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SECY-91-035

FOR: The Commissioners

FROM: John F. Cordes, Jr.
Solicitor

SUBJECT: LITIGATION REPORT 1991-02

Commonwealth of Massachusetts v. NRC, Nos. 89-1306, 90-1132 & 90-1218 (D.C. Cir., Jan. 25, 1991)

A panel of the District of Columbia Circuit (Buckley, Williams & Randolph, JJ) has unanimously upheld the Commission's decision giving "immediate effect" to a Licensing Board decision authorizing a full power license for the Seabrook Nuclear Power Station. With one exception the court of appeals rejected the various arguments made by the Commonwealth of Massachusetts and other challengers to Seabrook's license.

Initially the court agreed with our argument that it had jurisdiction over the Commission's "immediate effectiveness" decision only (and decisions subsumed in it), and not the full range (as yet non-final) of Seabrook decisions rendered by the Commission's adjudicatory bodies (Slip op. at 17-19). The court then turned to the fundamental question in the case: whether petitioners were correct that the Commission's emergency planning regulations "require[] the Commission to judge an emergency plan in terms of the actual dose of radiation received by a particular EPZ population in a hypothetical accident scenario" (Slip op. at 20). The court rejected petitioners' reading of the regulations, and deferred to the NRC's view that compliance with the 16 planning standards in 10 C.F.R. 50.47(b) satisfied the regulatory goal of "reasonable assurance" of "adequate protective measures" (Slip op. at 20-35). The court found nothing in the text of the regulations, in the Commission deliberations adopting them, or in the NRC's enabling legislation that required the "actual dose" approach demanded by petitioners.

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The court also upheld the Commission's decision, in its "immediate effectiveness" determination, that Seabrook could begin operations despite the Appeal Board's remand of certain emergency planning issues to the Licensing Board (Slip op. at 35-38). The court accepted the Commission's rationale that these issues were "not significant for the plant in question" (10 C.F.R. 50.47(c)).

Finally, the court considered two issues that had come up in connection with the low power license, but in the court's view remained relevant to the full power license. First, it upheld as "sensible" the Licensing and Appeal Boards' rejection of petitioners' claim that their contention focusing on aquatic blockage of cooling systems should be construed to cover aquatic corrosion as well (Slip op. at 38-39).

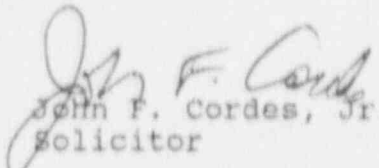
Second, it remanded for "reasoned decisionmaking" the question whether it was permissible to reject petitioners' late-filed contention on the June 1988 full participation exercise of the emergency plan (Slip op. at 39-45). The court upheld as "reasonable" the Appeal Board's conclusion that petitioners had waited too long to proffer their contention, and therefore did not satisfy the "good cause" for lateness prong of the 5-factor "late-filed" test, but the court felt that the Appeal Board had failed to consider the "materiality" of the contention in addressing the other four factors. The court was not entirely clear whether it viewed "materiality" as implicit in the existing 5-factor test or as a factor imposed by section 189a of the Atomic Energy Act, as construed in Union for Concern Scientists v. NRC, 735 F.2d 1437 (D.C. Cir. 1984), cert. denied, 469 U.S. 1132 (1985) (see Slip op. at 43). The court did comment that the NRC's 5-factor test seemed "not well suited" and "odd" in the context of exercise contentions (Slip op. at 41). The court also rejected as too "terse" the Appeal Board's alternative explanation that petitioners' contention did not meet the Commission's "fundamental flaw" standard for exercise contentions (Slip op. at 45).

Despite the remand for further explanation on the exercise contention, the court did not vacate Seabrook's license. The court decided "against imposing an immensely disruptive interim status quo" where there seemed to be no "ongoing flaws" and

where "a clean record" in Seabrook's most recent full participation exercise (in December 1990) "will likely moot this issue" (Slip op. at 46-47).

Contacts:

Marjorie Nordlinger	x21607
Roger Davis	x21606
Neil Jensen	x21634


John F. Cordes, Jr.
Solicitor

Enclosure: As stated

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United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 18, 1990 Decided January 25, 1991

No. 89-1306

COMMONWEALTH OF MASSACHUSETTS, *et al.*, PETITIONERS

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION
AND UNITED STATES OF AMERICA, RESPONDENTS

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE,
TOWNS OR CITIES OF ASHBURNHAM, *et al.*, INTERVENORS

and consolidated cases No. 90-1132 & 90-1218

Petitions for Review of an Order of the
Nuclear Regulatory Commission

Robert A. Backus (for Seacoast Anti-Pollution League)
and *John A. Traficante*, Assistant Attorney General for
the Commonwealth of Massachusetts, with whom *Paul*

Bills of costs must be filed within 14 days after entry of judgment. The court looks with disfavor upon motions to file bills of costs out of time.

McEachern (for Town of Hampton, New Hampshire), James M. Shannon, Attorney General for the Commonwealth of Massachusetts, and Stephen A. Jonas, Deputy Attorney General for the Commonwealth of Massachusetts, and Diane Curran (for New England Coalition on Nuclear Pollution) were on the joint briefs, for petitioners.

John F. Cordes, Jr., Solicitor, Nuclear Regulatory Commission ("NRC"), with whom William C. Parler, General Counsel, NRC, E. Leo Slaggie and John Cho, Special Counsel, NRC, Roger Davis, E. Neil Jensen, and Marjorie S. Nordlinger, Attorneys, NRC, and Richard B. Stewart, Assistant Attorney General, Peter R. Steenland and Jeffrey Kehne, Attorneys, Department of Justice, were on the briefs, for respondents. William H. Briggs, Jr. and Carole F. Kagan, Attorneys, NRC, and Edward J. Shawaker, Martin W. Matzen, and Jacques R. Gelin, Attorneys, Department of Justice, also entered appearances for respondents.

Thomas G. Dignan, Jr., with whom George H. Lewald and Jeffrey P. Trout were on the brief, for intervenor Public Service Co. of New Hampshire.

Paul McEachern was on the brief for intervenor Town of Hampton, Massachusetts, in No. 90-1132.

Stephen S. Ostrach was on the brief for amicus curiae New England Legal Foundation in No. 90-1132.

Thomas J. Heiden entered an appearance for intervenor Towns or Cities of Ashburnham, et al., in Nos. 89-1306 and 90-1132.

Judith H. Mizner entered an appearance for intervenor Town of Newbury, Town of West Newbury, and City of Newburyport in No. 90-1132.

Barbara J. Saint Andre entered an appearance for intervenor Town of Salisbury in No. 90-1132.

Before BUCKLEY, WILLIAMS, and RANDOLPH, Circuit Judges.

Opinion for the court filed by Circuit Judge BUCKLEY.

BUCKLEY, Circuit Judge: This action consolidates three petitions for review of the Nuclear Regulatory Commission's licensing of Seabrook Nuclear Power Station. Petitioners are the Commonwealth of Massachusetts, the Seacoast Anti-Pollution League ("SAPL"), and the New England Coalition on Nuclear Pollution ("NECNP"), all intervenors in the agency's licensing proceedings. Public Service Company of New Hampshire ("PSNH") has intervened here as leader of the consortium of utilities that owns and operates Seabrook.

In No. 90-1132, petitioners raise three issues concerning the Commission's authorization of the plant's full power license. They challenge the Commission's decision to allow authorization of the full power license despite a prior agency ruling requiring further consideration of Seabrook's offsite emergency response plans. They also challenge a ruling excluding from the licensing record evidence about the potential consequences of hypothetical radiological emergencies at Seabrook. Finally, they challenge the Commission's denial of a waiver of regulations exempting PSNH, as a regulated utility, from the requirement of demonstrating financial qualifications.

In No. 89-1306, petitioners raise two issues relating to the plant's low power licensing. They claim the Commission misconstrued the scope of a contention they had filed concerning the possible fouling of Seabrook's cooling system; and they claim the Commission improperly authorized the low power license without conducting an adjudicatory hearing on potential flaws in Seabrook's onsite emergency plan, allegedly revealed in a June 1988 emergency exercise. The third consolidated petition, No. 90-1218, was filed as a precaution to preserve petitioners' opportunity for appellate review of the full power issues; it simply duplicates No. 90-1132.

We deny in their entirety the petitions in Nos. 90-1132 and 90-1218 for review of the full power license issues. In No. 89-1306, we deny the petition for review of the

mission's action concerning the cooling system contention; we grant review, however, of the decision concerning the exercise contention, and we remand to the agency for further explanation of its reasoning on this issue. In the interim, we will allow the operating licenses for Seabrook to remain effective.

I. BACKGROUND

A. Regulatory Overview

Under section 182(a) of the Atomic Energy Act of 1954 ("AEA"), as amended, 42 U.S.C. §§ 2011-2296 (1988), the Nuclear Regulatory Commission ("NRC" or "Commission") is authorized to approve the operation of nuclear power plants that the agency finds "will provide adequate protection to the health and safety of the public." 42 U.S.C. § 2232(a). See also 10 C.F.R. § 50.57(a)(3) (1990). In accordance with the notice and hearing requirements of section 189 of the AEA, 42 U.S.C. § 2239, the procedural requirements of the Administrative Procedure Act, 5 U.S.C. §§ 551-559, and the procedures set forth in its own regulations, 10 C.F.R. Part 2, the NRC conducts formal adjudicatory hearings on all contested issues, called "contentions," that are raised by interested parties in response to applications for a nuclear plant operating license. Licensing hearings are conducted by a three-member Atomic Safety and Licensing Board ("Licensing Board") whose duties are to admit and decide contentions and, if the contentions are resolved in the applicant's favor, to authorize the requested license. See 10 C.F.R. §§ 2.750-772. Appeals from Licensing Board decisions are heard by a panel of the Atomic Safety and Licensing Appeal Board ("Appeal Board"), *id.* §§ 2.785, 2.787, and the Commission may, in its discretion, undertake further review, *id.* § 2.786.

A Licensing Board authorization of a low power testing license, which permits operation of a plant at up to five percent of rated power, becomes immediately effective notwithstanding any appeals taken within the NRC. *Id.*

§ 2.764(a), (f). Such authorizations are subject to motions for stay, and the Commission reserves the power to step in at any time. *Id.* § 2.764(f)(2). Authorization of an operating license that permits more than five percent power operations does not become effective until the Commission itself has conducted an "immediate effectiveness" review of the Licensing Board's initial decision. *Id.* § 2.764(f)(2)(i), (ii). After a positive immediate effectiveness review, the authorization becomes effective without prejudice to any pending administrative appeal of the Licensing Board's decision or any further motions or formal adjudication. *Id.* § 2.764(g).

An applicant for a nuclear plant operating license must provide detailed plans for coping with radiological emergencies on the plant site and for ensuring offsite emergency preparedness. See *id.* § 50.34(b)(6)(v); *id.* Part 50, Appendix E.III, IV. The NRC requires the applicant to submit emergency response plans prepared by state and local governments whose jurisdictions lie within designated emergency planning zones ("EPZs") surrounding the plant. *Id.* § 50.33(g). The "plume exposure pathway" EPZ is generally a circular zone with a radius of approximately ten miles; the "ingestion pathway" EPZ is a larger circle measuring approximately fifty miles in radius. The exact configurations of the EPZs depend on the particular characteristics of each site. *Id.* §§ 50.33(g), 50.47(c)(2). Offsite planning primarily focuses on protective measures for people within the plume exposure pathway EPZ. See, e.g., *id.* § 50.47(b)(5), (10). In the ingestion pathway EPZ, the focus is on protecting food sources from fallout. See *id.* §§ 50.33(g), 50.47(c)(2).

The NRC will not authorize an operating license unless it finds "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." *Id.* § 50.47(a)(1). The NRC's findings on the adequacy of protective measures are based on a determination by the Federal Emergency Management Agency ("FEMA") that the state and local response plans for the offsite EPZs are adequate and can be implemented, and

on an NRC assessment of the adequacy and implementability of the applicant's onsite emergency plans. *Id.* § 50.47(a)(2). A FEMA finding constitutes a rebuttable presumption on the adequacy of an offsite plan. *Id.* Low power licensing requires the approval of an onsite emergency plan but does not require any assessment of offsite emergency preparedness. *Id.* § 50.47(d).

Paragraph (b) of the emergency planning regulation sets forth sixteen specific standards that response plans must meet. *Id.* § 50.47(b).¹ Failure to meet these standards "may result in the Commission[s] declining to issue an operating license," but the applicant will have the opportunity to demonstrate that the license should still issue where, *inter alia*, "deficiencies in the plans are not significant for the plant in question." *Id.* § 50.47(c)(i). Further detailed guidance for emergency planning is contained in 10 C.F.R. Part 50, Appendix E.IV ("Content of Emergency Plans") and in emergency preparedness guidelines developed and published jointly by FEMA and the NRC, NRC & FEMA, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1 (rev. 1 Nov. 1980) ("NUREG-0654"). Where state or local governments in the EPZs refuse to participate in emergency planning, the applicant must substitute its own offsite response plan, and such a "utility plan" is also evaluated against the paragraph (b) standards. 10 C.F.R. § 50.47(c)(1)(iii).

B. Full Power Licensing Proceedings

The full power licensing issues before the court principally involve the Licensing Board's approval of Seabrook's offsite emergency plans. The New Hampshire Radiological Emergency Response Plan Revision 2 ("NH Plan") is a state plan covering the New Hampshire communities within the plume exposure pathway EPZ. The Seabrook Plan for Massachusetts Communities ("Utilities

¹Paragraphs (a) and (b) of the emergency planning regulation are set out in their entirety in the accompanying Appendix

Plan") is a plan that was developed by PSNH and the other owner-utilities pursuant to 10 C.F.R. § 50.47(c) after Massachusetts and the Massachusetts communities within the EPZ declined to participate in emergency planning.

During adjudicatory hearings on the adequacy of the NH Plan, petitioner Massachusetts proffered evidence of potential radiation doses that would result from specific hypothetical accidents at Seabrook. The evidence was intended to support petitioners' contentions that the NH Plan could not adequately protect the large numbers of persons who visit the ocean beaches near Seabrook on summer weekends. The evidence consisted of written testimony from four expert witnesses: Steven C. Sholly, Dr. Jan Beyea, Dr. Gordon Thompson, and Dr. Jennifer Leaning (collectively, "Sholly/Beyea testimony"). Joint Appendix ("JA") at 160. (Unless indicated otherwise, citations to the joint appendix refer to case No. 90-1132.)

Mr. Sholly's testimony was offered to explain that the generic emergency preparedness guidelines on which section 50.47 rests were developed on the basis of dose-distance assessments performed for a range of accident scenarios. JA at 171. Dr. Beyea would then predict the level of protection the NH Plan would actually provide to the peak summertime beach population in terms of the potential radiation doses that could result from various accident scenarios. *Id.* at 172. Dr. Thompson's testimony proposed to address the likelihood and characteristics of a catastrophic atmospheric release of radiation at Seabrook. *Id.* at 174. Finally, Dr. Leaning was to describe the health effects that such accidents would have on the beach population. *Id.* The stated premise of these experts' testimony was that a site-specific examination of the potential dose consequences of various accidents would illuminate the effectiveness of the offsite emergency measures planned. *Id.* at 187.

The Licensing Board refused to admit the Sholly/Beyea

vant to the review of emergency response plans under section 50.47. JA at 144-59. On interlocutory appeal, the Appeal Board certified to the Commission the question whether the evidence should be admitted in light of a prior Commission opinion, *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 N.R.C. 22, 30 (1986) ("*Shoreham*"), in which the Commission had stated that a goal of emergency planning is "reasonable and feasible dose reduction under the circumstances." See *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-922, 30 N.R.C. 247, 255-59 (1989).

In the meantime, on December 30, 1988, the Licensing Board issued a 141-page partial initial decision approving the NH Plan. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-88-32, 28 N.R.C. 667 (1988).² The Board made findings on twenty-six litigated contentions relating to eight general aspects of the plan. See *id.* at 669-70. While the Board found it necessary to make four specific revisions to the plan and to retain jurisdiction over a subissue relating to one of those revisions, it concluded that, subject to later verification that the necessary revisions had been made, the plan met the requirements of 10 C.F.R. § 50.47(b) and Part 50, Appendix E, and reasonably assured that adequate protective measures were available for the New Hampshire portion of the EPZ. See 28 N.R.C. at 804-05.

Petitioners appealed this decision while hearings continued on other segments of offsite emergency planning. On November 7, 1989, the Appeal Board handed down an opinion reviewing four of the eight categories of issues resolved in LBP-88-32. ALAB-924, 30 N.R.C. 331 (1989).

²Each of the NRC rulings related to Seabrook bears the caption "*Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2)," followed by its respective decision number, with the prefix "LBP" denoting the Licensing Board, "ALAB," the Appeal Board, and "CLI," the Commission. For ease and clarity, we will simply refer to all of the Seabrook rulings by their decision numbers.

The Appeal Board generally affirmed the Licensing Board's findings and conclusions but reversed and remanded four issues "for further action consistent with this opinion." *Id.* at 373. The remanded issues involved the possible need for letters of agreement with school personnel involved in evacuating schoolchildren; the accuracy of a survey intended to identify persons with special transportation needs; the accuracy of evacuation time assumptions for advanced life support patients in hospitals, nursing homes, and other special facilities; and the need for further implementing details in the plan for emergencies in which sheltering would be the preferred protective action for the beach population. *Id.* The Appeal Board did not specify that its opinion precluded issuance of a full power license but did note that the lack of implementing details for beach sheltering "is a deficiency that must be remedied." *Id.* at 372 n.194.

Two days after ALAB-924, on November 9, 1989, the Licensing Board issued a 281-page partial initial decision. The decision addressed sixty-two litigated contentions proffered by petitioners relating to the Utilities Plan and a 1988 FEMA-graded, full participation exercise of Seabrook's emergency plans (such an exercise being a prerequisite to full power licensing under 10 C.F.R. Part 50, Appendix E.IV.F.1). See LBP-89-32, 30 N.R.C. 375, 380-84 (1989). The Board concluded that the 1988 graded exercise was adequate in scope and revealed no fundamental flaw in the Utilities Plan or the NH Plan; that the 1988 exercise demonstrated that the NH Plan was adequate and implementable; and that the Utilities Plan satisfied the requirements of section 50.47(b) and Appendix E, and reasonably assured that adequate protective measures would be available for the Massachusetts portion of the EPZ. See 30 N.R.C. at 650. Having thus resolved all remaining licensing issues in the applicants' favor (other than the four remanded by the Appeal Board), the Licensing Board authorized a full power license for Seabrook. *Id.* at 651. The Board took note of the four remanded issues and promised to provide a supplemental decision

explaining why ALAB-924 did not preclude the immediate issuance of an operating license. *Id.* at 651 & n.87.

Petitioners moved the Appeal Board to vacate authorization of the full power license, but the Appeal Board refused to act before receiving the Licensing Board's supplemental opinion. JA at 1048. Subsequently, the Commission decided *sua sponte* to assume jurisdiction over petitioners' motion to vacate; the Commission reasoned that because it was already scheduled to decide the immediate effectiveness of LBP-89-32 and the Sholly/Beyea evidentiary question, its resolution of the motion to vacate would serve the interests of efficiency. JA at 1051. Thereafter, in its supplemental decision of November 20, 1989, the Licensing Board analyzed the four remanded issues in light of its familiarity with the extensive factual record and concluded that none of the deficiencies was sufficiently significant to preclude licensing and that any further action concerning such issues could be conducted through post-licensing hearings. LBP-89-33, 30 N.R.C. 656 (1989).

On March 1, 1990, the Commission handed down its decision on the certified question concerning the Sholly/Beyea testimony. CLI-90-2, 31 N.R.C. 197 (1990). The Commission upheld the Licensing Board's ruling that the testimony was inadmissible, holding that "judgments on the adequacy of emergency planning are to be based on conformity with the sixteen planning standards set forth in 10 C.F.R. § 50.47(b)." *Id.* at 213. Relying on its own guidelines and rulemaking statements supporting section 50.47 and on prior adjudicatory decisions, including its *Shoreham* opinion, the Commission reasoned that

consideration of specific accident sequences and their potential dose consequences has been rendered unnecessary by the promulgation of generic guidance that incorporates and synthesizes data on a range of accidents and their consequences. Thus the seeming anomaly of excluding proffered evidence on dose consequences, where the objective of the inquiry is to reduce dose consequences, is in fact no anomaly at

all. For it is by applying the generic guidance of the regulation's sixteen standards to the review of individual emergency plans — not by attempting to predict the effects of particular hypothetical accidents occurring under particular hypothetical conditions of weather, time of year, and time of day — that the NRC satisfies itself that the goal of achieving dose reductions is met.

Id. at 215.

On the same day it decided this evidentiary question, the Commission issued a ruling denying petitioners' motion to vacate and allowing the immediate effectiveness of the Licensing Board's decisions. CLI-90-3, 31 N.R.C. 219 (1990). On the motion to vacate, the Commission concluded that the Licensing Board had not violated any "clear, nondiscretionary duty" in authorizing the license. *Id.* at 229-31. The Commission reasoned that "nothing in ALAB-924 by its terms precludes a full power authorization"; that no NRC rule or decision "suggests . . . [a] duty on the part of the Licensing Board to delay full power authorization pending completion of remand proceedings"; and that, "most important for this case," the Licensing Board's authority to act despite a remand from the Appeal Board was properly supported by 10 C.F.R. § 50.47(c)(1). 31 N.R.C. at 230. While agreeing that the remanded issues were probative of compliance with section 50.47(b), and thus would be relevant to licensing, the Commission noted that they were "not necessarily material to license issuance because, under § 50.47(c), [some] compliance issues may not be significant and therefore need not be resolved prior to license issuance." *Id.* at 230-31 (emphasis added).

In its immediate effectiveness review, the Commission found that the Licensing Board had acted reasonably in determining that the remanded issues were not significant and that this determination did not preclude the immediate issuance of a license. See *id.* at 232-48. The Commission further held that the Licensing Board's findings and conclusions in LBP-89-32 on the adequacy of the licensee

Plan and the FEMA-graded exercise, not yet reviewed by the Appeal Board, also met the immediate effectiveness criteria set forth in 10 C.F.R. § 2.764(f)(2). See *id.* at 248-54. As a result, the Commission allowed the full power license to take effect, "with, however, the recognition that administrative appeal processes (in which later review of the Licensing Board's decision[s] will take place) will continue." *Id.* at 225.

On March 15, 1990, the full power license issued. JA at 752. This court denied a stay pending appeal, and Seabrook thereafter began its ascension to full power. Administrative appeals and further adjudication before the Licensing Board are ongoing.

The last NRC action petitioners ask us to review in connection with the full power proceedings is the Commission's denial of their request for a waiver of the financial qualification regulation. CLI-89-20, 30 N.R.C. 231 (1989). The NEC exempts regulated electric utilities, like PSNH, from its general rule requiring license applicants to demonstrate financial qualification. 10 C.F.R. §§ 50.33(f), 50.40(b). The rationale for the exemption is that a regulated utility usually can recover through its rate base the costs of safely operating a nuclear facility. 49 Fed. Reg. 35,747, 35,748 (1984). Massachusetts and SAPL argued that a waiver was justified pursuant to 10 C.F.R. § 2.758(b) because the rationale for the exemption had been undercut by "special circumstances," namely, the fact that PSNH had filed for bankruptcy. JA at 397-537. The Licensing Board ruled that petitioners failed to make a *prima facie* showing for a waiver, LBP-89-10, 29 N.R.C. 297 (1989), but the Appeal Board certified the issue to the Commission, ALAB-920, 30 N.R.C. 121 (1989).

Petitioners relied on a prior opinion rendered during Seabrook's low power proceedings in which the Commission had found that the purpose of the exemption was undermined by the combination of PSNH's bankruptcy and New Hampshire's "anti-CWIP" statute (which pro-

hibits a utility from increasing customers' rates to recover the costs of construction work in progress). See CLI-88-10, 28 N.R.C. 573, 592-98 (1988). In denying the later petition, the Commission held that its low power decision did not support a waiver of the financial qualification exemption during full power operations because "[n]othing in the anti-CWIP law . . . prohibits including Seabrook's operating costs in the rate base when the plant is operating to serve the public, as it will be fully authorized to do if it receives its full-power license." 30 N.R.C. at 241 (emphasis in original). The Commission also held that the exemption would not be undercut by a normal delay in cost recovery imposed by the New Hampshire ratesetting process, *id.*, and that even if the rule were undercut by exceptional circumstances, petitioners had failed to show that a significant safety problem would result, *id.* at 243-44.

C. Low Power Licensing Proceedings

A low power license permits an applicant to initiate fuel loading and low-level testing before ascension to full power operation. Because certain requirements for full power licensing, such as adequate offsite emergency plans, are not relevant to low power operation, the NRC may, upon motion by the applicant, issue a low power testing license prior to the authorization of a full power license, provided that all contested issues material to low power operations have been resolved in the applicant's favor. See 10 C.F.R. § 50.57(c). The Licensing Board assigned the adjudication of Seabrook's licensing issues to two panels; one of them held hearings on the offsite emergency planning contentions discussed above, and the second adjudicated all contentions relevant to low power licensing, including all onsite safety and emergency planning issues. See LBP-87-10, 25 N.R.C. 177, 181 (1987). Petitioners seek review of the NRC's action concerning two issues raised in the low power proceedings.

In June 1982, petitioner NECNP submitted a conten-

tem could fail because of "the accumulation of mollusks, other aquatic organisms, and debris." JA, No. 89-1306, at 1. As its basis for the contention, NECNP pointed to an NRC notice in the Federal Register discussing the problem of cooling system blockage from sea animals like clams and mussels. *Id.* at 2-3; see 47 Fed. Reg. 21,653 (1982). The Licensing Board refused to admit the contention. Several years later, however, the Appeal Board reversed and remanded the contention. ALAB-875, 26 N.R.C. 251, 261-63 (1987).

During the course of subsequent proceedings, NECNP sought to compel discovery of Seabrook's ability to detect and control "microbiologically induced corrosion" in its cooling system. The Licensing Board denied NECNP's motion to compel, ruling that NECNP's cooling system contention was limited to the accumulation of marine organisms and debris and did not encompass the side-effects of microbiological activity. JA, No. 89-1306, at 472-79. NECNP sought reconsideration, submitting an expert affidavit expressing the view that microbiologically induced corrosion was within the scope of the 1982 contention. *Id.* at 90. The Licensing Board denied the motion to reconsider on the ground that expert opinions were not relevant to the question. *Id.* at 491-96. NECNP thereafter informed the Board that it no longer wished to litigate the issue of blockage by "macro"-organisms, *id.* at 158-59, and the contention was subsequently dismissed as abandoned, *id.* at 499-501.

The Appeal Board accepted an untimely appeal of the Licensing Board's ruling on the scope of the cooling system contention, ALAB-894, 27 N.R.C. 632 (1988), and later affirmed the ruling, ALAB-899, 28 N.R.C. 93 (1988). Based on the terms and the stated basis of the contention, the Appeal Board concluded that the contention addressed "blockage" of coolant flow to safety-related systems, not "leakage" caused by corrosion. 28 N.R.C. at 96-99. The Appeal Board observed that instead of raising this new issue within the terms of the old contention, NECNP should have proffered a late-filed contention. *Id.* at 99.

The Commission denied review, and the Appeal Board's decision became final agency action.

The second low power issue raised by petitioners relates to the June 1988 full participation exercise of Seabrook's emergency plans. The NRC inspection team overseeing the onsite portion of the exercise issued a report on July 6, 1988, which concluded that "[n]o violations were identified" during the drill and that the "response actions were adequate to provide protective measures for the health and safety of the public." JA, No. 89-1306, at 220. The report detailed various strengths observed in the exercise and also discussed some "weaknesses," including certain actions of onsite plant personnel. *Id.* at 223-24. In the opinion of the inspection team, five weaknesses indicated that the plant's Technical Support Center ("TSC") and Emergency Operations Facility ("EOF") staffs displayed questionable engineering judgment or failed to recognize or address technical concerns:

- Neither the EOF [n]or TSC staff questioned a release of greater than 7000 curies per second with only clad damage and no core uncover;
- Efforts continued to restore the Emergency Feed-water Pump after a large break LOCA [Loss of Coolant Accident];
- A questionable fix for the Containment Building Spray system;
- A lack of effort to locate and isolate the release path; and
- No effort was noted to blowdown Steam Generators to lessen the heat load in containment.

Id. at 224.

On September 16, 1988, petitioners filed a motion requesting that the Board admit a new contention, or in the alternative reopen the record, based on their allegation that the June exercise had revealed fundamental deficiencies in the onsite emergency plan. *Id.* at 241. On September 28, the NRC staff issued a follow-up inspection

report based on further investigation, which concluded that the actions of the plant personnel had been acceptable after all and that the matter of the weaknesses was "considered closed." *Id.* at 274, 286-88.

The Licensing Board denied petitioners' motion on the grounds that petitioners had failed to satisfy the requirements for a late-filed contention, set forth in 10 C.F.R. § 2.714(a)(1), and that the motion did not meet the criteria for reopening a closed hearing record, *id.* § 2.734. LBP-89-4, 29 N.R.C. 62, 68-86 (1989). The Appeal Board affirmed, first, on the ground that the Licensing Board did not abuse its discretion in determining that the motion failed to meet the late-filed contention requirements; and, second, on the "independent basis" that even if the motion met those criteria, the proposed exercise contention must be rejected under Commission case law because it did not involve a "fundamental flaw" in the emergency plan. ALAB-918, 29 N.R.C. 473, 480-86 (1989). The Appeal Board did not reach the issue of whether the motion satisfied the criteria for reopening a closed record. *Id.* at 485. The Commission declined further review; thus the Appeal Board's ruling became final agency action.

After various delays, the Commission ultimately granted a low power testing license for Seabrook in December 1988, with two conditions: The applicants had to provide reasonable assurance that sufficient funds would be available to cover the costs of decommissioning the plant should a full power license be denied, and petitioners' then-pending motion to litigate the onsite exercise contention had to be resolved. See CLI-88-10, 28 N.R.C. 573 (1988). With the fulfillment of these conditions, the Commission lifted its stay of the license in May 1989. CLI-89-8, 29 N.R.C. 399 (1989). After this court refused petitioners' subsequent request for a stay, Seabrook began low power operations.

II. DISCUSSION

A. Jurisdiction

At the outset, we must sort out the reviewability of the various agency decisions implicated in these petitions. This court has jurisdiction over all final orders of the NRC that are made reviewable by section 189 of the AEA, 28 U.S.C. § 2342. Section 189 provides for judicial review of "[a]ny final order entered in any proceeding," *inter alia*, "for the granting, suspending, revoking, or amending of any license." 42 U.S.C. § 2239(a), (b). Generally, under these statutes, an NRC order is final if it disposes of all issues as to all parties in the licensing proceeding, that is, if it consummates the agency's decisionmaking process and results in granting, denying, suspending, revoking, or amending a license. See *NRDC, Inc. v. NRC*, 680 F.2d 810, 815 (D.C. Cir. 1982). According to this strict rule of finality, we plainly have jurisdiction to review the low power issues raised in No. 89-1306 because the Commission has issued a final order, CLI-88-10, granting the low power testing license. The full power petitions, however, are another matter.

In our opinion, the Commission's immediate effectiveness ruling, CLI-90-3, represents a final agency order that is reviewable by this court. As shown by our decision in *Oystershell Alliance v. NRC*, 800 F.2d 1201 (D.C. Cir. 1986), we will review an immediate effectiveness decision even though, under the procedures set forth in 10 C.F.R. § 2.764, the Commission's decision is not a final adjudication on the merits and is without prejudice to any pending administrative appeal or subsequent adjudication. See 800 F.2d at 1206-07. Such review is appropriate because it will not disrupt the orderly process of adjudication within the agency and because significant legal consequences flow from the Commission's action. See *Port of Boston Marine Terminal Ass'n v. Rederiaktiebolaget Transatlantic*, 400 U.S. 62, 71 (1970). We also believe it appropriate in this case to review that portion of CLI-90-3 in which the Commission refused to vacate the Licensing Board's authori-

zation of the full power license, 31 N.R.C. at 225-31, because that ruling was a necessary predicate to immediate effectiveness.

Of course, our examination of CLI-90-3 is exceedingly limited. In an immediate effectiveness review, the Commission determines whether it is in the public interest to lift the administrative stay that automatically attaches to an initial authorization of a full power license. This determination is based on a weighing of equitable considerations: "the gravity of the substantive issue, the likelihood that it has been resolved incorrectly below, the degree to which correct resolution of the issue would be prejudiced by operation pending review, and other relevant public interest factors." 10 C.F.R. § 2.764(f)(2)(i). Thus, our review of CLI-90-3 is akin to the review of a district court's grant of a preliminary injunction, *see, e.g., National Wildlife Fed'n v. Burford*, 835 F.2d 305, 319 (D.C. Cir. 1987), and is properly confined to determining whether the Commission abused its discretion, *see Oyster-shell Alliance*, 800 F.2d at 1206.

We reject petitioners' argument that immediate effectiveness renders the Licensing Board's decisions and all related "intermediate, procedural or preliminary non-final actions or rulings" of the NRC reviewable by this court under 5 U.S.C. § 704. Petitioners' Motion Seeking Clarification of Appellate Jurisdiction, filed Apr. 30, 1990, at 10. We already decided in a related petition that LBP-89-32 is not reviewable even after CLI-90-3. Order, *Massachusetts v. NRC*, No. 89-1743 (D.C. Cir. filed Mar. 7, 1990) (*per curiam*). Furthermore, while section 704 authorizes judicial review of preliminary or intermediate rulings "on the review of the final agency action," 5 U.S.C. § 704, it does not give us plenary jurisdiction over the entire Seabrook licensing litigation. The only "final agency action" at issue here is an order allowing the plant to operate at full power pending the Commission's further review of the licensing issues. This order is not a "final decision" by the Commission pursuant to 10 C.F.R. § 2.770. Section 704 authorizes us to review only those preliminary, intermedi-

ate, or procedural rulings that relate to the final agency action presently before the court. Accordingly, we will consider the NRC's full power rulings only to the extent necessary to review the Commission's exercise of discretion in allowing immediate effectiveness.

In particular, the Commission's denial of a financial qualification waiver, CLI-89-20, is interlocutory in nature and is not independently reviewable. We so held in dismissing an earlier petition for review of CLI-89-20, Order, *Massachusetts v. NRC*, No. 89-1648 (D.C. Cir. filed Dec. 26, 1989) (*per curiam*), and we see nothing in the immediate effectiveness decision to alter that conclusion. Therefore, we again decline to review CLI-89-20.

Intervenor PSNH maintains that the Commission's evidentiary ruling on the Sholly/Beyea testimony in CLI-90-2 is also not a final licensing order subject to our review. Brief for PSNH at 22-23; *see NRDC, Inc. v. NRC*, 680 F.2d at 816 (ordinarily, agency's evidentiary ruling not a final order). In our opinion, however, the peculiar relationship between CLI-90-2 and the Commission's immediate effectiveness decision of the same date, CLI-90-3, makes the decision to exclude the testimony properly reviewable. In allowing immediate effectiveness, the Commission observed that CLI-90-2 "forms an important part of conclusions regarding emergency planning for Seabrook." CLI-90-3, 31 N.R.C. at 225. Indeed, the Licensing Board believed that its initial ruling on the relevance of the Sholly/Beyea testimony "would have the potential to affect the basic structure of the case in a pervasive way," JA at 144, and in certifying the question to the Commission, the Appeal Board stated that "this issue is cardinal to the resolution of a number of matters in this proceeding." ALAB-922, 30 N.R.C. at 249. In sum, there is little doubt that if its decision on the relevance of the testimony had gone in petitioners' favor, the Commission would not have allowed the immediate effectiveness of the full power authorization. This close link between the two decisions renders our review of CLI-90-2 appropriate.

B. Interpretation of Emergency Planning Regulation

In the NRC's view, an emergency response plan provides "reasonable assurance" of "adequate protective measures" under 10 C.F.R. § 50.47(a)(1) if it adequately satisfies the sixteen paragraph (b) criteria in a way that is implementable; the plan need not achieve any minimum radiation dose savings or minimum evacuation time in the event of a specific accident. See CLI-90-2, 31 N.R.C. at 208, 216-17. This approach is thought most likely to produce a flexible plan that offers the best feasible means for minimizing harm to the public from unpredictable accidents, given the particular characteristics of the plant site and the surrounding EPZ. See *id.* at 215-17. If any interested party believes that satisfaction of the sixteen standards alone will not produce an adequate and implementable plan in a particular case, the party may petition the NRC under 10 C.F.R. § 2.758 for a waiver of section 50.47 to allow the imposition of more stringent planning requirements. See *id.* at 217. Petitioners challenge this interpretation of the emergency planning regulation and the Commission's consequent decision to exclude the Sholly/Beyea testimony.

Petitioners' view of emergency planning fundamentally differs from the NRC's. It is their position that section 50.47(a)(1) requires the Commission to judge an emergency plan in terms of the actual dose of radiation received by a particular EPZ population in a hypothetical accident scenario. The inference to be drawn from their position is that a nuclear power plant may not be licensed for full power operation where the demography and physical constraints of the planning area are such that no feasible response plan can provide substantial protection under particular conditions. See Brief for Petitioners at 13, 43-46; Brief for SAPL at 2-8. Because of the absence of sufficient protective sheltering near the beaches and the length of time potentially required for a complete evacuation of the beach population during periods of peak use, they contend that Seabrook is such a plant. See Oral

Argument of Robert A. Backus, counsel for petitioner SAPL, Sept. 18, 1990:

QUESTION: Would you agree that adequate sheltering is simply not available on the beaches for the beach population?

MR. BACKUS: Essentially, we agree with that, Your Honor.

QUESTION: Then is it your position that if there cannot be protection, a license may not issue?

MR. BACKUS: That's our position.

QUESTION: That this is a characteristic inherent in the choice of the site?

MR. BACKUS: That's correct, Your Honor.

This basic, irreconcilable conflict fuels petitioners' challenge to the full power licensing of Seabrook. For that reason, we will address CLI-90-2 before turning to the immediate effectiveness ruling. As discussed below, we decline to disturb the Commission's application of section 50.47.

Our standard of review on this question is necessarily deferential. We will not overturn the Commission's interpretation of its own emergency planning rule "unless that interpretation is plainly inconsistent with the language of the regulation[]." *San Luis Obispo Mothers for Peace v. NRC*, 789 F.2d 26, 30 (D.C. Cir.) (en banc) ("Mothers for Peace II"), cert. denied, 479 U.S. 923 (1986). If its reading of section 50.47 satisfies that standard, the Commission's application of the regulation to exclude petitioners' expert testimony may be set aside only if it was arbitrary, capricious, an abuse of discretion, or otherwise contrary to law. See 5 U.S.C. § 706(2)(A) (1988). Moreover, the Commission's licensing decisions are generally entitled to the highest judicial deference because of the unusually broad authority that Congress delegated to the agency under the

Atomic Energy Act. *Carstens v. NRC*, 742 F.2d 1546, 1551 (D.C. Cir. 1984), *cert. denied*, 471 U.S. 1136 (1985).

Petitioners argue that we should not defer to the Commission's interpretation of section 50.47 or the decision to exclude the Sholly/Beyea testimony on the ground that the NRC lacks expertise in the area of emergency planning. They contend that Congress recognized this supposed lack of expertise when it required the NRC to develop and implement mandatory offsite planning standards in consultation with an agency more specialized in emergency response, FEMA, see 1980 NRC Authorization Act, Pub. L. No. 96-295, § 109, 94 Stat. 780, 783-85 (1980), thereby indicating dissatisfaction with the failure of the "checklist" approach to offsite planning that the NRC employed prior to the Three Mile Island ("TMI") accident in 1979.

Petitioners have confused the judicial deference that is given when the NRC makes "predictions, within its area of special expertise, at the frontiers of science," *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 103 (1983), with the deference presumptively owed an agency's interpretation of its own regulations and with the heightened deference for NRC licensing decisions that flows from its broad statutory mandate. The latter two bases for judicial deference fully apply here.

In particular, the 1980 Authorization Act, an expired fiscal appropriations law, was not in effect when CLI-90-2 was decided and therefore did not limit the licensing discretion otherwise conferred on the Commission by Congress. Moreover, petitioners' argument that the NRC lacks expertise in offsite emergency planning was expressly rejected in *Massachusetts v. United States*, 856 F.2d 378 (1st Cir. 1988), where the court held that "[t]he substantive area in which an agency is deemed to be expert is determined by statute; here, under the relevant congressional enactments . . . , the NRC is specifically authorized and directed to determine whether emergency

with the First Circuit. Accordingly, we see no reason to depart from the highly deferential standard of review outlined above.

Our analysis must begin with the wording of section 50.47. Petitioners argue that the Commission's interpretation violates the plain language of the regulation because protective measures cannot possibly be judged "adequate," as required by section 50.47(a)(1), without consideration of their actual effectiveness in protecting the public. That conclusion, however, is not compelled by a straightforward reading of the rule.

The Commission observed that "[n]othing in the regulation contains any suggestion that calculations of dose consequences are intended to play a role in the evaluation of a plan's adequacy." CLI-90-2, 31 N.R.C. at 214. We cannot say that this judgment is flatly contradicted by the language or structure of section 50.47. As we have previously noted in determining that a response plan need not consider a particular emergency event like an earthquake, section 50.47 "make[s] no reference to specific conditions or accident sequences." *Mothers for Peace II*, 789 F.2d at 43. Paragraph (a) appears to state the general goal of the regulatory scheme for emergency planning. As we earlier observed, paragraph (a) "does not address any particular emergency . . . ; rather, it sets forth a general standard that envisions judgment and implies discretion." *Id.* at 31. Paragraph (b) then enumerates specific standards that a response plan "must meet," presumably for the purpose of achieving the goals of adequacy and implementability. 10 C.F.R. § 50.47(b). None of these specific standards requires the Commission to measure a plan against particular hypothetical scenarios.

Other provisions in the regulation indicate that the core of the Commission's inquiry is compliance with the generic standards of paragraph (b). Paragraph (a)(2) provides that FEMA's determination supporting the "reasonable assurance" finding "will primarily be based on

necessarily focus on the contents required by paragraph (b) and Part 50, Appendix E.IV. Paragraph (c)(1) provides, *inter alia*, that "[f]ailure to meet the applicable standards set forth in paragraph (b) of this section may result in the Commission[s] declining to issue an operating license," unless the applicant for the license can demonstrate to the Commission's satisfaction that deficiencies in the plan are not significant for the plant in question, that interim measures will compensate for the deficiencies, or that there are other compelling reasons to permit licensing. *Id.* § 50.47(c)(1).

In the event the applicant must develop its own response plan as a result of a refusal by state and local governments to participate in emergency planning, the regulation provides that the "utility plan will be evaluated against the same planning standards applicable to a state or local plan, as listed in paragraph (b) of this section," with certain allowances for the lack of governmental participation. *Id.* § 50.47(c)(1)(iii). Under paragraph (d), the NRC's evaluation of onsite emergency planning for purposes of low power licensing requires a similar finding of reasonable assurance of adequate protective measures, which will be based on the NRC's "assessment of the applicant's onsite emergency plans against the pertinent standards in paragraph (b) of this section and Appendix E." *Id.* § 50.47(d).

All of these provisions bolster the Commission's conclusion that "adequacy is to be judged by conformity with the planning standards." CLI-90-2, 31 N.R.C. at 214. These sixteen standards were derived from assessments of a spectrum of possible radiological accidents, and the NRC has concluded that they provide an appropriate basis for arriving at a plan that will be comprehensive and flexible. *See id.* at 215-17. Petitioners' construction of paragraph (a) is certainly plausible, perhaps even desirable as a matter of policy, but it is not the only reasonable reading of the regulation. We conclude that the Commission's interpretation is not plainly inconsistent with any language in section 50.47.

Petitioners further argue that the agency interpretation is contrary to the mandate of the 1980 Authorization Act, in which Congress directed the NRC to establish and enforce standards for onsite emergency plans. *See* Pub. L. No. 96-295, § 106, 94 Stat. at 783-84.³ They point to language in the Authorization Act indicating that a response plan was to "provide[] reasonable assurance that public health and safety is not endangered," *id.* § 109(b)(1)(B)(i)(II); that the NRC was required to "assess the adequacy" of existing plans, *id.* § 109(b)(3); and that the agency was directed to report to Congress on the emergency response capabilities available for plants with existing construction permits (which included Seabrook) and to determine "the maximum zone in the vicinity of each such facility for which evacuation of individuals is feasible at various different times corresponding to the representative warning times for various different types of accidents," *id.* § 109(c). Petitioners contend that these provisions required the NRC to judge the effectiveness of a particular plan's protective measures based on "the degree to which the public is actually protected by those measures." Brief for Petitioners at 27.

We do not agree that the Authorization Act required the NRC to develop standards for evaluating each emergency plan in terms of an actual reduction in potential radiation exposure. The Act directed the agency to promulgate planning standards by rule and to require as a condition of licensing that for each plant there exist either a plan that complies with the NRC's regulatory standards for responding to a radiological emergency or, in the alternative, a plan that offers reasonable assurance that public health and safety will not be endangered. Pub. L. No. 96-295, § 109(b)(1). This congressional mandate left to the NRC's discretion the specific requirements of emergency planning. The alternative structure of section 109(b) reflects Congress's assumption that the NRC could develop generic standards that would reasonably assure

³Section 109 of the 1980 NRC Authorization Act is reprinted in the Appendix following this opinion.

the public safety without having to examine the specific safety consequences of each emergency plan for each plant.

Petitioners do not contend that the agency failed to comply with section 109(c) of the Act, which simply required the NRC to report to Congress on the emergency response capabilities of each plant then under construction and to include in that report a description of the maximum feasible emergency planning zone for such plant. See *id.* § 109(c). The fact that Congress directed the NRC to identify enlarged EPZs for all new facilities with reference to feasible evacuation times does not signify that a response plan could only be approved if it would achieve some minimum safe evacuation time for persons in the EPZ. This provision did not constrain the NRC's discretion to define generic standards for such protective measures. See H.R. Rep. No. 1070, 96th Cong., 2d Sess. 27 (1980) (conference report) (while designation of EPZ should consider capability to implement protective measures such as evacuation and sheltering quickly and safely, minimum requirements for planning standards left to NRC discretion).

Petitioners offer a second statutory basis for their contention that the adequacy of emergency planning must be measured by the actual mitigation of harmful consequences. As a result of the TMI accident, they argue, the NRC came to realize that emergency planning is an essential "first tier" safety requirement, along with siting and design engineering, for achieving "adequate protection to the health and safety of the public," the goal of licensing under section 182(a) of the AEA, 42 U.S.C. § 2232(a). See 44 Fed. Reg. 75,167, 75,169 (1979) (rationale for promulgation of section 50.47). They conclude from this that the 1980 Authorization Act required that the same standards be applied in determining the adequacy of offsite emergency planning as are applied in determining the adequacy of site selection and plant design.

From this premise, petitioners reason that each emergency response plan must be judged to provide effective

protection for the public from hypothetical accidents that surpass the containment capabilities of engineered safety features and onsite precautions. The only possible measure of such effectiveness, they claim, is dose consequences.

Petitioners contend that in its 1980 rulemaking proceedings on emergency planning, the NRC embraced this concept and in response to the Authorization Act, rejected the pre-TMI practice of relying on a checklist to guide state and local authorities in the development of emergency plans because that approach was insufficient to achieve "adequate protection." Petitioners argue that the Commission's current interpretation of section 50.47 represents a throwback to the pre-Authorization Act practice because the paragraph (b) catalog of standards is almost identical to the earlier checklist used by the NRC. Cf. NRC, Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities, NUREG-75/111 (1974).

In CLI-90-2, the Commission agreed that emergency planning under section 50.47 is a "first-tier" safety requirement designed to implement the "adequate protection" standard of section 182(a) of the AEA. 31 N.R.C. at 210-13. But the Commission did not believe this fact was material to whether evidence like the Sholly/Beyea testimony is properly considered in the review of an emergency plan. *Id.* at 210. According to the Commission, even though offsite planning is an essential element of adequate public protection, it is not necessarily of equal safety significance with other protective requirements:

[A]dequate emergency planning is "essential," just as adequate lifeboats are essential for a liner carrying passengers at sea. But it is only common sense to acknowledge that emergency plans, like lifeboats, are a backstop, a second or third line of defense that comes into play only in the extremely rare circumstance that engineered design features and human

capacity to take corrective action have both failed to avert a serious mishap.

Id. at 213.

For initial siting approval, the NRC requires the applicant to establish around the proposed plant an "exclusion area" and "low population zone" ("LPZ"), the sizes of which must be determined on the basis of specific maximum safe radiation exposure levels for the public assuming a fission product release from the reactor core. See 10 C.F.R. § 100.11(a)(1)-(2). The siting regulations also require the determination of a "population center distance," measuring the distance to the nearest area of dense population, which must be at least one and one-third times the radius of the LPZ. See *id.* § 100.11(a)(3). Thus, the shorter the population center distance, the greater the design-engineered safeguards required in order to have an LPZ with an outer boundary of no more than three-fourths the distance to the nearest population center. In emergency planning, by contrast, the goal of mitigating dose consequences in the larger EPZs is to be attained through the application of generalized planning standards without consideration of actual levels of dose savings. See *Shoreham*, 24 N.R.C. at 30.

Our limited task on this point is to determine whether, given its recognition that emergency planning is "first-tier," the NRC's generalized approach to dose mitigation in offsite planning is a reasonable exercise of the agency's discretion under section 182(a). We believe it is. Section 182(a) does not expressly require that "adequate protection" be judged by a single standard for different categories of safety features. In fact, we have repeatedly emphasized the broad discretion available to the agency in devising appropriate standards and have held that "adequate protection" permits the acceptance of some level of risk. See *Union of Concerned Scientists v. NRC*, 824 F.2d 108, 117-18 (D.C. Cir. 1987). It is for the NRC to determine whether a level of, or approach to, risk reduction is acceptable for offsite planning that may not be adequate for plant siting and design engineering.

Contrary to petitioners' contention, the Commission's July 23, 1980, rulemaking proceedings do not clearly establish that section 50.47 was intended to achieve a measurable level of effective protection in specific cases. In choosing the word "adequate" over "appropriate" for paragraph (a), certain members of the Commission voiced the opinion that "adequacy" would connote reasonable assurance of effective dose reductions, whereas "appropriate" might be satisfied by a less demanding best-efforts standard that could leave the public in danger. See Transcript of NRC Rulemaking Session, July 23, 1980, at 22-28, 34-43, reprinted in JA at 25-31, 37-46. Petitioners argue that these statements contemplate a case-by-case effectiveness assessment.

We are not convinced. At most, the 1980 rulemaking proceedings establish that the overall goal of emergency planning is reasonable and feasible dose reductions under the circumstances, a proposition reiterated in the Commission's ruling, see CLI-90-2, 31 N.R.C. at 216-17. In the same hearing cited by petitioners, one commissioner stated:

[T]he whole thrust of the rule as I perceive it is that we do things with plant design and operation to try to keep things from happening. Then you say if something does happen it seems sensible ... to have pre-existing plans and notification means so that we can take whatever measures are practical ... to reduce the radiological hazard.

JA at 38. Another commissioner noted that a plan need not

be found inadequate just because you know that there are going to be some periods of time when you can't do that which you would really like to be able to do ... because of the conditions of the accident or the conditions of the weather.

Id. at 41-42. While the adequacy of a plan is necessarily determined on a case-by-case basis, the rulemaking record does not contradict the Commission's decision that the

minimization of harm to the public in each case may be inferred from satisfaction of the sixteen planning standards, regardless of whether the plan will actually protect the entire EPZ under all conditions if one of the particular accidents assessed in the underlying guidelines should occur.

Nor do we accept the claim that under the Commission's interpretation, section 50.47 amounts to little more than a pre-TMI reliance on a pro forma "checklist." Before 1980, the Commission did not require an NRC-approved offsite emergency plan as a condition of licensing. The checklist provided state and local governments with criteria for the development of plans for responding to radiological emergencies and facilitated their coordination with those of the licensee. See NRC, *Emergency Planning for Nuclear Power Plants*, Regulatory Guide 1.101 (rev. 1 Mar. 1977). The regulatory scheme for emergency planning developed by the NRC in response to TMI and the 1980 Authorization Act is markedly more demanding than the prior practice, even though the paragraph (b) planning standards are largely drawn from the earlier criteria. See generally 45 Fed. Reg. 55,401, 55,402-08 (1980).

After 1980, satisfaction of these standards became for the first time a condition of licensing that required the finding of adequacy by FEMA and the NRC. *Id.* at 55,403. The new scheme provided that where significant deficiencies in a plan would preclude the finding of adequacy, the plant could be shut down if the deficiencies were not corrected within four months. *Id.* The geographical area for offsite planning was substantially expanded from the LPZ to two larger zones, the ten-mile radius plume exposure pathway EPZ and the fifty-mile radius ingestion pathway EPZ. See *id.* at 55,406; 44 Fed. Reg. 61,123 (1979); see also *Seacoast Anti-Pollution League v. NRC*, 690 F.2d 1025, 1028-29 & nn.10 & 12 (D.C. Cir. 1982). Also, the new scheme required detailed implementing procedures and more stringent public notification capabilities. See 45 Fed. Reg. at 55,403, 55,407. Finally, emergency plans must

comply with the detailed requirements of Appendix E. These enhanced safety requirements plainly represent something more than a checklist review.

Furthermore, we do not take it from the Commission's ruling in CLI-90-2 that paragraph (a) has no meaning independent of paragraph (b). As we understand the NRC's application of the regulation, paragraph (a) requires the agency to determine that compliance with the sixteen planning standards is more than pro forma. The NRC must assure itself, based on FEMA's review, that the plan addresses each of the individual requirements in a manner that is adequate and implementable. There is ample indication in the administrative record that the Licensing Board employed this approach in its approval of the NH Plan for Seabrook.

For example, the planning standard in section 50.47(b)(10) is satisfied if the response plan demonstrates that "[a] range of protective actions [has] been developed ... for emergency workers and the public." 10 C.F.R. § 50.47(b)(10). Petitioners argued before the Licensing Board that the NH Plan did not satisfy (b)(10) because it did not contain adequate provisions for sheltering the beach population. See CLI-90-3, 31 N.R.C. at 244. Commission guidance makes clear, however, that (b)(10) does not require sheltering as an option but does require an evaluation of the expected advantages of sheltering under local circumstances. *Id.* (citing NUREG-0654, Criterion HJ.10.m). Pursuant to this guidance, the Licensing Board set out to determine "whether the State of New Hampshire has given careful and adequate consideration to sheltering as a protective action" in the NH Plan. LBP-88-32, 28 N.R.C. at 771; see CLI-90-3, 31 N.R.C. at 244.

The Board found that the State had satisfied this standard. In response to comments from FEMA, the State had provided detailed explanations of its approach to the use of sheltering for the beach population. 28 N.R.C. at 758. Under almost all circumstances, early beach closure or evacuation would be the preferred action for the beach

areas because of the lack of beachside structures that would offer substantial protection. *Id.* at 758, 766. The plan included a description of the very low-probability conditions under which emergency planners would choose general sheltering for the beach population. *Id.* at 758-59, 775.

Sheltering would be more readily utilized for the estimated two percent of beach-goers without their own transportation, and the plan identified specific shelters for these persons and provided for sufficient bus transportation along the beach routes. *Id.* at 759, 761. In addition, the Board found that credible surveys established that sheltering providing a dose reduction of at least ten percent existed for the entire peak or near-peak transient summer beach crowd in the very limited circumstances in which sheltering would be the preferred option. *Id.* at 770-72, 775. FEMA agreed with the technical bases for the State's approach to sheltering and concluded that the NH Plan, with its primary reliance on evacuation, satisfied the requirement for a range of protective measures. *Id.* at 767.

Based on these and other findings, the Licensing Board ruled that adequate consideration had been given in the NH Plan to the protective action of sheltering Seabrook's beach population. *Id.* at 776. On review, the Appeal Board upheld the Licensing Board's conclusions on the limited nature of the sheltering option but went even further on the question of implementability, requiring that the NH Plan include more detailed implementing instructions for those very low probability situations when general sheltering of the transient beach population would be the preferred option. See ALAB-924, 30 N.R.C. at 362-73.

Far from applying an uncritical checklist methodology, the Licensing and Appeal Boards exhibited a reasoned evaluation of the adequacy and implementability of the plan's compliance with the paragraph (b) standards. That is the approach we interpret the Commission to require under section 50.47. See, e.g., CL-90-3, 31 N.R.C. at 244-45.

ment of sheltering option). Indeed, in ruling on the immediate effectiveness of the full power authorization, the Commission agreed with the Appeal Board that the plan should include further implementing detail if general beach sheltering was to be an option. *Id.* at 245. Although it also agreed with the Licensing Board that the lack of such detail was not significant, *id.*, the Commission's concurrence with the Appeal Board on the need for further implementing measures reinforces our conclusion that the NRC requires fulfillment of the individual paragraph (b) standards in an adequate and implementable manner.

Having determined that the Commission's interpretation of its emergency planning regulation is consistent with the language of the regulation and is not otherwise contrary to law, we have little difficulty concluding that the Commission's exclusion of the Sholly/Beyea testimony was not improper.

Given the fact that the Licensing Board's task under section 50.47 is limited to a review of the plan's conformity with the paragraph (b) standards and that this review does not entail consideration of the dose consequences that might result from various hypothetical accidents, the Commission had a reasonable basis for concluding that the proffered evidence was not relevant to the proceedings because it would not make the finding of an adequate and implementable plan within the meaning of the regulation more or less likely. *Cf.* Fed. R. Evid. 401. To allow litigation of specific dose consequences would be inconsistent with a methodology that was derived from generic guidelines and was designed to eliminate the need for an examination of hypothetical dose savings. See CL-90-2, 31 N.R.C. at 215-17. This determination is within the NRC's "great discretion to decide what matters are relevant to its licensing decision." *Union of Concerned Scientists v. NRC*, 735 F.2d 1437, 1446 (D.C. Cir. 1984) ("UCS I"), cert. denied, 469 U.S. 1132 (1985).

At bottom, petitioners' contention is that the Sholly/Beyea testimony was relevant to the Commission's

tive emergency planning at Seabrook is inherently impossible because the plant is located so near the crowded ocean beaches, a fact that was described by SAFL counsel at oral argument as an "operating license blocker." They point to post-TMI rules that require applicants for nuclear facility construction permits to file preliminary emergency plans, see 10 C.F.R. § 50.34(a)(10), Appendix E.II ("Preliminary Safety Analysis Report"), and they suggest that this requirement means that after 1980 the feasibility of emergency planning was meant to influence site selection. The implication apparently is that inherent planning difficulties created by the siting of a facility may block section 50.47 approval where the plant received its construction permit, as did Seabrook, prior to TMI.

The problem is that, as discussed above, neither the AEA nor section 50.47 as interpreted by the Commission leads to this implication. The Commission has given no indication that preliminary emergency plans under section 50.34(a)(10) will be used as "site blockers" any more than final emergency plans under section 50.47.

Finally, we note that although the Commission held the Sholly/Beyea testimony inadmissible for purposes of the section 50.47 proceeding, the Commission did suggest a possible use for such evidence. See CLI-90-2, 31 N.R.C. at 217. It noted that when the Licensing Board refused to admit the evidence, petitioners could have filed a petition for a waiver or exception to the normal application of section 50.47, requesting more stringent planning requirements for Seabrook on the ground that "special circumstances with respect to the subject matter of the particular proceeding are such that application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted" 10 C.F.R. § 2.758(b). With their application for a waiver, petitioners could then have submitted the Sholly/Beyea testimony to the Licensing Board in the form of supporting affidavits "set[ting]

to justify the waiver or exception." *Id.* Petitioners failed to avail themselves of this opportunity.

C. Immediate Effectiveness Review

Petitioners argue that the Appeal Board's ruling in ALAB-924 mandated that the Licensing Board hold further hearings on beach sheltering and on the other remanded issues prior to authorizing a full power license for Seabrook, and that, therefore, the Commission acted unlawfully in refusing to vacate authorization of the license and in allowing the Licensing Board's decisions to become immediately effective. They also contend that the Commission's action in CLI-90-3 violated their statutory right to a hearing under section 189(a).

The NRC's rules of practice do not specifically provide for the "mandatory relief" petitioners were seeking in their motion to vacate. See CLI-90-3, 31 N.R.C. at 229. As a practical matter, no order was necessary because an initial decision authorizing a full power license is automatically stayed pending the immediate effectiveness review. See 10 C.F.R. § 2.764(f)(3)(iii). Nevertheless, the Commission chose to entertain petitioners' motion, and, borrowing from the law of judicial mandamus, decided that such extraordinary relief would only be appropriate if the Licensing Board had breached "a clear, nondiscretionary duty to withhold . . . authorization." CLI-90-3, 31 N.R.C. at 229-30 (citing *Ganem v. Heckler*, 746 F.2d 844, 852 (D.C. Cir. 1984)). The decision to adopt this approach was peculiarly within the Commission's discretion.

We cannot say that the Commission acted arbitrarily or capriciously in concluding that the Licensing Board had not violated such a duty. As the Commission observed, no NRC rules preclude the authorization of a license while remand proceedings are pending, and there is precedent for such authorizations. CLI-90-3, 31 N.R.C. at 230; see, e.g., *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-84-53, 20 N.R.C. 1531, 1542-48 (1984). Indeed, 10 C.F.R. § 50.47(c)(1)

plan that are "not significant for the plant in question" may be resolved by the Licensing Board after license issuance. 31 N.R.C. at 230.

The Appeal Board did not state that the deficiencies it identified in the LBP-88-32 partial initial decision precluded authorization. It expressly affirmed the Licensing Board's decision in all respects other than the four specific items and said only that these items required "appropriate corrective action." ALAB-924, 30 N.R.C. at 373. ALAB-924 did make it clear that so long as the NH Plan was to include sheltering as a possible protective option for the general transient beach population, implementing details would have to be included in it, *id.* at 368, 372 n.194; but the Appeal Board's directives did not rule out a finding by the Licensing Board that the planning deficiencies were not significant under section 50.47(c). In fact, the Appeal Board deferred any action on petitioners' motion to vacate in order to give the Licensing Board an opportunity to provide "some explanation of the relevance of 10 C.F.R. § 50.47(c)(1)." JA at 1049. And, as the Licensing Board pointed out in its supplemental opinion, LBP-89-33, 30 N.R.C. at 657 & n.2, only one week prior to the issuance of ALAB-924, the Appeal Board had denied a motion by petitioners for an order directing the Licensing Board to withhold its impending decision in LBP-89-32, even though the Commission had made it known that LBP-89-32 "would have the potential to authorize issuance of the full-power license," CLI-89-19, 30 N.R.C. 171, 173 (1989).

We do not agree that the Commission's application of section 50.47(c) is inconsistent with petitioners' right to a hearing under section 189 of the AEA. Section 189(a) provides that in any licensing proceeding, "the Commission shall grant a hearing upon the request of any person whose interest may be affected." 42 U.S.C. § 2239(a)(1). We have held that section 189(a) guarantees an opportunity for a hearing on issues that the NRC considers material to licensing. See *UCS I*, 735 F.2d at 1443, 1447-48.

consider all issues relating to deficiencies in a particular response plan to be material to the basic findings required for license authorization under sections 50.47(a)(1) and 50.57(a)(3). Thus, consistent with the AEA, the Licensing Board could choose to address the remanded issues in post-licensing hearings upon finding that the issues were not significant for emergency planning at Seabrook. See CLI-90-3, 31 N.R.C. at 230-31. In addition, it is established NRC practice that, where appropriate, the Licensing Board may refer minor safety matters not pertinent to its basic findings to the NRC staff for post-hearing resolution, and may make predictive findings regarding emergency planning that are subject to post-hearing verification. *Id.* at 231 n.11.

Turning to its immediate effectiveness review, the Commission examined the reasonableness of the Licensing Board's supplemental opinion explaining why the four remanded issues were not significant for the adequacy of emergency planning. On the issue of letters of agreement with school personnel, the Commission believed that the Licensing Board's further explanation of its original findings might well satisfy the Appeal Board's concerns; at any rate, there was support for the finding that sufficient school personnel would accompany children in an emergency and no indication that evacuation would be delayed even if the personnel did not participate. *Id.* at 234-35. The Commission found reasonable the Licensing Board's opinion that the second remanded issue — the accuracy of the special-needs survey — was a question more of fine tuning an acceptable methodology than of developing a different methodology, and that any uncertainty about the size of the special-needs population was probably not large enough to require additional transportation resources. *Id.* at 239-40. The accuracy of the evacuation time estimates for advanced life support patients remained unresolved, in the Commission's opinion, but the error was not large enough to cause authorities to recommend sheltering over evacuation and could easily be corrected, given that such patients were found at only two locations in the EPZ. *Id.* at 243.

Finally, on the lack of implementing details for beach sheltering, the Commission believed that correcting this deficiency would not be difficult because a comprehensive survey of available beachside shelters had been prepared, and the Appeal Board's mandate simply required that the NH Plan designate which shelters on the survey list would be suitable and available for use. *Id.* at 248 & n.45. Moreover, the Commission concurred with the Licensing Board that the sheltering issue was not significant. Evacuation would be the primary protective action for the beach and the record showed that the protection afforded by the structures at the beach was "trivial," as further evidenced by the fact that the Utilities Plan, which the Licensing Board had found adequate, did not include sheltering as an option for the Massachusetts beaches. *Id.* at 248. In this regard, we note that in later proceedings, New Hampshire revised its plan to omit any provision for sheltering the general beach population other than a "shelter in place" option, and the Licensing Board therefore concluded that this issue was resolved. LBP-90-20, 31 N.R.C. 581, 585 (1990).

It is evident that the Commission did not abuse its discretion in concluding that the Licensing Board's findings on these matters were reasonable. See *Oystershell Alliance*, 800 F.2d at 1206. Hence, we also deny the petitions for review as to this full power issue.

D. Low Power Licensing Issues (No. 89-1306)

We need not devote much analysis to petitioners' arguments concerning the Appeal Board's interpretation of the cooling system contention in the low power proceedings. See background discussion at pages 13-14 above. On this issue, petitioners direct most of their effort toward relitigating the question of whether microbiologically induced corrosion is within the four corners of NECNP's 1982 contention. This court, however, is limited to deciding whether the Appeal Board's ruling in ALAB-899 was arbitrary or capricious, or otherwise contrary to law. See 5 U.S.C. § 706(2)(A). Petitioners have not shown that it was

They argue only that the Appeal Board acted arbitrarily by ignoring certain terms in the contention that could conceivably be read to encompass the build-up of microscopic aquatic organisms, and that the Board had no reasonable grounds for disregarding the opinion of NECNP's expert concerning the technical interpretation of these terms. We think the Appeal Board's construction was reasonable because it took into account the entire context of the contention, whose heading and stated basis focus solely on the blockage of cooling systems due to the accumulation of marine life and debris. See ALAB-899, 28 N.R.C. at 96-97. One important purpose of the NRC's pleading requirements in 10 C.F.R. § 2.714(b)(2) is to put all parties reasonably on notice about what issues may be raised. 28 N.R.C. at 97. Therefore, it was sensible for the Board to approach the matter as a straightforward question of linguistic construction and not as a matter of technical interpretation requiring a battle of experts. We deny the petition as to this issue.

The second low power issue in No. 39-1306, however, does raise questions that justify granting this petition. Petitioners argue that the NRC violated their statutory right to a hearing by rejecting the contention concerning the onsite weaknesses identified in the 1988 full participation exercise. See background discussion at pages 15-16. Because we are unable to determine whether the Appeal Board properly considered the potential materiality of the allegations involved, we must remand this issue for further explanation.

The Appeal Board's ruling in ALAB-918 is the final agency action on the exercise contention and is the only opinion before us. Petitioners challenge the Appeal Board's application, in ALAB-918, of the late-filed contention criteria of 10 C.F.R. § 2.714(a)(1) on the ground that use of these criteria cannot be squared with our decisions in *UCS I* and *San Luis Obispo Mothers for Peace v. NRC*, 751 F.2d 1287 (D.C. Cir. 1984) ("*Mothers for Peace I*"), *vacated in part*, 760 F.2d 1321 (D.C. Cir. 1985) (*en*

banc), and *aff'd*, 789 F.2d 26 (D.C. Cir.) (en banc), *cert. denied*, 479 U.S. 923 (1986).

Under the NRC's rules, intervenors in licensing proceedings must file their proposed contentions at least fifteen days prior to the Licensing Board's prehearing conference. 10 C.F.R. § 2.714(b)(1). The Board may grant additional time for the filing of contentions based upon a balancing of the factors set forth in section 2.714(a)(1) governing nontimely petitions for intervention. *Id.* Those factors are:

- (i) Good cause, if any, for failure to file on time.
- (ii) The availability of other means whereby the petitioner's interest will be protected.
- (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
- (iv) The extent to which the petitioner's interest will be represented by existing parties.
- (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

Id. § 2.714(a)(1).

Because of the requirement, under section 2.714(b)(1), that contentions be filed prior to the prehearing conference, it would appear that almost any contention based on the results of a plant's full participation exercise would be subject to a balancing of these factors; under NRC rules, the exercise must take place less than two years prior to full power licensing, *id.* Part 50, Appendix E.IV.F.1, a period that generally falls well after the prehearing conference. The full participation exercise for Seabrook, for example, occurred in June 1988, more than six years after the prehearing conference on the low power licensing issues.

Under *UCS I*, the NRC may not eliminate from the licensing proceedings consideration of evidence that is rel-

emergency preparedness exercises. 735 F.2d at 1443-48; see *Union of Concerned Scientists v. NRC*, No. 89-1617, slip op. at 7-8 (D.C. Cir. Nov. 30, 1990) (reading *UCS I* to require a hearing on all material "issues," as distinct from all "evidence" or "information" that comes to light after the time of the initial application). At the same time, we fully recognize that the NRC has "wide discretion to structure its licensing hearings in the interests of speed and efficiency." 735 F.2d at 1448. This discretion may include, for example, rules on the admissibility of evidence, enhanced pleading requirements in support of contentions, and procedures for summary disposition of claims not meeting the agency's criteria. See *id.* In short, we allow for a balancing between the public's right to a hearing under section 189 and the NRC's discretion to structure efficient licensing proceedings. See *id.* at 1446-49.

We are not willing to say that the sensitive balance outlined in *UCS I* is upset whenever the NRC applies the late-filed contention factors to submissions based on deficiencies revealed in exercises occurring after the prehearing cut-off. The unfettered ability to file a late contention may significantly undermine the efficiency of a proceeding even if the contention is based on newly discovered information. The NRC should retain discretion to impose enhanced procedural requirements on such filings so long as the use of that discretion is consistent with section 189.

On their face, the five factors listed in section 2.714(a)(1) as justifying intervention are not well suited to the question of whether a late-filed contention should be considered where based on deficiencies found in a subsequent exercise, and we think it odd that the NRC would choose to apply them in this context. An exercise contention will in practice almost always be filed out of time, so the question of "good cause" seems less central. Two of the other factors also do not make much sense here. Factor (iv) does not seem relevant because there will almost never be other parties already litigating the issues raised by the new contention. And factor (v) is potentially incon-

sistent with *UCS I*s holding that emergency preparedness exercises are material to licensing; it should not be a strike against admitting the contention that it will "broaden the issues" to include material questions about the adequacy of preparedness. Nevertheless, in practice the NRC's boards have attempted to compensate somewhat for the problematic nature of these factors, and we will look to the manner in which they have been applied in the particular case before us.

We think the Appeal Board's application of factor (i) to petitioners' exercise contention is reasonable and consistent with section 189. In considering "good cause" for a late filing, the adjudicatory boards insist that "a late-filed contention must be tendered promptly upon the discovery of the information upon which it is based." ALAB-918, 29 N.R.C. at 482 (citing *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 N.R.C. 1041, 1048 (1983)). This prompt-filing requirement is in line with the agency's broad discretion to structure efficient proceedings. Moreover, we have been presented with no argument for rejecting the Board's view that factor (i) is the "most crucial" in the analysis. See 29 N.R.C. at 484.

Applied in this fashion, the first factor is not contrary to *Mothers for Peace I*, which held that under section 189(a), the NRC may not unjustifiably require that a material contention satisfy the heightened evidentiary standards for reopening a closed record. See 751 F.2d at 1316. *Mothers for Peace I* does not constrain the NRC's discretion to impose reasonable limits on the untimely presentation of claims, including claims based on late-breaking developments that are not promptly filed. We do not express an opinion here about whether the NRC may justifiably apply these five factors to contentions that are tendered promptly upon discovery of newly revealed information. The Appeal Board made it clear that that would be the agency's practice in such cases. See 29 N.R.C. at 480.

In the present case, the Appeal Board did not act arbi-

good cause for their failure to tender the exercise contention promptly. The Appeal Board agreed with the Licensing Board that petitioners had no convincing justification for waiting until September 16, 1988, to present their contention when all of the essential information on which it was based was available in the July 6 inspection report, which was received by petitioners no later than July 15. *Id.* at 482-83. Although this period of approximately two months does not strike us as an exceptional delay, we are not willing to interpose our judgment. The low power proceedings had advanced to a stage when promptness might have been especially important. Indeed, the Licensing Board had renewed its authorization of a low power license when petitioners moved to admit their contention. See *id.* at 475-76.

The problem with the Appeal Board's reasoning relates to its application of the remaining four factors. The NRC requires a "compelling" showing on these factors to overcome a lack of good cause under (i). *Id.* at 484. In this counterbalancing, the greatest emphasis seems to be on factor (iii) — the ability of the petitioning party to assist in developing a sound record. See *id.* at 483-85. The Appeal Board stated that petitioners "had an obligation in addressing the third criterion to set out with as much particularity as possible the precise issues they plan to cover, the identity of their prospective witnesses, and a summary of their proposed testimony." *Id.* at 483. Here, the Appeal Board upheld the finding that this significant factor weighed against admitting the contention because petitioners, who were "experienced litigants," had failed in their motion papers "to furnish the required information in the prescribed form." *Id.* at 483-84.

Our concern is that in focusing on whether petitioners' papers satisfied these formal "particularity" requirements, the Appeal Board may have lost sight of the potential materiality of the issues raised by the contention and thus may have strayed from the line laid down in *UCS I*. We think section 189 required the Appeal Board to provide an affirmative explanation as to whether petitioners' allo-

gations raised any material issue and, if they did, how that materiality was to be weighed against petitioners' delay in promptly filing the contention. We note, for example, that petitioners offered an expert affidavit alleging that the July 6 inspection report showed fundamental deficiencies in Seabrook's onsite emergency preparedness. See Affidavit of Robert D. Pollard, Sept. 16, 1988. Petitioners specifically contended that the deficiencies in the onsite plan precluded a finding of compliance with paragraphs (b)(2), (b)(14), and (b)(15) of the section 50.47 planning guidelines. JA, No. 89-1306, at 253-54.

The Appeal Board failed to consider these allegations in analyzing whether, on balance, it was proper to reject petitioners' late-filed claims. The Licensing Board did engage in an extended discussion of the safety significance of the exercise issues in the context of its ruling on petitioners' motion to reopen the record, see LBP-89-4, 29 N.R.C. 62, 74-86 (1989), but the Appeal Board declined to address that portion of the Licensing Board's decision, ALAB-918, 29 N.R.C. at 485. Thus, we cannot impute this reasoning to the higher board.

The Appeal Board provided a second, independent basis for its opinion, namely, that no hearing was required on petitioners' exercise contention because the contention did not involve a "fundamental flaw" in the onsite plan. *Id.* at 485. Under NRC precedent, a fundamental flaw is a deficiency that precludes the finding of reasonable assurance under 50.47(a)(1), and is confined to deficiencies that reflect a failure of an essential element of the plan that can be remedied only through a significant revision of the plan. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 N.R.C. 499, 504-05 (1988) ("*LILCO*"). We acknowledged this concept in *UCS I*, and stated that our gloss on section 189 does not restrict the NRC's authority to adopt this substantive licensing standard. 735 F.2d at 1448. We nevertheless recognized that even the best of plans may be so poorly implemented that it would be foolhardy to license

exercise, such as serious shortcomings in staff training, were substantially corrected. Cf. 10 C.F.R. § 50.47(b)(15) (requiring plan to provide for adequate training of emergency personnel). Thus we noted that the agency would still be subject to challenge for applying the standard arbitrarily or capriciously. See 735 F.2d at 1448 n.20.

Here, we are unable to determine from the Appeal Board's terse explanation whether it acted properly in applying the fundamental flaw concept. The Board simply stated the conclusion that the purported weaknesses in the training of Technical Support Center and Emergency Operations Facility staff could be readily corrected through minor modifications in operating procedures or supplemental training and would not require any revision in the onsite plan. ALAB-918, 29 N.R.C. at 485-86. Once again, this judgment does not meet the allegations set out in petitioners' contention and in the Pollard Affidavit concerning adequate compliance with specific planning standards. Moreover, in a second affidavit, filed in response to the NRC's September 28 follow-up inspection report, petitioners presented further evidence to support their claim that the alleged deficiencies had not been adequately addressed. See Second Affidavit of Robert D. Pollard, Nov. 3, 1988.

We fail to see how the Appeal Board could reasonably determine the materiality of this contention under the fundamental flaw rubric without considering the supporting allegations. The *LILCO* opinion relied on by the Appeal Board draws a distinction between fundamental flaws and "[m]inor or isolated problems on the day of the exercise" that can be "readily corrected." ALAB-903, 28 N.R.C. at 505, 506, cited in ALAB-918, 29 N.R.C. at 485. There would appear to be a substantial variance between such nonfundamental deficiencies and the serious shortcomings in staff competency alleged in the Pollard Affidavit.

Accordingly, we must grant the petition for review of this issue and remand ALAB-918 to the Appeal Board for

further consideration of the materiality of petitioners' exercise contention.

As is apparent, we disagree with the NRC and PSNH that this issue was mooted by the September 1989 exercise of Seabrook's onsite plan. Appendix E of the emergency planning regulations calls for a precense onsite drill if the full participation exercise occurs more than a year before full power licensing. 10 C.F.R. Part 50, Appendix E.IV.F.1. We do not believe that such an onsite exercise is intended to supersede the full participation drill, and thus we reject the NRC's contention that the onsite exercise becomes the "legal underpinning" for approval of the full power license. Supplemental Brief for Respondents at 6. The Licensing Board essentially rejected the view now adopted by staff counsel when it described the purpose of the more limited onsite drill: "to ensure that emergency response personnel retain sufficient knowledge and expertise to actuate an emergency [plan] *already determined through a reasonably current 'full participation' exercise to be adequate and without fundamental flaws.*" LBP-89-38, 30 N.R.C. 725, 744-45 (1989) (emphasis added).

In granting the petition for review of ALAB-918, we do not vacate the authorization of Seabrook's operating licenses. In appropriate cases, we will remand without vacating an agency's order where the reason for the remand is a lack of reasoned decisionmaking. *E.g., International Union, UMW v. Mine Safety & Health Admin.*, No. 89-1702, slip op. at 12 (D.C. Cir. Nov. 30, 1990). "Relevant to the choice are the seriousness of the order's deficiencies (and thus the extent of doubt whether the agency chose correctly) and the disruptive consequences of an interim change that may itself be changed." *Id.*

On the record before us, only the allegations and affidavits offered by petitioners provide a basis for concern about the adequacy of onsite preparedness. Although we are unwilling to conclude that the September 1989 onsite

potentially implicated by petitioners' contention, we see nothing in the results of that exercise to indicate any ongoing flaws in staff competency. Most important, we note that Seabrook was scheduled for a second full participation exercise in December 1990. A clean record in that exercise will likely moot this issue. Hence, we decide against imposing an immensely disruptive interim status quo that may itself be displaced by the Appeal Board's subsequent reasoning or by the more recent full participation exercise.

We therefore leave it to the Appeal Board to determine whether our opinion suggests any reason for altering the plant's licensing status. In particular, we have received from petitioners no guidance as to how, if at all, the Appeal Board's ruling in ALAB-918 may bear on the Commission's decision to allow the authorization of full power operations. Because the full power license necessarily depends upon the resolution of all issues material to low power licensing, including the adequacy of the onsite emergency plan, this question merits the agency's consideration.

III. CONCLUSION

We deny the petitions for review of Seabrook's full power license in Nos. 90-1132 and 90-1218. The Commission's interpretation of its emergency planning regulation does not do violence to the language of the rule and is within the agency's statutory discretion, and the related decision to exclude the Sholly/Beyea testimony was not arbitrary or capricious or otherwise unlawful. Furthermore, the Commission did not abuse its discretion in allowing the immediate effectiveness of the full power authorization. The decision denying a waiver of the agency's financial qualification exemption is not a final order, and petitioners' challenge to that ruling is not properly before us.

The low power licensing petition in No. 89-1306 is denied in part and granted in part. The Appeal Board

acted reasonably in interpreting the scope of petitioners' cooling system contention, and we deny review of ALAB-899. We are, however, unable to conclude that the Appeal Board properly considered petitioners' rights under section 189 when it rejected their onsite exercise contention. For that reason, we grant the petition for review of ALAB-918 and remand this ruling for reasoned decision-making. This conclusion, however, does not give us reason to disturb Seabrook's operating licenses.

So ordered.

APPENDIX

10 C.F.R. § 50.47(a), (b) (1990):

Emergency Plans.

(a)(1) Except as provided in paragraph (d) of this section, no operating license for a nuclear power reactor will be issued unless a finding is made by NRC that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

(2) The NRC will base its finding on a review of the Federal Emergency Management Agency (FEMA) findings and determinations as to whether State and local emergency plans are adequate and whether there is reasonable assurance that they can be implemented, and on the NRC assessment as to whether the applicant's onsite emergency plans are adequate and whether there is reasonable assurance that they can be implemented. A FEMA finding will primarily be based on a review of the plans. Any other information already available to FEMA may be considered in assessing whether there is reasonable assurance that the plans can be implemented. In any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on questions of adequacy and implementation capability.

(b) The onsite and, except as provided in paragraph (d) of this section, offsite emergency response plans for nuclear power reactors must meet the following standards:

(1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

(4) A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

(5) Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

(6) Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

(7) Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news

media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

(8) Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

(9) Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

(10) A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

(11) Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

(12) Arrangements [sic] are made for medical services for contaminated injured individuals.

(13) General plans for recovery and reentry are developed.

(14) Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

(15) Radiological emergency response training is provided to those who may be called on to assist in an emergency.

(16) Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

NRC Authorization Act for Fiscal Year 1980, Pub. L. No. 96-295, § 109, 94 Stat. 780, 783-85 (1980):

(a) Funds authorized to be appropriated pursuant to this Act may be used by the Nuclear Regulatory Commission to conduct proceedings, and take other actions, with respect to the issuance of an operating license for a utilization facility only if the Commission determines that —

(1) there exists a State or local emergency preparedness plan which —

(A) provides for responding to accidents at the facility concerned, and

(B) as it applies to the facility concerned only, complies with the Commission's guidelines for such plans, or

(2) in the absence of a plan which satisfies the requirements of paragraph (1), there exists a State, local, or utility plan which provides reasonable assurance that public health and safety is not endangered by operation of the facility concerned.

A determination by the Commission under paragraph (1) may be made only in consultation with the Director of the Federal Emergency Management Agency. If, in any proceeding for the issuance of an operating license for a utilization facility to which this subsection applies, the Commission determines that there exists a reasonable assurance that public health and safety is endangered by operation of the facility, the Commission shall identify the risk to public health and safety and provide the applicant with a detailed statement of the reasons for such determination. For purposes of this section, the term "utilization facility" means a facility required to be licensed under section 103 or 104(b) of the Atomic Energy Act of 1954.

(b) Of the amounts authorized to be appropriated under section 101(a), such sums as may be necessary shall be used by the Nuclear Regulatory Commission to —

(1) establish by rule —

(A) standards for State radiological emergency response plans, developed in consultation with the Director of the Federal Emergency Management Agency, and other appropriate agencies, which provide for the response to a radiological emergency involving any utilization facility,

(B) a requirement that —

(i) the Commission will issue operating licenses for utilization facilities only if the Commission determines that —

(I) there exists a State or local radiological emergency response plan which provides for responding to any radiological emergency at the facility concerned and which complies with the Commission's standards for such plans under subparagraph (A), or

(II) in the absence of a plan which satisfies the requirements of subclause (I), there exists a State, local, or utility plan which provides reasonable assurance that public health and safety is not endangered by operation of the facility concerned, and

(ii) any determination by the Commission under subclause (I) may be made only in consultation with the Director of the Federal Emergency Management Agency and other appropriate agencies, and

(C) a mechanism to encourage and assist States to comply as expeditiously as practicable with the standards promulgated under subparagraph (A) of this paragraph,

(2) review all plans and other preparations respecting such an emergency which have been made by each State in which there is located a utilization facility or in which construction of such a facility has been commenced and by each State which may be affected (as determined by the Commission) by any such emergency,

(3) assess the adequacy of the plans and other preparations reviewed under paragraph (2) and the ability of the States involved to carry out emergency evacuations during an emergency referred to in paragraph (1) and submit a report of such assessment to the appropriate committees of the Congress within 6 months of the date of the enactment of this Act,

(4) identify which, if any, of the States described in paragraph (2) do not have adequate plans and preparations for such an emergency and notify the Governor and other appropriate authorities in each such State of the respects in which such plans and preparations, if any, do not conform to the guidelines promulgated under paragraph (1), and

(5) submit a report to Congress containing (A) the results of its actions under the preceding paragraphs and (B) its recommendations respecting any additional Federal statutory authority which the Commission deems necessary to provide that adequate plans and preparations for such radiological emergencies are in effect for each State described in paragraph (2).

(c) In carrying out its review and assessment under subsection (b)(2) and (3) and in submitting its report under subsection (a)(5), the Commission shall include a review and assessment, with respect to each utilization facility and each site for which a construction permit has been issued for such a facility, of the emergency response capability of State and local authorities and of the owner or operator (or proposed owner or operator) of such facility. Such review and assessment shall include a determination by the Commission of the maximum zone in the vicinity of each such facility for which evacuation of individuals is feasible at various different times corresponding to the representative warning times for various different types of accidents.