safety and environmental decisions.

⁸ This must be done in a plenary suit outside the bankruptcy if the possessor of the assets has not submitted himself to the bankruptcy court's jurisdiction, *e.g.*, by filing a claim against the estate.

nevertheless mindful of my learned colleagues' admonition that "it is one of the surest indexes of a mature and developed jurisprudence not to make a fortress out of the dictionary; but to remember that statutes always have some purpose or object to accomplish, whose sympathetic and imaginative discovery is the surest guide to their meaning."⁹ Surely the same is true in the interpretation of regulations. My brethren have cogently delineated the underlying purpose of §2.717(a)—"a recognition of the obvious fact that there must be an end to litigation sometime."¹⁰ How, then, can this regulation be applied to a case such as *South Texas* in which the antitrust litigation has not even begun?

II

Having decided that §2.717(a) does not apply, I must return to the regulation relied upon by the Licensing Board—§2.714(a)—for the purpose of seeing whether it provides authority for the grant of Central Power and Light Company's petition. This regulation requires that a petition for intervention and/or request for a hearing "shall be filed not later than the time specified in the notice of hearing" It goes on to state:

Nontimely filings will not be entertained absent a determination by the Commission, the presiding officer or the atomic safety and licensing board designated to rule on the petition and/or request that the petitioner has made a substantial showing of good cause for failure to file on time, and with particular reference to the following factors in addition to those set out in paragraph (d) of this section:

- (1) The availability of other means whereby the petitioner's interest will be protected.
- (2) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (3) The extent to which petitioner's interest will be represented by existing parties.
- (4) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

Looking at the problem strictly as a procedural one, there is no reason why §2.714(a) might not have been applied in this case, given the inapplicability of §2.717(a). However, we have long been alerted to the danger of treating a question as merely procedural where it would "determine the outcome of a

⁹*Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Unit 1), ALAB-323, 3 NRC 331, 336 (1976), quoting from Judge Learned Hand in *Cabell v. Markham*, 148 F.2d 737, 739 (2d Cir.), *aff'd*, 326 U.S. 404 (1945).

¹⁰P. 591, *supra*.

litigation.”¹¹ To hold that a late filed petition may not trigger an antitrust hearing under §2.714(a) might mean that there would be no hearing available as of right on whether antitrust conditions should attach to the construction permit in a case of significant changes in the activities of an applicant subsequent to the initial review of the Attorney General.¹² This would be an important decision on the nature and scope of the Commission’s antitrust enforcement powers. Accordingly, I think it necessary to look to the legislative history of Section 105c of the Atomic Energy Act to see if it sheds any light on the question.

The present version of Section 105c was enacted as part of the 1970 amendments to the Act.¹³ Representative Holifield, Chairman of the Joint Committee on Atomic Energy which reported the bill out unanimously, said in the debate on the House floor:¹⁴

Additionally, if the Attorney General does not so advise and recommend, but antitrust issues are raised by another in a manner according with the Commission’s rules or regulations, the Commission would be obliged to give such consideration thereto as may be required by the Administrative Procedure Act and the Commission’s rules and regulations. *In the latter regard, the committee intends that, in any event, the Commission’s rules and regulations will set a fixed period in which such issues may be raised.* It is hoped that this period will coincide with and not extend beyond the specified period in which the Attorney General’s advice may be rendered. *The bill contemplates that all aspects of the antitrust considerations constituting part of the Commission’s total licensing procedure, including the ultimate findings by the Commission, would be dealt with in such a way as not to impose an additional delaying factor.* We believe a separate board can be utilized by the Commission in connection with such antitrust considerations. *This feature of the total licensing process should be completed by the Commission before the radiological health and safety matters are concluded in the licensing procedure.* (Emphasis added.)

In view of the Chairman’s strong concern (which is echoed in the Committee report)¹⁵ that antitrust issues raised by parties other than the Attorney General be raised within a fixed period and that the antitrust proceeding be concluded

¹¹ *Guaranty Trust Co. v. York*, 326 U.S. 99, 109 (1945).

¹² I have put to one side the question of whether 10 CFR §50.90 would be applicable. See note 20, *infra*. But, even if it were, it would be of no avail in a case in which the petitioner was not a co-applicant.

¹³ Act of December 19, 1970, Pub. L. No. 91-560, 84 Stat. 1472.

¹⁴ 116 Cong. Rec. H 9440 (daily ed. September 30, 1970).

¹⁵ H.R. Rep. No. 91-1470 (identical to S. Rep. No. 91-1247), 91st Cong., 2d Sess. 15-16 (1970) (hereinafter “Joint Committee Report”).

by the time the radiological health and safety proceeding is concluded, I do not think it appropriate to interpret Section 2.714(a) as being applicable to permit the grant of nontimely antitrust petitions requesting intervention or a hearing after the radiological health and safety and environmental proceeding has been finally concluded.

It may be asked why this legislative policy should not also extend to prevent the Commission from ordering an antitrust hearing at the same late date by order to show cause.¹⁶ I believe that there is a good reason as to why it does not. There was a very strong intent expressed in the Joint Committee that substantial antitrust issues be resolved early so that utilities investing enormous sums of money in constructing nuclear plants are able to determine, before most of their investment has been irretrievably sunk, what benefits they will receive from the plant and whether or subject to what conditions they will be able to receive an operating license.¹⁷ Given the fact in this case that significant changes in the activities of Houston Lighting and Power Company have occurred subsequent to the Attorney General's initial antitrust review, that the Attorney General on reexamination has concluded that an antitrust hearing should be

¹⁶ I realize that, initially, power to issue an order to show cause resides in the staff. 10 CFR §2.206. But refusal to issue one is reviewable for abuse of discretion. *Consolidated Edison Co.* (Indian Point, Units Nos. 1, 2 and 3), CLI-75-8, 2 NRC 173, 175 (1975). As the staff has now placed the matter of what should be done in this case before the Commission, stating why it did not issue an order to show cause, I am sure that it would be open to the Commission to itself issue such an order or direct its issuance should it feel that that is the appropriate course to take, despite the fact that an actual request for the issuance of such an order was not originally made to the staff. Indeed, we are informed that Central Power and Light Company has now suggested this course of action to the Commission.

¹⁷ Chairman Holifield stated at an early point in the hearings (*Hearings before the Joint Committee on Atomic Energy on Prelicensing Antitrust Review of Nuclear Power Plants*), 91st Cong., 1st Sess. (Part I, 1969) and 2d Sess. (Part 2, 1970) (hereinafter "*Hearings*"), at 37-38:

I am concerned with the mandatory requirement in the AEC bill to review at both the construction and operating license stages. It seems to me that the Joint Committee's bill which requires mandatory review on the antitrust problem at the construction stage is a practical and sound way to approach it. I think if you hold over the head of any investor of \$100 million in a plant, let us say, the fact that he builds the plant to channel the power into his own system of distribution, at that point he should be made aware of any diversion from that plant to another source. . . .

It would seem to me that just on the basis of fairness alone that that particular point should be settled prior to construction.

And he added at a later point (*Hearings 73*):

You see, I am very anxious to put the builders and constructors in the position of knowing what kind of cards there are in the deck and not have something new sprung on them after they have made their capital investment. I want them to go ahead in good faith on a basis of a finding that the construction does not constitute a violation of the

(continued on next page)

held, and that, therefore, an antitrust hearing would clearly be required at the operating license stage,¹⁸ it would best serve this Congressional intent to hold the antitrust hearing as soon as possible and not wait for the operating license stage which may still be a long way off. Thus, in these circumstances, the Commission would be doing no violence to the purposes of Section 105c if it commenced an antitrust proceeding at this juncture by order to show cause.

Why, then, was it not equally consistent with the legislative intent underlying Section 105c for the Licensing Board to grant Central's petition under 10 CFR §2.714(a)? In my opinion, the reason is that §2.714(a) does not permit a licensing board to limit its grant of a petition in a case like this to situations in which the holding of a late hearing addressed to the construction permit would serve the legislative policy of permitting early resolution of substantial antitrust issues which have arisen as a result of significant changes in an applicant's activities after the previous review by the Attorney General. If a petitioner has an excellent excuse for filing late, for example that he was in a coma for six months after the antitrust notice issued and was extremely ill for a long time thereafter, and he makes a good case with respect to the four factors which must be considered under §2.714(a), insofar as they are applicable to a case in which there would be no hearing without a grant of the late petition, the licensing board has no choice but to grant the petition. However, this would conflict with the statutory purpose, to which we have alluded, of resolving antitrust issues before the issuance of the construction permit and only permitting them to be raised later in narrowly circumscribed circumstances.¹⁹ In contrast, the Commission, in deciding whether or not to grant an order to show cause, could take

(continued from previous page)

antitrust laws, but I also want them to in good faith keep the same situation that existed at the time the construction permit was granted so that they don't have to be in jeopardy later on the operating license.

Senator Aiken, one of the strongest proponents of precicensing antitrust review, said (*Hearings* 319):

Preconstruction antitrust review will enable the utilities to know at an early stage in their planning whether their plans violate the antitrust statutes.

Finally, Chairman Holifield stated again, with regard to the antitrust review (*Hearings* 487):

I have been saying right along that I think this decision ought to be made at the construction permit stage, that we ought to have a finding at that time whether it is going to be in violation or not, if it is possible to do it, rather than to hold them over the hot seat until the operating time.

¹⁸ *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit No. 1), ALAB-279, 1 NRC 559, 565 (1975); Joint Committee Report 30.

¹⁹ I refer to the circumstances set forth in Section 105c(2).

proper account of all the Congressional policies underlying Section 105c to which I have referred.²⁰

For the reasons stated, I concur in the conclusion reached by my colleagues that the Licensing Board's order must be reversed and that the petition must be dismissed.

²⁰Whether the Commission could also properly act under 10 CFR §50.90 is a more difficult question because it is not clear (1) whether it entitles an applicant to a hearing as a matter of right in all cases and (2) whether it may be invoked by an applicant against a hostile co-applicant. As this issue is before the Commission and not before us, I need not attempt to resolve these questions. I discussed the Commission's power to issue an order to show cause, a matter equally not before us, only to make clear that I am not taking the position that the Commission has no power whatsoever to order an antitrust hearing addressed to the construction permit at this juncture.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Michael C. Farrar, Chairman
Dr. Lawrence R. Quarles
Richard S. Salzman

In the Matter of

Docket Nos. 50-329
50-330

CONSUMERS POWER COMPANY

(Midland Plant, Units 1 and 2)

March 18, 1977

Upon motion by intervenors seeking directed certification of the Licensing Board order denying their request for financial assistance, the Appeal Board holds that the Commission's determination in CLI-76-23, NRCI-76/11, 484, is dispositive of the motion. That determination ruled out assistance to intervenors in adjudicatory proceedings generally and expressly rejected consideration of such requests on a case-by-case basis.

Motion denied.

RULES OF PRACTICE: CERTIFICATION OF ISSUES TO THE COMMISSION

Appeal boards have jurisdiction over certification motions (10 CFR §2.718); certification motions directed to the Commission by individual parties are unauthorized (10 CFR §2.785(d)).

COMMISSION PROCEEDINGS: FINANCIAL ASSISTANCE TO PARTICIPANTS

The NRC has an express policy against financing intervenors in its adjudicatory proceedings. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, NRCI-76/11, 484 (1976).

RULES OF PRACTICE: CERTIFICATION

A request for directed certification is an exception to the Commission's general rule against allowing interlocutory appeals (10 CFR §2.730(f)) and is to be granted only in "exceptional circumstances." *Public Service Co. of New*

Hampshire (Seabrook, Units 1 and 2), ALAB-271, 1 NRC 478, 486 (1975). Where the Appeal Board has no authority to grant the relief requested, certification is unwarranted.

COMMISSION PROCEEDINGS: FINANCIAL ASSISTANCE TO PARTICIPANTS

The Commission has expressly rejected the suggestion that financing participants in NRC adjudicatory proceedings is a matter to be decided on a case-by-case basis. *Nuclear Regulatory Commission* (Financial Assistance to Participants in Commission Proceedings), CLI-76-23, NRCI-76/11, 484, 498 n. 4 (1976).

LICENSING BOARD: AUTHORITY TO SUBPOENA WITNESSES

The Commission's *Financial Assistance* decision (CLI-76-23, NRC-76/11, 484), does not preclude a licensing board from calling witnesses of its own where it finds a genuine need for their testimony or from authorizing Commission payment of the usual witness fees and expenses when it does so. The subjects which the witness may address would be controlled by the Board. The Board's authority in this respect should be exercised with circumspection where the witness would have been sponsored by a party but for financial considerations.

Ms. Caryl A. Bartleman, Chicago, Illinois, for Consumers Power Company.

Mr. Myron M. Cherry, Chicago, Illinois, for the intervenors *Saginaw Valley Nuclear Study Group, et al.*

Mr. L. F. Nute, Midland, Michigan, for the intervenor Dow Chemical Company.

Mr. Richard K. Hoefling for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

On March 13, 1977, an "emergency" motion¹ was filed on behalf of the

¹ Because of a claimed uncertainty before whom to file this certification motion, it is captioned in the alternative before this Board and the Commission. The Rules of Practice give us jurisdiction over these motions (10 CFR §2.718); certification motions directed to the Commission by individual parties are unauthorized (10 CFR §2.785(d)).

Saginaw group of intervenors² seeking directed certification of the Licensing Board's order of February 25, 1977, (unpublished) denying their request for Commission funds to pay their lawyer's fees and expenses and those of a witness they wish to sponsor who resides on the West Coast. The "emergency" character of the motion is premised upon the scheduled resumption of hearings before the Licensing Board on March 21, 1977, and the Saginaw intervenors' professed inability to continue their participation without the public funds they are seeking. Because of the asserted emergency, we shortened the usual time for responses to the motion and invited replies by March 18, 1977. Consumers Power Company and the NRC staff both urged us to deny the certification request; intervenor Dow Chemical Company advised us that it did not choose to take a position on Saginaw's motion. We find that the result reached by the Licensing Board is compelled by Commission rulings and deny the request for directed certification.

1. The Licensing Board's ruling was founded upon the Commission's express policy against financing participants in NRC adjudicatory proceedings announced in *Nuclear Regulatory Commission (Financial Assistance to Participants in Commission Proceedings)*, CLI-76-23, NRCI-76/11, 484 (November 12, 1976). The Saginaw intervenors had asked the Board below to arrange public funds to pay for their lawyer's fees and expenses and to pay the cost of bringing Dr. Richard J. Timm of Salem, Oregon, to the hearing in Chicago as their witness. In its February 25 order, the Board ruled that the various legal theories propounded by the intervenors to justify that financial assistance "ignore the clear published Commission policy by which we are bound."

Before us, the Saginaw intervenors acknowledge the Commission policy upon which the Licensing Board based its ruling, but proffer reasons why in this case it should not bar the financial assistance requested, stressing in particular their contribution to the proceeding and the recognition of that fact by the Licensing Board. They assert that they are otherwise unable to raise funds to participate further and that the money—both for the witness expenses and for their counsel—is necessary to assure that Dr. Timm will testify and that these intervenors' participation can continue. According to the Saginaw intervenors, the importance of the financial assistance issue as it bears upon this proceeding satisfies our standards for directed certification, citing *Public Service Co. of New Hampshire (Seabrook, Units 1 and 2)*, ALAB-271, 1 NRC 478 (1975).³

²The Saginaw group is comprised of the Saginaw Valley Nuclear Study Group, the Mapleton Intervenors, the Aeschliman Intervenors, West Michigan Environmental Action Council and the United Auto Workers International Environmental Group. Tr. 7.

³As was appropriate, the intervenors first asked the Licensing Board to refer its February 25, 1977, ruling to us. The Board denied that request. See order dated March 11, 1977, and memorandum dated March 16, 1977 (both unpublished).

2. We have frequently pointed out that the grant of a request for directed certification is an exception to the Commission's general rule against interlocutory appeals (10 CFR §2.730(f)) and, as such, is to be resorted to only in "exceptional circumstances." *Seabrook*, ALAB-271, *supra*, 1 NRC at 486.⁴ In situations where we have no authority to grant the relief requested, certification is unwarranted.

The Licensing Board correctly read the Commission's *Financial Assistance* decision, *supra*, as precluding the relief here sought. See *Detroit Edison Co.* (Greenwood Energy Center, Units 2 and 3), ALAB-376, 5 NRC 426 (February 22, 1977). The Commission's decision noted that the extent of its authority to finance hearing participants was limited as described in an opinion of the Comptroller General of the United States (B-92288, February 1976). After reviewing that opinion, the Commission concluded for reasons it set out at length that it was unable to make the requisite finding (specified by the Comptroller General) that in adjudicatory proceedings funding was "necessary . . . in order to carry out NRC's statutory functions in making licensing determinations." We need not rehearse those reasons here. It is sufficient to note for purposes of this motion that the Commission's conclusions rest on its carefully considered judgment that it "lack[s] not only the statutory authority to provide funding, but . . . also . . . [as a matter of sound public policy] that a nonelected regulatory commission is not the proper institution to expend public funds in this fashion absent express Congressional authorization" (NRCI-76/11 at 500-01).

The Saginaw intervenors' attempts to avoid the effect of the Commission's *Financial Assistance* ruling are of no avail. They first cite a recent decision of the Second Circuit, issued a month after the Commission's *Financial Assistance* ruling, as authority for its reexamination. *Greene County Planning Board v. FPC*, ___F.2d ___, 9 ERC 1611, 1616-17 (December 8, 1976). That court, by divided vote, held only that the Federal Power Commission had authority to award financial assistance to participants in proceedings before it in circumstances "where they may meet the standards approved by the Comptroller General" in his advice letter to the NRC, and remanded the request for fees and expenses to the FPC for consideration in light of the Comptroller's ruling. 9 ERC at 1617. This Commission, however, has already made its judgment on

⁴See also *Seabrook*, ALAB-295, 2 NRC 668 (1975) ("truly exceptional situation"); *Toledo Edison Co.* (Davis-Besse Nuclear Power Station), ALAB-314, 3 NRC 98, 99 (February 26, 1976); *Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-318, 3 NRC 186 (March 16, 1976); *id.*, ALAB-353, NRCI-76/10 381 (October 28, 1976); *Puerto Rico Water Resources Authority* (North Coast Nuclear Plant, Unit 1), ALAB-361, NRCI-76/12 625 (December 28, 1976); *cf. United States Energy Research and Development Administration*, CLI-76-13, NRCI-76/8 67, 75-76 (August 27, 1976).

funding intervenors under the Comptroller General's criteria. As we have noted, however, the Commission's determination was adverse to the position espoused by the Saginaw intervenors; nothing said in *Greene County* mandates its reconsideration.

The Saginaw intervenors next argue that this case is different from most and that their participation here is more useful and more necessary than usual. Accordingly, they urge that the general Commission rule against paying a party's attorney's fees and witness' expenses not be applied. Accepting *arguendo* everything the Saginaw intervenors assert about the usefulness of their participation, we cannot credit their argument. It amounts to no more than that the determination whether or not to finance intervenor groups should be made anew in each individual case. A proposal for a case-by-case review of the question of financing intervenors participation, however, has already been considered by the Commission and was expressly rejected.⁵ Our views of the merits of that approach are thus of no moment; we are bound by the Commission decision to the contrary.⁶

3. Finally, the Licensing Board said that were Dr. Timm released from sponsorship by the Saginaw intervenors, it "would look into the matter of his sponsorship by the Board." Given the importance that Board apparently attaches to hearing this witness,⁷ we do not see why the Board cannot obtain the benefit of his testimony by subpoenaing him as a Board witness. Nothing we have said in this opinion, and nothing we discern in the Commission's *Financial Assistance* decision, precludes a Board from calling witnesses of its own where it finds a genuine need for their testimony or from authorizing Commission payment of the usual witness fees and expenses when it does so.⁸ Of course, in such circumstances, the subjects which the witness may address in his testimony would be

⁵ NRCI-76/11 at 498, fn. 4. We note that for reasons expressed in his separate views, Commissioner Gilinsky would have adopted the case-by-case approach. See NRCI-76/11 at 518-20.

⁶ In light of our disposition of their motion, we need not explore the subsidiary question whether the Saginaw group intervenors would qualify for public funding in any event. We note, however, that in an earlier proceeding involving this same facility, the Commission denied a request for financial assistance to this intervenor group on the ground that it had not made a "proper showing of need." The Commission observed that some of the intervenors requesting assistance possessed substantial assets and commented that "intervention may sometimes require an intervening organization to reorder its budgetary priorities." *Consumers Power Company* (Midland Plants, Units 1 and 2), CLI-74-26, 8 AEC 1 (1974). See note 2, *supra*. See also, *Consumers Power Company* (Midland Plants, Units 1 and 2), ALAB-270, 1 NRC 473, 474-76 (1975).

⁷ In its February 25 Order, it stated that Dr. Timm's prefiled testimony "and the cross-examination that will result if the testimony is received seem to the Board to be valuable additions to the hearing record."

⁸ 42 U.S.C. § 2201(c); 10 CFR § 2.718(b).

controlled by the Board and cross-examination by any party would be restricted to matters covered in the witness' direct presentation.

Needless to add, the Board's authority in this respect should be exercised with circumspection where the witness it desires to hear would have been sponsored by one of the parties but for financial considerations. In these circumstances, there necessarily can be no bright line between rendering indirect financial support to an intervenor—which we take to be proscribed by Commission policy—and arranging to hear evidence which a Board deems relevant and important for its resolution of a significant contested issue.⁹ We can, however, offer our colleagues who must decide these questions when they arise certain useful observations. *First*, in a close case involving key safety or environmental issues, we are confident that the Commission does not perceive its mission as requiring the protection of the public fisc at the expense of the search for truth. *Second*, should a party object to one of its witnesses being called on behalf of the Board, the Board may consider that factor in deciding whether to do so. But here again the search for truth is the paramount consideration. Accordingly, the decision to call or not to call a witness for the Board must rest and does rest ultimately in the sound discretion of the tribunal alone.

The Saginaw intervenors' motion for directed certification of the Licensing Board's February 25, 1977, order is *denied*.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

⁹One way a Board might avoid crossing that line inadvertently is to be cautious before accepting written direct testimony from a Board witness that was previously prepared by (or for) him in his capacity as a witness or expert for a partisan in the proceeding.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Michael C. Farrar

In the Matter of

Docket Nos. 50-458
50-459

GULF STATES UTILITIES COMPANY

(River Bend Station, Units 1 and 2)

March 22, 1977

Upon motion by the staff, the Appeal Board reopens the record to include a particular affidavit and authorizes issuance of construction permits.

Motion granted.

ADJUDICATORY PROCEEDINGS: SCOPE OF REVIEW

"As to matters pertaining to radiological health and safety which are not in controversy, boards are neither required nor expected to duplicate the review already performed by the staff"; rather, boards "are authorized to rely upon the testimony of the staff . . . which [i]s not controverted by any party." 10 CFR Part 2, Appendix A, Section V(f)(1).

Mr. Troy B. Conner, Jr., Washington, D.C., for the applicant, Gulf States Utilities Company.

Messrs. Bernard M. Bordenick and Lawrence Brenner for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

The Licensing Board has now issued a total of three partial initial decisions in this construction permit proceeding involving Units 1 and 2 of the River Bend station. The first was rendered in September 1975.¹ It dealt with environmental

¹ LBP-75-50, 2 NRC 419.

and site suitability matters and paved the way for the issuance under 10 CFR 50.10(e) of a limited work authorization for the facility. The second was rendered in September 1976.² It covered all remaining safety issues and, beyond that, explored anew one environmental issue which had been earlier considered in the September 1975 decision but then remanded by us in ALAB-317, 3 NRC 175 (March 4, 1976). It left unresolved, however, questions pertaining to the environmental effects of the reprocessing and waste disposal phases of the uranium fuel cycle. The third and final partial decision was rendered on February 3, 1977.³ Its purpose was to determine the still-open fuel cycle matters.

By virtue of these several decisions, the Licensing Board has now ruled in the applicant's favor on all issues—safety and environmental—which that Board deemed to have been placed before it for determination. Nonetheless, the third decision did not authorize the issuance of construction permits for the facility. This was because, in late January, the NRC staff had brought to its attention, by letter, certain recently discovered calculational errors in the Emergency Core Cooling System (ECCS) performance evaluation for River Bend. In the third decision, the Licensing Board took note of the staff's communication but expressed the view that it should be considered in the first instance by us. This conclusion was based upon the fact that (1) in its second partial decision, the Board had found the River Bend ECCS to be acceptable;⁴ and (2) that decision is presently before us on an appeal taken by the intervenor State of Louisiana. In that circumstance, the Licensing Board reasoned, this Board is now the appropriate tribunal to look into any supervening developments related to ECCS acceptability. Accordingly, the third decision imposed a condition precedent to the issuance of construction permits: the "supplementation [before this Board] of the record on ECCS compliance."

By reason of this condition, the staff has moved us to reopen the record to receive the affidavit of William F. Kane, the River Bend licensing project manager. We are told by the staff that this affidavit establishes that, despite the earlier calculational errors, the facility's ECCS meets all relevant Commission requirements. Consequently, the staff maintains, we should now authorize the issuance of construction permits. The applicant understandably supports the motion. The State of Louisiana has not filed any response at all; thus the motion is unopposed.⁵

² LBP-76-32, NRCI-76/9 293.

³ LBP-77-6, 5 NRC 446.

⁴ NRCI-76/9 at 303-04.

⁵ Similarly, the appeal taken by the State from the second partial decision does not specifically challenge the finding of the Licensing Board therein that has been cast in possible doubt by the recently discovered calculational errors.

In the totality of circumstances, we see no reason to withhold a ruling on the motion pending resolution of the State's appeal from the second partial initial decision. And our close scrutiny of the affidavit has led us to the conclusion that the relief sought by the staff is warranted. Although this is a contested proceeding, "[a]s to matters pertaining to radiological health and safety which are not in controversy, boards are neither required nor expected to duplicate the review already performed by the staff . . ." Rather, we "are authorized to rely upon the testimony of the staff . . . which [is] not controverted by any party." 10 CFR Part 2, Appendix A, Section V(f)(1). It appears from the affidavit here that the staff has sufficiently analyzed the data now available to it bearing upon the effect of the calculational errors in terms of the overall ECCS performance evaluation. The conclusion reached on the basis of that analysis—that correction of the errors does not produce a result which cuts against the staff's original judgment respecting the acceptability of the River Bend ECCS—seems reasonable. True, as the affidavit points out, still additional information is being sought. The staff has retained, however, the option of taking further action in the light of any such information. All things considered, at this juncture we need not pursue the matter more deeply ourselves.

Although the Staff may now issue the construction permits, needless to say no finality will attach to that action prior to the completion of our review of the second and third partial initial decisions.

The motion of the NRC staff is *granted*. The affidavit of William F. Kane is hereby made a part of the record in this proceeding and the staff is authorized to issue construction permits for Units 1 and 2 of the River Bend Station.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Jerome E. Sharfman

In the Matter of

Docket No. 50-320

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER & LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY(Three Mile Island Nuclear Station,
Unit 2)

March 22, 1977

Upon appeal by applicants from LBP-77-10, 5 NRC 478, which granted an untimely intervention petition, and upon attempted appeal by intervenor from the Licensing Board's rejection of some of its contentions, the Appeal Board holds the intervenors' appeal to be interlocutory and hence not permitted but treats it as a response to the applicants' appeal and as putting forth an alternative ground for affirmance. The Appeal Board rules that the Licensing Board, in admitting the intervenor, erred (1) in not considering the four factors specifically enumerated in 10 CFR §2.714(a); and (2) in concluding with respect to an energy conservation contention that the intervenor had sufficiently justified the lateness of its petition. The Appeal Board also holds that none of the other contentions provides a sufficient basis for allowing late intervention.

Licensing Board order reversed; remanded with instructions to deny the untimely intervention petition.

RULES OF PRACTICE: APPELLATE REVIEW

An interlocutory order of a licensing board which grants intervention but rejects certain contentions is not appealable by the intervenor. 10 CFR §§2.730(f) and 2.714a.

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

In deciding whether a petitioner has shown "good cause" for its failure to

file an intervention petition on time, adjudicatory boards must consider both the justification offered for the lateness of the filing and the four factors enumerated in 10 CFR §2.714(a). *Nuclear Fuels Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273 (1975).

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

Late petitioners for intervention have a substantial burden in justifying their tardiness, and the burden of justifying intervention based on the four factors in 10 CFR §2.714(a) is considerably greater when the latecomer has no good excuse. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

Even where a late intervenor has tendered a good excuse for lateness, a board must nevertheless consider the four factors enumerated in 10 CFR §2.714(a), although in perhaps not the same painstaking detail as if no such good excuse had been submitted.

NEPA: SUFFICIENCY OF CONTENTIONS

Under NEPA, no evidentiary showing need be made by an intervenor to invoke the NRC's duty to consider energy conservation issues; the intervenor need only bring "sufficient attention to the issue to stimulate the Commission's consideration of it," but it must do so with due diligence. *Aeschliman v. NRC*, 547 F. 2d 622, 628 (D.C. Cir. 1976); *Public Service Co. of New Hampshire* (Seabrook, Units 1 and 2), ALAB-366, 5 NRC 39, 66 (January 21, 1977).

Mr. George F. Trowbridge, Washington, D. C., for the applicants, Metropolitan Edison Company, *et al.*

Mr. Chauncey Kepford, York, Pennsylvania, for the Environmental Coalition on Nuclear Power.

Mr. Gregory Fess, for the Nuclear Regulatory Commission staff.

DECISION

This is a combined licensing proceeding to consider whether an operating license should issue for Unit 2 of the Three Mile Island facility and, additionally,

whether the construction permit previously issued for that unit should be continued, modified, terminated or conditioned to protect environmental values.¹ The deadline established for the filing of petitions under 10 CFR 2.714(a) for leave to intervene in the proceeding was June 27, 1974. 39 Fed. Reg. 18497. A joint intervention petition was timely filed by two organizations and thereafter granted by the Licensing Board, which also admitted the Commonwealth of Pennsylvania to the proceeding under the "interested state" provisions of 10 CFR 2.715(c).

What is now before us is a petition for leave to intervene filed in August 1976 (*more than two years late*) by another organization—the Environmental Coalition on Nuclear Power (Coalition). By memorandum and order of February 14, 1977, the Licensing Board granted the petition on the strength of a determination that "good cause" had been established for the belated assertion of one of the contentions contained therein. LBP-77-10, 5 NRC 478. That contention, identified as No. 5, reads as follows:

The Petitioners contend that the rate structure of the Applicant is a promotional rate structure designed to increase the consumption of electricity by offering declining rates for increased consumption. Such a rate structure minimizes the possibility and practicality of worthwhile energy conservation efforts. Petitioners contend that a flat rate structure—one price for all levels of consumption and for all customers—or a declining block rate structure would make conservation a viable and practical alternative to Three Mile Island, Unit 2.

The remaining six contentions set forth in the petition (identified as Nos. 2-4 and 6-8) dealt with various other matters and were rejected by the Board.

Invoking its right of appeal conferred by 10 CFR 2.714a, the applicants ask that we overturn the Licensing Board's determination and direct the dismissal of the Coalition's petition on the ground that there was not "good cause" for the late assertion of Contention No. 5. The NRC staff supports the appeal. For its part, the Coalition has attempted to take its own appeal under Section 2.714a from the rejection by the Licensing Board of its other contentions.

We have often pointed out that

10 CFR 2.730(f) contains a general prohibition against interlocutory appeals from licensing board rulings made during the course of a proceeding. The single exception to this prohibition is found in 10 CFR 2.714a. *Insofar*

¹The environmental review in connection with the construction permit was instituted pursuant to Section C of Appendix D to 10 CFR Part 50 (1974). That section applied to Unit 2 of this facility because the construction permit had been issued prior to January 1, 1970. Appendix D has now been replaced by 10 CFR Part 51, promulgated in 1974. The provisions of Appendix D remain, however, applicable to this proceeding. See 10 CFR 51.56.

as a petitioner for intervention is concerned, that Section allows an appeal from an order concerning his petition if—but only if—the order denied the petition outright.

Puerto Rico Water Resources Authority (North Coast Nuclear Plant, Unit 1), ALAB-286, 2 NRC 213, 214 (1975)(footnote omitted; emphasis supplied); see also *Boston Edison Co.* (Pilgrim Nuclear Generating Station, Unit 2), ALAB-269, 1 NRC 411, 413 (1975) and cases there cited. It is thus clear that, as matters now stand, the Coalition's appeal is foreclosed. Nonetheless, should we conclude that the Licensing Board erroneously found good cause for the tardy assertion of Contention No. 5, we will be obliged then to decide whether the Board's result—the grant of the petition—was proper because one of the other contentions provided a sufficient basis for allowing late intervention.² This being so, it is appropriate to treat the papers submitted to us by the Coalition as a response to the applicants' appeal³ and as, in effect, putting forth an alternative ground for affirmance of the Board's action in admitting the Coalition to the proceeding.

A. 10 CFR 2.714(a) expressly provides that nontimely intervention petitions "will not be entertained" absent a determination by the Licensing Board "that the petitioner has made a substantial showing of good cause for failure to file on time." As construed by the Commission in its *West Valley* decision two years ago,⁴ the "good cause" determination is to be made on the basis of consideration of both the substantiality of the justification offered for the late filing and the four factors specifically enumerated in Section 2.714(a).⁵ See also *Project Management Corp.* (Clinch River Breeder Reactor Plant), ALAB-354, NRCI-76/10 383, 388-89 (October 29, 1976). In this connection, the Commission stressed that "[l]ate petitioners properly have a substantial burden in justifying their tardiness. And the burden of justifying intervention on the basis of the other factors in the rule is considerably greater where the latecomer has no good excuse." *West Valley*, 1 NRC at 275.

² 10 CFR 2.714a(c) provides that an order granting an intervention petition is appealable "on the question whether the petition . . . should have been wholly denied."

³ The Coalition has submitted no direct response to that appeal.

⁴ *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273 (1975).

⁵ Those factors are:

- (1) The availability of other means whereby the petitioner's interest will be protected.
- (2) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (3) The extent to which petitioner's interest will be represented by existing parties.
- (4) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

The order of the Licensing Board under appeal makes no reference to the four factors of Section 2.714(a), much less reflects that they were taken into account in the making of the good cause determination. Rather, the Board focused entirely upon the sufficiency of the reason offered by the Coalition for its belated filing. In light of *West Valley*, this was error. Granted, the corollary of the proposition that the absence of a good excuse for lateness requires an especially strong showing by the petitioner on the four factors is that where the lateness has been satisfactorily explained a much smaller demonstration on these factors is necessary. But that does not mean that the factors may ever be entirely ignored. For example, it might appear in the particular case that the grant of an extremely tardy petition would perforce occasion substantial delay in the progress of the proceeding; that the petitioner's participation likely would add nothing to the development of a sound record; and that the interest asserted in the petition could be protected by other available means or would be adequately represented by existing parties. In the totality of such circumstances, a licensing board might well be warranted in denying the petition even though the petitioner has established that his failure to have filed it on time was not due to a lack of diligence.⁶

Be that as it may, we cannot agree with the Licensing Board's conclusion that the Coalition was justified in waiting for two years before coming forth with its contention related to energy conservation and the utility's rate structure. As the Board pointed out, the Coalition relies for its late assertion of that contention on the decision of the Court of Appeals for the District of Columbia Circuit in *Aeschliman v. NRC*, 547 F.2d 622, which was rendered on July 21, 1976 (*i.e.*, shortly before the intervention petition was filed).⁷ Although the Board's reasoning on the point is not altogether clear to us, it appears that it thought that *Aeschliman* provided a basis for Contention No. 5 which had theretofore been wanting. We think otherwise.

To the extent that it has a bearing upon that contention, *Aeschliman* involved a review of the Commission's decision in January 1974 in *Consumers*

⁶We do not mean to suggest that, where it has found that a good excuse has been tendered for the late filing, the Licensing Board must invariably discuss the Section 2.714(a) factors in painstaking detail. It will frequently—indeed usually—be sufficient to note in the order (if such be the case) that the factors do not weigh so heavily against the petitioner that, notwithstanding the existence of a satisfactory reason for the tardiness, intervention should be denied. Once again, what confronts us here is the seeming failure of the Licensing Board to have given *any* scrutiny to the factors. It is this failure which we have determined to have been in derogation of Section 2.714(a) as previously interpreted.

⁷Certiorari was granted by the Supreme Court on February 22, 1977, 35 U.S.L.W. 3570. On the same date, certiorari was additionally granted in a companion case to which the Coalition's petition also made reference. That case is irrelevant to the consideration of the Licensing Board's decision on Contention No. 5; it will be touched upon later in this opinion in connection with the disposition below of the other Coalition contentions.

Power Co. (Midland Plant, Units 1 and 2), CLI-74-5, 7 AEC 19. In *Midland*, the Commission had embarked upon an elaboration of its then recent decision in *Niagara Mohawk Power Corp.* (Nine Mile Point, Unit No. 2), CLI-73-28, 6 AEC 995 (1973), which had overturned a ruling of a licensing board precluding an intervenor from adducing evidence concerning the energy conservation alternative to the construction of a nuclear plant. Among other things, the Commission had held in *Midland* that a licensing board need not explore energy conservation alternatives unless (1) "clear and reasonably specific energy conservation contentions" have been placed before it "in a timely fashion"; and (2) the sponsor of the contentions makes "some affirmative showing" with relation thereto. 7 AEC at 32. In the latter regard, the Commission had stated at an earlier point in its opinion:

Purported energy conservation issues must meet a threshold test—they must relate to some action, methods or developments that would, in their aggregate effect, curtail demand for electricity to a level at which the proposed facility would not be needed. . . . Beyond that, the issue must pertain to an alternative that is "reasonably available." *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 834 (C.A.D.C. 1972). Furthermore, the impact of proposed energy conservation alternatives on demand must be susceptible to a reasonable degree of proof. Largely speculative and remote possibilities need not be weighed against a convincing projection of demand. Here, as with many other issues under the National Environmental Policy Act of 1969, a rule of reason applies. See *Natural Resources Defense Council v. Morton*, *supra*.

Id. at 24 (footnote omitted).

It was this "threshold test" which *Aeschliman* rejected. In the District of Columbia Circuit's view, NEPA forbids the imposition of a requirement that an intervenor "prove that an alternative satisfies the 'rule of reason' before the Commission will investigate it." Rather, the court concluded,

. . . an intervenor's comments on a draft [environmental statement] raising a colorable alternative not presently considered therein must only bring "sufficient attention to the issue to stimulate the Commission's consideration of it." Thereafter, it is incumbent on the Commission to undertake its own preliminary investigation of the proffered alternative sufficient to reach a rational judgment whether it is worthy of detailed consideration in the [Final Environmental Statement].

547 F.2d at 628 (footnote omitted).

As is readily apparent from the foregoing, *Aeschliman* did not open the door for the first time to the assertion and litigation of contentions relating to energy conservation. At least since the Commission's *Nine Mile Point* decision in

1973, the Coalition could have pressed its Contention No. 5. The effect of *Aeschliman* is simply to reduce the burden which must be assumed by intervenors desiring to have energy conservation considered in a particular licensing proceeding. No longer need the *Midland* "threshold test" be met; it now suffices that the intervenor has brought "sufficient attention to the issue to stimulate the Commission's consideration of it." As we recently held in the *Seabrook* case,⁸ however, there is an obligation to do so with due diligence; in *Aeschliman* itself, the court of appeals found that the comments by the intervenor on the draft environmental statement for the facility adequately provided the necessary "stimulation."⁹

The Coalition has favored us with no good reason why it could not have raised Contention No. 5, with its assertions respecting promotional rate structures, long before last August. And none appears. The record reflects that a Final Environmental Statement for both units of the Three Mile Island facility issued in December 1972.¹⁰ That document did not address the energy conservation alternative at all.¹¹ Surely, if the Coalition thought that energy conservation should have been considered as an alternative to Unit 2, it both could and should have raised the matter when given the opportunity to file an intervention petition in 1974.

We therefore conclude that *Aeschliman* cannot be invoked as a justification for the late filing of the Coalition's petition. No other excuse having been tendered, the petition should have been denied as untimely unless it appeared that, in combination, the four Section 2.714(a) factors weigh heavily in the Coalition's favor. Once again, the Board below did not address the factors. But, although it might have been helpful to have had the benefit of its views, a remand on the point is not required. Our independent analysis satisfies us that

⁸*Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-366, 5 NRC 39, 65-67 (January 21, 1977), *Commission review pending*. See also, *Illinois Power Co.* (Clinton Power Station, Units 1 and 2), ALAB-340, NRCI-76/7 27, 50-51 (July 29, 1976).

⁹For present purposes, we have attached no significance to the grant of certiorari in *Aeschliman*; i.e., we have assumed that the Commission is now obliged to follow it notwithstanding the pending Supreme Court review on the merits of the holding of the court of appeals.

¹⁰The FES was issued in compliance with the requirements of Appendix D to 10 CFR Part 50 (see fn. 1, *supra*). The conclusion reached therein was that the construction permits should be continued and that operating licenses should issue. Because the operating license application for Unit No. 2 was not filed until April 1974, the staff determined it was necessary to prepare a supplement to the FES. A draft of the supplement was published in July 1976 and circulated for comment. The final version issued in December 1976.

¹¹The draft of the Unit No. 2 FES supplement (see fn. 10, *supra*) likewise did not consider that alternative. We note in passing that the Coalition's representative (it does not here appear by counsel) commented upon the draft supplement but, in doing so, did not mention the omission of a discussion therein of energy conservation. See Final Supplement to the FES, pp. A-5 to A-7.

an application of the factors here could not overcome (under the *West Valley* standard) the extreme and unwarranted tardiness of the petition.

The most that can be said for the Coalition is that, unless it is allowed to participate, its rate structure concerns will not be considered at all in this proceeding.¹² Because construction of Unit 2 is now almost 90% completed, however, it seems hardly likely that the possibility of achieving energy conservation through alterations in the applicants' rate structures (were it to be demonstrated) could now serve as a justification for abandoning that unit at this juncture. And, to the extent that the Coalition may have a more generalized interest in obtaining rate structure reforms in the furtherance of energy conservation, we would think the Pennsylvania Public Service Commission to be an available forum for the assertion and vindication of that interest. But even if the first and third factors¹³ might nonetheless be thought to provide material aid to the Coalition, the second and fourth manifestly do not. There is nothing before us to suggest that the Coalition possesses or has at its disposal any expertise which might be of real assistance in developing a sound record on Contention No. 5. Further, the introduction of that contention would manifestly broaden the issues (no other intervenor having tendered a like contention) and might well occasion delay. The hearing is currently due to commence in a matter of weeks. Yet there is at least the possibility that the discovery process would have to be reopened to allow intervenors to obtain, prior to trial, information bearing upon the effect of the applicants' rate structures upon energy conservation. True, as the Commission pointed out in *West Valley, supra*, 1 NRC at 276, "[a] tardy petitioner with no good excuse may be required to take the proceeding as it finds it." Nevertheless, given the complexity of the rate structure issue and the fact that there has been no prior discovery on it by anyone in this proceeding, the Licensing Board might be compelled to conclude that that structure could not be rigidly applied here.

B. What thus remains for decision is whether any one of the other six contentions set forth in the Coalition's untimely petition provided a basis for the requisite good cause determination. We conclude not.

The Coalition appears to explain the tardy assertion of these contentions on the basis of the invalidation in *Aeschliman, supra*, and another case decided the same day,¹⁴ of the reprocessing and waste disposal portions of the Commission's generic rule relating to the environmental effects of the uranium fuel cycle, codified in 10 CFR 51.20(e).¹⁵ With one exception (No. 8), none of the conten-

¹²None of the already admitted intervenors has raised an issue relating to energy conservation and utility rate structures.

¹³See fn. 5, *supra*.

¹⁴*Natural Resources Defense Council v. NRC* 547 F.2d 633 (D.C. Cir. July 21, 1976), *certiorari granted*, 45 U.S.L.W. 3570 (February 22, 1977).

¹⁵For a fuller discussion of that invalidation, see *Public Service of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-349, NRCI-76/9 235, 238-39 (September 30, 1976), *vacated*, CLI-76-17, NRCI-76/11 451 (November 5, 1976).

tions is related to those portions of the rule. Further, as was the case with Contention No. 5, on these contentions the Coalition has fallen far short of sustaining its heavy burden on the factors set forth in Section 2.714(a). Among other things, we have been given no cause to believe that the Coalition would make a significant contribution to the record development of any of the issues which it seeks to inject into the proceeding at this very late date. And a potential for substantial delay is also present.

For its part, Contention No. 8 was fairly interpreted by the Licensing Board to assert that construction of Unit 2 of this facility should be suspended pending ultimate resolution of the reprocessing and waste disposal issues. But, as the Board held, such an assertion is totally foreclosed by the Commission's November 5, 1976, memorandum and order, issued in connection with this proceeding among others. CLI-76-18, NRCI-76/11 470.¹⁶ To the extent that Contention No. 8 might be taken as also asserting that construction should be suspended in the light of the other contentions set forth in the petition, the short answer is that an insufficient basis has been alleged for the adoption of such a course.

The February 14, 1977, order of the Licensing Board is *reversed* and the matter is remanded with instructions to *deny* the untimely intervention petition of the Environmental Coalition on Nuclear Power on the ground of lack of a substantial showing of good cause for failure to file on time.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

¹⁶ See also the statement of considerations accompanying the new interim fuel cycle rule. 42 Fed. Reg. 13803, 13806 (March 14, 1977).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

THE TOLEDO EDISON COMPANY
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Docket Nos. 50-346A
50-500A
50-501A

(Davis-Besse Nuclear Power Station,
Units 1, 2 and 3)

THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY, et al.

Docket Nos. 50-440A
50-441A

(Perry Nuclear Power Plant,
Units 1 and 2)

March 23, 1977

Applicants moved to stay, *pendente lite*, the effectiveness of antitrust conditions imposed on them by LBP-77-1, 5 NRC 133. The Licensing Board denied the motion in LBP-77-1, 5 NRC 452. Applicants renewed their request before the Appeal Board, which ruled that good cause for that extraordinary relief had not been demonstrated.

Motion denied.

RULES OF PRACTICE: STAY PENDING APPEAL

In assessing a request for a stay pending appeal, adjudicatory boards must consider four factors: (1) has the movant made a strong showing that it is likely to prevail on the merits of its appeal; (2) has the movant shown that without a stay it will be irreparably injured; (3) would issuance of a stay substantially harm other interested parties; and (4) where lies the public interest? *Virginia Petroleum Jobbers Ass'n v. FPC*, 295 F.2d 921, 925 (D.C. Cir. 1958); *Natural Resources Defense Council*, CLI-76-2, 3 NRC 76, 78 (1976).

RULES OF PRACTICE: STAY PENDING APPEAL

“A party is not ordinarily granted a stay of an administrative order without an appropriate showing of irreparable injury.” *Permian Basin Area Rate Cases*, 390 U.S. 747, 773 (1968). “The key word in this consideration is *irreparable*. Mere injuries, however substantial, in terms of money, time and energy necessarily expended in the absence of a stay, are not enough.” *Virginia Petroleum Jobbers Ass’n v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958) (emphasis in original).

RULES OF PRACTICE: STAY PENDING APPEAL

With regard to requests for stays of antitrust conditions pending appeal, the appropriate “public interest” consideration is the Congressional purpose that nuclear facilities not be given unconditioned licenses in circumstances where doing so would create or maintain a situation inconsistent with the antitrust laws.

APPEAL BOARD: STANDARD OF REVIEW

Although an appeal board is not bound by a licensing board’s factual findings, in considering a request for stay pending appeal which calls those findings into question, they merit respect until the record had been reviewed, unless the party seeking the stay has demonstrated their inadequacy.

ATOMIC ENERGY ACT: ANTITRUST PROVISION

The Commission’s authority under Section 105c(6) of the Atomic Energy Act to license the operation of a nuclear power plant notwithstanding the anti-competitive consequences of doing so may be exercised “only in the exceptional case where the power from the plant is vitally needed and the antitrust impact of its operation cannot be otherwise ameliorated.” *Toledo Edison Co.* (Davis-Besse, Unit 1), ALAB-323, 3 NRC 331, 346 n. 41 (1976).

RULES OF PRACTICE: STAY PENDING APPEAL

The degree of likelihood of success on appeal which must be demonstrated for a stay pending appeal depends on the strength of movant’s showing on the other factors. *Virginia Petroleum Jobbers Ass’n v. FPC*, 259 F.2d 921, 925 (D.C. Cir. 1958).

RULES OF PRACTICE: STAY PENDING APPEAL

To make a strong showing that it is likely to prevail on the merits of its appeal, the movant for a stay must do more than merely list possible grounds for

reversal. *Environmental Defense Fund, Inc. v. Froehlke*, 348 F. Supp. 338, 366 (W.D. Mo. 1972), *aff'd*, 477 F.2d 1033 (8th Cir. 1973).

RULES OF PRACTICE: BRIEFS

Where a party has failed to address an issue in its appellate briefs, it normally will not be heard to raise that issue at oral argument on appeal.

Mr. Wm. Bradford Reynolds, Washington, D.C., argued the cause for applicants, the Toledo Edison Company *et al.*; with him on the briefs was **Mr. Robert E. Zahler**, Washington, D.C.

Mr. Terence H. Benbow, New York, N.Y., argued for applicants Ohio Edison Company and Pennsylvania Power Company.

Mr. David C. Hjelmfelt, Washington, D.C., argued the cause for intervenor the City of Cleveland, Ohio; with him on the briefs were Messrs. **Reuben Goldberg**, Washington, D.C., **Vincent C. Campanella**, **Malcom Douglas** and **Robert D. Hart**, Cleveland, Ohio.

Mrs. Janet R. Urban, Washington, D.C., argued the cause for the Attorney General of the United States; with her on the briefs was **Mr. Melvin G. Berger**, Washington, D.C.

Mr. Roy P. Lessy, Jr., argued the cause and filed briefs for the Nuclear Regulatory Commission Staff.

MEMORANDUM AND ORDER

Opinion of the Board by Mr. Salzman, in which Messrs. Rosenthal and Sharfman join:

I

Before us is applicants' motion to stay, *pendente lite*, the effectiveness of remedial antitrust conditions in their licenses to build or operate the Davis-Besse and Perry nuclear power facilities. Those conditions were imposed by the Licensing Board following a full-dress antitrust proceeding under Section 105c of the Atomic Energy Act.¹ The applicants are five large Ohio and Pennsylvania-based

¹42 U.S.C. §2135(c).

electric utility companies; they comprise the "CAPCO² pool" and have dominance (market share in excess of 90%) over bulk power transmission and generation in their combined service areas.³

Based on the antitrust record developed before it, the Board below found the CAPCO companies to have acted "individually and collectively" to eliminate competing smaller utilities and to "preclude competition" and, further, to be currently "engaged in activities which violate" the antimonopoly provisions of Sections 1 and 2 of the Sherman Act⁴ and the proscription against unfair business practices of Section 5 of the Federal Trade Commission Act.⁵ The Board imposed the license conditions in suit after determining "that a situation inconsistent with the antitrust laws and the policies underlying those laws would be both created and maintained by the unconditioned license of the Davis-Besse and Perry nuclear stations." LBP-77-1, 5 NRC 133, 254-255 (January 6, 1977). In substance, the conditions require applicants to open CAPCO membership to the smaller electric utilities in their service areas; to sell bulk power to them free of certain anticompetitive restrictions; to interconnect (if necessary) with the smaller companies; to "wheel"⁶ power to and for those companies within given limits; to sell various economical forms to each other; to share reserves with those utilities; and to provide the smaller companies with access to the nuclear power plants in suit (or to power from them) as well as to certain future plants, subject to stated time and capacity limitations. *Id.*, 5 NRC at 255-260.

Applicants' motion to stay the effectiveness of the antitrust conditions—but not of the licenses—pending completion of appellate review was strongly opposed by the other parties to the proceeding: the Attorney General (represented by lawyers from the Antitrust Division of the Department of Justice), the City of Cleveland, Ohio, and the antitrust staff of the Commission.⁷ The Licensing Board assessed the motion in light of the factors initially laid down in *Virginia Petroleum Jobbers Ass'n v. FPC*,⁸ which also govern Commission stay practice:⁹

²"CAPCO" stands for "Central Area Power Coordination Group."

³LBP-77-1, 5 NRC 133, 142 (January 6, 1977).

⁴15 U.S.C. §§ 1 and 2.

⁵15 U.S.C. § 45(a).

⁶For purposes of the relief ordered, "wheeling" was defined by the Board as "transportation of electricity by a utility over its lines for another utility, including the receipt from and delivery to another system of like amounts but not necessarily the same energy. Federal Power Commission, *The 1970 National Power Survey*, Part 1, p. I-24-8." 5 NRC at 256.

⁷That motion was initially filed with us; we promptly referred it to the Licensing Board for the reasons explained in ALAB-364, 5 NRC 35 (January 17, 1977).

⁸259 F.2d 921, 925 (D.C. Cir. 1958).

⁹*Natural Resources Defense Council, CLI-76-2*, 3 NRC 76, 78 (1976); accord, *Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear-1)*, ALAB-192, 7 AEC 420 (continued on next page)

(1) has the movant (the party seeking the stay) made a strong showing that it is likely to prevail on the merits of its appeal; (2) has the movant shown that without a stay it will be irreparably injured; (3) would issuance of a stay substantially harm other interested parties; and (4) where lies the public interest?

The Board concluded that all four factors militated against granting the relief requested and accordingly declined to issue the stay. LBP-77-7, 5 NRC 452 (February 3, 1977). Applicants renewed their motion before us on February 14th. The other parties have responded to that renewal by reiterating vigorous opposition to the grant of any such relief.¹⁰

II

One observation is in order before we reach the merits of the applicants' motion. A stay, like a preliminary injunction, is normally understood to be a device to maintain the "*status quo ante litem*" pending consideration of the merits of a case; it serves to keep the parties as far as possible in the postures they occupied when the litigation began.¹¹ Here this would mean leaving applicants unfettered by antitrust conditions but also unlicensed to build and operate the nuclear power plants. The applicants concededly want more than this. They have told us expressly that they wish both to obtain and use their licenses and to be free of the antitrust conditions the Board below found

(continued from previous page)

(1974); *Southern California Edison Company* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-199, 7 AEC 478 (1974); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-338, NRCI-76/7, 10, 13 (1976).

¹⁰ Applicants represented to us at oral argument that Unit 1 of the Davis-Besse facility was scheduled for operation on or about March 15, 1977. App. Tr. p. 7. That schedule has proven over-optimistic before. Nevertheless, with the acquiescence of all the parties, on March 9th we entered an order temporarily restraining the effectiveness of the antitrust conditions for no more than two weeks with the understanding that we would decide the stay motion within that period. App. Tr. pp. 140-41. Our order contained no implications about the merits of the request for stay; its purpose was simply to enable us to decide the matter free of distracting motions for "emergency" interim relief during this very brief period.

¹¹ See *Sampson v. Murray*, 415 U.S. 61, 74 (1974); *Tanner Motor Livery Ltd. v. Avis, Inc.*, 316 F.2d 804, 809 (9th Cir.), *certiorari denied*, 375 U.S. 821 (1963); *Westinghouse Electric Corp. v. Free Sewing Machine Co.*, 256 F.2d 806, 808 (7th Cir. 1958); *Flood v. Kuhn*, 309 F. Supp. 793, 798 (S.D.N.Y. 1970). The cases involve applications for preliminary injunctions; the same standards obtain, however, as on a motion for a stay pending appeal. *Coleman v. Paccar, Inc.*, 424 U.S. 1301, ___, 47 L.Ed. 2d 67, 71 (Rehnquist, Circuit Justice, 1976); see also, *Sampson v. Murray*, *supra*, 415 U.S. at 88 n. 59.

necessary.¹² Thus they ask as a preliminary matter for the full relief to which they might be entitled if successful at the conclusion of their appeal. Given our status as an arm of the Commission, the cases do not hold that we lack the power to grant that relief.¹³ But they surely suggest that a party has a heavy burden indeed to establish a right to it. Bearing this in mind, we now consider the "four factors," turning first to whether applicants would be irreparably injured if the relief sought is not granted them.

1. Likelihood of irreparable injury to the applicants if a stay is not granted.

It is a well established rule of administrative law that "a party is not ordinarily granted a stay of an administrative order without an appropriate showing of irreparable injury." *Permian Basin Area Rate Cases*, 390 U.S. 747, 773 (1968)(Harlan, J.) In this case, the assertion of "irreparable injury" put forward in applicants' papers¹⁴ is that

the license conditions, as now framed, require a disruptive restructuring of relationships with other electric entities that will have a serious, unsettling impact on the utilities and their customers,

the cost of which applicants could not expect to recoup if they prevail; and that they would have to

reassess all of their planning projections with respect to their existing and prospective generation and transmission facilities, [involving] an irretrievable commitment of resources

which would be better spent if delayed until the appeal is decided.

At oral argument, applicants characterized that assertion as one involving "a serious disruption and a serious planning problem posed by immediate imposition of these license conditions." App. Tr. p. 37. But when pressed for particu-

¹² "CHAIRMAN ROSENTHAL: So in short, Mr. Reynolds [counsel for applicants], you want the best of both worlds. You want your permits and license; at the same time you want them without antitrust conditions."

"MR. REYNOLDS: That's correct, yes. And I would suggest that by applying the criteria of Virginia Petroleum Jobbers that we are entitled to, as you stated, the best of both worlds under the circumstances." App. Tr. p. 7.

¹³ See note 11, *supra*. The decided cases do teach that a court could not order the Commission to grant a license which it had refused: "A stay of an order denying an application would in the nature of things stay nothing. It could not operate as an affirmative authorization of that which the Commission has refused to authorize." *Scripps-Howard Radio v. FCC*, 316 U.S. 4, 14 (1942), quoted in *Sampson v. Murray, supra*, 415 U.S. at 75-76. We need not reach the interesting subsidiary question whether, with respect to a conditional license, a court would be authorized to "stay" the conditions only.

¹⁴ Applicants' Renewed Motion for Stay, filed February 14, 1977, pp. 16-17.

lars, applicants acknowledged that they meant only that the CAPCO companies would have to adjust their planning to take into account future operations under the license conditions and that it would be expensive thus to restructure their operating plans (App. Tr. p. 37):

MR. ROSENTHAL: What does that planning problem and disruption translate itself into? Money? The amount of money invested in people doing the planning?

MR. REYNOLDS [Applicants' counsel]: It translates itself into time and resources involved in the planning process.

MR. ROSENTHAL: So that is all we are talking about. When you come to us and tell us you will be irreparably injured, what it comes down to is that you will have to expend money and effort in circumstances where if you eventually win before us or before a court or the Commission, that money would have gone down the drain.

Is that really at the bottom what your claim of irreparable injury comes to?

MR. REYNOLDS: At bottom it comes down to that; that is correct.

And when asked precisely how much money would be involved, applicants' counsel responded: "I do not know." App. Tr. p. 38.

In other words, the "irreparable injury" applicants foresee is simply that they must now recast their future electric power requirements and operating plans in light of a new contingency—the need to satisfy the antitrust conditions set by the Board below—and this will entail, *inter alia*, some renegotiation of underlying CAPCO pool arrangements. We are hard put to see this as irreparable injury. To place the matter in perspective, we note the omission of any assertion by the applicants that the challenged antitrust conditions are impossible of performance;¹⁵ their concession that compliance needs no costly interconnections, useless if the Board's order is overturned;¹⁶ and the absence of serious suggestion that applicants will be called upon to provide services to non-CAPCO companies without entitlement to compensation.¹⁷

In the best of circumstances, planning for the future in the electric utility industry is beset with imprecision. The sudden occurrence of unanticipated situations seriously affecting the demand for and the distribution of electric power is hardly unknown and needs no illustration. We have observed before

¹⁵We are inclined to agree with the staff that those conditions essentially do no more than oblige the applicants "to offer similar power supply options and access to nuclear units to nonapplicants in [the CAPCO service area] as Applicants make available . . . to each other." NRC Staff Response, January 26, 1977, pp. 8-9.

¹⁶App. Tr. p. 46.

¹⁷See App. Tr. p. 97.

that load forecasting involves "at least as much art as science."¹⁸ Prior cases have taught us that a margin of error in planning is unavoidable and that the need to readjust, on a regular basis, planned operations and power plant construction schedules is virtually endemic in the electric utility industry. See, e.g., *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, NRCI-76/10, 397, 401, 410-11 (1976), affirming LBP-74-84, 8 AEC 890 (1974), and LBP-75-34, 1 NRC 626, 629 (1975); *Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB-264, 1 NRC 347, 363-69 (1975); *Tennessee Valley Authority* (Hartsville Nuclear Plant, Units 1A, 2A, 1B and 2B), ALAB-367, 5 NRC 92, 95-96 (January 25, 1977). In our judgment, the type of planning required to meet the Board's directives is of that stripe; certainly nothing applicants have shown us suggests, much less establishes, that it would be uniquely difficult or unduly stretch their planning capabilities.

We by no means imply that satisfying the antitrust conditions imposed by the Board below will not require the investment on applicants' part of additional time and effort in planning. Neither do we intimate that this can be done without cost (albeit applicants could not tell us what it might be). But, as the court of appeals stressed in *Virginia Petroleum Jobbers*, "[t]he key word in this consideration is *irreparable*. Mere injuries, however substantial, in terms of money, time and energy necessarily expended in the absence of a stay, are not enough." 259 F.2d at 925 (emphasis in original).

As for applicants' need to reassess their relationships with one another in light of the antitrust conditions, we have been given no reason by them—and we know of none ourselves—to find fault with the correctness of the analysis and conclusion of the Licensing Board in denying a stay (5 NRC at 462):

Applicants' argument that compliance with license conditions would require unspecified and inarticulated costs associated with the negotiation and filing of interconnection and sales agreements is unpersuasive. Applicants routinely engage in such negotiations with their wholesale municipal customers, with each other within the confines of the CAPCO agreement, and with outside systems. No special burden, let alone irreparable injury, is foreseen by the license requirements.

In short, even were we to accept *arguendo* the contentions made by the applicants, they do not amount even to a showing of grievous economic injury—much less of the type of loss which would satisfy the irreparable damage requirement. *International Waste Controls, Inc. v. SEC*, 362 F. Supp. 117, 121 (S.D.N.Y.), affirmed, 485 F.2d 1238 (2d Cir. 1973). See also *Petroleum Exploration v. Public Service Commission*, 304 U.S. 209, 222 (1938); *M.G. Davis & Co. v. Cohen*, 369 F.2d 360, 364-64 (2d Cir. 1966).

¹⁸ *Nine Mile Point*, *infra*, ALAB-264, 1 NRC 347, 365 (1975).

To summarize, we agree with the Licensing Board on this point. The record permits the drawing of but one conclusion: the applicants have failed to establish that they will suffer irreparable injury (or for that matter any significant injury at all) in the absence of a stay of the license conditions *pendente lite*. Their showing falls far short of demonstrating the kind of injury settled jurisprudence requires to merit a stay pending appeal. We turn now to another relevant consideration, the consequences that a stay would entail for others:

2. Harm to other parties.

Applicants contend that issuance of the stay will not harm the other parties but if anything will be to their advantage. It is the applicants' belief that the decision below is so flawed that it is bound to be reversed eventually and, therefore, "a precipitous disruption of the status quo, rather than judicious maintenance of it, would be the most harmful course to take insofar as the other parties are concerned." To this argument, applicants add that they have always offered fair access to their nuclear power plants and continue to do so.¹⁹

The other parties dispute the likelihood of reversal of the decision below, consider applicants' access offer unsatisfactory, and complain that a stay will permit applicants to continue unlawful business practices already shown to be harmful to their small competitors.

Reserving the question of likelihood of success on appeal for later, we find that the applicants have failed to show that the issuance of a stay would not have a serious adverse effect on the smaller utilities. *Virginia Petroleum Jobbers, supra*, 259 F.2d at 925. The Licensing Board made a number of findings to the effect that the past practices of the CAPCO companies not only disadvantaged the smaller cooperative and municipal systems, but actually drove (or at least contributed to driving) some of them under.²⁰ Although we are by no means bound by the findings to this effect drawn by the Board below from the evidence before it,²¹ those findings merit our respect until either we have had adequate opportunity to review the record or the party seeking a stay has demonstrated their inadequacy.²² Our review thus far, although preliminary, suggests that in most cases those findings are not devoid of record support and the applicants' papers do not persuade us that we must dismiss them out of hand. The situation here is analogous to that before the court in *North Central*

¹⁹ Applicants' Renewed Motion for Stay, pp. 21-23.

²⁰ See for example Initial Decision, 5 NRC at 179-182, 188-190, 211-213, 255.

²¹ *Catawba, supra*, ALAB-355, NRCI-76/10 at 402-05.

²² See *Coleman v. Paccar, supra*, 424 U.S. at ___, 47 L. Ed.2d at 72; *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 853 (D.C. Cir. 1970), *certiorari denied*, 403 U.S. 923 (1971).

Truck Lines, Inc. v. United States, 384 F. Supp. 1188 (W.D. Mo. 1974) (three-judge court), *affirmed*, 420 U.S. 901 (1975). The court there denied a petition to stay pending appeal an Interstate Commerce Commission order where doing so would have freed the petitioner to resume conduct the ICC had proscribed as unlawful and harmful to the interests of others.²³ This factor therefore weighs against a stay, for its grant would relieve applicants from a relatively insubstantial burden at the potential expense of serious injury to others interested in the proceeding.

3. The public interest.

The public interest is essentially found in the Congressional purposes underlying the antitrust provisions (Section 105) of the Atomic Energy Act. These were fully explored by us last year in an earlier phase of this litigation when we reviewed the application of the "grandfather clause" (Section 105c(8)) to the grant of an operating license for the Davis-Besse facility. *Toledo Edison Company* (Davis-Besse Nuclear Power Station, Unit 1), ALAB-323, 3 NRC 331 (1976). We recently summarized that legislative purpose as one

to establish formal procedures for the administrative review of the antitrust aspects of applications for construction permits (and in some instances operating licenses as well). And, with limited exceptions not of concern here, Congress has required that these review procedures be completed before a construction permit might issue—with a view toward insuring that, when and if the permit does issue in response to a grant of the application, it is laden with any conditions found necessary to obviate or rectify a situation inconsistent with the antitrust laws.²⁴

Given that legislative purpose, this factor obviously militates against staying antitrust conditions, particularly so where impressed on an operating license. To be sure, as the applicants point out, the Commission has authority under Section 105c(6) of the Act²⁵ to license the operation of a nuclear power plant notwith-

²³The court cogently observed that "plaintiff states that a denial of its motion for a stay 'would in effect require plaintiff to abandon a very large portion of its operations' and that it would '... lose substantial sums of money in prepaid expenses and capital outlays which could not be recouped if this Court's decision were reversed on appeal.' This contention is somewhat counterbalanced by the fact that the 'irreparable injury' to which plaintiff refers constitutes, in essence, the unlawful diversion of business from the intervenor-defendants and others similarly situated." 384 F. Supp. at 1191.

²⁴*Houston Lighting and Power Co.* (South Texas Project, Unit Nos. 1 and 2), ALAB-381, 5 NRC 582, 592 (March 18, 1977).

²⁵Section 105c(6), 42 U.S.C. § 2135(c)(6), provides: "(6) In the event the Commission's finding under paragraph (5) is in the affirmative [i.e., that "the activities under the license
(continued on next page)

standing the anticompetitive consequences of doing so. But, as we noted in the "Grandfather" decision, "[t]he legislative history makes it very clear that the Commission was to resort to authority under Section 105c(6) sparingly. It was to be invoked only in the exceptional case where the power from the plant is vitally needed and the antitrust impact of its operation cannot be otherwise ameliorated. See *Joint Committee Report*, p. 31. See also the remarks of Senators Aiken, Metcalf and Hart in the debates on the 1970 Amendments. 116 Cong. Rec. 19254-57 (daily ed. December 2, 1970)."²⁶

In this case, the antitrust conditions certainly do not themselves preclude licensing the operation of the Davis-Besse nuclear facility. It has not been seriously argued—or for that matter suggested—by the applicants that they would be compelled to forego the license rather than operate under these conditions. In sum, then, public interest considerations, too, militate against staying the effectiveness of the conditions.

4. Applicants' showing of likelihood of success on appeal.

We have saved for last the consideration of whether applicants have made the requisite "strong showing that [they are] likely to prevail on the merits of [the] appeal."²⁷ Without that showing it has been suggested that there is no right to a stay "even if irreparable injury might otherwise result."²⁸ We reserved this question because, as the District of Columbia Circuit observed in *Virginia Petroleum Jobbers*, the degree of likelihood of success which must be demonstrated for a stay turns in no small measure on the strength of applicants'

(continued from previous page)

would create or maintain a situation inconsistent with the antitrust laws . . ."], the Commission shall also consider, in determining whether the license should be issued or continued, such other factors, including the need for power in the affected area, as the Commission in its judgment deems necessary to protect the public interest. On the basis of its findings, the Commission shall have the authority to issue or continue a license as applied for, to refuse to issue a license, to rescind a license or amend it, and to issue a license with such conditions as it deems appropriate."

²⁶ *Davis-Besse*, ALAB-323, *supra*, 3 NRC at 346 fn. 41. At the cited page the Joint Committee Report states: "While the Commission has the flexibility to consider and weigh the various interests and objectives which may be involved, the committee does not expect that an affirmative finding under paragraph (5) would normally need to be overridden by Commission findings and actions under paragraph (6). The Committee believes that, except in an extraordinary situation, Commission-imposed conditions should be able to eliminate the concerns entailed in any affirmative finding under paragraph (5) while, at the same time, accommodating the other public interest concerns found pursuant to paragraph (6)." H.R. Rep. No. 91-1470 (also S. Rep. No. 91-1247), 91st Cong., 2nd Sess. (1970), p. 31.

²⁷ *Virginia Petroleum Jobbers Ass'n. v. FPC*, *supra*, 259 F.2d at 925.

²⁸ *Virginian Ry. Co. v. United States*, 272 U.S. 658, 672 (1926) (Brandeis, J.); but see *Seabrook*, *supra*, ALAB-338, NRCI-76/7 at 14-15.

showing on the other factors. 259 F.2d at 925. Indeed, that case illustrates the point. There the court had concluded that the "petitioner has shown a probability of success on the merits of its appeal" but denied a stay because of its "inadequate showing on the remaining . . . considerations." 295 F.2d at 926. *Accord, Blankenship v. Boyle*, 447 F.2d 1280 (D.C. Cir. 1971); see *Seabrook, supra*, ALAB-338, NRCI-76/7 at 14-15.

(1) The principal error alleged in connection with applicants' motion for a stay is that the Board below made its antitrust determinations and ordered relief without making "any assessment as to whether competition between electric entities in the electric utility industry is, in fact, in the public interest."²⁹ This, they contend, "is so fundamentally wrong as to render virtually every facet of the Initial Decision fatally suspect."³⁰

The applicants do not find spelled out in Section 105c the obligation to assess the advisability of competition on a case-by-case basis. Rather, they have distilled it from a line of cases including *FCC v. RCA Communications*, 346 U.S. 86, 97 (1953). They read *RCA Communications* to stand for the general proposition that "[m]erely to assume that competition is bound to be of advantage, in an industry so regulated and so largely closed as [the communications industry] is not enough."³¹ They also cite a series of court of appeals decisions, rendered in cases arising under statutes regulating other industries, as holdings to the same effect.³² Applicants reason that Section 105c of the Atomic Energy Act must be similarly interpreted; viz., to require the Commission, in each precertificate antitrust review, to consider whether competition with the utility seeking a license is a desirable end.

The Department of Justice, the NRC staff and the City of Cleveland all challenge the applicants' reading of the Act. Those parties point out that, unlike the agencies involved in the cases cited by the applicants, the NRC has not been given authority to regulate a line of commerce or a particular industry under a "public interest" standard, nor has it been vested with power to exempt entities or transactions from the reach of the antitrust laws.³³ They stress that, on the contrary, the Commission has been placed under an affirmative duty to "make a

²⁹ Applicants' Renewed Motion for Stay, p. 5, quoting from the Stay Decision, 5 NRC at 457.

³⁰ *Id.* at p. 6.

³¹ *Id.* at pp. 6-7.

³² *Hawaiian Telephone Co. v. FCC*, 498 F.2d 771, 777 (D.C. Cir. 1974); *Northern Natural Gas Co. v. FPC*, 399 F.2d 953, 959 (D.C. Cir. 1968); *Latin America/Pacific Coast S.S. Conf. v. Federal Maritime Commission*, 465 F.2d 542, 545 (D.C. Cir.), *certiorari denied*, 409 U.S. 967 (1972); *S.S.W., Inc. v. Air Transport Ass'n of America*, 191 F.2d 658, 661 (D.C. Cir. 1951), *certiorari denied*, 343 U.S. 955 (1952).

³³ Section 105a provides, *inter alia*, that "[n]othing in [the Atomic Energy Act] shall relieve any person from the operation of the [antitrust laws]."

finding as to whether the activities under the license would create or maintain a situation inconsistent with the antitrust laws . . ." which they assert is an entirely different responsibility.

To applicants' contention that Section 105c(6) calls upon the Commission to "harmonize both antitrust and . . . other public interest considerations" (quoting the *Joint Committee Report*, p. 31), the other parties' rejoinder is that such "harmonizing" is solely for purposes of remedy and is undertaken only after there has been a finding under Section 105c(5) of a situation inconsistent with the antitrust laws, citing an earlier passage in the same paragraph of the *Joint Committee Report* that "the [Joint] committee does not expect that an affirmative finding [of a situation inconsistent with the antitrust laws] under paragraph [105c](5) would normally need to be overridden by Commission findings under paragraph [105c](6)." *Ibid.*

(2) A recognized distinction exists between authority on the one hand to regulate an industry for the public convenience and necessity (which may require giving some consideration to antitrust policies) and, on the other, to enforce the antitrust laws directly. The Supreme Court has held that whether an activity "would serve the public interest" does not present the same issue as whether "the Sherman Act [has] been violated." *United States v. Radio Corporation of America*, 358 U.S. 334, 350-52 (1959) (distinguishing, *inter alia*, *FCC v. RCA Communications, Inc.*, *supra*, and holding that FCC approval of certain activities by licensed broadcasters did not immunize them from the antitrust laws). Although we are not deciding this matter finally at this preliminary stage, we are inclined to come down on the side of those contending that the Commission is called upon to decide the latter question, not the former. It is to be recalled that this Commission administers no pervasive economic regulatory scheme. It is not authorized to control entry into the various electric power markets. It regulates no rates and approves no mergers. Power over such matters—the normal concomitant of authority for economic regulation "in the public interest"—has been left to others.

This is not to say that we apply the antitrust laws to the electric utility industry as one would to shoe companies and toothpaste manufacturers. Far from it. Of course questions such as ease of market entry and the demands of state and Federal regulators must be taken into account in determining whether a situation conflicting with antitrust law or policy exists. The Board below appears at least to have attempted to so do.³⁴ But this is not the same as having to decide whether competition is good for the electric utility industry in general or any utility in particular. That question appears to us—at least on preliminary examination—to have been resolved by Congress and the courts. The contention that "the competitive standard imposed by antitrust legislation is fundamentally

³⁴ See, e.g., Initial Decision, 5 NRC at 245-248.

inconsistent with the 'public interest' standard widely enforced by regulatory agencies" has been rejected by the Supreme Court. *Cantor v. Detroit Edison Co.*, 428 U.S. 579, ___, 49 L.Ed 2d 1141, 1152 (1976). Since that Court's decision in *Otter Tail Power Co. v. United States*, 410 U.S. 366 (1973), there is no longer any doubt that the Federal antitrust laws are applicable to electric utility companies. And of course the fundamental purpose of the Sherman and Clayton Acts is the promotion and preservation of competition. *Northern Pacific Ry. v. United States*, 356 U.S. 1 (1958); *United States v. Topco Associates*, 405 U.S. 596 (1972).³⁵

We need not decide finally that the Board below applied the correct anti-trust standard applicable under Section 105c. It is sufficient for purposes of deciding the stay motion before us that the applicants have made no showing that they are likely to prevail on this point. Applicants have filed numerous other exceptions to the decision below, but have not pressed them on the stay motion. These, therefore, are also inadequate to support a finding that the appeal will ultimately be successful; the mere establishment of possible grounds for appeal is not in and of itself sufficient to justify a stay. *Environmental Defense Fund v. Froehlke*, 348 F. Supp. 338, 366 (W.D. Mo. 1972), *affirmed*,

³⁵In *Northern Pacific Ry.*, the Supreme Court stated (356 U.S. at 4-5):

The Sherman Act was designed to be a comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade. It rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources, the lowest prices, the highest quality and the greatest material progress, while at the same time providing an environment conducive to the preservation of our democratic political and social institutions. But even were that premise open to question, *the policy unequivocally laid down by the Act is competition*. And to this end it prohibits "Every contract, combination . . . or conspiracy in restraint of trade or commerce among the several States." (Emphasis supplied.)

In *Topco Associates* the Court reiterated (405 U.S. at 610):
Antitrust laws in general, and the Sherman Act in particular, are the Magna Carta of free enterprise. They are as important to the preservation of economic freedom and our free enterprise system as the Bill of Rights is to the protection of our fundamental personal freedoms.

477 F.2d 1033 (8th Cir. 1973). This, coupled with their failure to show that the other relevant factors point in their favor, leaves us no choice other than to *deny* the motion for a stay *pendente lite*.³⁶

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

³⁶At oral argument, separate counsel for the Ohio Edison Company and the Pennsylvania Power Company appeared and endeavored to urge upon us the existence of special considerations allegedly applicable to those two companies alone. The briefs filed on behalf of all the applicants had not included the points sought to be made by separate counsel. And, in the seven weeks which had elapsed between the initial decision and oral argument on the stay motion, no brief had been filed with us on behalf of those companies alone. In these circumstances, considerations of fundamental fairness to the opposing parties induced us to decline to hear argument on the new points which separate counsel belatedly sought to raise.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

Docket Nos. 50-498A
50-499A

HOUSTON LIGHTING AND POWER COMPANY
THE CITY OF SAN ANTONIO
THE CITY OF AUSTIN
CENTRAL POWER AND LIGHT COMPANY

(South Texas Project, Unit Nos. 1 and 2)

March 25, 1977

Upon request by a party for an extension of time to seek reconsideration of ALAB-381 until 10 days after the Commission has completed its discretionary review of that decision and has acted on certain related matters, the Appeal Board (1) denies the sought extension on the ground that the Commission is entitled to the Board's final views but (2) grants a brief 3-day extension.

Mr. Joseph Gallo, Washington, D.C., for the Central Power and Light Company.

Mr. J.A. Bouknight, Jr., Washington, D.C., for the Houston Lighting and Power Company.

ORDER

Opinion of the Board by Messrs. Salzman and Sharfman, in which Mr. Rosenthal joins except for Part 2:

On March 18th we reversed the Licensing Board's order granting, on the purported authority of 10 CFR §2.714(a), the untimely petition of Central Power and Light Company ("Central") for an antitrust hearing after a construction permit had been issued but before an operating license had been applied for. ALAB-381, 5 NRC 582. Our reasons for reaching this result are there set forth at length. The Commission now has that decision before it for discretionary review,

together with submissions by the several parties suggesting other ways in which a Commission antitrust hearing might be triggered.

Central now moves to extend the time in which it may ask us for reconsideration of ALAB-381 to ten days after the Commission acts on the options just described. If we deny that relief, Central asks for an extension of time of ten days from that denial in which to petition for reconsideration of ALAB-381. The staff voices no objection to the motion; Houston Lighting and Power Company, however, the party against which antitrust relief is sought, opposes it.

1. It seems clear to us that, in considering the advisability of initiating an antitrust hearing by one or another of the means which have been suggested to it by the several litigants, the Commission is entitled to have before it our *final* word on the availability of the route initially selected by Central for accomplishing that end. This being so, it would be, at the very least, inappropriate to leave Central free to try to persuade us at some indefinite future date (after the Commission has spoken) that our conclusions in ALAB-381 were erroneous. If Central has good reason to believe that we were wrong, the time to tell us about it is now.

2. Putting aside doubts about our authority to reconsider our prior decision after the Commission has acted, we find it anomalous that a party should ask a lower tribunal to extend the time to move for reconsideration of its decision until ten days after a superior tribunal has acted. Nothing in Central's motion explains—much less justifies—relief of this nature. It comports with neither fairness nor sound principles of administrative (or judicial) practice to permit a party to reserve to itself the right to wait and see if it likes the results reached by the Commission, while keeping the door open for an attempt to circumvent it at a lower level within the agency. “[T]here must be an end to litigation sometime.” ALAB-381, *supra*, 5 NRC at 591.

3. With respect to the alternate request for relief, we note that Central has been litigating this matter for nearly ten months. It therefore should not need a great deal of time to prepare a motion for reconsideration. The Commission has this entire problem before it now; any substantial extension of time will only tend to impede its expeditious resolution. For these reasons, we grant the request for an extension of time in which to petition for reconsideration, but only *until March 30, 1977*.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Richard S. Salzman
Jerome E. Sharfman

In the Matter of

Docket Nos. 50-498A
50-499AHOUSTON LIGHTING AND POWER COMPANY
THE CITY OF SAN ANTONIO
THE CITY OF AUSTIN
CENTRAL POWER AND LIGHT COMPANY

(South Texas Project, Unit Nos. 1 and 2)

March 31, 1977

The Appeal Board summarily denies a petition for reconsideration of ALAB-381.

Messrs. Richard D. Cudahy, Washington, D.C., and Michael Miller, Chicago, Illinois, for the Central Power and Light Company.

ORDER

Within the period allowed to it by ALAB-386,¹ the Central Power and Light Company (Central) has petitioned for reconsideration of our decision reversing the grant of its untimely request for an antitrust hearing. ALAB-381, 5 NRC 582 (March 18, 1977). Without calling for responses from the other parties, we summarily *deny* the petition.

Central advances no arguments not previously tendered to us and rejected for the reasons set forth at length in ALAB-381. Indeed, its reconsideration petition does little more than to express with acerbity its displeasure over the result. In this connection, we are reminded by Central that almost ten months have now elapsed since the filing of its request for an antitrust hearing, all agree that such a hearing is warranted and yet one still has not been ordered. The appropriate response is twofold: first, that a party has mistaken the path to its

¹ 5 NRC 636 (March 25, 1977).

goal is hardly an excuse for pique directed at those who point out it is going the wrong way; second, even less is there room for complaint that it will be late getting there.

It is so ORDERED.

**FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD**

**Margaret E. Du Flo
Secretary to the Appeal Board**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Jerome E. Sharfman

In the Matter of

Docket Nos. STN 50-556
STN 50-557

PUBLIC SERVICE COMPANY OF OKLAHOMA
et al.

(Black Fox Station, Units 1 and 2)

March 31, 1977

The Appeal Board calls upon applicants, which are appealing from so much of LPB-77-17, 5 NRC 657, as admitted certain intervenors to the proceeding, to supplement their brief with a statement of specific background information.

RULES OF PRACTICE: BRIEFS

Although not specifically required by the Rules of Practice, every appellant in an NRC proceeding has an implicit obligation to include in its brief the procedural history of the case related to the issue or issues presented by the appeal.

Mr. John W. Rowe, Chicago, Illinois, for the applicants,
Public Service Company of Oklahoma, *et al.*

ORDER

We have before us the applicants' appeal under 10 CFR 2.714a from so much of the Licensing Board's March 9, 1977, third prehearing conference order as granted the petitions for leave to intervene filed by five individuals in this construction permit proceeding. LBP-77-17, 5 NRC 657. The brief in support of the appeal is wholly inadequate in one important respect: it sets forth little, if any, of the background information necessary to an understanding of the setting in which the Licensing Board's determination was rendered—an understanding essential to our evaluation of the merit of the appeal.

It is true that our Rules of Practice do not contain a specific requirement that the brief of an appellant contain what is referred to in judicial proceedings as a "statement of the case" or "statement of facts." Nonetheless, as has been generally recognized by the parties appearing before us, there is an implicit obligation on the part of an appellant to include in its brief an exposition of that portion of the procedural history of the case related to the issue or issues presented by the appeal. In this instance, the proper discharge of that obligation required much more to be said in the brief respecting such matters as the difference between the original and amended notices of hearing (and when each issued); the dates upon which the intervention petitions were filed; the content of each petition; and the relationship, if any, between what is asserted by these petitioners and what had been placed before the Licensing Board by persons already admitted to the proceeding. Obviously, because the entire Licensing Board record is available to us, we could ferret out those details ourselves. Given the state of our docket, however, we are disinclined to take the time required to search the record in quest of information which the applicants were duty-bound to supply to us themselves.

The applicants may file a supplement to their brief on or before April 8, 1977, for the purpose of curing the deficiencies noted above. In the absence of such filing, the appeal will be dismissed. The time of the other parties for the filing of responses to the appeal shall not commence to run until service upon them of the supplement.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING APPEAL BOARD

Margaret E. Du Flo
Secretary to the Appeal Board

Dr. Johnson did not participate in this order.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Robert M. Lazo, Chairman
Dr. Emmeth A. Luebke
Dr. David R. Schink

In the Matter of

Docket Nos. STN 50-508
STN 50-509

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM, et al.

(WPPSS Nuclear Projects
No. 3 and No. 5)

March 4, 1977

Upon motion by applicant requesting authorization, prior to the grant of a limited work authorization, to commence construction activities involving the development and use of four laydown areas for storage of prepurchased equipment and the upgrading of an existing access road to the site, the Licensing Board rules, as a matter of summary disposition, that (1) the road upgrading results in so trivial an impact as to not adversely affect the environment, is therefore not precluded by 10 CFR §50.10(c), and hence may be authorized; (2) although the construction activities relating to three of the laydown areas may adversely affect the environment in a minor manner, such impacts are fully redressable and, since the applicant has agreed to redress such impacts, if necessary, the activities may proceed, subject to one condition; and (3) since the record is inadequate to reach any conclusion on the impacts of the fourth laydown area, construction of that area is not authorized.

Motion granted in part and denied in part.

LICENSING BOARD: DELEGATED AUTHORITY

A licensing board has the authority to grant appropriate declaratory relief in order to remove uncertainty and accommodate an applicant's practical needs. *Kansas Gas and Electric Co.* (Wolf Creek, Unit 1), CLI-77-1, 5 NRC 1 (1977).

NEPA: PRE-LWA CONSTRUCTION ACTIVITIES

A licensing board may, as a matter of discretion, grant permission for offsite activities before an LWA is granted, provided that either (1) the impact is so trivial that no conceivable harm could be done to any of the interests sought to be protected by NEPA, or (2) the possible damage is fully redressable, and the applicant is willing to obligate itself, if required, to undertake such activities as are necessary to restore the site. *Kansas Gas and Electric Co.* (Wolf Creek, Unit 1), CLI-77-1, 5 NRC 1 (1977).

RULES OF PRACTICE: SUMMARY DISPOSITION

Summary disposition is appropriate for such matters as requests for authorization to undertake pre-LWA construction activities. *Kansas Gas and Electric Co.* (Wolf Creek, Unit 1), ALAB-321, 3 NRC 293, 314-15 (1976).

ORDER AUTHORIZING CONSTRUCTION OF LAYDOWN AREAS AND UPGRADING OF EXISTING ROAD

This Order is in response to the Motion filed by the Washington Public Power Supply System (Applicant) on February 16, 1977, for (1) a determination that certain limited construction activities will result in only *de minimis* environmental impacts and are therefore not precluded by 10 CFR §50.10(c); and (2) authorization to immediately commence such activities. The construction activities involved are (1) development and use of four laydown areas for storage of prepurchased equipment, and (2) upgrading of an existing county road to be used for access to the plant site.

In its response dated March 2, 1977, the NRC Staff has advised the Board that the Staff has conducted its independent evaluation of the potential environmental impacts which may result from performing the requested activities. The Staff concludes that subject to the condition that the construction activities relating to the laydown areas are carried out incrementally on a schedule dictated by the storage requirements of the Applicant, the Board should exercise its discretion and grant precicensing authorization to commence, with one exception, the limited activities specified in Applicant's Motion. The Board agrees with the Staff's conclusions.

I

A. On January 24-25, 1975, evidentiary hearings were conducted by the Atomic Safety and Licensing Board (Board) with respect to environmental and site suitability matters. The Applicant presented evidence on these matters in documentary form (including the Environmental Report as Applicant's Exhibit

2) and by testimony. Likewise, the Staff presented evidence in documentary form (including the Final Environmental Statement as Staff Exhibit 1) and by testimony (including the Staff Site Suitability Report). The Board examined the witnesses of the Applicant and the Staff. Thereafter, a series of delays were encountered in the issuance of the Partial Initial Decision on environmental and site suitability matters. Issuance of the Limited Work Authorization for WNP-3 and WNP-5 has been delayed accordingly. That delay is expected to continue for at least several months.

B. The authority of this Board to rule on the instant motion in advance of issuance of the Partial Initial Decision was recently confirmed by the Commission in *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), CLI-77-1, 5 NRC 1 (January 13, 1977), affirming the decision of the Atomic Safety and Licensing Appeal Board, ALAB-321, 3 NRC 293 (April 7, 1976).

In *Wolf Creek*, the Commission concluded that its licensing boards have been delegated the authority to issue declaratory orders "to terminate a controversy or to remove uncertainty." See 5 U.S.C. §554(e). The Commission also concluded as a matter of policy that applicants should be encouraged to seek declaratory relief to remove uncertainty and to accommodate an applicant's practical needs. *Wolf Creek*, CLI-77-1, 5 NRC 1, 4-5.

The "uncertainty" to which the Commission referred in *Wolf Creek* involved, in part, the jurisdiction of the Commission to evaluate environmental impacts occurring "offsite" and to impose license conditions concerning such impacts. As the Commission noted (*Id.*, 5 NRC at 7), this jurisdictional question was not raised for the first time in *Wolf Creek*. See, e.g., *Detroit Edison Company* (Greenwood Energy Center) 8 AEC 936 (1974). Implicit in the filing of the instant motion is a concession by the Applicant that the Commission (and hence this Board) has jurisdiction over those limited "offsite" matters which are the subject of the motion.

It is apparent that the practical needs of the Applicant here compel the swift issuance by this Board of authorization to conduct the requested activities. The construction schedule for WNP-3 and WNP-5 is governed in large measure by the rainy season in the site region. The requested activities must be commenced shortly if curtailment or even postponement of many construction activities (such as excavation) due to the advent of the rainy season is to be avoided. Immediate authorization to conduct the activities will also relieve the Applicant of substantial expenses associated with offsite storage of prepurchased equipment at the manufacturer's location or in presently developed industrial areas in Grays Harbor County vicinity.¹

¹The Commission itself recently recognized that receipt of prepurchased equipment should be permitted where "substantial economic penalties would be incurred on failure to (continued on next page)

In *Wolf Creek* (ALAB-321), the Appeal Board set forth three possible means for an applicant to obtain preclicensing authorization to engage in certain specified construction activities. One such approach is to seek an exemption from the requirement of NRC regulations pursuant to 10 CFR §50.12.² Another approach is to plead special circumstances under 10 CFR §2.758. The Applicant has elected to pursue the third approach, under which it has attempted to demonstrate to this Board that the proposed activities will not "adversely affect the environment." The rationale for this approach is that NEPA, as implemented by 10 CFR §50.10(c), does not prohibit preclicensing activities which will result in only *de minimis* environmental impacts.

The Appeal Board framed the applicable legal standard to be whether the proposed preclicensing activity can be conducted "with so trivial an impact that it can safely be said that no conceivable harm would have been done to any of the interests sought to be protected by NEPA . . ." *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1), ALAB-331, 3 NRC 771, 777 (June 8, 1976).

This legal standard was endorsed by the Commission, with one qualification involving the authority of a licensing board in certain instances to permit preclicensing activities which may have greater than *de minimis* environmental impact. The Commission expressed this qualification, as follows:

We think that there will be instances in which it will be possible to correct damage to the environment which is caused by site preparation or other preconstruction activities, should the Commission eventually deny an applicant a construction permit. In those instances in which damage is fully redressable, and the applicant is willing to obligate itself to undertaking such activities as are necessary to restore the site, a licensing board might in its discretion allow the applicant to proceed accordingly. [*Wolf Creek*, Commission Memorandum and Order (January 13, 1977), 5 NRC at 12.]

(continued from previous page)

accept delivery of the materials . . ." *Public Service Company of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-5, 5 NRC at 405 (February 7, 1977). In short, the Commission recognized that practical considerations may dictate that laydown areas be constructed and used even in the absence of licensing action. As noted, the Applicant will incur substantial expense if it is required to store prepurchased equipment.

²The Applicant filed with the Commission simultaneously with the instant motion an application for such an exemption authorizing the commencement of certain construction activities, including those activities for which authorization is sought from the Board, and other activities which may affect the environment. The partial duplication of the requests to the Board and Commission respectively do not in our view diminish the importance of prompt disposition by this Board.

C. Attached to the Motion to obtain preclicensing authorization from the Board was the Affidavit of Mr. Kenneth R. Wise, Supervisor for Environmental Engineering for the Applicant. The Board receives the Wise affidavit into evidence as Applicant's Exhibit 32.

The Wise affidavit discusses the environmental impacts associated with the development and use of the four proposed laydown areas and the upgrading of the existing county road. Construction of the four laydown areas would be undertaken incrementally, starting with the Saginaw Spur and Meteorological Tower areas. The location of these areas (and the Cooley and Wilder areas) and specific plans for construction of the four areas were presented in the Wise affidavit. Development of the Meteorological Tower, Wilder, Cooley, and Saginaw Spur areas will involve approximately 13.3 acres, 1.2 acres, 7.1 acres, and 27.7 acres, respectively.³

Development of the laydown areas will consist of the spreading of a six-inch gravel bed over the areas and a twelve-inch gravel bed for roadways within the areas. This activity will not result in any runoff difficulties, and no additional permits or approvals are required. The gravel is expected to be transported from an existing local gravel quarry over existing roadways. Minor and temporary inconveniences such as dust and noise will be experienced (Wise affidavit, at 2).

The proposed laydown areas presently consist of grazing land which is substantially clear of trees. Only the Saginaw Spur area is utilized for grazing, and then only intermittently. No agricultural crops are planted on any of the areas, and there are no rare species of animals in these areas. These areas constitute a very small portion of similar such land in the vicinity of the site. Existing woodlands will be preserved, and no residents will be displaced by the proposed activities (Wise affidavit, at 3).

All areas except Saginaw Spur are owned by the Applicant. It is asserted that a lease of up to five years for Saginaw Spur can be obtained, and the lease would provide that this area will be redressed upon completion of use. The Applicant commits to redress all areas in the event construction permits for WNP-3 and WNP-5 are not issued. Redress will be effected by removing the gravel beds, discing the areas to turn any remaining gravel, and mulching and seedling the areas to facilitate return to natural conditions (Wise affidavit, at 3).

D. To its response to Applicant's Motion, the Staff has attached the Affidavit of Jan A. Norris. The Board receives the Norris affidavit into evidence as Staff's Exhibit 11. As indicated in the Norris affidavit, the Staff has no basis for any conclusion regarding environmental impacts related to the development or use of the Saginaw Spur Site and consequently cannot comment on their magni-

³Total acreages of some of the laydown areas may be slightly larger since the acreage estimates in the text account for the fact that existing woodlands will be preserved. Wise affidavit, Figures 3, 4, and 5.

tude, significance or acceptability. The Saginaw Spur Site was not a part of the Applicant's original proposal and therefore it was not reviewed and independently evaluated by the Staff. Therefore, the Staff believes the record to be inadequate to support the relief requested insofar as it pertains to the Saginaw Spur Site. We agree.

Further, the Staff disagrees with the Applicant's evaluation that the potential environmental impacts from the construction and use of the three laydown areas located onsite are *de minimis*. The Staff believes that the removal of these areas as habitats for wildlife is a significant enough impact to be considered greater than *de minimis*. In the Staff's opinion, the impacts could be ameliorated by permitting, in advance of the receipt of such components, only that amount of laydown area construction and use necessary for the storage of such components. If this recommendation was followed, the Staff concluded that the environmental impacts would be minor.

However, the Staff agrees with the Applicant that these impacts are fully redressable and notes that the Applicant has committed to redress these laydown sites in the event its application for a construction permit is denied. Accordingly, the Staff recommends that the Board exercise its discretion to authorize construction of the onsite laydown areas subject to the condition recommended by the Staff.

E. The Wise affidavit also discusses the environmental impacts associated with upgrading of the existing county road. The road runs south from an interchange with Highway 12 at Elma to the bridge over the Chehalis River at South Elma. The approximate length of the road is 1.6 miles. The existing road is a two-lane, all weather road. Each lane is 10 feet wide, and the shoulders on either side are 6 feet wide. The existing right-of-way is 60 feet wide.

The road will be improved so that each lane will be one foot wider, *i.e.*, 11 feet wide, and the shoulders on either side will be 8 feet rather than 6 feet. Two existing flood relief bridges will be upgraded. The upgraded road will follow existing rights-of-way, and will require an additional 20-foot right-of-way to allow for widening. This additional right-of-way will require the dedication of approximately 4 acres of cropland. No unique wildlife or croplands are involved, and no significant impact on wildlife is anticipated. No residents will be displaced by the proposed activities. Minor and temporary inconveniences such as dust and noise will be experienced.

With respect to the potential environmental impacts resulting from the upgrading of the county road from Elma to South Elma, the Staff evaluation concluded that these impacts would be trivial. Therefore the Staff agrees with the Applicant that the record in this proceeding would support a finding by this Board that the upgrading can be accomplished with so trivial an impact that it will not "adversely affect the environment." See 10 CFR §50.10(c).

II

In accordance with the above discussion, the Board concludes that the record supports issuance of a declaratory order without further hearings: (1) finding that the limited construction activities attendant to the upgrading of the existing county road from Elma to South Elma will result in so trivial an impact as to not adversely affect the environment and are therefore not precluded by 10 CFR §50.10(c), and (2) finding that the construction activities relating to the Meteorological, Cooley and Wilder laydown areas, on a schedule dictated by the storage requirements of the Applicant, may adversely affect the environment in a minor manner but are fully redressable and the Applicant's commitment to redress such impacts is acceptable, and that accordingly, the Board, in its discretion, authorizes such activities in accordance with the condition recommended by the Staff, based upon the existing record and the Wise and Norris affidavits.⁴

WHEREFORE, IT IS ORDERED, in accordance with the Atomic Energy Act, as amended, and the rules and regulations of the Nuclear Regulatory Commission, that the Applicant's motion for authorization to commence development and use of the Saginaw Spur Site as a laydown area for storage of prepurchased equipment is denied.

IT IS FURTHER ORDERED that the Applicant's motion for authorization to commence development and use of three onsite laydown areas for storage of prepurchased equipment and upgrading of an existing county road to be used for access to the plant site, all in accordance with the plans and descriptions set forth in the record of this proceeding and with the conclusions of the Board set forth hereinabove, is hereby granted.

ATOMIC SAFETY AND LICENSING BOARD

Dr. Emmeth A. Luebke, Member

Dr. David R. Schink, Member

Robert M. Lazo, Chairman

Dated at Bethesda, Maryland
this 4th day of March 1977.

⁴Our disposition of the Applicant's motion constitutes summary disposition of the matters raised therein. The Appeal Board expressly approved of the summary disposition of such matters. *Kansas Gas and Electric Company* (Wolf Creek Nuclear Generating Station, Unit No. 1) ALAB-321, 3 NRC at pp. 314-15.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Robert M. Lazo, Chairman
Dr. Emmeth A. Luebke
Dr. David R. Schink

In the Matter of

Docket Nos. STN 50-508
STN 50-509

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

(Nuclear Projects No. 3
and No. 5)

March 8, 1977

Upon untimely "petition for limited right of intervention" (treated as a petition for leave to intervene pursuant to 10 CFR §2.714, accompanied by a request to make a limited appearance pursuant to 10 CFR §2.715(a) if the petition for leave to intervene is not granted), the Licensing Board rules that (1) petitioner has not made a substantial showing of good cause for the lateness of its petition, as required by 10 CFR §2.714(a); but that (2) the equities favor granting petitioner a brief additional opportunity to justify the lateness of its petition.

Petition denied; leave granted to file amended petition; in the alternative, request to make limited appearance granted.

RULES OF PRACTICE: NONTIMELY INTERVENTION PETITIONS

In deciding whether a petition for leave to intervene should be denied as untimely because good cause for late filing has not been shown, a licensing board must consider the four factors spelled out in 10 CFR §2.714(a), as well as whether the petitioner has advanced an adequate excuse for being late. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

Studies which suggest legislation which has not been enacted do not constitute the type of information which would justify reopening the record. *Northern*

MEMORANDUM AND ORDER

Notices of Hearing in the captioned matter were published in the *Federal Register* on August 23, 1974, (39 Fed. Reg. 30535) and October 4, 1974 (39 Fed. Reg. 35835). The notices provided, *inter alia*, that any person whose interest might be affected by the proceeding could file a petition for leave to intervene, in accordance with the requirements of 10 CFR §2.714, not later than September 23, 1974, and November 7, 1974, respectively. The notices further provided that interested persons could file requests for limited appearances pursuant to the provisions of 10 CFR §2.715.

On January 18, 1977, the Office of the Secretary of the Nuclear Regulatory Commission received a "Petition for Limited Right of Intervention" (Petition) filed by Citizens for a Safe Environment (CASE), who seek to present testimony, exhibits and offer argument in this proceeding. CASE requests the right to present evidence on the issue of conservation as an alternative to building the reactors, on the seismic design of the proposed facility, and on the cost of nuclear power versus coal-fired plants. In addition, the petitioner has requested the NRC to reevaluate the short-term effects of storing spent fuel at the site, the availability of fuel for Washington Public Power Supply System (WPPSS or Applicant), Nuclear Project Nos. 3 and 5 (WNP 3 and 5), the cost-benefit on WNP 3 and 5, and the acceptability of the reactor vessel supports for WNP 3 and 5.

Because the Commission's Rules of Practice in licensing proceedings do not contemplate a "petition for limited right of intervention," the Atomic Safety and Licensing Board (Board) has considered the Petition by CASE to be a petition for leave to intervene pursuant to the provisions of 10 CFR §2.714 accompanied by a request pursuant to the provisions of 10 CFR §2.715(a) to make a limited appearance in the event the petition for leave to intervene is not granted.

Both the Applicant and the Staff of the Nuclear Regulatory Commission (Staff) have filed answers urging the Board to deny the Petition filed by CASE because of its nontimely filing.

Upon consideration of the aforementioned filings, the Board concurs with the view of both the Applicant and the Staff that the petitioner has not made a substantial showing of good cause for failure to file on time and that on the basis of the pleadings which have been filed the CASE Petition must be denied. The Board has concluded however, that the equities favor affording the Petitioner a brief additional opportunity to furnish a valid justification for the nontimely Petition.

Accordingly, CASE is granted fifteen (15) days from the date of service of this Memorandum and Order to file an amended petition, including a showing of good cause for its tardiness in filing a petition for leave to intervene two and a half years after the Notice of Hearing was issued in this proceeding. The reasons for the Board's conclusions are discussed hereinbelow.

I

A. By way of background, it should be noted that a public evidentiary hearing in this proceeding was held on June 24 and 25, 1975, in Aberdeen, Washington, for the purpose of hearing testimony on environmental and site suitability issues. A number of limited appearances pursuant to 10 CFR §2.715 were made at the hearing, including limited appearances by both a director (John Raby) and an officer (Emory Stoy) of CASE.

At the hearing, the Staff and the Applicant presented testimony in support of the issuance of a limited work authorization for WNP 3 and 5, and responded to several specific questions posed by the Board both in direct and written testimony and in oral examination during the hearing. Subsequent to the hearing, both parties submitted affidavits in response to additional Board questions, updating their respective analyses of the projected need for the facilities. Thereafter, both the Staff and the Applicant submitted proposed findings of fact and conclusions of law in support of the issuance of a partial initial decision on environmental and site suitability matters for WNP 3 and 5. However, no partial initial decision in this matter has been rendered and the record remains open pending a determination of the impacts of the revised values included in the Commission's Table S-3 regarding the nuclear fuel cycle, and input from the Staff regarding the conclusion of its current review of the geology of the WNP 3 and 5 site.

B. Since CASE's petition has been considered to be a petition for leave to intervene, an evaluation of the petition must be in light of the standards for intervention set forth in Section 2.714(a)-(d) of the Commission's Rules of Practice, 10 CFR Part 2. This section requires intervention petitions to identify by affidavit the specific aspect or aspects of the subject matter of the proceeding as to which the petitioner wishes to intervene and to set forth with particularity both the facts pertaining to its interest, how that interest may be affected, and the basis for its contentions. The Board, in ruling on a petition, must consider, *inter alia*, the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interests in the proceeding; and, (3) the possible effect of any Order which may be entered in the proceeding on the petitioner's interest.

However, the Board must reach these matters only if it makes a threshold determination that the nontimely petition should be entertained. Therefore, we

have not addressed petitioner's interest and contentions in this Memorandum and Order except as they relate to the "good cause" question.

II

A. In deciding whether a petition for leave to intervene should be denied as untimely because good cause for late filing has not been shown, the Board must consider not only whether the petitioner advanced an adequate excuse for being late, but also the following four factors spelled out in §2.714(a):

- (1) The availability of other means whereby the petitioner's interest will be protected.
- (2) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (3) The extent to which petitioner's interest will be represented by existing parties.
- (4) The extent to which the petitioner's participation will broaden the issues for delay in the proceeding.¹

B. Nowhere in the petition does CASE make a substantial showing of good cause for its tardiness in filing a petition for leave to intervene two and a half years after the first notice was issued, and a full year and a half after the evidentiary hearing on environmental and site suitability issues was held. The explanation given for the late filing consists of a one-sentence affidavit by James E. Duree that the issues raised are the result of recent court decisions or public disclosure of recent information. An examination of the issues raised in the petition refutes this claim, however. Of the seven issues petitioner seeks to raise, four of them involve requests of the NRC to reevaluate previously performed analyses without suggesting material new reasons for doing so (Petition paragraphs 3, 4, 7 and 8). Apparently, CASE does not intend to offer any additional evidence on these issues.

Of the three issues upon which CASE does wish to participate, no compelling reason has been advanced for reopening the environmental and site suitability hearing. The first issue on which CASE seeks to make a presentation involves conservation of energy (Petition, para. 2). However, the only sources of information that could be considered "recent" are the first court decision cited (*Aeschliman v. NRC*, Nos. 73-1776 and 73-1867, D.C. Cir., July 21, 1976), (or "*Aeschliman*"); a study by Skidmore, Owings & Merrill; and a study made by Seattle Power and Light (studies). *Aeschliman*, decided over six months ago, is being offered by CASE solely for the purpose of showing that the NRC should con-

¹See, *Nuclear Fuel Services, Inc., and New York State Atomic and Space Development Authority* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (April 17, 1975).

sider conservation as an alternative to construction of the facility. However, the Staff and Applicant have considered conservation as an alternative and presented a great deal of evidence on this subject in connection with the need for the power to be supplied by WNP 3 and 5. The testimony was the subject of inquiry by the Board. This examination covered, *inter alia*, the relationship of price elasticity to conservation (Tr. 213-236, 238-240). In addition, the Staff performed an analysis of the impact of energy conservation and substitution on need for power (FES, § 8.2.3-8.2.3.6).

The studies referred to by CASE, one of which was available almost a year ago, and the other this fall, suggest a reduction of energy consumption of up to 33% as being possible only if the full spectrum of conservation measures were taken, including involuntary measures enforced by legislation. The measures considered by these studies have not been enacted into law and it is only conjecture to assume such legislation will be passed. Accordingly, these studies do not constitute the type of information which would justify reopening the record (see, *Northern Indiana Public Service Company* (Bailly Generating Station, Nuclear-1), ALAB-227, 8 AEC 416, 417-18 (September 5, 1974)).

Both the Staff and the Applicant updated their need for power testimony in 1976, and concluded, even with conservation, that there is a deficiency of existing generating capacity to meet expected average annual loads which will likely result in substantial energy shortages in the West Group Area during the next ten years or until future plants become operational (Testimony of Donald W. Connor, p. 2, following Tr. 191; Tr. 294-95, 278; and Staff Exhibit 10).

The second issue which CASE seeks to participate in is the adequacy of the proposed plants to withstand earthquakes (Petition, para. 5). Petitioner's "new information" on this issue apparently consists of statements by citizens that a strong earthquake occurred in Olympia on April 13, 1949. Not only is this information almost 28 years old, but consideration was given to this earthquake by the Staff in arriving at an acceleration value for the seismic design for the proposed facility (see, FES p. 2-16, Table 2.4; SER, pp. 2-15 through 2-22).

Finally, petitioner seeks to intervene on the economic viability of operating WNP 3 and 5 versus coal-fired plants. CASE cites an unspecified Council on Economic Priorities study in an attempt to show that coal-fired plants are cheaper for generating electricity than are nuclear facilities. The court case cited in the petition, *Conservation Society of Southern Vt., Inc. v. Sec. of Transportation*, 508 F. 2d 927 (2d Cir. 1974),² is a decision rendered over two years ago instructing the Dept. of Transportation to include in its environmental impact statement a consideration of alternatives to the highway. The parties submitted testimony of the cost of alternatives to nuclear power, including natural gas,

² *Vacated and remanded*, 46 L. Ed. 2d 29 (1975); *opinion on remand* 531 F. 2d 637 (1976).

petroleum liquids, municipal solid waste, hydroelectric power, solar and wind power, geothermal power, and advance nuclear sources, in addition to coal (*see, e.g., Staff Final Environmental Statement, Section 9.1.2 and Tr. 346-361*). It was concluded that economic costs would be lower for WNP 3 and 5 than with any of the abovementioned alternatives (FES, § 9.1.2. and 9.2.2).

On all three issues, therefore, the petition fails to assert significant new information that can be considered to constitute good cause for the untimeliness of the filing. In most instances the information is no more recent than six months old, and in each case the information addresses issues previously considered by the parties in testimony presented during the evidentiary hearing. Accordingly, the petition fails to assert good cause for failing to file on time within the meaning of 10 CFR § 2.714(a).

III

A. In consideration of the fact that the record in this proceeding on environmental and site suitability issues has not been closed and that additional hearings on public health and safety matters are required at some future date, the Board has concluded that the petitioner should be given an additional opportunity to respond to the four factors set out above in an attempt to explain why its petition should be granted.

B. While there may be available no other means whereby petitioner's interest will be protected, it is not clear what interest petitioner seeks to assert in this proceeding. Similarly, the Board finds that the third factor does not overwhelmingly suggest that the hearing should be reopened to consider petitioner's area of concern. Although it cannot be said with any certainty that petitioner's interest has been represented by existing parties, a number of citizens of the site area did make limited appearance statements during the proceeding. We also must conclude, on the basis of the petition, that CASE may not reasonably be expected to lend such vital assistance in developing a sound record in this proceeding that a new hearing should be granted on issues already considered by this Board. Finally, petitioner will broaden the issues and quite probably delay this proceeding if allowed to intervene at this time. Since the evidentiary hearing has already been completed on environmental and site suitability matters, and the partial initial decision is being withheld solely for the completion of two items, the reopening of this proceeding to consider petitioner's issues could have a direct effect on the timing of the issuance of a partial initial decision for WNP 3 and 5.

Thus far, petitioner has failed to establish any compelling reasons why its petition should be granted at this late date, especially when weighed against the delay that would probably result from a grant of intervention in this proceeding and fair reading of the petition which as been filed fails to suggest that petitioner has a valuable contribution to make to this decision making process.

C. Because of the aforementioned deficiencies, the petition for leave to intervene filed by CASE is hereby *denied*. However, because CASE may be able to cure the defects in the Petition, the Board has concluded that this petitioner should be afforded additional time for that purpose. In its ruling above, the Board has granted CASE fifteen (15) days from the date of service of this Memorandum and Order to file an amended petition including a substantial showing of good cause for its tardiness in filing said petition, in accordance with the Commission's Rules of Practice as discussed hereinabove.

In the event that CASE elects not to file an amended petition as permitted by the Board, CASE's request to make a limited appearance pursuant to the provisions of 10 CFR §2.715(a) at the next evidentiary session of this proceeding, is hereby *granted*.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Robert M. Lazo, Chairman

Dated at Bethesda, Maryland
this 8th day of March 1977.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Daniel M. Head, Chairman
Dr. Paul W. Purdom
Frederick J. Shon

In the Matter of

Docket Nos. STN 50-556
STN 50-557

**PUBLIC SERVICE COMPANY OF OKLAHOMA
ASSOCIATED ELECTRIC COOPERATIVE, INC.
WESTERN FARMERS ELECTRIC COOPERATIVE,
INC.**

(Black Fox, Units 1 and 2)

March 9, 1977

The Licensing Board issues a prehearing conference order in which it (1) grants five intervention petitions and (2) rules on three procedural motions.

RULES OF PRACTICE: STANDING TO INTERVENE

The economic interest of a ratepayer is not sufficient to provide standing to intervene as a matter of right, since concerns about rates are not within the scope of interests sought to be protected by the Atomic Energy Act. *Portland General Electric Co.* (Pebble Springs, Units 1 and 2), CLI-76-27 NRCI-76/12 610, 614 (1976).

RULES OF PRACTICE: STANDING TO INTERVENE

Licensing boards may permit late intervention if the factors listed in 10 CFR 2.714(a) and (d) justify it. *Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273 (1975).

RULES OF PRACTICE: STANDING TO INTERVENE

Licensing boards have the power to grant intervention as a matter of discretion; in so doing, they should consider all the facts and circumstances of the particular case, including the factors specified in 10 CFR § 2.714(a) and (d)

which govern intervention generally. *Portland General Electric Co.* (Pebble Springs, Units 1 and 2), CLI-76-27, NRCI-76/12 610, 616-17 (1976).

RULES OF PRACTICE: LWA HEARING

An applicant may formally request an LWA hearing by motion, even though 10 CFR §2.761a provides for such a hearing; such a motion can properly be granted unless there is good cause for denial of the LWA hearing.

THIRD PREHEARING CONFERENCE ORDER

On February 15, 1977, the Atomic Safety and Licensing Board (the Board) conducted the Third Prehearing Conference in the above-identified proceeding in Tulsa, Oklahoma. As a result of that Third Prehearing Conference, the Board makes the following rulings and orders.

I. NEW PETITIONS TO INTERVENE

Five (5) new petitions to intervene had been filed in response to the Amended Notice of Hearing (Amended Notice) issued by the Board October 20, 1976. The new petitioners are Mr. Lawrence Burrell, Dr. Wallace Byrd, Dr. Clark Glymour, Mrs. Robert Ann Paris Funnell, and Ms. Sherri Ellis. Pursuant to the Board's Second Prehearing Conference Order of January 14, 1977, these new petitioners were given additional time to file amended petitions¹ which were received by the Board in due time. Responses thereto were filed by the Applicants, the U.S. Nuclear Regulatory Commission Staff (the Staff), and the currently admitted Intervenors, and oral argument was held on the new petitions at the Third Prehearing Conference. The Board will deal with the new petitioners, *seriatim*.

1. Mr. Lawrence Burrell

With regard to interest, Mr. Burrell basically relies on an economic interest since he is supplied with electricity by a cooperative that is serviced by Western Farmers Electric Cooperative, Inc. (Western). The remainder of the allegations in Mr. Burrell's pleadings regarding interest do not establish any connections between those interests and the addition of Western as a co-Applicant. Since the Amended Notice only reopened the intervention period for persons whose in-

¹ In analyzing these requests for intervention, the Board has considered both the initial petitions and the amended petitions. The Board will refer herein to the initial petition and the amended petition together as the "petition."

terests were affected by the addition of Western, these other interest allegations do not form a proper basis for granting the Burrell petition as a matter of right under the rule on intervention, Section 2.714 of the Commission's Rules of Practice, 10 CFR Part 2.

Concerning the aforementioned economic interest, Mr. Burrell is apparently relying on his position as a ratepayer. The Commission, however, has recently held that economic interest of a ratepayer is not sufficient to provide standing to intervene as a matter of right since concerns about rates are not within the scope of interests sought to be protected by the Atomic Energy Act. *Portland General Electric Co.* (Pebble Springs Nuclear Plant, Units 1 and 2), CLI-76-27, NRCI-76/12, 610, 614 (December 23, 1976).

Also, certain of Mr. Burrell's other allegations regarding interest² might have formed a basis for intervening pursuant to the original Notice of Hearing (Original Notice) issued by the Commission on January 21, 1976. However, a review of the petition reveals that Mr. Burrell has not established good cause for late filing if the petition is considered as relating to the Original Notice. The Board may nonetheless permit late intervention if the other factors relating to intervention justify it. *Nuclear Fuel Service, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273 (April 15, 1975).³ Also, the Board has the discretionary power to permit intervention under *Pebble Springs, supra*, at 616. Since the guidelines for exercising this discretionary power are substantially identical to those factors controlling late intervention, the Board will present a unified analysis with regard thereto.

At the outset, the Board will set out the Commission's statement of the pertinent factors contained in *Pebble Springs* at 616, 617:

... Some factors bearing on the exercise of this discretion are suggested by our regulations, notably those governing the analogous case where the petition for intervention has been filed late, 10 CFR 2.714(a), but also the factors set forth in 10 CFR 2.714(d), governing intervention generally:

- (a) Weighing in favor of allowing intervention—
 - (1) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
 - (2) The nature and extent of the petitioner's property, financial, or other interest in the proceeding.
 - (3) The possible effect of any order which may be entered in the proceeding on the petitioner's interest.

² Briefly, the other interest allegations relate to loss of farm water, visiting friends and taking part in church activities near the site, care for possible evacuees, possibility of radiation exposure and transportation of radioactive wastes.

³ The factors governing late intervention, including the good cause requirement, are set out in 10 CFR 2.714(a) and (d).

(b) Weighing against allowing intervention—

- (4) The availability of other means whereby petitioner's interest will be protected.
- (5) The extent to which the petitioner's interest will be represented by existing parties.
- (6) The extent to which petitioner's participation will inappropriately broaden or delay the proceeding.

Clearly, these are not the only factors which might be considered. Other factors may be suggested by the practice of other agencies or by judicial cases, such as *United Church of Christ v. FCC, supra*, which deal explicitly with the discretionary character of some interventions. As a general matter, however, we would expect practice to develop, not through precedent, but through attention to the concrete facts of particular situation [Footnote omitted]

Having taken into account the above factors, the Board finds that participation by this petitioner will be of value in two areas. The basis for this is that these areas have not been raised as contentions by the currently admitted intervenors and that this petitioner may well be able to present evidence in these areas that might assist in developing a sound record for decision. Further, neither area would tend to enlarge unduly the issues in the proceeding or cause an undue delay in this cause.

The two issues the Board considers appropriate for intervention by Mr. Burrell are the areas of anticipated transients without scram (ATWS), and sabotage. In the Board's view, the presentation of testimony in this area by Dr. Webb might be of assistance in developing the record herein. The Board therefore is admitting two (2) new issues in controversy. These are construed by the Board as Follows:

- a. The analyses by the Applicants and the Staff of the facilities' response to certain anticipated transients with simultaneous failure of the scram system (ATWS) have underestimated both the consequences of such events and their likelihood, to such an extent that the facilities present an undue hazard to the health and safety of the public.
- b. The Applicants' present design does not adequately protect the public from the potential consequences of sabotage at the Black Fox plant in that the plan does not require sufficient structural integrity and safety redundancy to thwart a saboteur.

Regarding the other contentions of Mr. Burrell, the Board has concluded that most of them are substantially identical with the admitted contentions of

the present Intervenors and that Mr. Burrell's interests will be protected by those Intervenors.⁴

However, two matters in addition to the ATWS and sabotage issues are not covered by the contentions of the other Intervenors. These are the contention involving common mode failures of the emergency core cooling system (ECCS) piping and coolant recirculation piping and the contention relating to Class Nine accidents. The Board will, therefore, deal with these two issues here.

In the Board's view, the ECCS contention is not admissible since it does not allege that the emergency core cooling system will not meet the Commission's regulations. Instead, it asserts that the ECCS system will fail in a manner that would have been more properly raised in the hearings with regard to the emergency core cooling system. The contention is, therefore, foreclosed by the Commission decision in that proceeding. *Acceptance Criteria for Emergency Core Cooling Systems*, CLI-73-39, 6 AEC 1085 (December 28, 1973).

Regarding Class Nine accidents, Mr. Burrell has sought to raise the issue of extremely large accidents at the facility.⁵ Both the Staff and Applicants argue that such accidents need not be treated, citing precedents which turn, however, upon specific mechanisms for such accidents (e.g., pressure vessel failure or ECCS failure), or citing guidelines rather than regulations (Tr. 215-220). The Board is not convinced that treating such accidents is generically excluded irrespective of the hypothesized mechanism. We may, indeed, wish to frame a Board question on the matter. Since, in the Board's opinion, such matters would be properly dealt with in the health and safety hearing, if at all, we shall take this matter under advisement, pending the production by the petitioner of a credible mechanism other than those excluded by precedent, or the introduction by Staff or Applicants of authority showing a generic exclusion. Each is hereby given fifteen (15) days following service of this Prehearing Conference Order to file any pleadings making the aforementioned showings. (This time period also applies to the other new petitioners.)

Overall, the Board has concluded that Mr. Burrell should be admitted as an Intervenor on a discretionary basis for the purpose of participating in the ATWS and sabotage contentions, which are hereby admitted as issues in controversy.

2. Dr. Wallace Byrd

A review of Dr. Byrd's petition again indicates that the petitioner has not established any connection between his interests and the addition of Western as

⁴In this regard it should be noted that Mr. Burrell is represented by the same counsel as the current Intervenors.

⁵All of the other new petitioners also have raised the Class Nine accident issue and the Board's ruling herein with regard to Mr. Burrell will apply equally to them. The Board will not, however, repeat its ruling in its analysis of the other new petitions.

a co-Applicant. As a result, the Board finds that the petitioner is not entitled to intervene in the proceeding as a matter of right pursuant to the Amended Notice of Hearing.

The Board has, however, analyzed Dr. Byrd's pleadings to determine whether they could form the basis for late intervention pursuant to the Original Notice of Hearing. A review of the petition and the responses thereto indicates that Dr. Byrd has not shown good cause for late filing, but again, under *West Vally, supra*, the Board may nonetheless permit late intervention if other factors justify it.

As pointed out with regard to Mr. Burrell's petition, the factors involved in considering whether to permit late intervention and whether to permit intervention on a discretionary basis are substantially identical and can be considered together. The Board has, therefore, assessed the Byrd petition with them in mind. In the Board's opinion, Dr. Byrd's interests⁶ will be protected adequately by the current Intervenors and the majority of his contentions are covered by the issues that will be pursued by those Intervenors.

However, in two areas⁷ Dr. Byrd's participation might assist in developing a sound record for decision and it would not appear that permission for him to participate would unduly broaden the issues or delay the proceeding. The Board, therefore, will permit Dr. Byrd to participate as follows pursuant to its discretionary powers under the *Pebble Springs* decision. Dr. Byrd indicated that he would probably be able to secure the testimony of an expert witness on the transport of radioactive material which will be released during normal operations, which testimony would relate to the issue of the effects of low level radiation exposure from normal plant operation. Dr. Byrd will be allowed to participate with regard to that contention and present evidence in relation thereto. Also, he will be permitted to participate on a contention the Board is admitting relating to employee radiation exposures. The employee exposure contention is set out in the Board's ruling on Ms. Ellis' petition, *infra*.

3. Dr. Clark Glymour

Dr. Glymour in his petition asserts that he purchases electricity from a cooperative which is served by Western and consequently relies on that to sustain his interest. However, as noted in connection with the Burrell petition, this economic interest as a ratepayer is not sufficient to sustain intervention as a

⁶ These interests include a general concern for health of the citizens of Oklahoma, work and travel in an area that could be affected by an accident at the facility and a personal interest in the environment and natural resources.

⁷ The Board also has under advisement Dr. Byrd's Class Nine accident contentions. See footnote 5, *supra*.

matter of right under the ruling in *Pebble Springs, supra*. While Dr. Glymour does make an argument that the *Pebble Springs* case is incorrect, this Board is bound by that Commission precedent and must reject his arguments on this point.

Considering the Glymour petition on the basis of it being a late filed request to participate relating to the Original Notice, the Board can discern nothing that establishes good cause for late filing. Nonetheless, the Board may permit late intervention if other factors justify it, *West Valley, supra*.

Since the other factors relating to permission of late intervention are substantially identical to the considerations governing discretionary intervention under *Pebble Springs*, the Board will analyze these factors together and set forth its evaluation.

Basically, Dr. Glymour has asserted contentions that are already raised by the current Intervenors and, therefore, his concerns will be addressed at the hearing. In addition, a great number of his contentions are identical to those of Mr. Burrell's. As we have noted in connection with the Burrell petition, only two of those contentions raise new matters for adjudication, the ATWS and sabotage contentions. Further, Dr. Glymour does not appear to bring to the proceeding any additional witnesses or particular expertise that might assist the Board in developing a sound record. While Dr. Glymour's participation would not appear unduly to broaden or delay the proceeding, it does seem that his interests will be adequately represented by the present parties. However, since this petitioner has raised the new ATWS and sabotage contentions on the same basis as Mr. Burrell, the Board considers that he also should be admitted to participate on these issues.⁸ Dr. Glymour is admitted as an Intervenor as set out herein under the Board's discretionary power established in the *Pebble Springs* decision.

However, under the powers contained in Section 2.714(e) and (f), the Board, to prevent duplication, is hereby consolidating Dr. Glymour's interest with that of Mr. Burrell. Also, the Board is designating that the spokesman for these two petitioners is to be Mr. Burrell, who is represented by counsel, thereby having the benefit of professional assistance in connection with the evidentiary presentation.

4. Mrs. Roberta Ann Paris Funnell

Mrs. Funnell relies on property interests and does not attempt to establish any connection between her interests and the addition of Western as a co-Applicant. Accordingly, Mrs. Funnell is not entitled to intervene as a matter of right in connection with the Amended Notice of Hearing. Her petition must, there-

⁸The Board also has under advisement Dr. Glymour's Class Nine accident contentions. See footnote 5, *supra*.

fore, be considered as a late filed petition in connection with the Original Notice of Hearing and as a petition upon which the Board might as a matter of discretion permit intervention under the authority vested in it by the *Pebble Springs* decision.

Regarding good cause for late filing, the Board has considered the allegations regarding petitioner's reliance on information allegedly to be supplied by the Staff. The Board will assume for the purposes of this analysis that the Staff had indicated it would supply certain information and materials, thereby construing the matter more favorably toward the petitioner. Even under these circumstances, the Board does not consider that the petitioner has made a sufficient showing of good cause to justify late filing. In particular, the Board notes that the petitioner waited for approximately a year before taking any action to file a petition. In the Board's view, this constitutes an unreasonably long period for the petitioner to have delayed making further inquiry regarding intervention, either from the Staff or from the current Intervenors. The Board notes that the current Intervenors were known to this petitioner and had had joint discussions of the case with the Staff. In addition, the petitioner makes no claim that the Staff actually advised that she would have further time to file a petition to intervene, or that there were any actual misrepresentations of her rights as a petitioner. At worst, the Staff might have failed to supply promised information. Therefore, the Board concludes that the petitioner has not made a sufficient showing of good cause for late filing.

Again, under *West Valley, supra*, turning to the other factors relating to late intervention and again considering those factors in connection with the similar factors involved in discretionary intervention, the Board makes the following assessment. In the Board's opinion, the interests alleged by this petitioner are remote although some might have sustained intervention under the Original Notice of Hearing. The petitioner has only potential property interests which depend upon presently contested litigation. Perhaps the strongest argument advanced by the petitioner is the fact that she visits in the area of the facility, although this is apparently a random connection.

Further, it appears that this petitioner's interests are adequately represented by the current Intervenors and that this petitioner's contentions will be mainly covered by the admitted contentions of those Intervenors. However, Mrs. Funnell has raised two issues that are not covered by the current Intervenors. The first is the ATWS contention, which has already been admitted in the Board's rulings on the Burrell and Glymour petitions. The second issue relates to the handling, disposal, and environmental effects of radioactive wastes. However, the Board is going to defer a ruling in that area in the event that the Commission may promulgate an interim rule on waste disposal in the relatively near future. If such an interim rule is not promulgated by early April, the Board will rule on this contention as currently presented.

Considering all the circumstances, the Board has concluded that this petitioner should at this time be admitted as an intervenor under its discretionary power only with regard to the ATWS issue.⁹ Moreover, to prevent duplication, the Board under its power in 10 CFR 2.714(e) and (f) is hereby designating Mr. Burrell as spokesman on the ATWS issue since he is represented by counsel and will have the benefit of professional assistance in presentation of evidence on this issue.

Regarding the other contentions raised by this petitioner, the Board finds that these contentions will be adequately covered by the existing parties and that therefore this petitioner's interest will be protected in that regard. Also, in view of the Board's consolidation of this petitioner with the petitioner Burrell on the ATWS contention, Mrs. Funnell's participation should not unduly broaden or delay this proceeding.

5. Ms. Sherri Ellis

This petitioner also has not established any connection between her interests and the addition of Western as a co-Applicant.¹⁰ There is an allegation that the addition of Western will increase the chance that the plant will be built. However, this argument is not germane to the issue of whether there is a nexus between the petitioner's interest and the addition of Western. This point might perhaps be pertinent to the financial capability of the Applicants but it does not relate to the petitioner's interests which preexisted the advent of Western as a co-owner of the facility. Accordingly, the Board finds that this petitioner has not established a sufficient interest under the Amended Notice of Hearing to sustain intervention as a matter of right under 10 CFR 2.714.

We can address ourselves, however, to the petition as a late filed request to intervene pursuant to the Original Notice of Hearing. The Board has reviewed the petition on this basis and has determined that the petitioner has not established good cause for late filing. The petitioner alleges that she did not receive actual notice of the opportunity to intervene in the Original Notice, but this is not a justification for late filing in view of the public dissemination of the Original Notice. Turning, under *West Valley*, to the other factors that are involved in determining whether late petitions should be accepted, again the Board has considered these together with its assessment of whether to permit intervention as a discretionary matter since the factors are substantially the same in each instance. The Board's analysis thereon follows.

⁹ In addition to this petitioner's radioactive waste contention, the Board also has under advisement her Class Nine accident contentions. See footnote 5, *supra*.

¹⁰ The petitioner states that her parents own land serviced by Western but Ms. Ellis is not herself the ratepayer and no economic interest of this nature appears involved herein.

With regard to the interests asserted by Ms. Ellis, her connections with the site are tenuous. She visits the Tulsa area professionally as a hairstylist on certain occasions and participates in rodeos held in communities near the site. In the Board's view, these interests are rather remote and will be protected by current Intervenor. Also, almost all of the contentions raised by Ms. Ellis are currently admitted as issues and will be covered by the present parties at the hearing. There is, however, one area that this petitioner has raised which is not covered by the current Intervenor and on which Ms. Ellis may be able to assist in developing the record for decision. That area relates to the issue of employee exposure to radiation. The Board interprets that contention as follows:

- a. The Black Fox facility will not meet the employee exposure limitations of 10 CFR Part 20, and the health effects of employee exposures have not been adequately considered.

As interpreted, the Board hereby admits this contention as an issue in controversy, and under its discretionary powers, will permit this petitioner to intervene on this issue. However, since this petitioner's other contentions are adequately covered by the current Intervenor, the Board is limiting this petitioner's participation to this issue to avoid duplication and repetition.¹¹ See 10 CFR 2.714(e) and (f). The Board further notes that Petitioner Byrd has a similar contention regarding the effects of radioactivity on employees. The Board, however, is not consolidating these two petitions for presentation of this issue. In light of Dr. Byrd's medical expertise and Ms. Ellis' personal experience, the Board feels that each should be allowed to present appropriate evidence on this issue. In addition, the Board has taken into account whether this participation will unduly broaden or delay the proceeding and has concluded that it will not.

6. Summary

Regarding the five (5) new petitions to intervene, the Board considers that it would be appropriate to summarize the action taken herein. First, the Board has concluded that none of the petitioners have established a right to intervene pursuant to the Amended Notice of hearing adding Western as a co-Applicant. None have shown a connection between their interests and the addition of Western to the proceeding. The closest that any of the petitioners come to such a connection is the allegation that they are ratepayers of a cooperative serviced by Western. However, under the *Pebble Springs* decision, the Commission has determined that the interest of a ratepayer is not sufficient to sustain intervention as a matter of right and, therefore, these arguments were rejected by the Board.

¹¹The Board also has under advisement Ms. Ellis' contention relating to Class Nine accidents. See footnote 5, *supra*.

In addition, the Board has analyzed all the petitions to determine whether good cause for late filing was established to permit intervention under the Original Notice of Hearing. The Board's analysis was that none of the petitioners had established such good cause. The Board did, however, evaluate other factors to determine whether the petitioners should nonetheless be admitted as set out in *West Valley, supra*. Since the factors for such determinations are substantially identical with the factors to determine whether or not the Board should permit discretionary intervention under the *Pebble Springs* decision, the Board provided a unified analysis of those factors. In each instance the Board concluded that there were certain areas where the Board should permit participation by the new Intervenor as a matter of discretion.¹² However, the Board limited the participation to avoid duplication and repetition under the powers vested in it under 10 CFR 2.714(e) and (f). Further, in certain circumstances where the newly admitted issue was common to some of the new Intervenor, the Board consolidated the presentations and designated a spokesman with regard to the particular issue. On the ATWS and sabotage issues the Board designated Mr. Burrell as spokesman since he was represented by counsel. However, on the employee exposure issue, the Board indicated that both Dr. Byrd and Ms. Ellis will be allowed to make their own presentations.

Further, the Board considered the possible impact of admitting these new Intervenor on the agreed-upon schedule for the hearing. In balancing various factors, the Board has concluded that permitting such intervention will not unduly delay the proceeding or broaden the issues to be considered. If some delay should necessarily be caused by this new intervention, the Board considers that as unavoidable and necessary to ensure appropriate public participation in the hearing process. The Commission was careful to note that this is an important factor in its discussion of discretionary intervention in the *Pebble Springs* decision.

¹²The Board concluded that intervention should be a matter of discretion rather than a justified late intervention as of right in each case. The Board considered the late intervention issue a close one as to each petition in view of the greater burden of justification for a late petitioner where good cause for late filing cannot be shown. *West Valley, supra*, at 275. As the Board concluded in each instance that intervention should be permitted as a matter of discretion, the Board does not deem it necessary to rule specifically on late intervention. The Board should note, however, that its rulings limiting the new Intervenor's participation to certain issues would be the same even if the Board found the interventions justified as late filed petitions. The Board considers such limitations are warranted under its authority to restrict duplication and repetition, and to consolidate parties. See 10 CFR 2.714(e) and (f), and 2.715a.

II. MOTIONS

At the Third Prehearing Conference the Board considered three motions: (1) Applicants' Motion to Consider Issues Relevant to Limited Work Authorization; (2) Applicants' Motion to Compel Discovery; and (3) Intervenors' Motion to Reconsider Application to Add Parties. The following is the Board's rulings with regard thereto.

1. Motion to Consider Issues Relevant to LWA

Concerning the Applicants' Motion to Consider Issues Relevant to Limited Work Authorization, the Board granted that motion after brief discussion at the Third Prehearing Conference (Tr. 327-329). While the motion may not be necessary since an LWA hearing is provided for in 10 CFR 2.761a, nothing in the regulations prohibit the Applicants from making a formal request by motion and it can properly be granted unless there is good cause for denial of the LWA hearing. In this case, the Intervenors' opposition constituted a challenge to the LWA regulation, 10 CFR 50.10(e), rather than a showing of valid reasons for not having an LWA hearing.

2. Motion to Compel Discovery

The Board took the Applicants' Motion to Compel Discovery under advisement at the Third Prehearing Conference. This motion was a request by the Applicants to compel the Intervenors to answer certain specific interrogatories that had been propounded, and the Board will deal with the interrogatories separately.

Interrogatory No. 1 is the first question involved. It relates to potential consequences at Black Fox from a possible explosion of a barge carrying explosives on the Verdigris River. A review of the pertinent pleadings¹³ indicates that the Intervenors' answer is not responsive to the interrogatory. The Board concurs with the Applicants' analysis and therefore grants the motion to compel with regard to Interrogatory No. 1.

The second interrogatory involved in Interrogatory No. 3(d) relating to soil runoff and soil erosion. Again considering the pleadings, the Board concurs with the Applicants that the answer is not responsive to the interrogatory. Accordingly, the Board hereby grants the Applicants' motion to compel regarding Interrogatory No. 3(d).

¹³The pleadings referred to in this section for each interrogatory at issue are the interrogatory and its answer, plus the motion to compel and the responses thereto.

The next interrogatories involved are Nos. 4(d) and (g), relating to noise impacts on the adjacent land from the construction and operation of the facility. The Board is going to deny the motion on Interrogatory 4(d) since an overall reading of the pleadings reveals that the Intervenor's response sufficiently presents the Intervenor's position with regard to noise sampling and is responsive to the interrogatory. With regard to Interrogatory 4(g), however, the Board is going to grant the motion to compel. This interrogatory relates to the Intervenor's Contention 22e, which alleges noncompliance with noise standards and regulations. Applicants had requested the Intervenor to identify the specific standards and regulations involved and to particularize the respects in which the Applicants fail to comply with each such requirement. This is proper discovery and the Intervenor's response that there is a lack of compliance with all such requirements is too general to be considered responsive. Nor is the Board persuaded that this discovery somehow shifts the burden of proof—it is strictly a discovery matter and does not relate to any burden of proof issue.

The next interrogatory involved is No. 5 which relates to compliance by the Applicants with applicable Federal, state and local clean air requirements. Again, the Board is going to grant the motion on the same basis it granted the motion relating to Interrogatory 4(g). Interrogatory 5 sought the same specifics for air standards as 4(g) sought for noise requirements and the Intervenor provided the same general answer that the facility will not comply with all clean air requirements.¹⁴ The Intervenor is required to identify the specific clean air standards and requirements involved and to give particulars of why the facility will not comply with each, as requested by Interrogatory 5.

Interrogatory No. 11 is the next interrogatory involved and it relates to remedial measures to be utilized if cooling tower drift causes damage to vegetation. The interrogatory seeks in part (a) to have the Intervenor particularize the damage that will result from the drift and in part (b) to identify the remedial measures which the Intervenor says should be taken. An analysis of the pleadings indicates that the Intervenor's answer challenges the Applicants' analysis of the drift issue as opposed to describing the potential damage and remedial measures with regard thereto. As such, the Intervenor's answer is not responsive and the Board will grant the motion to compel.

The final interrogatory is No. 13 which relates to compliance by the Applicants with applicable Federal, state and local water quality requirements. Again, Intervenor has responded that the Applicants will not be in compliance with any such requirements while Applicants' interrogatory asks that the Intervenor identify the specific requirements and particularize in which respect the Applicants will fail to comply with each requirement. As set out above with regard to

¹⁴There was a notation that there was a special concern regarding nondegradation but the reference was too vague to be responsive.

noise and air standards, such a generalized answer is not responsive to the interrogatory. Accordingly, the Board will grant the motion to compel with regard to Interrogatory 13.

In view of the above rulings, the Board hereby orders that the Intervenors respond to Applicants' Interrogatories 1, 3(d), 4(g), 5, 11 and 13 on or before Friday, March 25, 1977.

3. Motion to Reconsider Application to Add Parties

The final motion discussed at the Third Prehearing Conference was the Intervenors' Motion to Reconsider Application to Add Parties. While this motion was not at issue at the time of the Third Prehearing Conference, responses from the Applicants and the Staff have now been received. The Board concurs with the positions taken by the Applicants and the Staff that the Intervenors have not raised any new grounds since the denial of the original motion that would warrant reversal of the Board's earlier decision and form an appropriate basis to add the Department of the Interior as a party. Accordingly, the Board hereby denies the Intervenors' motion to reconsider.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY
AND LICENSING BOARD**

Daniel M. Head, Chairman

**Dated at Bethesda, Maryland,
this 9th day of March 1977.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Daniel M. Head, Chairman
Frederick J. Shon
Dr. Paul W. Purdom

In the Matter of

Docket Nos. STN 50-556
STN 50-557

PUBLIC SERVICE COMPANY OF OKLAHOMA
ASSOCIATED ELECTRIC COOPERATIVE, INC.
WESTERN FARMERS ELECTRIC COOPERATIVE,
INC.

(Black Fox, Units 1 and 2)

March 16, 1977

Upon motions by intervenors to quash certain deposition notices and for a protective order, raising the issue of whether the intervenors' expert witnesses should receive expert witness fees from the applicants in connection with depositions, the Licensing Board rules that (1) the applicants may be required to pay reasonable expert witness fees in connection with their taking of depositions, under the authority of 10 CFR §2.720(f) and §2.740(c); (2) proper circumstances are presented in this case for such payments; (3) the parties must attempt to agree on the amount of the fees but, if they cannot do so, the Board will resolve the matter.

Motion to quash denied, subject to payment by applicants of reasonable expert witness fees; motion for protective order granted to the extent that applicants are required to pay reasonable expert witness fees.

RULES OF PRACTICE: DISCOVERY (WITNESS FEES)

The witness fees referred to in 10 CFR §2.720 and §2.740a(h) are intended to be the statutory fees provided for witnesses appearing in the United States courts as set out in 28 U.S.C. §1821; those sections of the NRC rules do not incorporate by implication the provision for expert witness fees contained in Rule 26(b)(4) of the Federal Rules of Civil Procedure.

RULES OF PRACTICE: DISCOVERY (WITNESS FEES)

The omission of Section (b)(4) of Rule 26 of the Federal Rules of Civil Procedure from the NRC deposition rule is not a blanket rejection of Commission authority to order payment of expert witness fees in proper circumstances.

RULES OF PRACTICE: DISCOVERY (WITNESS FEES)

A licensing board may order payment of expert witness fees under 10 CFR §2.720(f) by conditioning denial of a motion to quash subpoenas on such payment.

RULES OF PRACTICE: DISCOVERY (WITNESS FEES)

A licensing board may order payment of witness fees under 10 CFR §2.740(c) by entering a protective order requiring that depositions be taken only upon payment of reasonable expert witness fees.

MEMORANDUM AND ORDER REGARDING DEPOSITION DISCOVERY

The purpose of this Memorandum and Order is for the Atomic Safety and Licensing Board (the Board) to rule on certain motions made by the Intervenors, CASE and Ilene Younghein (hereinafter the Intervenors) regarding depositions which the Applicant has scheduled for three of the Intervenors' witnesses. The motions involved are a motion to quash the deposition notices and a motion for a protective order. The Board's disposition thereof follows.

Although the motions raised a variety of issues, the Applicants and the Intervenors were able to reach agreement on all items with the exception of whether the witnesses should receive expert witness fees in connection with giving the depositions. Intervenors raised this point in both motions and apparently¹ rely on the sections in the NRC Rules of Practice, 10 CFR Part 2, which provide that payment to persons summoned by subpoena or who testify in depositions be the same as the fees which are payable in the district courts of the United States. See 10 CFR 2.720(b) and 2.740a(h). The argument is that the above cited rules of the Commission implicitly incorporate Rule 26(b)(4) of the Federal Rules of Civil Procedure (FRCP) which provides for the payment by

¹ Intervenors did not directly present their rationale on this point in their motions but it was set out in the Applicants' answer thereto which also advised the Board of the agreement on the other points.

parties seeking discovery of a reasonable fee for the time spent by an expert in responding to discovery.

Applicants on the other hand assert that Sections 2.720(b) and 2.740a(h) require only payment of the witness fees set out in 28 U.S.C. 1821, the statutory provision covering fees and mileage allowances for witnesses appearing in the courts of the United States. Applicants then note that Federal Rule 26 which contains the provision for expert fees was adapted as an NRC rule when Section 2.740 of the NRC rules was adopted on July 28, 1972, 37 FR 15217. The Applicants point out that Section (b)(4) of Rule 26 was omitted from the new NRC rule 2.740 and argue that this eliminates the requirement that the party seeking discovery must pay a reasonable expert witness fee.

The Board does concur with the Applicant's rationale that the witness fees referred to in the NRC subpoena rule, Section 2.720, and in the deposition rule, Section 2.740a(h), are intended to be the statutory fees provided for witnesses appearing in courts of the United States as set out in 28 U.S.C. 1821. The Board, therefore, rejects the argument that that reference to witness fees in the above cited NRC rules incorporates by implication the provision for expert witness fees contained in Rule 26(b)(4) of the FRCP.

The Board also notes that the Applicant has correctly analyzed the relationship between Rule 26 of the FRPC and its adaptation as Section 2.740 of the Commission's Rules of Practice. However, the Board cannot accept the Applicants' entire argument and does note that in the statement of considerations relating to the adoption of Section 2.740 (37 FR 15133, July 28, 1972), no explanation is given for the omission of Section (b)(4) of Rule 26 from NRC Section 2.740. In any event, the Board does not consider that such omission must be construed as a blanket rejection by the Commission of authority to order payment of expert witness fees in proper circumstances.

In the instant action, the Board has concluded that the proper circumstances do exist for requiring the Applicants to pay reasonable expert witness fees in connection with the depositions. The experts involved were secured by the Intervenors because of their expertise and their opinions will no doubt be explored at the depositions. They will be acting in their professional capacity and the Board considers it equitable that they receive reasonable compensation for this.² The Board, therefore, is hereby ordering the Applicants to pay reasonable fees to these witnesses for the time spent in responding to this discovery.

The Board considers that it has the authority to order the payment of such expert witness fees on the basis of two provisions in the NRC Rules of Practice.

² Although the rationale is not identical, recognition of this obligation to pay the experts a reasonable fee for the time spent in deposition is set out in the opinion of the District Court in *Herpes v. ITT Corp.*, 65 F.R.D. 528 (D.C. Conn. 1975).

First, the Board has before it the Intervenor's motion to quash the deposition notices, and since the Applicants have now requested subpoenas be issued for the depositions, the Board can construe it as a motion to quash the subpoenas. Therefore, the Board has authority under Section 2.720, the Commission rule governing subpoenas. Section 2.720(f) provides that the Board may condition denial of a motion to quash on just and reasonable terms and, in this case, the Board is conditioning denial of the Intervenor's motion to quash on the Applicants agreeing to pay the witnesses reasonable expert witness fees. Likewise, the Board has before it the Intervenor's motion for a protective order, which it is hereby granting in part. Section 2.740(c) governing protective orders provides that the Board may order that discovery be had only on specified terms and conditions. In the present case, the Board is hereby entering a protective order that the depositions be taken only upon the Applicants paying a reasonable expert witness fee in connection with the taking of the depositions.

Further, the Board is directing the parties to attempt to reach agreement upon what the reasonable fees should be for the depositions. If such agreement cannot be reached, the Board orders that the depositions nonetheless go forward as scheduled and that the Intervenor secure from their witnesses a detailed statement of what they consider the reasonable fees to be and submit it to the Board. After such submission the Applicant may then present its views and the Board will resolve the matter by further Order. In the event of a dispute over fees, the Intervenor's position should be submitted to the Board no later than two weeks after the taking of the last deposition and the Applicants' comments thereon should be submitted within a week after receipt of the Intervenor's position.

In view of the timing of the depositions which were set for March 15, March 17 and March 24, 1977, the Board held a conference call between the Applicants, the Intervenor and the Regulatory Staff³ on March 11, 1977, and advised those parties of the substance of the rulings contained herein. The Board also

³The newly admitted Intervenor was not included in this conference call because they were not directly involved in the dispute, and the Board did not consider their participation necessary for resolution of this particular issue. The Board does note, however, that counsel for the Intervenor represents one of the new Intervenor.

indicated to the Applicants that it would sign the original of the subpoenas presented and leave them at the Panel offices for messenger pickup by counsel for the Applicants.

IT IS SO ORDERED.

**FOR THE ATOMIC SAFETY AND
LICENSING BOARD**

Daniel M. Head, Chairman

**Dated at Bethesda, Maryland
this 16th day of March 1977.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Frederic J. Coufal, Chairman
Dr. Donald P. de Sylva
Dr. Walter H. Jordan

In the Matter of

Docket Nos. 50-491

50-492

DUKE POWER COMPANY

50-493

(Cherokee Nuclear Station,
Units 1, 2 and 3)

March 17, 1977

Upon motions by applicant and staff for reconsideration of portions of the Licensing Board's Partial Initial Decision (LBP-76-18), the Board amends that decision with respect to the removal of rad-waste equipment and the partial flooding of a mountain laurel-hardwood stand, and calls for further exploration of the need for certain monitoring stations.

AMENDMENT OF PARTIAL INITIAL DECISION

(1) On May 21, 1976, this Board issued a Partial Initial Decision authorizing a Limited Work Authorization subject to certain conditions. Both Applicant and Staff have objected to some of the conditions of the P.I.D. Our Order of June 23, 1976, resolved two of the issues concerning (1) modifications of conditions at page iii, paragraph 7 of the FES and (2) ownership of the exclusion area; it requested further testimony concerning, (3) removal of rad-waste equipment, (4) partial flooding of a mountain laurel-hardwood stand, and (5) the need for monitoring stations 19 and 20.

(2) Our Order of October 21, 1976, received certain affidavits into the record and further defined the Board's position with respect to items (3) and (4) above. An Order of December 14, 1976, further clarified the Board's concern with respect to item (5) and requested further evidence.

(3) On January 18, 1977, a hearing was held in Spartanburg, South Carolina, to supplement the record with respect to items (3), (4) and (5). This Order expresses the Board's conclusions on the motions to reconsider the P.I.D. with respect to items (3) and (4) and the status of item (5).

Retention of Rad-Waste Equipment

(4) In our Order of October 21, 1976, we requested "that the parties supply proposed terminology to implement condition iv (P.I.D. on p. 63) on the retention of rad-waste equipment." The Applicant responded in a letter to the Board dated December 6, 1976. The Staff responded on January 7, 1977. The Board examined those responses and informed the parties at the January 18, 1977, hearing of the wording of the revised P.I.D. (Tr. 434-439).

(5) Paragraph iv, p. 63 of P.I.D. will be revised to read as follows:

The Applicant shall not remove any major components of the rad-waste treatment system without replacing them with components to maintain equivalent overall system performance capability. The final design must be found acceptable by the Commission prior to the issuance of an operating license.

(6) Paragraph 49, p. 28, of the P.I.D. shall be amended to read as follows:

The Board concludes that the dose to the population surrounding the CNS will be very small compared to background radiation and will meet the Commission's regulation for "as low as reasonably achievable." The Board further concludes, based upon the record, that the proposed rad-waste treatment system may release less radioactivity than the maximum allowed under Appendix I. To that end, the Board requires that the Applicant shall not remove any major components of the rad-waste treatment system (described in Section 11, PSAR as that document existed on August 8, 1975) which would significantly reduce overall system performance, or result in doses significantly higher than calculated in Staff's Exhibit 11. The final design must be found acceptable by the Commission prior to the issuance of an operating license.

Mountain Laurel-Hardwood Stand

(7) In our October 21 Order, we received affidavits of the Applicant and Staff witnesses and pointed to certain deficiencies in the record. We are now persuaded that these deficiencies have been cured by the testimony of the Applicant and Staff at the January 18, 1977, hearing. Mr. Dail testified that only 6 acres of the 17.2 acre stand would be flooded by the proposed location of the nuclear service water pond (Applicant's Exhibit 9). An alternate Scheme I, which would reduce the flooded area to 3.2 acres would cost an additional \$635,000. Reducing the flooded acreage to zero (Scheme II) would cost \$830,000 more than the proposed scheme.

(8) The Applicant also presented testimony by Dr. Peter Cumbie, a well qualified biologist and an employee of the Applicant (Tr. p. 451-468). He had made an aerial and a ground survey of the forests in the neighborhood of the

site. He found similar laurel-hardwood stands in the near vicinity of the site (Applicant's Exhibit 10), four of which were larger than the one on the site. He also testified to his review of the scientific literature which indicates that mountain laurel grows along with associated hardwoods in many counties in the Piedmont region.

(9) Dr. Roger Kroodsma is the Staff ecologist who recommended in the FES that the stand be preserved unless proven too costly. He testified on January 18 that he now agrees that such laurel-hardwood stands are not as rare as he originally thought, and that in view of the cost of preserving the stand, the loss of 6 acres would be small and will result in an acceptable environmental impact (Tr. 467-485).

(10) The Board concludes that since the laurel-hardwood stand is not as rare as it was originally said to be, that only 6 of 17 acres will be flooded, and that preservation of the stand would be costly, relocation of the nuclear service water pond should not be required. Subparagraph 20 of paragraph 35 of the P.I.D. will be deleted and replaced as follows:

The Applicant shall preserve and protect approximately 10 acres of the 17 acre mountain-laurel hardwood stand as described in FES Section 4.3.1.1 and Mr. Dail's affidavits of July 8, 1976, (Applicant Exhibit 7) and December 8, 1976 (Applicant Exhibit 8).

Monitoring Stations 19 and 20

(11) At the January 18 hearing, just before receiving additional testimony concerning the monitoring stations, the Applicant announced that new data on the amount of suspended solids in the Broad River had brought about a change in the number of cycles of cooling tower operation prior to blowdown; that the cycle rate would be variable from 10 (as originally proposed) to 4-1/2 with an average of 7 cycles. It was also announced that new data showed that the leakage of water through the Ninety-Nine Islands Dam would be a minimum of 60 cfs rather than 40 cfs as assumed in previous calculations (Applicant's Exhibit 11).

(12) This reduction in cycles of operation would result in the following: (1) a 15% increase in the amount of makeup water from the river with a proportionate increase in the number of aquatic organisms entrained and impinged on intake screens and (2) a large increase (over 2.5 times) in the amount of blowdown. This could result in higher temperatures in the river and greater concentrations of chlorine in the river after mixing with the leakage flow through the dam (see Table 3.4.0-3 of Applicant's Exhibit 11).

(13) There could be a greater adverse environmental impact on the aquatic ecology as a result of the increased quantities of makeup water and blowdown. However, neither the Board nor the Staff had been advised of these changes prior to the hearing, so there was not time to properly assess the impact. The Board requires that the Staff address this matter expeditiously, provide the

Board with its evaluation of the change, and advise of any changes that may be required in the FES as a result of their evaluation.

(14) We proceed no further with this subject until the Staff has completed its evaluation.

IT IS THEREFORE ORDERED:

That the Partial Initial Decision dated May 21, 1976, is amended as is set out in paragraphs (5), (6) and (10) hereof.

**THE ATOMIC SAFETY AND
LICENSING BOARD**

Frederic J. Coufal, Chairman

**Dated at Bethesda, Maryland,
this 17th day of March 1977.**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Robert M. Lazo, Chairman
Dr. Cadet H. Hand, Jr.
Dr. Emmeth R. Luebke

In the Matter of

Docket Nos. 50-369
50-370

DUKE POWER COMPANY

(William B. McGuire Nuclear
Station, Units 1 and 2)

March 18, 1977

Upon motion by applicant in operating license proceeding for summary disposition of intervenor's contentions on *res judicata* and collateral estoppel grounds, the Licensing Board rules that (1) the safety related issues are not ripe for summary disposition because the staff's safety review is not complete and the ACRS report has not issued; and (2) the environmental issues cannot be determined by summary disposition, since they involve new or changed matters or matters that were not previously disputed between the parties.

Motion denied.

COMMISSION PROCEEDINGS: RES JUDICATA/COLLATERAL ESTOPPEL

Res judicata and collateral estoppel have no application where circumstances have changed from when issues were formerly litigated, either as to the context of law, the burden of proof, or as to the facts material to the dispute; these doctrines are also inapplicable if the public interest calls for relitigation of the issues. *Alabama Power Co.* (Farley, Units 1 and 2), ALAB-182, 7 AEC 210, 212-216 (1974), *reversed on other grounds*, CLI-74-12, 7 AEC 203 (1974).

**MEMORANDUM AND ORDER
DENYING MOTION FOR SUMMARY DISPOSITION**

In its Memorandum and Order of December 24, 1975, the Atomic Safety and Licensing Board ("Board") approved a stipulation entered into by the parties to the above-identified proceeding, in which it was agreed that the sole

matters in controversy are five¹ contentions which for the sake of convenience can be referred to in shorthand fashion as (1) need for power; (2) cost-benefit analysis of alternative generation; (3) need for changing seismic design; (4) financial qualifications; and (5) solar power. Duke Power Company ("Applicant") has filed a motion urging summary disposition of all issues raised by the Intervenor on the grounds that there is no genuine issue to be heard respecting any of the contentions. In addition, Applicant submits that the doctrines of *res judicata* and collateral estoppel are applicable and provide further grounds for dismissal of Intervenor's contentions.

By its pleading dated October 8, 1976, entitled "Applicant's Memorandum in Support of its Motion for Summary Disposition Respecting Intervenor, Carolina Environmental Study Group," the Applicant contends that, based upon an analysis of the case law of *res judicata* and collateral estoppel, described at length in its memorandum, the Intervenor is estopped from raising issues that were fully considered and decided in the McGuire construction permit proceeding and the Catawba proceeding² as well as in numerous other proceedings.

CESG and the Nuclear Regulatory Commission Staff ("Staff") have each served answers opposing Applicant's Motion. For the reasons set forth in such answers, the Board has concluded that the Motion must be denied.³

As the Staff has noted in its argument, contentions 3 and 4 are safety matters involving operations under the proposed operating license and the financial ability of the Applicant to operate the facility safely. The Staff Safety Evaluation Report (SER) and the opinion of the Advisory Committee on Reactor Safety (ACRS Report) have not been issued. Accordingly, these two matters involving safety issues are not appropriate for summary disposition at this time. However, if changed circumstance can be shown, such matters are open for reexamination at the operating licensing stage, though previously litigated between the parties. *Power Reactor Development Co. v. Int. Union of Electrical Workers*, 367 U.S. 396 (1960).

The remaining three issues of need for power, cost benefits of alternative generation and the alternative of solar power are generally environmental issues and presently ripe for determination. However, they cannot be determined by summary disposition. Each involves new or changed matters, or matters that were not previously disputed between the parties.

¹ Pursuant to the stipulation and the subsequent Board Order, Carolina Environmental Study Group ("CESG" or "Intervenor") was obliged to advise the Board if it intended to pursue a sixth contention concerning stud bolts. Intervenor failed to so advise and on April 21, 1976, the Board ruled that such contention had been withdrawn.

² *Duke Power Company* (Catawba Nuclear Station, Units 1 and 2), Docket Nos. 50-413 and 50-414.

³ "Intervenor's Reply to Applicant's Motion for Summary Disposition" and "NRC Staff Response to Applicant's Motion for Summary Disposition," both dated November 17, 1976.

Res judicata and its allied doctrine of collateral estoppel have no application where circumstances have changed from when issues were formerly litigated, either as to the context of law, the burden of proof on the party seeking to prove a matter, or as to the facts material to the dispute.⁴ Further, these doctrines will not be applied if the public interest calls for relitigation of the issues.⁵ As stated in the *Farley* case at p. 216:

Our conviction that *res judicata* and collateral estoppel should not be entirely ruled out of our licensing proceedings, but rather applied with a sensitive regard for any supported assertion of changed circumstances or the possible existence of some special public interest factor in the particular case, is not affected by the petitioner's emphasis upon the fact that any person with the requisite interest may seek to intervene in an operating license proceeding. Suffice it to say that we do not regard the affording of an opportunity to intervene as a blanket invitation either to relitigate issues once decided or (where the basic elements of *res judicata* are present) to raise new issues which both could and should have been presented and resolved along with the issues previously adjudicated.

Further, in reversing that opinion, the Commission stated at pp. 203-204:

In our view, an operating license proceeding should not be utilized to rehash issues already ventilated and resolved at the construction permit stage. Accordingly, we are in full agreement with the conclusion reached by the Appeal Board that "*res judica* and collateral estoppel should not be entirely ruled out of our proceedings, but rather applied with a sensitive regard for any supported assertion of changed circumstances of the possible existence of some special public interest factors in the particular case..." [ALAB-182, 7 AEC 210 at 216 (footnote omitted).] Due regard for these considerations convinces us that a remand to the Licensing Board, established to rule on intervention petitions, is necessary in the circumstances of this case. Upon such remand, petitioner shall be afforded an opportunity to make a particularized showing of such changed circumstances or public interest factors as might exist with respect to this particular proceeding.

It is manifestly evident that factors bearing on a need for power constantly change. The recent projections of the demands on Applicant's system presented in the *Catawba* proceeding in 1974 may not show current need. Further, the

⁴ See, e.g., *Alabama Power Company* (Farley Units 1 and 2), ALAB-182, 7 AEC 210, 212-216 (1974), reversed on other grounds, CLI-74-12, 7 AEC 203 (1974); *Public Service Company of New Hampshire* (Seabrook Station Units 1 and 2), ALAB-349, NRCL-76/9 235 (September 30, 1976), stayed.

⁵ *Ibid.*

Intervenor intends to update earlier testimony. Similarly, the cost-benefit analysis of alternative means of generating power changes with time. The Board recognizes that the cost of a constructed plant is a "sunk cost," but that does not mean that the Intervenor is estopped from submitting a present cost-benefit analysis of operation of the McGuire units as against other power sources. Regarding solar power, it is Intervenor's position that solar energy alternatives have been developed since the construction proceeding herein and the *Catawba* proceeding. If so, consideration of the effect of this on Applicant's power demand forecasts and the costs of alternative generating capacity appears appropriate.

CONCLUSION

The Applicant's Motion for Summary Disposition of the Intervenor's contentions on *res judicata* and collateral estoppel grounds is *denied*. It is denied on the safety related issues because the Staff's safety review is not complete. It is denied as to the environmental related matters on the grounds that circumstances may well have changed since the Intervenor litigated or could have litigated those issues in proceedings where it was a party. Environmental analysis cannot rest on facts in existence two, three and four years ago, especially in the application of that analysis to circumstances which have been altered significantly in the interim.

In reaching its ruling herein, the Board recognized that much of Intervenor's evidence might be repetitious of evidence formerly presented in other proceedings where the Intervenor, the Applicant and the Staff all were parties. To expedite matters the Board will require all parties at the evidentiary hearing to set out with particularity all new matters or changed circumstances they wish to bring to the Board's attention. To the extent required, the presentation of evidence will be limited to such new matters or changed circumstances. If it is necessary to introduce any testimony which previously has been presented in another proceeding, the source of such testimony shall be specifically identified so that, wherever practical, it can be incorporated by reference into the record of this proceeding.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Robert M. Lazo, Chairman

Dated at Bethesda, Maryland,
this 18 th day of March 1977.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Sheldon J. Wolfe, Chairman
Ralph Decker
Dr. E. Leonard Cheatum

In the Matter of

Docket Nos. 50-516
50-517

LONG ISLAND LIGHTING COMPANY

(Jamesport Nuclear Power Station,
Units 1 and 2)

March 21, 1977

Upon motion by the County of Suffolk, New York, to require the staff to circulate a supplemental environmental impact statement through the NEPA review process and for other relief, the Licensing Board (1) rules that, as a matter of law, the staff has met its responsibilities under NEPA as implemented by 10 CFR Part 51; (2) determines that there is no requirement for the staff of an agency to review and evaluate the record in an ongoing collateral state proceeding prior to issuance of a final environmental statement (FES), as sought by the County; (3) determines that the "Errata" document correcting the FES does not effect any change of sufficient materiality or significance to warrant preparation and circulation of an FES supplement; and (4) provides for testimony and cross-examination of an EPA official to deal with the critical comments of that agency on the FES.

MEMORANDUM AND ORDER

On August 24, 1976, hearings commenced before this Board upon the above-captioned application to construct two pressurized-water reactors on Long Island Sound in the Town of Riverhead, New York. During the course of the hearing and as of November 19, 1976, the County of Suffolk (County or CS) had orally argued only that (1) Staff had not given consideration to a letter dated June 7, 1976, (CS Exhibit 30) wherein the Environmental Protection Agency (EPA) stated that certain of its concerns (previously addressed in its May 15, 1975, letter of comments upon the Draft Environmental Statement (DES) which had been issued in February 1975) had been inadequately addressed in

the Final Environmental Statement (FES) issued in October 1975 and that (2) the Staff had not reviewed the New York State Article VIII Siting Board record prior to or after the issuance of the FES. Cognizant of its responsibilities under the National Environmental Policy Act, 42 U.S.C. § §4321, *et. seq.* (1970), (NEPA), the Board requested that two Staff witnesses appear on November 19, 1976, to testify upon the procedures followed in preparing the DES and the FES, and to testify whether or not consideration had been given to the EPA letter dated June 7, 1976. The Board questioned these two witnesses (Tr. 4414-4454) and permitted cross-examination in the hope that the CS would specify and clarify on the record wherein the Staff had allegedly not complied with NEPA requirements. After it became evident (see Tr. 4497-4502) that the CS had no sharply focused concerns other than the two adverted to *supra*,¹ and that cross-examination was not effectively serving to spread on the record any additional specific concerns, the Board ruled that there would be no further cross-examination at that time and that briefs should be submitted (Tr. 4507-4518).

Thereafter, under date of November 23, 1976, the Board issued the following Order:

This Order is issued to clarify the ruling made by the Board during the hearing on November 19, 1976. On or before December 23, 1976, the County of Suffolk shall file a legal memorandum wherein it will set forth factual averments or allegations upon which it bases its legal argument that the NRC Staff failed to meet its responsibilities under the National Environmental Policy Act. These factual averments or allegations must be *specifically enumerated*, and the County will predicate its legal argument thereon [footnote deleted]. Within ten days after receipt of the County's legal memorandum, the Staff, Applicant, and any other party desiring to do so, shall file responding legal memoranda. The County's factual averments or allegations shall be assumed to be true merely for the purpose of the parties legal arguments. If the Board concludes under the assumed facts that, as a matter of law, the Staff apparently has not met its responsibilities under NEPA as implemented by 10 CFR Part 51, it will allow the County to proceed with its cross-examination in an effort to prove the truth of the aforementioned specifically enumerated factual allegations. On the other hand, if the Board concludes under the assumed facts that, as a matter of law, the Staff has met its responsibilities under NEPA as implemented by 10 CFR Part 51, the Board will not permit cross-examination in order to prove the truth of the aforementioned alleged facts.

On December 29, 1976, the CS filed its Motion To Require Staff To Circu-

¹The CS did allude to the October 6, 1976, issuance of an "Errata" document to the FES but did not indicate that it had any specific concern with regard thereto (Tr. 4509).

late Supplemental EIS Through The NEPA Review Process And For Other Relief² and, on January 14, 1977, Applicant and Staff filed their responses. (During the course of hearings subsequent to December 29, 1976, the County orally argued that on other occasions the Staff had not complied with NEPA requirements. We do not now reach and decide these arguments because the CS had not raised them in its Motion and because Staff and Applicant have not had an opportunity to file written responses.)

MEMORANDUM-DISCUSSION

I. The Board Denies The Request That The Staff Be Directed To Prepare And Circulate A Supplemental EIS Evaluating The Siting Board Record To Date

At page 8 of its memorandum, the CS argues that the FES issued in October 1975 did not make any meaningful reference to or evaluate the professional, scientific and technical opinions and views in the New York State Siting Board transcripts and documentary evidence (the Article VIII record), and accordingly requests that the Staff be directed to prepare and circulate a supplemental FES evaluating the Article VIII record *to date*. (Parenthetically it should be noted that the CS does not claim that this Board preemptively barred the introduction into evidence of portions of the Article VIII record. The County does not so claim because, in our Section 2.752 Order dated July 23, 1976, we stated that portions of the Article VIII record cited by the parties in written direct testimony, if not objected to and if ruled admissible, would be admitted as evidence. Further, during the hearings, the testimonies of various witnesses before the New York State Siting Board have been incorporated into our record.)

The County's request is denied because, even assuming the truth of the allegations, as a matter of law we conclude that the Staff has met its responsibilities under NEPA as implemented by 10 CFR Part 51. (See also the Board's Memorandum and Order of October 21, 1976, which denied a similar request by

²Therein, The CS requested the following relief:

1. The County requests that NRC witnesses Boyle and Rush be recalled for cross-examination concerning the Staff's handling of the Siting Board record and the adverse comments of EPA and other Federal agencies [footnote omitted].
2. The Board should direct the Staff to prepare a supplemental EIS.
 - a) evaluating the Siting Board record to date;
 - b) evaluating the EPA's comments on the Final Environmental Statement set forth in EPA's letter of June 7, 1976;
 - c) setting forth the matters contained in the "ERRATA" document.
3. The Board should further direct the Staff to circulate such supplemental EIS through the NEPA review process and to consult with the Council on Environmental Quality as to the procedures to be followed with respect to such circulation (See CEQ Guidelines 1500.11 at page,20556).

the County.) In the first place, the Board is unaware of and the CS fails to cite any statute, case, regulation or guideline requiring the Staff of any agency to review and evaluate the record in any collateral proceeding prior to issuing an FES.³

Second, the CS cites no authority for the proposition that, prior to the preparation of the FES, the Staff, which was not a party to the Article VIII proceeding, had the singular burden and/or responsibility of sifting through and analyzing the thousands of pages of raw material in that proceeding.⁴ We hold that the Staff had no such obligation and that, in light of its posture, the County should be faulted because, as indicated at page 11-1 of the FES, the Staff had requested that the CS submit comments upon the DES but the CS failed to do so. If the CS had wanted the FES to reflect an analysis of the Article VIII record, it should have filed specific comments on the DES referring the Staff to those extant portions of said record that it felt were relevant and material. We have reviewed the letter to the NRC Staff dated April 25, 1975, a copy of which is attached to the CS's Motion. Therein the County merely requested that the Staff "evaluate the evidentiary record before the Siting Board and include your findings and conclusions with respect thereto in your Final Environmental Statement." In neither referring to any specific section of the FES nor to any specific portion of the Article VIII record, the County's letter failed completely to meet the standards for comment called for by the Council on Environmental Quality guideline 40 CFR §1500.9(e), captioned Responsibilities of commenting entities, and thus provided no assistance whatsoever to the Staff in the preparation of the FES.

Third, the request lacks merit in seeking to have the Staff prepare a supplemental FES evaluating the Article VIII record *to date* because, as indicated in footnote 3, *supra*, we understand that these collateral proceedings, to the extent environmental matters are concerned, are ongoing and that the date for the closing of proof cannot be predicted. Accordingly, it does not make sense to

³ Various exhibits attached to the CS memorandum indicate that in the late spring of 1975 Applicant and Staff were agreeable to setting over until October 1975 the environmental hearing before this Board in order that the Article VIII record could be completed and could then be evaluated prior to the issuance of the FES, and could also be used as evidence before this Board. Apparently the CS would have us infer that neither Applicant nor Staff can now be heard to oppose the instant request. If this is the County's contention, it is ill-taken because of the change in circumstances. Said exhibits show that, in May and early June of 1975, Applicant and Staff thought the Article VIII proceeding would be expeditiously completed and that thereafter the FES could be issued in August or September 1975. We understand that the Article VIII hearings are still being held and that the date for the closing of proof cannot be predicted.

⁴ In its reply brief, Applicant advises that "There are tens of thousands of pages of material in the Jamesport Article VIII record *alone*—that is well over 20,000 pages of hearing transcripts, well over 1,000 answers to interrogatories and other requests for information, well over 30 volumes of application, studies and exhibits."

have the Staff evaluate that incomplete record, publish a draft statement, and, after receiving comments, to issue a supplemental impact statement and, of course, implicit in the request is the unreasonable notion that thereafter the Board should direct the Staff to update continuously the impact statement.

Finally, there is no reason to follow the route requested by the County which would serve only to delay the issuance of the Board's initial decision. Pursuant to 10 CFR §51.52(b)(3)⁵ upon evidence adduced and fully tested during the hearing, the Board in its initial decision may amend the FES, and the Atomic Safety and Licensing Appeal Boards have sustained this authority. *Allied-General Nuclear Services* (Barnwell Nuclear Fuel Plant Separations Facility), 2 NRC 671, 680 (1975); *Niagara Mohawk Power Corporation* (Nine Mile Point Nuclear Station, Unit 2), 1 NRC 347, 371 (1975); *Philadelphia Electric Company* (Limerick Generating Station, Units 1 and 2), 1 NRC 163, 197 n.54 (1975); *Texas Utilities Generating Company* (Comanche Peak Steam Electric Station, Units 1 and 2), 1 NRC 51, 55 (1975); *Vermont Yankee Nuclear Power Corporation* (Vermont Yankee Nuclear Power Station), 7 AEC 159, 172 n. 25 (1974).

II. The Board Denies The Request That The Staff Be Directed to Prepare And Circulate A Supplemental EIS Evaluating The EPA's Comments On The FES Set Forth In The EPA Letter Of June 7, 1976.

In its letter of June 7, 1976, and attachment of detailed comments⁶ addressed to the NRC, the Environmental Protection Agency reiterated two areas of concern which had been previously addressed in its letter of comments on the DES dated May 15, 1975. In its Memorandum, the County argues that, with respect to one area of the EPA's concern, the NRC did not accord the EPA critical comments on the FES the seriousness and dignity they deserved. This one area encompassed the following comments: that the proposed once-through cooling system might not be in conformance with the requirements of the Federal Water Pollution Control Act amendments of 1972; that considering the high rate of impingement and entrainment expected at Jamesport, closed-cycle cooling might still be required; and that data and assessments in the FES related to entrainment, impingement and other impacts are inadequate, and that cor-

⁵ 10 CFR §51.52(b)(3) provides in pertinent part:

... an initial decision of the presiding officer may include findings and conclusions which affirm or modify the content of the final environmental impact statement prepared by the Staff. To the extent that findings and conclusions different from those in the final environmental statement prepared by the Staff are reached, the statement will be deemed modified to that extent: . . .

The predecessor to this regulation appeared in 10 CFR Part 50, App. D., §A.11.

⁶ This letter was admitted into evidence as CS Exhibit 30 merely to establish that it had been written and not to prove the truth of the comments therein.

recting such deficiencies is important if the Applicant requests a discharge permit under Section 402 of the FWPCA. The County requests that the Board direct the Staff to prepare a supplemental FES evaluating the EPA's comments and circulate it through the NEPA review process.

The request is denied because, even assuming, for the purposes of the County's motion, that the Staff did not adequately consider the EPA's critical comments which were submitted seven months after the issuance of the FES, as a matter of law we conclude that the Staff has met its responsibilities under NEPA as implemented by 10 CFR Part 51. In the first place, the Board is unaware of and the CS fails to cite any statute, case, regulation or guideline providing for the submission of comments on an FES. More particularly the Council on Environmental Quality guidelines, 40 CFR Part 1500, and the NRC regulations, 10 CFR Part 51, merely provide for the distribution of the DES accompanied by a request for comments on the proposed action and the DES. Pursuant to 40 CFR §1500.9(f) and 10 CFR §51.25, comments are to be submitted within 45 days of the Federal Register notice announcing the availability of the DES. Further, the NRC regulations, 10 CFR §51.25 provide that:

... If no comment are provided within the time specified, it will be presumed, unless the agency or person requests an extension of time, that the agency or person has no comments to make . . .

Second, the pertinent area of concern expressed in its post-FES letter of June 7, 1976, had been expressed previously in the EPA's comments on the DES dated May 15, 1975. Section 11 of the FES sets forth the Staff's discussion thereof and specified the location of the principal changes effected to the FES in response to the comments of the EPA as well as to the comments of other agencies.

Third, even assuming that the disposition of an EPA comment was defective in some manner, as previously discussed under Heading I, *supra*, this Board could amend the FES in its initial decision after hearing and evaluating the evidence. While we have concluded that the Staff has complied with NEPA as implemented by 10 CFR Part 51, the Board should not be understood to say that we are completely satisfied with the present status of the record regarding the merits of the critical comments contained in the EPA letter.⁷ In this respect, upon its own motion the Board could have directed the Staff to prepare and circulate a supplement to the FES as one means of obtaining EPA's views regarding the Staff's analyses of the impact to the marine environment, as now

⁷Although, as indicated in footnote 6, *supra*, the EPA letter was admitted into evidence for a limited purpose, some evidence has been adduced regarding the merits of the comments therein. For example, testimony has been presented showing that EPA had erroneously relied upon Table 2.7-27 in Applicant's Environmental Reports as a basis for critical comments upon Tables 5.13 and 5.14 in the FES (Biffar, Tr. 3774, 3779-80).

amended or corrected by the "Errata" document and by Dr. Rush's testimony. To have followed this course, however, would not only have been time consuming but might have resulted in a response from EPA which was not entirely clear or which was not fully explained or supported. Accordingly, as indicated in paragraph 2 of our Order, *infra*, after determining the name of a qualified EPA employee, the Board will request that said employee appear as a Board witness to testify and be cross-examined by the parties concerning the EPA's critical comments.

III. In Light Of The Foregoing Discussion, The Board Denies The County's Request That Two NRC Witnesses Be Recalled For Cross-examination Concerning The Staff's Handling Of The Siting Board Record And The Adverse Comments of EPA And Other Federal Agencies.

It follows from our discussion of and our denial of the two preceding requests that we also must and do deny this request. This denial also extends to the County's proposal (in footnote 7 of its memorandum) to cross-examine recalled Staff witnesses regarding a comment in the Department of Interior's letter of comments on the DES dated April 14, 1975 (see page A-8 of the FES). Therein said Department commented that the "most serious (Class 9) postulated accident has not been evaluated" in the DES, it stated that certain site specific "circumstances suggest that risks may be above average" at the Jamesport site,⁸ and it accordingly recommended "that any site posing special problems or risks in the event of a core melt-through accident should be evaluated individually."

We find that the Staff has complied with NEPA as implemented by 10 CFR Part 51. First, the Staff did acknowledge and directly address Interior's comments. In Section 11.9.1 of the FES, responding to Interior's comments, the Staff noted that its position on Class 9 accidents was stated in Section 7.1. In that latter section, while recognizing that the consequences of postulated Class 9 accidents could be severe, the Staff concluded that, because the probability of their occurrence was judged so small, their environmental risk was extremely low, and, thus, it was unnecessary to evaluate them. We note that Staff's position here is entirely consistent with 10 CFR Part 100, Reactor Site Criteria. Footnote 1 of 10 CFR Part 100.11 specifically requires that sites must be evaluated on the basis of a fission product release not in excess of those from any accident considered credible. We do not consider postulated Class 9 accidents to be credible ones. Second, we note that the Department of Interior does not challenge the Staff's conclusion of small probability or the basis for that

⁸One example of the site-specific circumstances adverted to by Interior was that the excavation for the reactor containment structure would extend below normal ground-water levels. The implication is that, in the event of a Class 9 accident, the ground-water table would be contaminated.

finding. Instead, apparently like the appellant in *Carolina Environmental Study Group v. U.S.*, 510 F.2d 796 (1975), the Department of Interior, focusing on the degree of possible damage resulting from the occurrence of a Class 9 accident, urges that the risk is very real, and thus tends to equate damage with risk. The Court of Appeals in the *Carolina Environmental Study Group* case, *supra*, could not and we cannot agree with such an equation.

IV. The Board Denies The County's Request That Staff Be Directed To Prepare And Circulate A Supplemental EIS Setting Forth The Matters Contained In The "Errata" Document.

During the course of the hearing on November 17, 1976, the Staff offered into evidence a document dated October 6, 1976, which was captioned "Errata." Subsequently, on February 2, 1977, Dr. Rush, a Staff witness, orally corrected certain tabular estimates in that document (Tr. 6631-2). To date, said document has been marked for identification as Staff Exhibit 3 because of the County's objection thereto. In its memorandum, the CS urges that, since the "Errata" document makes material and substantial changes to the FES, the Board should direct Staff to prepare a supplemental FES setting forth the matters contained in said document and circulate it through the NEPA process.

The County's request is denied. Other than barrenly asserting that the changes to the FES effected by the "Errata" document were material and substantial and other than generally alluding to critical comments in a Department of Commerce letter of April 18, 1975, and in the EPA letter of June 7, 1976, the County has failed to specify which changes were material and substantial, and has failed to provide reasons in support of its assertion. Clearly the County has completely disregarded our Order of November 23, 1976. Moreover, as movant, it was incumbent upon the County to furnish this specificity and supportive reasoning.

Further, upon reviewing the "Errata" document and pertinent portions of the record, we find that the "Errata" document serves (a) to correct certain typographical and mathematical errors in the FES, (b) to update information in FES Tables 5.13 through 5.16, as a result of subsequent data obtained from Applicant's continuing marine monitoring program, and (c) to change the wording in a condition to the construction permit, if issued, which relates to means to eliminate or minimize fish loss by impingement. In our judgment, the major changes effected by the "Errata" document (as corrected in the Rush testimony) relate to estimates of potential fish loss by entrainment. While changes to certain estimates in components of the analysis are quite dramatic numerically, the affect on the final estimate is still modest - *i.e.*, the total estimated potential fish loss is still less than one-half of one percent of the annual commercial fish catch in Long Island Sound. We recognize that this

estimate is based on data from a single twelve-month period and that some fluctuation from year to year is to be expected. However, on the other hand, we concur with the Staff's statement at page 5-31 of the FES that its estimate is quite conservative since it has been assumed that (a) all plankton killed would have been converted to fish through the food chain, (b) there are no compensatory mechanisms operable, and (c) all plankton killed are effectively removed from the nutrient cycle. While we are fully aware that the revised estimates of potential fish loss will have a bearing on the cost/benefit balance for both the once-through and the closed cooling cycles, we will accord this matter due consideration when it arises in this proceeding. We do not believe at this time, however, that the increased estimate, in and of itself, obviously tips the balance or indicates the need for a design change in the proposed once-through cooling system. In short, we conclude that the "Errata" document does not effect any change of sufficient materiality or significance to warrant the preparation and circulation of a supplement on the FES (see ASLB Order in *Portland General Electric Company* (Pebble Springs Nuclear Plant, Units 1 and 2), Docket Nos. 50-514, 50-515 (June 10, 1976)), and we find that the Staff has complied with NEPA as implemented by 10 CFR Part 51.

ORDER

1. The Board denies the County of Suffolk's Motion To Require Staff To Circulate Supplemental EIS Through The NEPA Review Process And For Other Relief, which was filed on December 29, 1976.

2. Pursuant to §2.718 of the Rules of Practice, a conference will be held at the beginning of the next hearing scheduled for March 29, 1977. After comments by the parties, the Board will determine which knowledgeable EPA official it will request to appear as a Board witness.⁹ Said Board witness will be requested to testify and can be cross-examined, with regard to the following: (1) whether or not, in whole or in specific parts, EPA adheres to the critical comments concerning the FES which it submitted to the NRC in a letter dated June 7, 1976, (2) if EPA adheres to its critical comments, do the "Errata" document of October 6, 1976, and the testimony of Dr. Rush, which amended or corrected certain portions of the FES, dispel the critical comments in whole or in specific parts. Further, on or before March 29, 1977, the Staff is requested to furnish requisite copies of affected FES pages reflecting hand-written insertions of the amendments and/or corrections effected by the "Errata" document or by Dr. Rush's testimony. The hand-written insertions should be identified as being

⁹Of course, if, prior to March 29, 1977, the parties can agree that a certain EPA witness should be called to testify, the Board should be promptly notified in order that the written testimony of said witness can be secured as soon as is possible.

occasioned by the "Errata" document or by Dr. Rush's testimony at transcript pages 6631-32.

3. The Board admits into evidence Staff Exhibit 3.

Dr. E.L. Cheatum and Mr. Ralph S. Decker, members of the Board, join in this Memorandum and Order.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Sheldon J. Wolfe, Esquire
Chairman

Dated at Bethesda, Maryland
this 21st day of March 1977.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Edward Luton, Chairman
Ernest E. Hill
John R. Lyman

In the Matter of

Docket Nos. 50-354
50-355

PUBLIC SERVICE ELECTRIC AND
GAS COMPANY
ATLANTIC CITY ELECTRIC COMPANY

(Hope Creek Generating Station,
Units 1 and 2)

March 28, 1977

Upon remand by Appeal Board (ALAB-251, 8 AEC 993, 997) for further evaluation of questions raised by the potential threat of Liquefied Natural Gas (LNG) tankers on the Delaware River, the Licensing Board concludes that the probability of damage to safety-related structures of the plant due to accidents involving LNG tankers is sufficiently low for such accidents to be ignored as bases for the design of the plant; and that, in view of the remote probability of such an accident, there is no need for the issuance of a supplement to the final environmental statement. Accordingly, the condition of the construction permits limiting construction pending further study of the LNG tanker questions is deleted.

TECHNICAL ISSUE DISCUSSED: Probability of postulated LNG tanker explosion in river.

SUPPLEMENTAL INITIAL DECISION

Appearances

Troy B. Conner, Esq., and Nicholas Reynolds, Esq., of Conner and Knotts, and **Richard Fryling, Jr., Esq.,** for the Applicant Public Service Electric and Gas Company

William Horner, Esq., for the Intervenor Lower Alloways Creek Township

Peter A. Buchsbaum, Esq., and Robert Westreich, Esq., for the Joint Intervenors Citizens on Logan Township Safety and Stanley C. Van Ness (Public Advocate of the State of New Jersey), the Boroughs of Swedesboro and Paulsboro

William Gural, Esq., Deputy Attorney General of the State of New Jersey

Michael Parkowski, Esq., Deputy Attorney General of the State of Delaware

Howard M. Wilchins, Esq., William D. Paton, Esq., William Massar, Esq., and Richard L. Black, Esq., and Joseph R. Gray, Esq., for the NRC Regulatory Staff

I. BACKGROUND

1. On November 4, 1974, the Public Service Electric and Gas Company (hereinafter referred to as "Licensee") and Atlantic City Electric Company were issued construction permits (CPR-120 and CPR-121) by the Director of Regulation of the United States Atomic Energy Commission¹ which authorized the construction of the Hope Creek Generating Station, Units 1 and 2 (hereinafter referred to as "Hope Creek Station" or "Hope Creek facility"). The granting of these construction permits was authorized by this Atomic Safety and Licensing Board (hereinafter referred to as "Board") in an Initial Decision² following an uncontested evidentiary hearing. In the Initial Decision this Board concluded, *inter alia*, that "the principal design criteria for Hope Creek, Units 1 and 2, conform to the General Design Criteria set forth in 10 CFR Part 50, Appendix A, and all other relevant regulations," that the National Environmental Policy Act of 1969 ("NEPA") review was adequate, that, on the basis of the entire record, there was a need for the power to be generated by the Hope Creek Station, and that the benefits of the project, principally supplying electricity to the Licensee's users, outweighed the environmental costs involved (8 AEC 745, 752, 767).

2. In this Board's Initial Decision, we observed that Supplement No. 3 to the NRC Regulatory Staff's Safety Evaluation Report ("SER") (Staff Exhibit

¹ The regulatory and licensing functions of the Atomic Energy Commission (AEC) were transferred on January 19, 1975, to the Nuclear Regulatory Commission (NRC). References throughout the Supplemental Initial Decision to "Commission" are to either the AEC or the NRC as appropriate.

² 8 AEC 745 (1974).

1-D) noted that the water depth in the vicinity of the plant is not shallow enough to preclude the possibility of a barge's impacting the intake structure. The Advisory Committee on Reactor Safeguards ("ACRS"), in its report of February 12, 1974, recommended further study of these events. The Licensee agreed to provide a study satisfactory to the Staff to demonstrate that the probability of a barge's impact affecting the safety of the plant is acceptably low or, alternatively, to provide suitable protection by appropriate design change.³ The Staff, during the original review and hearing, had taken the position that resolution of the matter of interaction between river traffic and safety features of the plant to the Staff's satisfaction should be made a condition of the construction permits.⁴ The Board agreed.⁵ Accordingly, each of the construction permits contained a condition, 3E(19), which provides as follows:

No concrete shall be poured for safety-related structures until the Applicants have completed a study of the probability of interaction between river traffic and safety-related plant features and applied results of the study in the design and planned construction of the facility in a manner acceptable to the Regulatory Staff.

3. The information called for by condition 3E(19) has been provided by the Licensee in three documents. First, the Licensee provided an "Analysis of Potential Effects of Waterborne Traffic On the Safety of the Control Room and Water Intakes at Hope Creek Generating Station" (Licensee's Ex. 9) on October 2, 1974, to the Staff for review. In addition, on January 13 and May 8, 1975, the Licensee responded to two rounds of Staff questions (Licensee's Exhibits 10 and 11, respectively). As a result of its review and analysis regarding the potential hazards of waterborne traffic to the Hope Creek Station, the Staff issued Supplement No. 5 to the SER in March 1976 (Staff Ex. 1-F).

4. On November 3, 1974, after the issuance of the Initial Decision, Mr. David A. Caccia of Sewell, New Jersey, forwarded a letter to the Chairman of the Atomic Safety and Licensing Appeal Board Panel in which he stated that he had read the Initial Decision and wished "to take exception with this decision for several reasons."⁶ Thereafter, on November 16, 1974, Mr. Caccia forwarded a letter titled "Brief in support of my exceptions to granting a Construction permit for Hope Creek" to the Chairman of the Atomic Safety and Licensing Appeal Board ("Appeal Board").⁷ Mr. Caccia had not been a party to the proceeding before this Board, and had made only a limited appearance at the hearing.⁸

³ Tr. 2294.

⁴ Supplement No. 4 to the Safety Evaluation Report (Staff Exhibit 1-E).

⁵ 8 AEC 745 at 751-752.

⁶ Letter from David A. Caccia to Alan Rosenthal, dated November 3, 1974.

⁷ Letter from David A. Caccia to William C. Parler, dated November 16, 1974.

⁸ Tr. 2207-09, 2372-75.

His contentions related to Liquefied Natural Gas ("LNG") carriage on the River as a threat to the plant and to other matters of no relevance here.⁹

5. The Appeal Board, on November 19, 1974, forwarded Mr. Caccia's November 19, 1974, letter to counsel for the Licensee and Staff, with the request that they comment on the matters raised therein. In particular, the Appeal Board solicited comments with regard to Mr. Caccia's allegation concerning the potential threat to the Hope Creek Station from LNG tankers on the Delaware River. After reviewing the comments submitted by the Licensee and Staff, the Appeal Board concluded that the matter should be remanded to the Licensing Board for "such action as it may deem necessary to reevaluate, based on the new LNG information, its initial determination that the design bases for the Hope Creek facilities conform to the requirements of 10 CFR Part 50, Appendix A" (ALAB-251, 8 AEC 993, 997 (December 31, 1974)). In all other respects, the Appeal Board affirmed the Initial Decision.

6. The Appeal Board noted that Mr. Caccia should be afforded the opportunity to make another limited appearance on remand. Any request by Mr. Caccia to participate other than by limited appearance was to be decided by the Board consistent with applicable regulations. Subsequently, Mr. Caccia filed a letter dated May 8, 1975, in which he requested that he be made an intervenor in the Hope Creek proceeding.

7. On December 24, 1975, a joint petition to intervene was filed by The Concerned Citizens on Logan Township Safety, Stanley C. Van Ness (Public Advocate of the State of New Jersey), and the Boroughs of Paulsboro and Swedesboro ("Joint Intervenors").

8. The Board held a prehearing conference on May 6, 1976, with the Licensee, the Staff, Mr. Caccia, and the Joint Intervenors, to discuss, *inter alia*, the pending petitions to intervene. Thereafter, on October 15, 1976, the Board issued its Memorandum and Order granting the petitions to intervene of Mr. Caccia and the Joint Intervenors. NRCI-76/10 442 (October 15, 1976). The Board's Order also set forth the contentions of both intervenors that were accepted as issues in controversy.¹⁰ These contentions are discussed in detail herein.

⁹Notes 6 and 7, *supra*.

¹⁰The Board accepted the following Caccia contentions as issues in controversy:

1. The analysis of interaction between the Hope Creek plants and LNG carrier traffic in the Delaware River (in the Licensee's September 1974 "Analysis of Potential Effects" study) is defective in the following respects:
 - a. The number of LNG carrier trips per year has been understated, and methane carriers have been separated from butane carriers and liquid petroleum gas (LPG) carriers.
 - b. Catchment distance is underestimated in that it does not allow for rupture of more than a single tank in one accident.

(continued on next page)

9. By order dated December 28, 1976, the Board scheduled a hearing on the remanded issue, and on January 18-19, 1977, an evidentiary hearing was held at Salem, New Jersey.

10. The record in this remanded proceeding consists of: (i) the transcript of the evidentiary hearing of January 18-19, 1977, containing, *inter alia*, the testimony of three witnesses presented by the Licensee and two witnesses presented by the Staff; and (ii) the following exhibits which were received in evidence:

- a. Licensee's Exhibits 9, 10 and 11. See paragraph 3, *infra*.
- b. Staff Exhibit 1-F, Supplement No. 5 to the SER (March 1976).
- c. Board Exhibits 1 and 2. Final Environmental Impact Statement for the Construction and Operation of an LNG Import Terminal at Raccoon Island, Gloucester County, New Jersey, El Paso Eastern Company, Transco Energy Company, *et al.*, Docket Nos. CP-73-258, *et al.*, Federal Power Commission, Bureau of Natural Gas, June 1976; Draft Environmental Impact Statement, West Deptford LNG Project, Tenneco LNG Inc., Federal Power Commission, Bureau of Natural Gas, December 1976. [These documents were received into evidence by Board Order dated February 9, 1977].

(continued from previous page)

- c. LNG spills are more probable than those calculated from collisions alone, since such spills may also be caused by groundings and shipboard mishaps.
- d. The probability of ship collision is greater nearer Hope Creek than in other stretches of the river because of the bend in the river and the congestion in the channel.
- e. The probability of ship collision is greater for LNG carriers than for average ships because LNG carriers are larger in size but less maneuverable than average ships.
- f. The figure adopted of .005 spills per collision is unrealistically low.
- g. The chance that a spill will be to the windward of the plants is greater than .028 since the prevailing winds are westerly and the channel is west of the plant.

The Board accepted the following contentions of the Joint Intervenors as issues in controversy:

1. The catchment distance for an LNG plume has been underestimated. As a consequence, the probability that a spill accident on the river will affect the safety of the Hope Creek plants is also increased.
2. The thermal hazard generated by a plume fire has been underestimated.
3. The Licensee has failed to adequately analyze the problems of explosion of confined and unconfined vapor clouds.
4. The number of annual LNG transits that should be anticipated on the Delaware and the probabilities of an accident and a spill have been seriously underestimated.
5. The determination of a lower accident and spill probability for LNG tankers than for tankers of other types is based upon mere speculation.

II. ISSUES IN CONTROVERSY

11. The Appeal Board has remanded this proceeding in order for this Board to reevaluate its initial determination that the "design bases for the Hope Creek facilities conform to the requirements of 10 CFR Part 50, Appendix A" based on new LNG information. 8 AEC 993 at 997. That new LNG information referred to by the Appeal Board consists of the proposals before the FPC by Tenneco and Transco to build LNG import terminals on the Delaware River. These proposed terminals, if built and operated, would have design capacities that would result in approximately 400 LNG tanker trips annually passing the Hope Creek site at Artificial Island.¹¹ Although no LNG is presently transported on the Delaware River,¹² we are directed by the Appeal Board to consider the *potential* threat to the Hope Creek Station from these activities.

12. As a result of a review and analysis of these potential activities, both the Licensee and the Staff concluded that the probability of damage to safety-related structures of the Hope Creek Station due to accidents involving LNG tankers is sufficiently low for these accidents to be ignored as bases for the design of the Hope Creek Station (Staff Ex. 1-F, p. 16; Licensee Ex. 10, p. 18). The Licensee calculated the overall risk to the plant from LNG shipping on the Delaware to be 3.1×10^{-8} occurrences per year (Licensee Ex. 11, pp. 20-27). After its review of the Licensee's analysis, the Staff concluded that the controlling risk to vital plant structures is limited to those structures that are in the vicinity of flammable gas concentrations (Staff Ex. 1-F, p. 13). Consequently, the Staff calculated that the risk to the Hope Creek Station from the postulated LNG activities is 1×10^{-7} , which represents the potential frequency of flammable gas clouds at Artificial Island assuming LNG traffic consistent with the design capacity of the proposed LNG terminals¹³ (Staff Ex. 1-F, p. 14).

13. These calculations of risk are derived by multiplying together the following factors: (1) the number of ship transits per year; (2) the effective length of river along which a ship accident could affect the facility (computed from meteorological data);¹⁴ (3) the probability of an accident per mile of ship transit; (4) the probability of a cryogenic spill in the event of an accident; and (5) the probability of nonignition of the resultant vapor cloud.¹⁵

¹¹ See FPC Draft Environmental Impact Statement for the West Deptford LNG Project, Board Ex. 2 at pp. 2, 169.

¹² Staff Ex. 1-F, pp. 5-7; Testimony of Boettger, Tr. 2800.

¹³ The difference between the Licensee's and the Staff's overall risk calculation (3.1×10^{-8} versus 1×10^{-7}) is a result of a different value for the number of LNG ship transits per year. The Licensee assumed 106 LNG ship transits/year, whereas the Staff assumed 360.

¹⁴ See Section E, *infra*, wherein this factor has been defined as the "meteorological factor" and represents an estimate of the probability that a methane gas cloud, if spilled in the general area of the plant, would reach the Hope Creek site in flammable concentrations.

¹⁵ Staff Ex. 1-F, p. 14; Licensee Ex. 11, pp. 20-27.

14. The issues in controversy in this proceeding consist mainly of allegations by the intervenors that at least one of the five factors set out in the preceding paragraph is inadequately or erroneously computed. Since the risk calculation is the focal point of the intervenors' challenge, it will provide a convenient way to review the various contentions. The evidence with regard to the risk calculation factors is fully examined below. Upon consideration of the evidence of record,¹⁶ this Board finds that the probability of damage to safety-related portions of the Hope Creek Station on Artificial Island due to LNG accidents occurring on the Delaware River is sufficiently low to exclude these accidents as bases for the design of the facility.

A. LNG Ship Transits Per Year¹⁷

15. As indicated above, the Licensee and the Staff assume a different number of annual LNG tanker transits on the Delaware River in their respective risk calculations (see fn. 7). The Licensee's number of 106 annual transits is based only on the Transco proposal to the FPC, whereas the Staff's number of 360 is based upon both the Transco and Tenneco proposals for LNG terminals on the upper reaches of the Delaware River.

16. Both the Licensee and the Staff submit that their respective assumed annual LNG transits are conservative assumptions.¹⁸ The Staff's assumption is based on the construction and operation of both the Tenneco and Transco terminals near planned capacity.

17. The Board adopts the Staff's assumption of 360 LNG tanker transits per year since there is no compelling reason to discount the ultimate operation of the Tenneco LNG terminal. We note, however, that neither Tenneco nor Transco has firm LNG supplies for these facilities and, therefore, the ultimate operation of either facility at design capacity is in doubt. Furthermore, the likelihood of finding a firm supply is questionable because of little worldwide capacity to liquify natural gas,¹⁹ and because of decisions by exporting nations not to convert natural gas to LNG.²⁰ In addition, U.S. Coast Guard procedures for the movement of LNG restrict LNG ship movement in coastal waterways to daylight hours during clement weather, and they require escort vessels and Coast Guard

¹⁶Licensee's Exhibits 9, 10, 11; Staff Ex. 1-F; Testimony of Licensee's witnesses Boettger, Kalelkar, and Bakerjian (Tr. 2600-2813; 2952-2961); Testimony of Staff witnesses Bunch and Read (Tr. 2814-2944).

¹⁷The factor of annual LNG ship traffic has been raised as an issue in controversy by Mr. Caccia (Contention 1.a) and the Joint Intervenors (Contention 1.d), *supra*, fn. 10.

¹⁸See, Staff Ex. 1-F, p. 15; Testimony of Boettger, Tr. 2623.

¹⁹Tr. 2623.

²⁰Witness Bakerjian testified that both Venezuela and Iran have made decisions not to convert at the present time (Tr. 2782).

supervision which will limit the meeting and overtaking of vessels in the river channel.²¹ We believe that these restrictions will physically limit the number of LNG ships that may potentially enter the Delaware River over the course of a year and also limit the number of LNG ships that may be on the river at the same time. Since credit for these restrictions has not been taken in the risk analysis (Tr. 2812), we have greater confidence in concluding that the risk analysis of the Staff is reasonable and that its conclusion is conservative with regard to the number of annual LNG ship transits.

18. This conclusion finds reinforcement in the fact that the FPC, which must authorize the construction and operation of the Tenneco and Transco LNG terminals, recently issued environmental impact documents prepared by its staff which tentatively rejected the proposed terminal sites (Board Exhibits 1 and 2).²²

B. Accidents Per Mile

19. For various reasons hereafter discussed, the intervenors contend that the Licensee's and Staff's calculation of the accident rate per mile for LNG tankers (1.5×10^{-6} accidents/mile) is erroneous.²³

20. Both the Staff's and the Licensee's accident rates were calculated on the basis of actual large conventional tanker and barge accident data accumulated on the entire Delaware River by the U.S. Coast Guard and Corps of Engineers during the period 1969-1973.²⁴ This data base was used because there has been no actual LNG traffic on the Delaware, and oceanic LNG traffic is not representative of conditions in a river waterway such as the Delaware River. Actual LNG experience of over 70 ship-years and about six million miles has resulted in no major accident (Staff Ex. 1-F, p. 7).

21. Usage of the casualty data base appears to be challenged by the Joint Intervenors as being underestimated and "speculative." They contended that an analysis of more recent data on the Delaware River would reveal a higher accident rate because of an increase in river traffic. The Licensee's expert witness testified that he has reviewed the more recent data since 1973 and has calculated

²¹ See, Tr. 2651, 2706, 2739; Staff Ex. 1-F, p. 7.

²² There appears to be some good reason to wholly discount the ultimate operation of the Transco facility. After the completion of the hearing in this case, the Licensee and Intervenors have supplied us with a copy of a Transco motion to the Federal Power Commission seeking permission to withdraw the application for the proposed Transco LNG terminals.

²³ Caccia Contentions 1.c, 1.d, and 1.e; Joint Intervenor Contentions 1.d and 1.e, *supra*, fn. 10.

²⁴ Staff Ex. 1-F, p. 7; Licensee Ex. 10, pp. 10-12; Tr. 2636.

an insignificant increase, approximately 6%, in the number of large ship accidents that would be included in the data base (Tr. 2637-39).

22. Intervenor Caccia contended that the usage of accident data of conventional tankers is erroneous because "LNG carriers are larger in size but less maneuverable than average ships" (Contention I.e., *supra*, fn. 10). No evidence was presented in support of this assertion.

23. The evidence indicates that LNG tankers are designed to be more powerful and more maneuverable than conventional tankers. For instance, the LNG tankers have larger horsepower-to-displacement ratios (Tr. 2697) and are equipped with bow thrusters which are installed on very few conventional tankers (Licensee Ex. 10, p. 1). LNG tankers are equipped with sophisticated collision avoidance systems (Licensee's Ex. 11, p. 21). In addition, the U.S. Coast Guard has imposed special requirements to assure safe transit such as pretransit conferences and inspection of LNG carriers, daylight-only transit, escort by commercial tugs and Coast Guard vessels, prohibition of LNG transit in inclement weather, and special passing and speed rules to eliminate high angle vessel meeting situations, which are not applicable to conventional tankers.²⁵

24. In addition, Intervenor Caccia contended that the Licensee's application of the accident data base is erroneous because the probability of a ship collision near Hopè Creek is greater than in other stretches of the Delaware River owing to the configuration of the river and the congestion in the channel (Contention I.d.). The evidence indicates, however, that the 24-mile catchment distance²⁶ is more accident-free in terms of large tanker history than other stretches of the river (Tr. 2625, 2854). Also, there is no evidence to indicate that this stretch of river has more congestion than other stretches. We find this contention to be without merit.

25. The Board concludes that application of the above accident data base is not speculative or erroneous. On the contrary, we conclude that such application is conservative in light of the extraordinary measures imposed by the Coast Guard and the evidence of observed favorable operating experience for LNG tankers.

26. After obtaining the accident data base, the Licensee determined which accidents could occur during a vessel passage over the 24-mile catchment distance and could conceivably lead to a large LNG release. It was determined that only collisions with other large vessels (over 18 feet draft) are capable of

²⁵See Licensee Ex. 9, p. 22; Licensee Ex. 10, p. 1; Staff Ex. 1-F, pp. 6-7; Tr. 2697, 2739, 2812.

²⁶The term "catchment distance" is a term invented by the Licensee which defines the range, upstream and downstream from the water intakes, within which a release of a certain quantity of gas (LNG) could reach Artificial Island in flammable concentrations (Licensee's Ex. 10, pp. 6-9; Licensee's Ex. 11, pp. 23-27).

inflicting sufficient damage to the proposed doublehulled LNG tankers to cause an LNG release (Licensee's Ex. 10, p. 2). Nevertheless, for conservatism, the Licensee assumed a collision between two moving vessels where only one of the vessels had a draft of over 18 feet (Tr. 2640).

27. Accidents involving the ramming of moored vessels or objects were discarded because no docking facilities exist in the 24-mile catchment distance. The Joint Intervenors pressed the point on cross-examination that the ramming of a pier at the Delaware Memorial Bridge (within the 24-mile catchment distance) provides a credible means for an accident which would result in an LNG release (Tr. 2685-2693). We do not find this assertion to be well founded. The evidence indicates that the piers of the Delaware Memorial Bridge are at least 500 feet from the ship channel, and the closest piers to the channel are in about 20 to 35 feet of water (Tr. 2685-86). Since drafts of typical LNG tankers are approximately 36 feet (Board Ex. 2, p. 6), an LNG tanker could ram a pier only under high water conditions. Even if a ramming collision with a pier should occur under high water conditions²⁷ the lateral velocity of the LNG tanker is not sufficient for the pier to penetrate the 13 feet into the tanker to reach the LNG tanks (Tr. 2690). Accordingly, a ramming accident with a bridge pier is not expected to result in an LNG release.

28. In addition, grounding accidents were excluded by the Licensee from the data base because the soft bottom of the ship channel and river within the catchment distance does not provide a mechanism for the breaching of a double-hulled LNG tanker (Tr. 2643). Intervenor Caccia contended that groundings, as well as shipboard mishaps, were erroneously excluded from the data base (Contention 1.c). However, he presented no evidence in support of either of these assertions.

29. The Licensee has examined navigational charts and has found no hard areas or rocky ledges of river bottom within the catchment distance which are within the reach of LNG tankers (Tr. 2643, 2793-94). The Board finds that the Licensee's exclusion of grounding accidents from the accident data base was appropriate and reasonable, particularly in light of the double-hull construction of LNG tankers.

30. Also, we find nothing in the record which would support Intervenor Caccia's contention that shipboard mishaps have been improperly excluded from the accident data base. No evidence was presented in support of this assertion. We find no merit in this contention.

31. The Staff independently reviewed the Licensee's accident rate per mile to determine if it was reasonable and accurate (Tr. 2844-45). The Staff utilized a "worst case" analysis which tested the Licensee's accident rate by a number of

²⁷The Board notes that LNG transits on the Delaware River during high water conditions are unlikely because of the U.S. Coast Guard procedures which prohibit such movement during inclement weather and provide for Coast Guard and tug escorts.

different methods. One method utilized by the Staff measured the Licensee's postulated accident rate against observed accident rates in the English Channel,²⁸ and against accident rates observed in other waterways for which the Coast Guard had data (Tr. 2849-50). The Staff found that the Licensee's accident rate overpredicted what was in fact observed, and, therefore, it concluded that the Licensee's accident rate was reasonable. It should be noted that this test by the Staff was not concerned with what events caused the accidents. Therefore, the Staff did not differentiate between groundings, rammings, shipboard mishaps, and collisions (Tr. 2855).

32. The Staff also tested the Licensee's accident rate per mile by comparing it with an accident rate derived from the number of human errors per unit time observed in LNG shipping experience. This rate acknowledges the fact that humans do make mistakes which will cause ship accidents and these mistakes are measured over time, not over distance. The Staff found that the Licensee's accident rate per mile was not contradicted by the Staff's independent test using a different rate (Tr. 2851).

33. In light of the foregoing analysis by the Licensee and the independent corroborating tests by the Staff, the Board finds that the accident rate utilized by the Licensee and Staff is reasonable. Nothing in the record adduced by the intervenors through cross-examination has rebutted these analyses. Indeed, the Board concludes that the accident rate employed is conservative owing to the fact that neither the Licensee nor the Staff took credit for the extraordinary Coast Guard procedures which will be imposed on LNG movements or the physical characteristics of LNG tankers which should result in an accident rate reduced below that observed for conventional tankers.

C. Conditional Spill Probability

34. Having established the probability of an accident within the 24-mile catchment distance, the Licensee next determined the probability that an LNG spill would result. The Licensee calculated that the conditional spill probability would be 5×10^{-3} occurrences per collision.²⁹ This probability was derived from a ship collision penetration model developed to be used in the design of LNG tankers.³⁰ The Licensee submits that the use of this model is conservative because it has assumed that the energy involved in a collision is completely

²⁸The Staff witness observed that the English Channel is one of the most dangerous pieces of water as far as ship hazards are concerned (Tr. 2852).

²⁹The Licensee also calculated and factored in an additional probability to account for right-angle collisions where the Chesapeake and Delaware Canal meets the Delaware River. Licensee's Ex. 11, p. 22; Tr. 2663.

³⁰Minorsky Model, Licensee's Ex. 11, p. 22; Staff Ex. 1-F, p. 9.

transferred to the LNG ship and that the striking ship suffers no damage. It was further assumed that penetration of the striking ship would result in an incipient spill even if the bow of the striking ship did not penetrate the LNG cargo tank.³¹ The Staff concurred in the Licensee's estimate of spill probability.³²

35. Both Intervenor Caccia and the Joint Intervenors raised contentions (Contentions 1.f and 1.d and e, respectively) relating to the spill probability calculations. The Joint Intervenors attempted to show through cross examination that the Minorsky penetration model is speculative and that the spill probability should be derived from actual spill data from large tankers (Tr. 2694). However, the evidence indicates that using actual spill data would not be realistic because the physical characteristics of LNG tankers cannot be compared to conventional tankers, which carry their cargo against the ship's side. For example, the LNG tankers are in effect double-hulled, since they carry their cargo in tanks within the ship structure, have different compartmentation and piping requirements, and have larger horsepower-to-displacement ratios than conventional tankers (Tr. 2697, 2869). The Board is of the opinion that, given a collision, the above design differences (particularly the double hull) would render the LNG tanker less susceptible to a cargo spill than conventional tankers. Accordingly, we find that the Licensee's and Staff's use of the Minorsky penetration model to be more realistic than the use of the actual spill data from conventional tankers.

36. The Joint Intervenors also attempted to show through cross examination that certain assumptions used in the application of the Minorsky model (*i.e.*, collisions will be randomly distributed between angles of 45° and 90° and random speeds between 0 and 12 knots) are erroneous (Tr. 2703). However, given the realistic configuration of LNG ships in the channel, the absence of docking facilities within the 24-mile catchment distance, the Coast Guard regulations, and the corrective actions possible by the ships to avert the collision, we find that the above assumptions are reasonable. Factors different from those assumed by the Licensee would result in an adjustment of the probabilities of such factors occurring (*see*, Tr. 2679, 2707, 2871). The Joint Intervenors have not convinced us that different assumptions are appropriate nor have they shown us that the different assumptions would lead to a significantly different conditional spill probability.

37. On the basis of the foregoing, the Board finds that the conditional spill probability calculated by the Licensee and reviewed and confirmed by the Staff is reasonably conservative.

³¹Licensee's Ex. 11, p. 22; Tr. 2681.

³²Staff Ex. 1-F, p. 9.

D. Probability of Nonignition of Flammable Cloud

38. Both the Staff and the Licensee estimated that the probability that a flammable cloud of LNG would not ignite before it reached Artificial Island is 0.1 (Staff Exhibit 1-F, p. 10; Licensee's Exhibit 10, pp. 4-5; Licensee's Exhibit 11, p. 23; Tr. 2715). This estimation was based on the assertion, not controverted by either of the intervenors, that energies on the order of a small fraction of a joule are sufficient to ignite methane-air mixtures having between 5 and 15% methane by volume (Staff Exhibit 1-F, p. 10; Tr. 2722). This small amount of energy can be dissipated as an electrical or friction-induced spark. A multitude of such sparking ignition sources would be present at the site of any LNG tanker accident of sufficient severity to rupture an LNG tank (Licensee's Exhibit 10, pp. 4-5; Licensee's Exhibit 11, p. 23; Tr. 2716, 2718-2719).

39. A study of historical ignition events (Tr. 2882) and the opinion of U.S. Coast Guard officers who deal with accidents and shipboard fires (Staff Exhibit 1-F, Tr. 2882-2883) confirm the validity and conservative nature of nonignition probability of 0.1. In addition, an ignition source density model derived from LPG historical data predicts a 94% probability of shipboard ignition (Staff Exhibit 1-F, p. 10).

40. The Board finds that there is a high probability of ignition of a methane gas cloud on board ship. Conversely, we find that the probability of 0.1 that a methane gas cloud would not ignite before it reached Artificial Island is conservative.

E. Meteorological Factor

41. The term "meteorological factor" has been defined as an estimate of the probability that a flammable methane gas cloud released somewhere within the "catchment distance" would reach Artificial Island in flammable concentrations considering meteorological data, weather stability classifications, and the distance of the spill location from the plant site (Tr. 2734). The "catchment distance," as defined earlier, is the range within which a gas cloud could reach Artificial Island in flammable concentrations (Licensee's Exhibit 10, pp. 6-9; Licensee's Exhibit 11, pp. 23-27).

42. The meteorological factor was calculated both analytically (Licensee's Exhibit 10, pp. 6-9) and graphically (Licensee's Exhibit 11, pp. 23-27) by integrating individual meteorological factors for each one-mile segment of the catchment distance over the distribution of wind direction and weather stability conditions observed at Artificial Island (Tr. 2844). The individual meteorological factors were based on the percent occurrence of specific turbulence classes which make drift of a flammable cloud to Artificial Island feasible and the probability of the wind's blowing in the necessary direction (Tr. 2751). This method was reviewed by the Staff and found to be reasonable (Staff Exhibit 1-F, p. 13).

43. The meteorological factor used by the Staff and the Licensee has been indirectly challenged by Intervenor Caccia's Contention 1.b and Joint Intervenor's Contention 1.a, in both of which it is asserted that the catchment distance has been underestimated.

44. Intervenor Caccia contends that the catchment distance is underestimated because the possibility of rupture of more than a single LNG tank and the attendant release of larger quantities of LNG was not considered in the calculation. The Licensee analyzed the two-tank rupture probability and determined that it is only 0.05 times as probable as a one-tank rupture (Licensee's Exhibit 11, pp. 1-2). The Licensee further determined that, in the event of a two-tank spill, the attendant increase in catchment distance increases the overall probability that a methane cloud might impair the safety features of the Hope Creek plant by 7% (Licensee's Exhibit 11, pp. 1-3, Tr. 2732-2734). The Board finds that the probability of a two-tank rupture is sufficiently small and the effect of a two-tank rupture on the overall probability of damage to the plant is so insignificant that the effect of a two-tank rupture need not be considered in calculating the catchment distance and the meteorological factor.

45. Joint Intervenor's challenge to catchment distance is based on its efforts during cross-examination to show that, by ignoring vapor clouds with centerline average methane concentrations of less than 5%, the Licensee failed to account for the fact that clouds of less than 5% average methane content can nevertheless contain pockets of higher than average methane concentration which are flammable and that accounting for such pockets would increase the catchment distance (Tr. 2744-2750, 2776-2777). Testimony presented by the Licensee (Tr. 2750, 2752-2754) indicated that, in the opinion of the Licensee's witness, accounting for cloud pockets with higher than average methane concentration would have negligible effect on the overall risks to the plant. The Staff's witness likewise agreed that there would be no significant difference in the overall risk to the plant since the preponderance of the risk is associated with accidents which occur within a short distance of the proposed plant site (Tr. 2847). This testimony was not controverted by any party. The Board finds that the effect of cloud pockets containing higher than average methane concentrations is so insignificant that it need not be considered in calculating the catchment distance and the meteorological factor.

46. Joint Intervenor's also attempted to show on cross-examination that catchment distance was underestimated because of the size of LNG tanks assumed by the Licensee and the Staff in that, had larger tanks been assumed, larger amounts of LNG would be released when a tank is breached (Tr. 2731). Witnesses for the Licensee testified that there are currently no plans for the use of LNG ships on the east coast with tanks larger than those assumed in the Staff's and Licensee's analyses (Tr. 2732-2734, 2772-2773). In addition, the evidence indicates that an increase in tank size to allow a spill of 37,000 cubic meters as postulated by Joint Intervenor's (Tr. 2731) would increase catchment

distance by about four miles but would have negligible impact on the meteorological factor (Tr. 2731-32). The Board finds that the likelihood of the use on the Delaware River of LNG vessels with tanks larger than those assumed in the Staff's and Licensee's analyses is sufficiently low and the effect of the use of larger tanks on the meteorological factor is so insignificant that the use of larger LNG tanks need not be accounted for in determining the meteorological factor.

47. Intervenor Caccia, in his Contention 1.g, also challenges the meteorological factor used by the Licensee by alleging that individual meteorological factors have been underestimated. Specifically, the contention is that the probability that a spill will be upwind of the plant is greater than that calculated by the Licensee because the prevailing winds are westerly and the channel is west of the proposed plant site. The uncontroverted evidence indicates that, on the average, the winds in the vicinity of the plant are not westerly. Moreover, since the plant is relatively small and at least a mile away from the nearest approach of the channel, a very limited and specific wind direction is necessary to carry a flammable vapor cloud from the site of a spill to the plant. An individual meteorological factor is based partially on the probability that the wind will be blowing in precisely the required direction (Tr. 2751). These probabilities were determined from available weather data (Licensee's Exhibit 11, App. A). The Licensee has presented a detailed exposition of the manner in which individual meteorological factors were calculated (Licensee's Exhibit 11, pp. 23-27). The Board finds those calculations to be reasonable.

48. On the basis of the foregoing, the Board finds that the methods and assumptions used to calculate the meteorological factor are reasonable and that the meteorological factor of 0.354 is reasonable.

F. Probability of a Flammable Cloud in Plant Vicinity

49. In the method adopted by the Staff and the Licensee, the probability that a flammable gas cloud released by an accident involving an LNG tanker in the Delaware River will reach the proposed site of the Hope Creek facility is obtained as the product of each of the five factors heretofore discussed (Staff Exhibit 1-F, p. 14; Licensee's Exhibit 11, p. 27; Tr. 2617-18). Upon cross-examination, Joint Intervenor's questioned the validity of this method by asserting that a detailed "fault tree" analysis had not been performed (Tr. 2895-98). Staff testimony indicated that use of a fault tree analysis approach is not necessarily proper for detecting very improbable accident paths (Tr. 2896) or assessing complicated situations where there is limited knowledge as in the case of a river with ships (Tr. 2897). Rather, the Licensee's and Staff's approach contains known conservatisms and constitutes a worst credible case analysis (Tr. 2897). The Board finds the method used by the Staff and the Licensee to calculate the probability that a flammable cloud released by an accident involving an LNG tanker in the Delaware River will reach the site to be reasonable.

50. As mentioned above, the Board has found that each of the factors used to calculate the probability that an LNG cloud will reach the proposed site of the Hope Creek facility, other than the meteorological factor, is conservative. In addition, the Board has found that the meteorological factor is reasonable. The Board also finds that additional conservatism is inherent in the overall probability calculated by both the Licensee and the Staff owing to the fact that the following items have not been considered in the probability calculation: U.S. Coast Guard regulations covering LNG shipping on the Delaware River; physical design of LNG tankers employed to increase power and maneuverability; and the effect of prompt corrective action by operators of the nuclear plant (Tr. 2930).

51. On the basis of the foregoing, the Board finds that the overall probability of 1×10^{-7} calculated by the Staff that a flammable methane cloud released by an accident involving an LNG tanker in the Delaware River will reach the proposed site of the Hope Creek facility (Staff Exhibit 1-F, p. 14) is conservative.

52. The criteria by which the NRC Staff evaluates hazards such as those addressed here were set out in Staff testimony as follows:

The identification of design basis events resulting from the presence of hazardous materials or activities in the vicinity of the plant is acceptable if the design basis events include each postulated type or accident for which a realistic estimate of the probability of occurrence of potential exposures in excess of 10 CFR Part 100 guidelines exceeds the NRC Staff objective of approximately 10 to the minus 7 per year. The methods of calculating the radiological exposures resulting from these events are acceptable if they are consistent with methods used for calculation of other accident radiological exposures (e.g., Standard Review Plan 15.6.5). Because of the difficulty of assigning precise numerical values to the probability of occurrence of the types of potential hazards generally considered in this review plan, judgment must be used as to the acceptability of the overall risk presented by an event. In view of the low probability events under consideration, the probability of occurrence of the initiating event leading to potential consequences in excess of 10 CFR Part 100 exposure guidelines should be estimated using assumptions that are as realistic as is practicable. In addition, because of the low probability events under consideration, valid statistical data are often not available to permit accurate quantitative calculation showing that the probability of occurrence of potential exposures in excess of 10 CFR Part 100 guidelines is approximately 10 to the minus 6 per year is acceptable if, when combined with reasonable qualitative arguments, the realistic probability can be shown to be lower. The effects of design basis events have been appropriately considered if analysis of the effects of accidents on the safety-related features of the plant have been performed and appropriate measures (e.g., hardening fire protection) to mitigate the consequences of such events have been taken.

(Tr. 2899-2900, quoting from NRC Standard Review Plan, NUREG-75/087, §2.2.3). Pursuant to these criteria, a probability in the range of 1×10^{-6} to 1×10^{-7} is acceptable to the Staff and is not considered a design basis event if conservative calculations are made (Tr. 2893-2908). The Board finds that these criteria provide a reasonable basis for judging the acceptability of the risk involved here. Furthermore, in view of our finding that the overall probability that a flammable methane cloud could reach the Hope Creek Facility is no more than 1×10^{-7} per year, this Board concludes that this event is not a design basis event and that the Licensee need not include provisions in the design of Hope Creek facility to prevent or mitigate the consequences of such event.

53. Our finding above is buttressed by the fact that the Staff has noted that if future developments show that river traffic risks are greater than presently projected, further protective measures sufficient to reduce that risk are feasible (Staff Ex. 1-5, p. 15).

54. Although the remanded hearing related solely to the Appeal Board's request to consider the LNG matter, this Board has also considered the other river traffic hazards which were the subject of Condition 3E(19) of the construction permits. We have reviewed the information presented by the Licensee and the analysis prepared by the Staff regarding the other river traffic hazards (*e.g.*, ramming of the water intake structures). We agree with their conclusion that there is no need for these matters to be considered as design basis events and that Condition 3E(19) has been satisfied (Licensee's Ex. 9, 10 and 11; Staff Ex. 1-F).

G. Related Questions

1. Separation of LNG Carriers from Butane Carriers and LPG Carriers

55. In his Contention 1.a, Intervenor Caccia asserts that the overall risk to the Hope Creek facility due to the traffic on the Delaware has been underestimated because the risk associated with methane (LNG) carriers has been separated from the risk associated with butane carriers and liquid petroleum gas (LPG) carriers. The rationale for separate treatment, according to the Licensee, is that butane and LPG are presently being shipped on the Delaware whereas LNG is not, and the likelihood that LNG will be shipped is uncertain (Tr. 2800). The Staff computed and listed separate risks for Propane/LPG shipments, butane shipments, and LNG shipments (Staff Exhibit 1-F, p. 14).

56. The evidence indicates that the probabilities for each type of shipment may be added to arrive at a cumulative probability that a flammable gas cloud of some type could reach the Hope Creek facility (Tr. 2807-08). Witnesses for the Licensee stressed that before addition can be considered, the LNG probability must be multiplied by the probability that LNG shipments will ultimately take

place on the Delaware River (Tr. 2805). The Licensee estimates that the probability that LNG shipments will take place during the lifetime of the Hope Creek facility is about 20% (Tr. 2810-11). We need not reach the question of the validity of this estimate for it is obvious that even if future LNG shipments on the Delaware River are a certainty, the cumulative probability that a flammable gas cloud of some type could reach the Hope Creek facility is 1.6×10^{-7} (Staff Exhibit 1-F, p. 14).

57. The Board finds this cumulative probability to be conservative and to be sufficiently low so that a flammable gas cloud in the vicinity of the plant due to shipment of any of these commodities is not a design event (see Paragraphs 51 and 52, *supra*, and Tr. 2905).

2. Explosions of Confined and Unconfined Gas Clouds

58. In their Contention 1.c, Joint Intervenors assert that the Licensee has failed adequately to analyze the problems of explosion of confined and unconfined vapor clouds.

59. The question of explosion of a confined vapor cloud is raised in the context of an explosion on board ship (Tr. 2798) or in confined spaces at the Hope Creek plant (Tr. 2908-2910). The potential consequences of the explosion of a confined vapor cloud on board ship have been addressed by the Staff in Staff Exhibit 1-F, p. 11. That evidence demonstrates to the Board's satisfaction, that, while shipboard detonation, as opposed to deflagration, is highly improbable,³³ even in the event of detonation, overpressures at the plant structure due to such an explosion would be within the design capacity of safety-related structures, and no missiles from the explosion could reach the plant (Staff Exhibit 1-F, p. 11). The Board finds that the consequences of a shipboard explosion have been adequately analyzed and shown to have no effect on vital plant structures.

60. As to the consequences of detonation of a methane cloud in confined spaces at the Hope Creek plant, such an explosion would initially require that a gas cloud reach the Hope Creek plant in flammable concentrations. This Board has found that the probability of that event is so low that no analyses of the consequences thereof need be undertaken (paragraph 52). Moreover, uncontroverted testimony demonstrates to the Board's satisfaction that detonation of such a confined cloud is not possible under accident conditions (Tr. 2908-2910). The Board finds that the probability that a methane cloud in confined spaces at the Hope Creek plant would detonate is sufficiently low for the consequences thereof to be ignored.

³³ Testimony by the Licensee's witnesses is to the same effect. Tr. 2798.

61. With respect to the detonation of an unconfined cloud in the vicinity of the facility, the Board notes that this event too would initially require that a gas cloud reach the Hope Creek plant in flammable concentrations. This Board has found that the probability of that event is so low that no analysis of the consequences thereof need be undertaken (paragraph 52). Further, evidence presented by the Staff indicates that it is probably not possible to detonate any significant fraction of an unconfined methane-air cloud (Staff Exhibit 1-F, p. 13). The Board finds that the probability that an unconfined methane cloud in the vicinity of the plant would detonate is sufficiently low for the consequences thereof to be ignored.

3. Thermal Hazards Generated by a Plume Fire

62. In their Contention 1.b, Joint Intervenors assert that the thermal hazards generated by a plume fire have been underestimated.

63. The Joint Intervenors' primary concern appears to be with the effect on both personnel and plant structures of plume fires away from the plant and immediately surrounding the plant (Tr. 2729). At the outset, the Board notes that on several occasions, Joint Intervenors raised the question of the effect of pool³⁴ or plume fires on persons outside the plant (Tr. 2724, 2757, 2760-62). Since our task is to reach a decision with respect to the effect of waterborne traffic on the Delaware on the safe operation of the Hope Creek facility, and since those personnel responsible for safe operation of the plant are required to be in the control room at all times during operation (Tr. 2727), our inquiry with respect to the thermal hazards generated by a plume fire must necessarily be limited to those hazards presented to plant structures and to control room personnel (Tr. 2758, 2760-62).

64. Uncontroverted testimony demonstrates, to the Board's satisfaction, that plant structures will be unaffected by any plume fire that does not surround plant structures (Tr. 2725-30) and that the only areas of concern are those within the cloud itself (Tr. 2754, 2757). The evidence shows that control room personnel would be unaffected by a plume fire which does not surround the plant and could safely shut down the reactor (Tr. 2799, 2888-93). The Board finds that plume fires which do not surround the plant will present no hazard to plant structures or to control room personnel responsible for safe operation of the facility.

65. As to the thermal hazards presented by a plume fire immediately surrounding plant structures, such a plume fire would initially require that a gas cloud reach the Hope Creek plant in flammable concentrations (Tr. 2910). The Board has found that the probability of that event is so low that no analysis of

³⁴Joint Intervenors do not challenge the analysis of the effects of a pool fire at some distance from the plant on concrete structures at the plant (Tr. 2729).

the consequences thereof need be undertaken (paragraph 52). As such, we find that the thermal hazards due to a plume fire immediately surrounding the plant need not be analyzed, and we reject Joint Intervenor's contention with respect to the plume fire thermal hazard.

4. Supplemental Environmental Impact Statement

66. Joint Intervenor's raised the following contention by way of motion concerning the Staff's compliance with NEPA:

Consideration of the existence of hazardous shipping on the Delaware River past the proposed Hope Creek plants is not contained in the Final Environmental Statement. Under the National Environmental Policy Act and the Commission's implementing regulations, the Regulatory Staff is required to prepare and circulate a supplemental environmental impact statement addressing this matter. [Memorandum and Order dated October 15, 1976, NRCI-76/10, 442 at 448.]

67. The Staff has argued by way of response to the Joint Intervenor's motion³⁵ that before we can consider the need for a supplemental environmental statement, it must first be found that the probability of an LNG accident which would affect the safety-related portions of the Hope Creek facility is greater than about 10^{-7} per year, the point at which the probability is sufficiently low for the postulated accident to be ignored as a basis for the design of the Hope Creek facility.³⁶

68. The Staff further argues that the above approach is consistent with the Commission position that the impact of accidents with a remote probability of occurrence need not be considered in any NEPA analysis because the environmental risk is extremely low.³⁷ The Commission's NEPA approach in its treatment of such remote accidents was approved in *Carolina Environmental Study Group v. AEC*, 510 F.2d 796 (D.C. Cir. 1975). The Licensee agrees with the Staff's position.³⁸

³⁵See "NRC Staff's Answer to Motion of Joint Petitioners for Determination of NEPA Issues," dated May 27, 1976.

³⁶The Board notes that if conservative calculations show that the probability of occurrence of potential exposures in excess of 10 CFR Part 100 guidelines is approximately 10^{-6} per year, then Commission policy would deem this risk acceptable, if, when combined with reasonable qualitative arguments, the realistic probability can be shown to be lower (see paragraph 52).

³⁷NRC Staff's Answer, *supra*, p. 4. See also Proposed Annex to 10 CFR Part 50, Appendix D, 36 *Fed. Reg.* 22851 (1971).

³⁸See, "Applicant's Response In Opposition to Motion of Joint Petitioners for Determination of NEPA Issues," dated May 24, 1976, and "Licensee's Brief Concerning the Need for a Supplemental Environmental Impact Statement," dated February 1, 1977.

69. Since we have previously found that the probability of the postulated LNG accident is no more than 1×10^{-7} per year and need not be the basis for the design of the Hope Creek facility (paragraph 53, *supra*), we conclude that the environmental impacts of such accidents are remote and speculative and need not be considered in any NEPA analysis.

70. Furthermore, there is nothing in the record which undermines this Board's finding in the Initial Decision that the NEPA review was adequate and that the cost-benefit analysis favors the construction of Hope Creek as presently designed. Since we have determined that the LNG accident is not a design basis event, there is no need to redesign the Hope Creek facility to eliminate or mitigate the consequences of such accidents, and therefore all impacts of construction and operation have previously been considered. Accordingly, the cost-benefit balance in the Initial Decision remains unchanged.

71. Although this Board is concerned here only with the construction of Hope Creek Generating Station Units 1 and 2, it is not unaware that Salem Nuclear Units 1 and 2 and gas turbine Unit 3 are located on Artificial Island, a few hundred yards from Hope Creek Units 1 and 2 (FES Figure 2.3). The hazard of river traffic to plant operation must be substantially the same for Salem 1 and 2 as for Hope Creek 1 and 2; yet had the Board found any reason to delay or modify construction at Hope Creek as a result of this evidentiary hearing, it would still be powerless to affect construction or operation at Salem, next door. If, therefore, the intervenors are still unconvinced that LNG traffic can operate safely on the Delaware River concurrently with nuclear power plants at Artificial Island, it appears appropriate to this Board that their future activity be directed to the restriction of LNG traffic on the Delaware River rather than to the restriction of nuclear power plant construction at Hope Creek. We conclude that, in view of the remote probability of occurrence of this event, there is no need for the issuance of a supplement to the FES.

III. CONCLUSIONS OF LAW

72. On the basis of our review of the entire record in this proceeding and the foregoing findings, the Board concludes as follows:

- a. The principal design criteria for Hope Creek, Units 1 and 2, conform to the requirements of 10 CFR Part 50, Appendix A.
- b. The Staff's FES meets the requirements of the National Environmental Policy Act.
- c. The appropriate action at this time is the removal of Condition 3E(19) from the construction permits heretofore issued in this case.

IV. ORDER

73. On the basis of the Board's foregoing Findings and Conclusions, and pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's

regulations, IT IS ORDERED that Condition 3E(19) from Construction Permits CPPR-120 and 121 be deleted, thereby permitting the Licensee to pour concrete for Category I structures immediately and to proceed with construction of the Hope Creek facilities in accordance with the permits. IT IS FURTHER ORDERED, in accordance with Sections 2.760, 2.762, 2.764, 2.785 and 2.786 of the Commission's Rules of Practice, that this Supplemental Initial Decision shall become effective immediately and shall constitute, with respect to matters, covered herein, the final action of the Commission forty-five (45) days after issuance hereof, subject to any review pursuant to the Commission's Rules of Practice. Exceptions to this Initial Decision may be filed by any party within seven (7) days after service of this Initial Decision. Within fifteen (15) days thereafter (twenty (20) days in the case of the Staff) any party filing such exceptions shall file a brief in support thereof. Within fifteen (15) days of the filing of the brief of the appellant (twenty (20) days in the case of the Staff) any other party may file a brief in support of, or in opposition to, the exceptions.

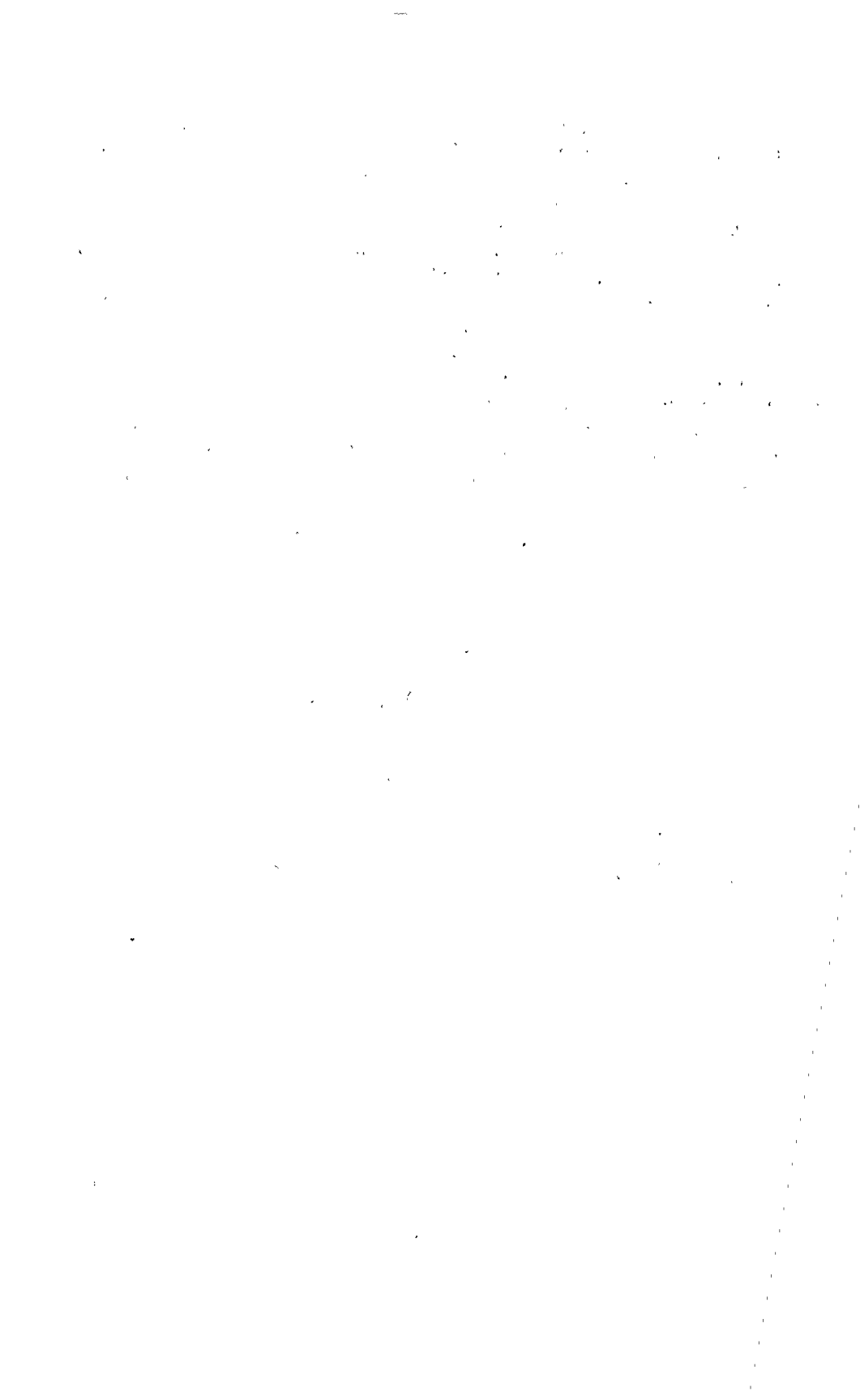
**THE ATOMIC SAFETY AND
LICENSING BOARD**

Ernest E. Hill, Member

John R. Lyman, Member

Edward Luton, Chairman

**Dated at Bethesda, Maryland
this 28th day of March 1977.**



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