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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
MAINE YANKEE ATOMIC POWER COMPANY ) Docket No. 50-309-OLA  
(Maine Yankee Atomic Power Station) ) (Spent Fuel Compaction)

ADDITIONAL CONTENTIONS OF  
THE STATE OF MAINE

INTRODUCTION

Maine Yankee has filed with the Nuclear Regulatory Commission an application to store on-site in its existing spent fuel pool all of the spent fuel it will generate during the entire projected life of the nuclear facility. The (3) methods by which Maine Yankee proposes to accomplish its goal are (1) further reracking; (2) pin compaction; and (3) use of the cask laydown area. Pin compaction is a storage technology never before applied for or approved by the Nuclear Regulatory Commission.

On April 12, 1982 the Atomic Safety and Licensing Board issued its Memorandum and Order granting the petition to

intervene filed by the State of Maine and admitting 5 of the State's contentions. On July 20, 1982 the Board issued a Memorandum and Order (Concerning Schedule for Further Proceeding) which set August 30, 1982 as the date for filing contentions "on EIA and SER issues." The State of Maine hereby submits its contentions pursuant to the July 20, 1982 Board order. Each of the contentions filed this date by the State of Maine relates to information which is or which should be contained in the Safety Evaluation Report (SER) and Enviromental Impact Appraisal (EIA). Because the Board has renumbered the contentions already admitted as State of Maine Contentions 1 through 5, the enclosed contentions are submitted as State of Maine Contentions 6 through 15.

#### ADDITIONAL CONTENTIONS

CONTENTION No. 6: The license amendment proposed by the licensee constitutes a major federal action significantly affecting the quality of the human environment, thereby requiring the preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act of 1969 (NEPA) and NRC regulations.

BASIS FOR CONTENTION No. 6: In its April 12, 1982 Memorandum and Order, the Board ruled that the State's contention calling for the preparation of an environmental impact statement was "premature at this time" (April 12, 1982 Order at 4-5 and 17). The Board cited Consumers Power Co. (Big Rock Point Nuclear Plant), ALAB-636, 13 NRC 312 (1981) for the proposition that a "Licensing Board should await issuance of the Staff's environmental analysis before deciding whether an EIS must be prepared for a spent fuel pool expansion." April 12, 1982 order at 5.

The Office of Nuclear Reactor Regulation issued its Environmental Impact Appraisal (EIA) on June 16, 1982 and concluded an EIS need not be prepared because "the proposed license amendment will not significantly affect the quality of the human environment." EIA, p. 10.

The State of Maine strenuously disagrees with the NRC staff conclusion that Maine Yankee's proposal "will not significantly affect the quality of the human environment" and thus renews its contention that an EIS must be prepared.

In its October 5, 1981 filing of Amended Contentions (State's Amended Contentions) the State spelled out 4 reasons why it believes an EIS is required. Briefly, an EIS is required in order to adequately address (1) the increased risks from the proposed amendment; (2) the precedential significance

of pin compaction; (3) use of the cask laydown area which may prevent removal of the spent fuel at the end of the license; and (4) the environmental effects of storing fuel at Maine Yankee after the expiration of the operating license. See Amended Contentions, Contention No. 1 and accompanying Basis statement. Rather than repeating that Basis statement, the State hereby incorporates by reference the Basis statement contained in its Amended Contentions and supplements that statement as follows.

The first reason why an EIS is required is because, in the event of either a partial or total loss of coolant accident involving the spent fuel pool, the proposed methods of reracking and pin compaction will increase both the probability of a release of radiation and the consequences resulting from such a release. The increased risks<sup>1/</sup> of such a release and its consequences must be analyzed in an EIS in accordance with NEPA and 10 CFR Part 51.<sup>2/</sup>

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<sup>1/</sup> "Risk, by its nature, includes consequences." Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), LBP-80-10, 11 NRC 337, 345 (1980).

<sup>2/</sup> For a description of (1) the accidents which could initiate a loss of coolant accident; (2) the increased consequences of the accident; and (3) the increased probability of the occurrence of such risks, see Amended Contention 1a, Basis statement, October 5, 1981.

The second reason why an EIS must be prepared is that Maine Yankee is proposing to accomplish its amendment request by means of a technology never before approved by the NRC to expand spent fuel pool storage capacity. Maine Yankee's proposal has received significant attention from the nuclear industry specifically because of its precedential value.

There appears to be little question that Maine Yankee's pin compaction proposal is new, untested technology. See State's Amended Contentions, p. 4; Report by E. R. Johnson Associates, Inc., A Preliminary Assessment of Alternative Dry Storage Methods for the Storage of Commercial Spent Nuclear Fuel (DOE/ET/47929-1) November, 1981 at 4-31 et seq.; Report by Nuclear Assurance Corporation, "Underwater Nuclear Fuel Disassembly and Rod Storage" (DOE/ET/47912), September, 1981 (6 volumes). The Final Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel (NUREG-0575, August, 1979) (FGEIS) contains only brief references to pin consolidation; see e.g., FGEIS, vol. 1, p. 3-4, 5. It is not surprising that pin consolidation received such scant attention in the FGEIS; pin consolidation is a technology which has only recently been explored to any degree.

Because of the precedential nature of the Maine Yankee proposal, an EIS must be prepared. See 10 CFR § 51.5(a)(12) and § 51.5(b). The Council on Environmental Quality

regulations, which are binding on the NRC (40 CFR § 1500.3), explicitly state precedential value of a proposal must be considered; see 40 CFR § 1508.27(b)(6). The EIA prepared by the Staff is completely silent on such precedential significance.

The third reason why the State believes an EIS must be prepared is that Maine Yankee proposes to use the cask laydown area to store spent fuel. Should an accident or event occur to prevent Maine Yankee from replacing the fuel in the reactor following proposed "temporary" use of the cask laydown area, Maine Yankee may be foreclosed from withdrawing spent fuel from the pool by any means currently utilized by the nuclear industry. Specific means by which fuel could not be returned to the reactor vessel include jamming of the fuel transfer tube controls or gate; a fire in the containment building; or a reactor leak from, e.g., thermal shock. By use of the cask laydown area for spent fuel storage, Maine Yankee very well might lose its ability to remove spent fuel from the pool.

The fourth reason why an EIS must be prepared is because the Board must consider the environmental effects of storing spent fuel at Maine Yankee after the expiration of the license in 2008. Although the State concedes that the Commission has suggested to licensing boards that they should not address in individual licensing proceedings how the spent fuel will be

stored or disposed of following the expiration of the operating license, the Board is not prohibited from addressing such an issue.

Since the Board Order of April 12, 1982 the Staff has published its SER and EIA. Noticeably absent in either document is any discussion whatever of whether the additional spent fuel storage proposed by Maine Yankee can safely remain on-site after the expiration of the operating license. The State's contention that an EIS must be prepared to consider the long-range future effects of permitting the proposed increased storage capacity has been further bolstered by a recent decision of the United States Court of Appeals for the District of Columbia Circuit. Potomac Alliance v. NRC, No. 80-1862, (D.C. Cir. July 20, 1982).

In Potomac Alliance the Court followed a similar result in Minnesota v. NRC, 602 F.2d 412 (D.C. Cir. 1979):

this court, on virtually an identical set of facts, (has) found itself unable to sustain, as against a claim of NEPA violation, an NRC order amending an operating license to expand spent fuel storage capacity, absent a meaningful exploration by the agency of the dangers presented by the continuing existence of the storage pool after the final closing date of the plant, and a finding based thereon that either (1) a satisfactory solution is presently available or (2) there is a reasonable probability of such availability by the shut-down date. (footnote omitted) Potomac Alliance, slip op. at 3.



In this proceeding involving Maine Yankee, the State asks not only that the Board follow the mandate of Minnesota v. NRC, supra, and Potomac Alliance, supra, but that the issues be addressed in this proceeding on the record rather than generically, as may be possible under the two court decisions. The facts at issue in both the Minnesota and Potomac Alliance cases argued for the relief accorded by the court; however, such compelling facts are not present in the case at issue.

In Minnesota v. NRC, the court noted (1) a decision was pending regarding the so-called S-3 proceeding, and (2) vacating or staying the license amendments would effectively shut down the nuclear plants. Minnesota v. NRC, supra, 602 F.2d at 418. However, the Court has now decided the challenge to the S-3 proceeding by declaring the S-3 table invalid. NRDC v. NRC, No. 74-1586, (D.C. Cir. April 27, 1982). Additionally, deciding at this stage to prepare an EIS will not "effectively shut down" Maine Yankee, since it has existing storage capacity through 1987.

In Potomac Alliance the Court noted its assumption in Minnesota v. NRC, decided in 1979, that the NRC generic rulemaking proceeding would proceed "expeditiously":  
"Implicit, however, in the disposition by the panel in Minnesota was the assumption that the NRC would proceed as expeditiously as possible." Potomac Alliance. slip op. at 4.  
The Court then decided as follows:



"taking into account the lengthy period of time that has elapsed since Minnesota, as well as the scientific and technical difficulties that appear to characterize this problem, we think an appropriate response to the NRC's latest progress report is for us to assert that its failure to act by June 30, 1983, will place in jeopardy the expanded authority at issue in this case. Potomac Alliance, slip op. at 4.<sup>3/</sup>

Also present in Potomac Alliance is the fact that additional spent fuel storage capacity is needed at North Anna "no later than 1983." Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451 (1980). As stated earlier, Maine Yankee has existing storage capacity until 1987.

Additionally, Maine Yankee admits in its application that it has no current plans to ship spent fuel offsite (inter alia, as its reason for failing to conduct an analysis of the consequences of an accident involving a spent fuel shipping cask drop)<sup>4/</sup> and that it may have to use the cask laydown area and/or reactor as storage space in 2007 because the spent fuel pool will be filled to capacity. Consequently the facts which would persuade a court to permit the generic rulemaking to take the place of license-specific rulemaking is simply not present in the case at issue.

The contention should be admitted and an EIS prepared.

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<sup>3/</sup> It is at least likely that the Maine Yankee proceeding will not be resolved until after June 30, 1983. See Board Order Concerning Schedule, supra, p. 3.

<sup>4/</sup> "There are no current plans to use a spent fuel shipping cask in the Maine Yankee spent fuel pool for the foreseeable future." SER, p. 13.

CONTENTION No. 7: In the event of a total or partial loss of coolant in the spent fuel pool, the proposed license amendments to permit reracking and pin compaction significantly increase (1) the probability of occurrence of a release of radiation or radioactive materials into the environment and (2) the environmental consequences of such a release. The licensee has failed to demonstrate, as required by the Atomic Energy Act and 10 CFR, Part 50, that there is reasonable assurance that the public health and safety will not be endangered by these risks.

BASIS FOR CONTENTION No. 7: Contention No. 7 is substantively the same as Contention No. 2 filed by the State in its Amended Contentions of October 5, 1981. The Basis statement that accompanied Amended Contention No. 2 is incorporated by reference herein; the following statement is intended as a supplement.

The SER submitted by the Staff has failed to address the State's concern; no mention is made of the increase in the consequences as a result of the licensee's proposal, despite the facts that the issue has been raised previously by the State and the contention has been admitted in other hearings (see, e.g., Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), LBP-80-10, 11 NRC 337 (1980)).

The State's contention is similar to the third question posed by the licensing board to the Staff in Salem, supra, 11

NRC at 346: "In the event of a gross loss of water from the storage pool, what would be the difference in consequences between those occasioned by the pool with expanded storage and those occasioned by the present pool?"<sup>5/</sup>

The State's contention here is raised pursuant to the Atomic Energy Act, rather than NEPA (the subject of Contention 6). Such grounds were specifically acknowledged by both the Salem licensing board ("We believe our surest course is to keep in mind our basic responsibility as a Licensing Board. We must determine whether the proposed increase in storage of spent fuel . . . can be accomplished without undue risk to the public." 11 NRC 337, 345) and appeals board when it rejected direct certification ("the new question simply appears to reflect the Licensing Board's effort to carry out its fundamental responsibility; namely, to satisfy itself whether the proposed license amendment would unreasonably affect the public health and safety." Salem, ALAB-588, 11 NRC 533, 536 (1980)).

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<sup>5/</sup> One difference between the Board-asked question in Salem, supra, and the State's contention is that the State includes a partial loss of coolant accident as one which would produce similar if not greater risks than a total loss-of-coolant accident.

Despite the fact that the subject matter of this contention was adjudicated in Salem, supra, assuming a gross loss of water from the storage pool, the State points out that one of its contentions which has already been admitted - State Contention 5, involving seismic criteria - is grounds for holding that the State has alleged a specific mechanism for such an accident. Other mechanisms are detailed in Amended Contention 2 (Oct. 5, 1981).

The State has retained an expert witness who will testify, in the event of a partial or total loss-of-coolant accident, there will be not only an increase in the consequences of such an accident but there will also be an increase in the probability that such consequences will occur (e.g., an increased probability that an exothermic reaction will result from an increased number of spent fuel rods in the pool because the new configuration adversely affects such variables as the natural cooling mechanisms).

Even without such increase in the probability of occurrence, an increase in the consequences was sufficient for the contention to be admitted and heard by the Salem licensing board. See specifically Salem, 11 NRC at 344-46. The State wishes to present testimony regarding this contention; it has retained an expert who will present such testimony; and the contention should be admitted at this stage of the proceeding.

CONTENTION No. 8: The proposed use of the cask laydown area for spent fuel storage will prevent or significantly impede the removal of spent fuel from the existing pool during the period of licensed operations and also upon cessation of commercial operations of the plant. The licensee has failed to demonstrate, as required by the Atomic Energy Act and 10 CFR Part 50, that there is reasonable assurance that the public health and safety will not be endangered by use of the cask laydown area for spent fuel storage.

BASIS FOR CONTENTION No. 8: Contention No. 8 is substantively the same as Amended Contention 3 filed by the State on October 5, 1981. The basis statement that accompanied Amended Contention 3 is incorporated by reference herein and is supplemented as follows.

Storage of spent fuel in the cask laydown area increases the probability of a release of radiation and the consequences of such a release, in the event of a partial or complete loss of coolant accident, even if the use is only temporary.<sup>6/</sup> Additionally there is no assurance, based on the record to date, that the actual use, if it ever is needed, will in fact be temporary. The proposed use of the cask laydown area received scant attention in the SER and no limiting condition

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<sup>6/</sup> for the same reasons that such result occurs as a result of pin compaction and reracking, discussed previously in the basis statement for Contention 7.

is proposed for the license amendment, if one is issued. Accidents such as jamming of the fuel transfer tube, a fire in the containment vessel or a reactor leak (from, e.g., thermal shock) may preclude return of the spent fuel to the reactor core. The State believes its concern in this narrow area can be easily resolved by a license condition requiring any "temporary" storage, required when the pool is otherwise full, to be accomplished in spent fuel casks or by use of dry storage methods.

CONTENTION No. 9: Neither the licensee nor the staff has provided sufficient evidence for the Board to conclude that the proposed increase in the amount of spent fuel to be stored at Maine Yankee can remain safely stored on-site following the expiration of Maine Yankee's operating license in 2008. Alternatively, hearings on the proposed license amendments should be deferred, at least until completion of the so-called "waste confidence" proceedings.

BASIS FOR CONTENTION No. 9: Contention No. 9 is substantively identical to the State's Amended Contention 4 as filed October 5, 1981. The Basis statement for Amended Contention 5 is incorporated by reference herein and is supplemented as follows. Unlike Contention 6, this contention is grounded on the Atomic Energy Act, rather than NEPA.

Since Amended Contention 5 was addressed by the Board in its April 12, 1982 Order, the Staff has published its SER and

EIA. Noticeably absent in the SER and EIA is any mention whatever of whether the additional spent fuel storage proposed by the licensee can safely remain on-site after the expiration of the operating license. Such determination by the Board is required pursuant to the Atomic Energy Act and 10 CFR Part 50. Minnesota v. NRC, supra, 602 F.2d at 419 (Tamm, J., concurring).<sup>7/</sup>

Emphasizing that "section 102(2)(C) of the National Environmental Policy Act of 1969 and Section 103(d) of the Atomic Energy Act of 1954 mandate" the conclusion reached by the Court, Judge Tamm wrote as follows:

(P)rior to approval of a license amendment permitting expansion of a nuclear plant's spent fuel pool capacity, there must be a determination concerning future spent fuel pool storage. Specifically, there must be a determination whether it is reasonably probable that an offsite fuel repository will be available when the operating license of the nuclear plant in question expires . . . . In addition, if the (Board) determines it is not reasonably probable that an offsite waste disposal solution will be available when the licenses of the plants in question expire, it then must determine whether it is reasonably probable that the spent fuel can be stored safely onsite for an indefinite period. Minnesota, 602 F.2d at 412.

The Board clearly has the authority to postpone its consideration of whether the additional fuel can remain safely

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<sup>7/</sup> The issue was not reached in Potomac Alliance, supra, slip op. at 3, n. 2.



on-site after the expiration of the operating license: it can defer proceedings on the proposed license amendment until after the so-called "waste confidence" proceedings are completed. See 10 CFR § 2.722 and § 2.718. Admittedly the Commission has provided "guidance" to licensing boards, 44 Fed. Reg. 45362 (1979), but such guidance is policy, not a rule, and therefore is not binding.

The question of a licensing board's authority to defer proceedings was placed squarely in front of the Commission during a construction permit hearing. Potomac Electric Power Company (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-277, 1 NRC 539 (1975). In considering whether evidentiary hearings should proceed notwithstanding the licensee's postponement of construction and operation dates, the licensing board stated its position as follows:

. . . it should not proceed with fragmented hearings on the basis that they cannot result in any really meaningful findings of fact at this early stage. The Board anticipates an absolute need for current information not only in the environmental area for a valid NEPA cost benefit balance but also in the area of health and safety where history indicates a reasonable possibility of changing standards within a period of several years (emphasis added) Douglas Point, Douglas Point (LBP-75-7), 1 NRC 233, 238 (1975).

The appeals board reversed on the grounds that no NRC statute or regulation required complete deferral and, on balance, there was good reason to proceed on many (but not all) issues.

Douglas Point, ALAB 277, 1 NRC a 542. The appeals board ruled

that on issues not relating to site suitability, a "different conclusion" might be reached, based on factors enumerated by the appeals board.

Because that part of the State's contention which deals with "deferral" is not precluded by regulation, because it is an issue recognized and accepted by the Commission in at least one previous case, and because the Board has the authority to grant the requested relief, the contention should be admitted.

If the Board should choose not to defer these proceedings until completion of the "waste confidence" proceedings<sup>8/</sup> then the Board must address the substance of the contention.

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<sup>8/</sup> Deferral should not work a hardship on the licensee or the Staff. As the Court noted in Potomac Alliance, supra, the Commission opined that the decision should be forthcoming soon:

[t]he earliest that the (waste confidence) proceeding might conclude and a decision issue would be about six months after the January, 1982 oral presentations, but it is possible that a year or more might pass before a final Commission decision could be reached. Slip op. at 4.

Additionally, the amendment request in reality involves three separate components: reracking, pin consolidation, and use of the cask laydown area. The most obvious and logical parts of the amendment request for which consideration should be deferred involve pin consolidation and use of the cask laydown area. As noted earlier, approval of reracking alone will provide sufficient storage at Maine Yankee until the mid-1990's.

CONTENTION NO 10: Neither the licensee nor the Staff has analyzed the environmental or public health and safety implications of environmentally preferable, safer and feasible alternatives to the proposed license amendments. The adoption of one or more alternatives would avoid or reduce threats to the environment and to the public health and safety.

BASIS FOR CONTENTION NO 10: The specific alternatives which should be analyzed by the licensee and the staff are:

- a. the use of the following alternate on-site, passive storage methods: dry storage in casks, vaults, caissons and concrete cannisters, either alone or within concrete buildings;
- b. delayed implementation of pin consolidation.

Contention No. 10 is similar to the State's Amended Contention No. 5, except that alternatives b through e listed in the Amended Contention are withdrawn. The State continues to seek to have adequate consideration be given to the alternatives presented by dry storage technology, which is environmentally preferable to the proposals by Maine Yankee. Despite the State's earlier pleas to the licensee and the Staff to address the feasibility of dry storage technology at Maine Yankee, the SER and EIA do not mention dry storage at all.

Consideration of the delayed implementation of pin consolidation as an alternative is directly related to, inter alia, Contentions 6, 9, 11, 12 and 15 (although admittedly all of the State's Contentions deal with pin consolidation);

therefore there is no need to elaborate further here on why alternative (b) should be fully explored.

The Board ruled at pages 7 and 19 of its April 12, 1982 Order that a contention requiring consideration of alternatives was premature because the Staff had not yet decided at that point whether an EIS was going to be required. The Staff has now suggested that an EIS is not necessary. Of course, if the Board now agrees with the State that an EIS is required, pursuant to State Contention No. 6, the Board will have likewise admitted the substance of Contention No. 10 because an EIS will necessarily include a thorough discussion of alternatives. However, there are other additional grounds on which the Board should admit a contention calling for consideration of alternatives.

A consideration of alternatives is required, inter alia, by Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.9); the National Environmental Policy Act of 1969 (NEPA) (Sections 102(2)(C) and 102(2)(E)); NRC regulations (10 CFR § 51.52); and NRC precedent.

A consideration of alternatives is mandated by CEQ regulations even if any agency chooses to prepare an environmental assessment, rather than an EIS. See 40 CFR § 1508.9(b) (an environmental assessment "shall include brief discussions of the need for the proposal, of alternatives as

required by sec. 102(2)(E), of the environmental impacts of the proposed action and alternatives, . . ." (emphasis added). See also Florida Light and Power Company (Turkey Point Nuclear Generating, Units Nos. 3 and 4), ALAB 660, 14 NRC 987, 1006 (1981) in which the Appeals Board agrees that 40 CFR § 1508.9 requires at least a brief discussion of alternatives.

Alternatives must also be considered pursuant to Section 102(2)(E) of NEPA (42 U.S.C. § 4332(2)(E)), even if no EIS is required by order of this Board, because the proposed license amendments involve "unresolved conflicts concerning alternative uses of available resources to store spent fuel." The conflicts involve whether to permit use of additional technology and substantial expenditures to expand the existing spent fuel pool capacity,<sup>9/</sup> as amplified in LaCrosse, infra.

Whether alternatives need to be addressed pursuant to Section 102(E) of NEPA was discussed in detail by the licensing board which considered the application of Dairyland Power Cooperative to expand its spent fuel storage capacity. See Dairyland Power Cooperative (LaCrosse Boiling Water Reactor), LBP 80-2, 11 NRC 44 (1980). The board agreed that the obligations under § 102(C) and § 102(E) are entirely separate

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<sup>9/</sup> It is important to keep in mind that Maine Yankee is asking for approval to carrying out actions which will not be completed for 25 years or more. Pin compaction isn't required for more than 10 years. As the State claims in Contention 11, such plans are both unnecessary and unsafe.

and focused on whether the proposal "involves unresolved conflicts concerning alternative uses of available resources," quoting § 102(E). LaCrosse, 11 NRC at 73. The board there found a project "costing over a million dollars" which had environmental impacts which were different from "doing nothing" were sufficient reasons to consider alternatives pursuant to § 102(E). The proposal by Maine Yankee, which will cost many times the costs associated with LaCrosse<sup>10/</sup> which involves up to 100,000 lbs. of stainless steel, which involves technology of important precedential value never before licensed, and which will allow Maine Yankee to store its entire lifetime supply of spent fuel on-site for an indeterminate time, is a far more compelling case for considering alternatives than the facts presented in LaCrosse.<sup>11/</sup> See also Consumers Power Company (Big Rock Point Nuclear Plant), ALAB-636, 13 NRC 312, 331-32 (1981).

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<sup>10/</sup> Maine Yankee has not yet indicated the estimated costs of its proposal; see October 5, 1981 letter from Maine Yankee to NRC, p. 6-5. In a November 22, 1978 letter to the NRC, Maine Yankee gave an estimate in 1978 dollars of \$5,550,000 to carry out a limited pin compaction proposal. The cost for the current proposals of reracking and pin compaction must necessarily be significantly higher.

<sup>11/</sup> Especially when considering that the alternative which the licensee fought to keep out in LaCrosse was whether the reactor should be shut down. In the case of Maine Yankee's application, the State merely wants adequate consideration to be given to dry storage technologies and delayed implementation of pin compaction, both alternatives the State contends are superior on environmental and safety bases.



Central to the State's contention that alternatives must be considered is the proposition that the consideration be up-to-date and complete. The requirement to consider alternatives would be meaningless unless all reasonably possible alternatives are considered. California v. Bergland, 483 F.Supp. 465, 487-88 (E.D. Cal. 1980). Glaringly absent in all documents considered by staff to date, including the licensee's supporting data and the EIA, is anything at all of substance concerning dry storage. The FGEIS, referred to by Staff, barely mentions it and the EIA and licensee's documents do not mention it at all. On the other hand, enormous progress has been made in the technology of dry storage. See, for example, the lengthy Johnson report prepared for DOE (A Preliminary Assessment of Alternative Dry Storage Methods for the Storage of Commercial Spent Nuclear Fuel, DOE/ET/47929, November, 1981).

Still another basis for requiring consideration of alternatives is found in NRC regulations, 10 CFR § 51.52(d). The EIA contains a very brief discussion of one alternative is listed (EIA, p. 1) and otherwise refers to the FGEIS, which has not been updated since it was issued 3 years ago, for a consideration of alternatives. § 51.52(d) provides in part that, if no EIS is prepared, "any party to the proceeding may take a position and offer evidence on the aspects of the



proposed action covered by NEPA and this part in accordance with (rules of general applicability). In such proceedings, the presiding officer will decide any such matters in controversy among the parties."

Lastly, the alternative of dry storage must be considered because the issue of alternatives has been raised by both the Staff, when it discussed certain alternatives in its EIA (at pp. 2-3), and the licensee, when it discussed alternatives in its application (see October 5, 1981 letter from Maine Yankee to NRC, pp. 6-6 through 6-8).<sup>12/</sup> In neither discussion did the Staff or the licensee address dry storage at all.

CONTENTION No. 11: The licensee has not demonstrated any current need for approval of pin compaction in addition to reracking. Approval of both pin compaction and reracking, rather than approval of just reracking, unnecessarily and

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<sup>12/</sup> At one point in its supporting documents Maine Yankee concede the wisdom of the substance of the State's Contention.

It should also be noted that other spent fuel storage options could conceivably become available in the future. Delaying rack expenditures until they are necessary by phased reracking permits evaluation of these potential options without bias introduced by consideration of early sunk costs. MYAP Co. letter to NRC dated June 3, 1981, p. 10.

unreasonably endangers the public health and safety and the environment because such approval will authorize the licensee to proceed with an experimental and technologically untested method of spent fuel storage approximately 14 years in advance of when it is needed.

BASIS FOR CONTENTION No. 11: Contention No. 11 is the same as Contention No. 6 of the State's previously filed Amended Contentions. The State herein incorporates by reference the basis statement provided in its Amended Contentions and supplements that statement as follows.

There is no question that "the complex and vexing question of the disposal of nuclear wastes is a matter . . . characterized by continuing evolution of the state of pertinent knowledge." Minnesota v. NRC, supra, 602 F.2d at 419. At a time when significant research is being accomplished in the areas of dry storage technology and pin compaction, it strikes us that it is unwise, unreasonable and unsafe to permit Maine Yankee, at this time, to utilize pin compaction when reracking alone will provide Maine Yankee with sufficient storage capacity until the mid-1990's. If then, after further research has been accomplished to provide a reasonable basis that further expansion of the spent fuel pool is warranted, the Board can address the safety of pin compaction, or alternative storage methods which may then be preferable. The Board has

the authority to at least defer ruling on the pin compaction and cask laydown storage proposals, 10 CFR § 2.722 and § 2.718, and it should exercise that authority in the interest of public health and safety. 42 U.S.C. § 2133(d).<sup>13/</sup>

CONTENTION No. 12: The licensee has not identified, described or analyzed the specific procedures it intends to use to implement its amendment request. As stated the licensee's procedures for the proposed reracking and pin compaction will not provide reasonable assurance that the public health and safety will not be endangered. At a minimum the licensee must specify:

- a. specific step-by-step operating procedures to be followed in implementing both the reracking and pin compaction proposals (Maine Yankee's September 18, 1979 submittal promised "precise written and approved procedures" for pin compaction);
- b. the equipment that the licensee intends to use to carry out the pin compaction proposal;
- c. its plans for hiring, testing, training and supervising personnel involved in carrying out the proposed modification, especially in view of past practices of improper supervision and insufficiently trained, untrained and unqualified personnel;

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<sup>13/</sup> See also Contention 9 and its basis statement.

- d. standards that it plans to follow to determine which fuel assemblies it plans to compact to avoid compaction of brittle rods or rods which have not sufficiently aged; and
- e. how the licensee intends to store or dispose of end caps resulting from the disassembly, reassembly and compaction process.

In addition, unless and until the licensee details the procedures it intends to use, the licensee has not shown that it is technically qualified to implement the proposals in a manner which protects the public health and safety.

BASIS FOR CONTENTION No. 12: Contention No. 12 is similar to the State's Amended Contention 11. The State herein incorporates by reference the basis statement included in its October 5, 1981 filing of Amended Contention 11. In addition the State supplements that statement as follows.

The Board ruled on April 12, 1982 that such a contention was in essence premature and went on to say:

. . . the Board expects that the Staff will have an opportunity to review these procedures before they are implemented by the licensee. If at some later time when the Licensee has developed specific procedures, (intervenor) wishes to submit contentions directed to their adequacy, the Board will evaluate such contentions at that time. Board Order, p. 6 (see also p. 21).

Contrary to the suggestion by the Board in its April 12 Order, the licensee has not submitted any further details concerning the procedures by which it intends to implement its

proposal. The entire pin compaction procedure is contained in only one page in Maine Yankee's application. See MYAP Co. letter to NRC dated October 5, 1981, p. 4-52. The Staff review, as contained in the SER, acknowledges that such procedures have not been submitted: ". . . the licensee is not specific in the manner in which the modification sequence will be performed." SER, § 2.7.1, p. 18.

Unless and until the licensee sets forth its specific, detailed procedures, this Board cannot make the requisite statutory findings to approve the amendment request.<sup>14/</sup>

As the appeals board noted in Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), Docket No. 50-272 OLA, Order dated May 21, 1981, CCH Para. 30, 596, "knowledge of the exact specifications of the equipment is necessary so that the staff will be better able to evaluate the application for environmental impact and compliance with agency safety regulations."

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<sup>14/</sup> Lest the State be criticized for failing to provide some idea of the sort of description of procedures that is necessary, we suggest the licensee look at the description contained in the NAC report on pin consolidation (especially Vol. II), supra For a suggestion of how many different procedures are possible, see Johnson DOE Report, supra, pp. 4-31 through 4-33.

Further, without detailing the procedures it intends to use, the licensee has not demonstrated that it has the ability to implement its proposal. The pin compaction method which the licensee has proposed has never before been approved or used by a commercial nuclear facility. Different disassembly methods are possible; different types of equipment can be used; different assembly methods are possible.<sup>15/</sup>

CONTENTION No. 13: Neither the licensee nor the NRC staff has addressed the extent to which unresolved generic safety issues will affect the proposed expansion of Maine Yankee's spent fuel pool.

BASIS FOR CONTENTION No. 13: In order to approve the proposed license amendments, the Board must make a finding that there is reasonable assurance that the facility can be operated safely. In Gulf States Utilities Company (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760 (1977), the Appeals Board said:

Of necessity, this determination will entail an inquiry into whether the staff review satisfactorily has come to grips with any unresolved generic safety problems which might have an impact upon operation of the nuclear facility under construction. River Bend, 6 NRC at 774-75.

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<sup>15/</sup> Johnson report, supra, pp. 4-31 through 4-33.

To date there has been no information submitted in the record dealing with generic unresolved safety issues. The SER is totally silent, despite the Appeals Board observation in River Bend, supra, that "(i)n short, the board (and the public as well) should be in a position to ascertain from the SER itself - without the need to resort to extrinsic documents - the staff's perception of the nature and extent of the relationship between each significant unresolved generic safety question and the eventual operation of the reactor under scrutiny." 6 NRC at 775. Thus in River Bend, an uncontested construction hearing, the Appeals Board held that the staff must review each generic unresolved safety issue to determine its significance to the reactor at issue.

Likewise, in the context of an uncontested operating license hearing, the Appeals Board required the Staff to provide, in affidavit form, "a full and detailed explanation of why it is acceptable to permit the North Anna units to operate in the face of the safety issues under study." Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245, 249 (1978).

The Appeals Board provided even further guidance on what is required from Staff in its sua sponte review of Northern States Power Company (Monticello Nuclear Generating Plant, Unit 1), ALAB-611, 12 NRC 301 (1980). The appeals board first stated



that generic unresolved safety issues must be addressed on the record, citing River Bend, supra, and North Anna, supra:

Our decisions teach that the record must contain sufficient information concerning each generic unresolved safety issue affecting operation of the facility under consideration to enable adjudicatory boards to fulfill their respective responsibilities under the Commission's regulations. Monticello, 12 NRC at 310.

The appeals board went on to specify what the Staff must do to satisfy the Commission's legitimate safety concerns surrounding generic unresolved safety issues:

. . . the staff should supplement the record with an appropriate identification of those unresolved generic safety issues it has brought to light over the years which might affect safe operation of the Monticello facility. For this purpose, the staff is to focus its attention on those Category A Tasks identified in NUREG-0510 as unresolved safety issues which could affect the Monticello facility. In addition, however, the staff should include in its submission any issues from Category B Tasks listed in NUREG-0510 which may have an impact on the Monticello facility and which, if left unresolved, could present potentially serious safety or environmental concerns.

Such identification should be accompanied by a brief description of the dimensions of each generic issue. As part of its submission, the staff should provide a succinct explanation of why the Monticello plant can continue to operate safely pending resolution of each generic safety issue. We once again suggest, as we did in River Bend and North Anna, that the staff consider filing this additional material as an amendment or supplement to its SER. Monticello, 12 NRC at 311-12.

It is therefore appropriate for the Staff not only to consider generic unresolved safety issues which may be listed by the State as impacting on the licensee's proposal but all generic unresolved safety issues which the Staff, in its independent appraisal of the application, considers applicable as well as a statement detailing why any others do not apply.<sup>16/</sup>

Until the Staff addresses unresolved generic safety issues in, for example, a supplemental SER, the State suggests the appropriate course for the Board to follow in the one taken by the licensing board in Commonwealth Edison Company (Byron, Nuclear Power Station, Units 1 and 2), LBP-80-30, 12 NRC 683 (1980). There the Board ruled, after a thorough review of the previous appeals board decisions, that the intervenor

"is entitled to put in issue by its pleadings the adequacy of the Staff's treatment of unresolved generic safety issues in relation to the Byron facility. The specificity and nexus contemplated by River Bend, supra, cannot be expected until the Staff's SER has been filed.

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<sup>16/</sup> It should be pointed out here, as with each of the State's other contentions, there is no question about what is the substance of the State's contention. The State wants each unresolved generic safety issue addressed by the Staff and an explanation, brief as it may be, as to why Maine Yankee can safely implement its proposals in light of the unresolved safety issues. Not only is the State's contention clear, such a result is mandated by River Bend, supra; North Anna, supra; and Monticello, supra.

Accordingly, these contentions are admitted, subject to subsequent refinement and particularization after the SER has been filed and appropriate discovery completed."

Generic unresolved safety issues have been identified in "Identification of Unresolved Safety Issues Relating to Nuclear Power Plants," NUREG-0510 (January, 1979) and "Identification of New Unresolved Safety Issues Relating to Nuclear Power Plants," NUREG-0705 (March, 1981). Such safety issues must be evaluated by the licensee and, more particularly, the Staff before the Board can determine that Maine Yankee can safely operate after implementing its proposals. Generic unresolved safety issues "cannot be disregarded in individual licensing proceedings simply because they also have generic applicability; rather, for an licensee to succeed, there must be some explanation why construction or operation can proceed even though an overall solution has not been found." North Anna, supra, 8 NRC 245, 248.

It is apparent that at least some of the listed generic unresolved safety issues directly affect the spent fuel pool and the licensee's proposed changes. For example, Task A-40 requires a reevaluation of seismic design criteria of existing spent fuel pools, in view of current seismic regulations and regulatory guides that became applicable after the plant was licensed. This reevaluation is necessary to assure that the old designs do not present undue public safety risks. The

Board has already admitted the State's contention that the spent fuel pool, when modified, will not comply with Class I seismic criteria (April 12, 1982 Board Order, p. 25, State Contention 5). The objective of Task A-40 is to develop conservatism in the seismic design sequence for all plants. "Certain aspects of the sequence may not be conservative for all plants." NUREG-0606, Vol. 3, No. 3, p. 32 (Aug. 21, 1981) ("Aqua book") (emphasis added).

Also related to the spent fuel pool expansion, from the descriptions provided by the Aqua book, is Tasks A-17 (Systems Interaction).<sup>17/</sup> Others may be applicable, but further refinement of this contention may have to wait until adequate information is submitted on the record.

CONTENTION No. 14: The licensee has not demonstrated that it has established and can comply with a detailed quality assurance program which complies with 10 CFR part 50, Appendix B.

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<sup>17/</sup> Task A-36 clearly applies to the amendment proposed by Maine Yankee. For a further description of why Task A-17 applies to the licensee's application, see the basis statement for the State's Amended Contention 16 (Oct. 5, 1981).

BASIS FOR CONTENTION No. 14: Although the State concedes that Maine Yankee at least has a written quality assurance (QA) program, included as Appendix B in its FSAR, it has recently become apparent that the licensee is either unable or unwilling to conform its actions to a QA program which meets NRC regulations (see 10 CFR Part 50, Appendix B).

The licensee has filed at least 22 "reportable occurrence" reports to date for this calendar year. Last year a violation occurred which required initiation of a shutdown; Maine Yankee did not initiate shutdown when required by technical specifications, nor did it report the violation when required. Letter to Maine Yankee Atomic Power Company from NRC Office of Inspection and Enforcement (Richard C. DeYoung, Director), Nov. 12, 1981. (A fine of \$20,000 resulted.) Just ten days ago newspapers in Portland, Maine reported that "the NRC is considering taking 'appropriate enforcement action' for a series of 'significant violations' that occurred between March and May, according to a recent letter from Richard W. Starostecki, director of the NRC's project and resident program." Portland Press Herald, August 20, 1982, p. 16. The article continued:

. . . the NRC's resident inspector at Maine Yankee said his agency normally investigates each accident individually but that the plant's entire management and quality assurance programs are under scrutiny because of the recurrence of the problems.

'We start wondering why they aren't identifying weaknesses and solving them before there is a problem,' Swetland said.

'Usually if there is one error, you don't figure the entire plant is bad. But if you have six different areas of design control with problems, then you consider it a problem of quality assurance.'

Portland Press Herald, Aug. 20, 1982, p. 16.

It is particularly important to make certain that the licensee can and will comply with an effective QA program now because it has proposed use of a technology which has never before been licensed. It is also important to address now because the licensee has proposed a number of "administrative controls" as its assurance that the proposals will meet NRC regulations.<sup>18/</sup> If the applicant cannot implement and maintain a satisfactory QA program, the Board's confidence in the "administrative controls" will be diminished. Additionally, the SER at p. 3 specifically notes that the spent fuel racks are subject to the QA program requirements of 10 CFR Part 50, Appendix B.

Without a finding that the licensee can implement and carry

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<sup>18/</sup> See, e.g., SER at p. 6: "MYAPC proposes to administratively control the rate at which the spent fuel is transferred to the storage pool." (emphasis added)



out an effective QA program, the Board cannot make the requisite finding that the health and safety of the public will be maintained.

CONTENTION No. 15: The licensee has not provided adequate assurance that the proposed modifications to the spent fuel pool assure adequate safety under normal and postulated accident conditions. Therefore the licensee has not provided adequate assurance that it can comply with 10 CFR Part 50, Appendix A, General Design Criterion 61.

BASIS FOR CONTENTION No. 15: Releases of radiation or radioactive materials from normal and postulated accident conditions previously considered in the Final Safety Analysis Report for the operating license will be increased in probability and consequence as a result of the proposed modifications. The licensee has not reconsidered such accident conditions in any information submitted to date and thus has not provided adequate assurance that the licensee will meet existing NRC regulations and that the health and safety of the public will not be endangered.

Radiological consequences of fuel handling accidents are discussed in the SER at pp. 21-22. The discussion is divided into two parts: cask drop accidents and fuel handling accidents. As for cask drop accidents, "(t)he licensee has not



presented any analysis of the radiological consequences of a cask drop accident onto consolidated spent fuel." SER, p. 21.

Likewise, for fuel handling accidents, no analysis was prepared except to assume, first, that an increase in the number of pins increases the undecayed source term "by an estimated factor of 1.62," and second, that fuel will be cooled for 120 days before being moved. On such a basis "the staff estimates" its result. However, the application by Maine Yankee is devoid of an explanation of the procedures or tools that Maine Yankee plans to use to accomplish pin compaction. Until such information is established, the Staff cannot say with adequate assurance that the limiting case for a fuel handling incident see (FSAR, section 14.16.2.1, p. 14-76) is still the limiting case for a fuel handling analysis involving consolidated assemblies. A separate fuel handling analysis must be prepared for the pin consolidation proposal.

Dated: August 30, 1982

Respectfully submitted,



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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on August 30, 1982 he made service of the within document by mailing a copy thereof, postage prepaid, to:

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