

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Public Service Company of )  
New Hampshire )  
(Seabrook Station, Units 1 & 2) )

Docket Nos.: 50-443  
50-444

REQUEST FOR ACTION PURSUANT TO 10 CFR 2.206

Notice is hereby given that by petition dated May 2, 1979, the Seacoast Anti-Pollution League, Portsmouth, New Hampshire, requested that the Director of Nuclear Reactor Regulation issue an Order suspending or revoking Construction Permit Nos. CPPR-135 and CPPR-136 issued for the Seabrook Station pending a determination that evacuation of persons within 30 miles of the site is feasible and the site is still acceptable after analysis of the consequences of a Class 9 accident.

This petition is being treated pursuant to 10 CFR 2.206 of the Commission's regulations and, accordingly, appropriate action will be taken on the petition within a reasonable time.

A copy of the petition is available for inspection in the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. 20555, and in the local public document room for the Seabrook Station at the Exeter Public Library, Front Street, Exeter, New Hampshire 03883.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold P. Denton, Director  
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,  
this 24th day of May, 1979.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

TO: DIRECTOR OF NUCLEAR REACTOR REGULATION  
RE: CONSTRUCTION PERMITS CPPR-135  
CPPR-136

In the Matter of  
PUBLIC SERVICE COMPANY OF  
NEW HAMPSHIRE, et al.  
(Seabrook Station, Units 1 and 2)

Docket Nos. 50-443  
50-444

REQUEST FOR AN ORDER TO SHOW CAUSE WHY CONSTRUCTION  
PERMITS FOR THE PROPOSED NUCLEAR POWER PLANT AT SEA-  
BROOK SHOULD NOT BE SUSPENDED OR REVOKED

This request for an Order to Show Cause is made on behalf of the Seacoast Anti-Pollution League, 5 Market Street, Portsmouth, New Hampshire, 03801 an Intervenor in the above captioned.

The relief requested is an Order to Show Cause why the Seabrook construction permits should not be suspended or revoked because of:

1. Failure of NRC to require development of an evacuation plan beyond the low population zone as part of the construction permit proceedings, and
2. Failure of NRC to evaluate the consequences of a Class 9 accident, including the necessity for evacuation beyond the low population zone.

BACKGROUND OF THE EVACUATION ISSUE

The Application for Seabrook construction permits was docketed in July of 1973. During the period of license review, the NRC Regulatory staff took the position, which it has maintained throughout

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the proceeding in the above captioned, that demonstration of the ability to evacuate persons beyond the low population zone was within the jurisdiction of the Staff to require in a construction permit proceeding.

Over objection by the Applicants, the issue of evacuation feasibility beyond the LPZ was admitted as an issue in contention before the Atomic Safety and Licensing Board, and was the subject of extensive evidentiary hearings in June of 1975.

However, in the Initial Decision, LBP 76-26, the Licensing Board specifically declined to rule on the contested issue of the feasibility of evacuation beyond the LPZ, and particularly of Hampton Beach, for two reasons.

First, the Board held that the anticipated radiological doses likely to be received as the result of a design basis accident should be treated "realistically" rather than "conservatively." When so treated, the Board found that the likely doses would be well below those doses for which protective action would be recommended under the protective action guides. Thus the Board held:

"That evacuation of the area within about five miles of the Seabrook station would become advisable, or necessary, only in the event of an accident whose consequences are substantially greater than and less probable than those reasonably to be expected from a design basis accident."

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The Licensing Board further held, in a supporting Opinion, that in any event the Commission's regulations did not intend any requirement for a demonstration of protection of persons beyond the LPZ.

"...Appendix E should not be read as requiring consideration by a licensee of protective measures beyond the LPZ, but that so far as design basis events are concerned, the several safety features in a plant should be credited with reasonable protection of populations outside the LPZ."

In short, the Licensing Board's decision held that a demonstration of the feasibility of protective action, primarily meaning evacuation, was only required for the LPZ, a circle it held was properly drawn at a radial distance of 1.5 miles from the reactors, and which did not include within its orbit Hampton Beach or the other barrier beaches. As a result, the Licensing Board did not resolve the conflicting testimony about the feasibility of evacuating persons more than 1.5 miles from the reactors, such as persons on Hampton and the other beaches.

Appeals from the Licensing Board decision were taken to the Atomic Safety and Licensing Appeal Board by the Intervenor New England Coalition on Nuclear Pollution, the Attorney General of New Hampshire, and by the NRC staff itself. The Appeal Board disposed of the evacuation issue in ALAB-390, April 3, 1977, in a manner contrary to the Staff's position. The Appeal Board held:

"That, under the Commission's regulations in their present form, consideration is not to be given in a licensing proceeding to the feasibility of devising an emergency plan for the protection (in the event of an accident) of persons located outside the low population zone."

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Because of the ruling that the regulations did not permit consideration of persons outside the LPZ in the event of an accident, the Appeal Board did not need to, and did not, consider the propriety of treating the radiological consequences of a design basis accident on "realistic" rather than "conservative" assumptions, as had been done by the Licensing Board. In a concurring opinion, Appeal Board member Farrar stated:

"I believe there is much to be said for the view, pressed upon us here, that consideration need be given to the feasibility of protecting people located outside (as well as inside) a reactor's low population zone from radiological hazards in the event of a serious accident."

Mr. Farrar went on to point out that the Advisory Committee on Reactor Safety had stated, in a December 10, 1974 letter reviewing the Seabrook Application:

"Because of the proximity of the Seabrook station to the beaches on the coast and because of the nature of the road network serving the beaches, the Applicant has given early attention to the problem of evacuation. The Committee believes, however, that further attention needs to be given to evacuation of residents and transients in the vicinity even though they maybe outside the LPZ." (Emphasis supplied by Mr. Farrar.)

In a subsequent Appeal Board decision, reviewing other aspects of the Initial Decision in the Seabrook proceeding, ALAB-422, the Appeal Board further held that the LPZ for Seabrook should be reduced from 1.5 to 1.25 miles, based upon

the Appeal Board's finding that the Licensing Board had erred in treating Portsmouth, New Hampshire, approximately 11 miles from the reactor, as the population center distance. Contrary to the Applicant's and Staff's position, the Appeal Board held that the appropriate population center distance was Hampton Beach, since:

"There is no doubt that, at peak periods there, in excess of 25,000 people will be found in a densely populated area--indeed, no one disputes the claim that this area will be at times the most densely populated area in the State."

The effect of this holding, however, was merely to reduce the area in which the Applicants were held to have a duty to demonstrate an ability to protect persons in the event of an accident, since the Appeal Board adhered to its ruling in ALAB-390 that NRC regulations did not permit consideration of evacuation of persons outside the low population zone.

On September 21, 1978, the NRC's Office of Standards Development notified NRC licensees that the Commission was, in effect, reversing the holding of ALAB-390 by means of a proposed rule.

"The proposed changes to the Commission's Part 50, Appendix E, would require an applicant to consider emergency planning beyond the low population zone...."

The proposed rule, designated to provide "interim guidance," and published in the Federal Register on August 23, 1978 provides:

"The extent to which emergency planning, which may include evacuation measures, would extend to areas beyond the LPT would be based on the design features of the facility, and the physical and population characteristics of the land surrounding the plant site as well as the acceptable protective action criteria developed by federal, state and local authorities."

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The Notice to Licensees also stated that,

"Where a construction permit has been issued, the emergency plans will be reviewed at the operating license stage."

In summary, it is clear that at the present time:

1. No determination of the feasibility of protecting persons beyond the Seabrook LPZ, 1.25 miles from the reactors, by evacuation or otherwise has been made.
2. The reason for not requiring such a demonstration, the lack of regulatory authority to do so, has been expressly repudiated by the Commission in promulgating the proposed rule.
3. The alternate basis for not requiring proof of the feasibility of evacuation beyond the LPZ, the use of "realistic" rather than "conservative" radiological dose assumptions, has never been reviewed or approved by the Appeal Board or the Commission, or even endorsed by the Staff.
4. The issue of evacuation must be dealt with, in any event, during the operating license stage for the proposed Seabrook plant.<sup>1</sup>

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<sup>1</sup>The Seabrook construction permits, it should be noted, are still not final. They are under challenge before the First Circuit Court of Appeals as to the Commission's discharge of its duties as to alternative sites, and under challenge in the same Court with regard to the Commission's treatment of the nuclear waste issue, now pending before the District of Columbia Court of Appeals on remand. In addition, a seismic issue at the Seabrook site awaits possible Commission review upon completion of Appeal Board member Farrar's full dissent on this subject. (See ALAB-422 and the Commission's Order of September 15, 1977.)

BACKGROUND OF THE CLASS 9 ACCIDENT ISSUE

In its Safety Evaluation Report and Final Environmental Statement, consistent with established practice, the NRC Regulatory Staff declined to consider the consequences of the so-called Class 9 accident. (FES 7-3) A Class 9 accident is, by definition, an accident that involves the failure of engineered safety features, and includes such scenarios as a core meltdown with consequent breach of containment.

The Staff, in order to avoid the evaluation of the consequences of a Class 9 accident in the performance of its NEPA review, appears to have relied upon WASH 1400, the reactor safety study, more commonly known as the Rasmussen Report. (FES Chapter 7) The Licensing Board, in adopting the Staff's view that no consideration need be given to the Class 9 accident, relied upon the proposed annex to Appendix D to 10 C.F.R. Part 50. The proposed annex admitted that "the consequences [of a Class 9 accident] could be severe." However, the annex also stated that "the probability of their occurrence is so small that the environmental risk is extremely low."

However, in the Initial Decision, the Licensing Board, although adopting the Staff's position that no consideration of a Class 9 accident was required, added:

"With regard to accidents larger than those considered in safety evaluations it is clear that evacuation in the event of a Class 9 accident would be desirable, and indeed in some cases necessary." (Citing WASH 1400)

Since the Initial Decision, however, the basis for refusing to consider the consequences of a Class 9 accident, that is

the assumption of extremely low probability of this occurrence, has been severely undermined by action of both the Commission and of the Regulatory Staff.

First, in Regulatory Guide 4.7, the Staff had long ago recognized that some guidance for implementing the requirements of 10 C.F.R. Part 100 was appropriate. Regulatory Guide 4.7 provides that:

"Areas of low population density are preferred for nuclear power station sites."

The Regulatory Guide goes on to provide as follows:

"If the population density, including weighted transient population, projection at the time of initial operation of a nuclear power station exceeds 500 persons per square mile averaged out over any radial distance out to 30 miles (cumulative population at a distance divided by the area at that distance), or the projected population density over the lifetime of the facility exceeds 1,000 persons per square mile averaged out over any radial distance out to 30 miles, special attention should be given to the consideration of alternative sites with lower population densities."

In December 1978, in NUREG-0501, entitled "NRC Staff Testimony Related to Alternative Sites to Seabrook I and II," the Staff for the first time presented evidence of population densities at Seabrook averaged out over a radial distance of 30 miles. This study showed that the "trip levels" of Regulatory Guide 4.7 were exceeded both in 1980 three years prior to the start of plant operation, and in 2020, near the end of plant operation, at most radial mile markers. The Staff's testimony further showed that none of the alternative sites being canvassed in detail by the Staff had population densities as high as those

at the proposed Seabrook site.

Finally, prior to the release of NUREG-0501, but unknown to counsel for the person making this request, the Staff had changed the position it had taken before the Licensing Board where it had contended that the consequences of a Class 9 accident need not be considered. In Staff action document SECY -78-137, March 7, 1978, the Staff pointed out that in certain cases, such as the proposed Clinch River Breeder Reactor and the floating nuclear power plant, it had analyzed the consequences of a Class 9 accident. In SECY-78-137, the Staff presented the following recommendation for Commission action:

"Pending completion of the Commission's review of its reactor siting policy, that the Staff perform quantitative assessments of the relative differences in Class 9 accident consequences and risks in the review of alternative sites where the proposed site exceeds the general population guidelines of Regulatory Guide 4.7."

Thus, the Staff's position in the FES appears to have been substantially modified, as became clear during the reopened hearings on alternative sites held before the Appeal Board in January of 1979. At this point, it appears that the Staff would now require some evaluation of the consequences of a Class 9 accident when a proposed site, as in the case of Seabrook, exceeds the "trip levels" of Regulatory Guide 4.7.

Second, the Commission has itself taken action which undermines the prior Staff decision to not evaluate the consequences of a Class 9 accident. As previously pointed out, the Staff, apparently, and the Licensing Board explicitly, relied upon NASH 1400, the Rasmussen Report, to support the conclusion that

the consequences of a Class 9 accident need not be considered because the probability of its occurrence was "so small that [its] environmental risk is extremely low."

On January 19, 1979, the Commission expressly repudiated the executive summary of WASH 1400, the Rasmussen Report, and further stated that:

"Absolute values of the risk presented by WASH 1400 should not be used uncritically either in the regulatory process or for public policy purposes...."

The Commission added:

"In particular, in light of the Review Group's conclusions on accident probabilities, the Commission does not regard as reliable the Reactor Safety Studies numerical estimate of the overall risk of reactor accident."

Thus, the staff decision not to require consideration of Class 9 accident consequences, insofar as it depended on WASH 1400's conclusions, is at this point without proper scientific or analytical foundation.

As a result, both the environmental and safety analyses of the proposed Seabrook site are incomplete at this time.

In summary, it is clear that at the present time:

1. No evaluation of the consequences of a Class 9 at Seabrook have been performed, even as to alternative sites.
2. The evaluation of a Class 9 accident consequence would require, among other things, consideration of evacuation of persons beyond the low population zone, as the Licensing Board has held.
3. No finding that evacuation is possible beyond the low population zone has ever been made by any tribunal in the Seabrook proceeding. (See Initial Decision)
4. The basis for not considering the Class 9 accident, the allegedly extremely low probability of its

occurrence, has been undercut by the Commission's repudiation of the assessment risk values in the Rasmussen Report.

5. The Staff has recognized the desirability of at least some analysis of the consequences of a Class 9 accident when population densities within 30 radial miles of the reactor exceed certain "trip levels," which levels are in fact exceeded at Seabrook.

#### LEGAL AUTHORITY

This request is made pursuant to 10 C.F.R. 2.206. In addition, it is made in reliance upon the duty of the Commission's Staff to take appropriate action in the light of evolving safety standards and newly developed information as set forth in such cases as Ft. Pierce Utilities Authority of the City of Ft. Pierce v. United States of America and the Nuclear Regulatory Commission, No. 77-1925 and 77-2101, decided by the United States Court of Appeals for the District of Columbia, March 23, 1978.

#### DISCUSSION

There is no doubt that Seabrook is today being constructed without any evaluation of a Class 9 accident and, in particular, without any determination that evacuation at this site of persons beyond the low population zone is practicable.

The issue raised by this request for an Order to Show Cause is whether this determination of practicality can be deferred, as intended by the September 21, 1978 "Notice to Licensees," to the operating license stage.

It is the position of your requestor that deferral of this issue to the operating license stage for Seabrook is singularly inappropriate, and not consistent with the staff's primary

obligation to protect the public's health and safety.

This position is supported by the following reasons.

First, all parties to this proceeding have recognized that, in certain cases, evacuation beyond the LPZ is appropriate as a siting question. The NRC Staff took this position consistently during the licensing process. Furthermore, counsel for the Applicant, Mr. Thomas G. Dignan, himself stated to the Licensing Board on June 18, 1975:

"The issue in a construction permit hearing is feasibility, and what we are now getting is detailed questions on an evacuation plan, which I think has been uniformly testified doesn't exist yet. The burden is upon us to show feasibility."  
(Tr. 3471)

Second, the only bases for not requiring a demonstration of evacuation feasibility beyond the LPZ as part of a siting decision have been expressly repudiated by subsequent events. These events are the reversal of ALAB 390's holding that the regulations did not provide for this authority by the promulgation of the proposed rule amending Appendix E, and the highly questionable use of "realistic" rather than "conservative" assumptions as to radiological doses from a design basis accident.

Third, the consideration of evacuation, like any other issue, will be tainted by the specter of a completed plant, and billions of dollars invested, if the inquiry into feasibility is to await the operating license stage. The issue will become

at that stage not feasibility, but rather one of making the best of a potentially bad, or impossible, situation.

Fourth, the Seabrook site is now known to exceed staff population guidelines, as set forth in Regulatory Guide 4.7, so the issue of evacuation is particularly appropriate for consideration as a siting issue in this proceeding.

Fifth, the Seabrook site is a particularly difficult one in regard to evacuation because of the barrier beaches, which are at times extremely heavily populated. These beaches are connected to major evacuation routes by only three highways, with very limited capacity, and two of which would lead evacuees generally back toward the reactors.

Sixth, although EPA Protective Action Guidelines suggest evacuation would only be considered at dose levels of 1 to 5 rems whole body or 5 to 25 rems thyroid, it is a fact that during the Three Mile Island event a partial evacuation was ordered by the Governor of Pennsylvania, at the suggestion of the Chairman of the NRC, when, according to published reports, doses only in millerems were detected in the environment. Nonetheless, it was based upon the values of the EPA PAG's, plus the use of "realistic" rather than "conservative" dose assumptions that enabled the Licensing Board to rule that, even if regulations permitted it, no consideration of evacuation beyond the LPE was necessary for a design basis accident.

CONCLUSION

For the foregoing reasons, and in particular in light of the difficult physical character of the proposed site, together with its high population densities, the Director of Nuclear Reactor Regulations should immediately issue a show cause order pending a soundly based determination that:

- (1) Evacuation of persons within the 30 mile area surrounding the proposed reactor is feasible, and
- (2) Analysis of the consequences of a Class 9 accident finds the site still to be acceptable.

Respectfully submitted,  
SEACOAST ANTI-POLLUTION LEAGUE  
By Their Attorneys,  
O'NEILL BACKUS SPIELMAN

BY: 

Robert A. Backus

May 2, 1979

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