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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSIONOFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCHBEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
GPU NUCLEAR CORPORATION)	Docket No. 50-320-OLA
)	(Disposal of Accident-
(Three Mile Island Nuclear)	Generated Water)
Station, Unit 2))	

LICENSEE'S MOTION FOR SUMMARY
DISPOSITION ON ALTERNATIVES
(CONTENTIONS 1, 2, 3 AND 8)

I. Introduction

Licensee GPU Nuclear Corporation ("GPUN") hereby moves the Atomic Safety and Licensing Board, pursuant to 10 C.F.R. § 2.749 and the Board's Memorandum and Order of April 15, 1988, for summary disposition in Licensee's favor of Contentions 1, 2, 3 and 8 by Susquehanna Valley Alliance and Three Mile Island Alert ("Joint Intervenors"). These contentions are addressed in a single motion because they each challenge, in some way, the proposed disposal by evaporation of the processed Accident-Generated Water ("AGW") at TMI-2, when compared on a cost/benefit basis to various alternatives, including the taking of no action.

As grounds for its motion, Licensee asserts that there is no genuine issue of material fact to be heard with respect to these

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contentions, and that Licensee is entitled to a decision in its favor as a matter of law. This motion is supported by:

1. "Licensee's Memorandum of Law in Support of Motions for Summary Disposition," dated May 9, 1988;
2. "Licensee's Statement of Material Facts as to Which There is No Genuine Issue to be Heard (Contentions 1, 2, 3 and 8)"; and,
3. "Joint Affidavit of Dr. Gary G. Baker, David R. Buchanan, James J. Byrne, Thomas A. Grace, James E. Tarpinian, Charles S. Urland, Jr., and William W. Weaver (Contentions 1, 2, 3 and 8) ("Joint Affidavit")."

Following a statement of the procedural background of Contentions 1, 2, 3 and 8, the motion proceeds to describe the applicable legal standards for assessing alternatives under NEPA and the Commission's ALARA (as low as is reasonably achievable) regulations. The motion then summarizes the evidence presented on Licensee's proposal and the alternatives suggested by Joint Intervenors, and reaches conclusions on each of the four contentions.

Pursuant to the Board's Memorandum and Order of April 15, 1988, the Joint Intervenors and the Commonwealth of Pennsylvania may file any answer to this motion by no later than thirty-five (35) days after service of the motion.

II. Procedural Background

A. Contention 1

Contention 1 states as follows:

Neither the Licensee nor the Nuclear Regulatory Commission has shown that the disposal of the accident-generated water by an evaporator method complies with the A.L.A.R.A. principle (as low as reasonably achievable). Other methods of water disposal discussed in the Environmental Impact Statement (EIS) (NUREG 0683 Supplement #2, June 1987) would not release all the tritium and a quantity of radionuclides into the environment as the evaporation method would.^{1/}

In its ruling admitting this contention, the Board characterized the asserted basis as follows:

. . . citing the PEIS, Supplement No. 2, the Joint Petitioners allege that the ALARA principle has not been complied with because the selected open cycle evaporation method would release all of the tritium and a quantity of radionuclides whereas other methods would not release all the radioactivity.

Memorandum and Order (Memorializing Special Prehearing Conference; Ruling on Contentions; Scheduling), at 7 (Jan. 5, 1988). The Board later held that "evidence on whether the design system of the proposed evaporator will meet the ALARA standard does not fall within the scope of Joint Intervenors' admitted Contention 1." Order (Denying Licensee's Objection to Special Prehearing

^{1/} Amendments to Supplement to the Petition for Leave to Intervene for Susquehanna Valley Alliance (SVA) and Three Mile Island Alert (TMIA), Nov. 20, 1987, at 1.

Conference Order) at 3 (Jan. 28, 1988).^{2/}

B. Contention 2

As proposed, Contention 2 stated as follows:

The EIS fails to comply with the requirements of the National Environmental Policy Act (42 USCS 4332, n 29). The NRC and GPU failed to conduct conclusive risk/benefit analysis of the "No Action Alternative." The EIS has not clearly demonstrated that any adverse impact from the disposal program are outweighed by its benefits to the public. The benefits have not been clarified except the NRC says disposal is a fundamental element of the clean-up. This would appear to be a benefit to the Licensee and the NRC, but not to the public. The benefits of whether or not to dispose the water can only be analysed following the evaluation of the Licensee's plan for "Post Defueling Monitored Storage."^{3/}

In its ruling on this proposed contention, the Board admitted as an issue in controversy only "[t]he part of the proposed contention which contends that Staff's assessment fails to provide an adequate risk/benefit analysis of the 'no action alternative'. . .". Memorandum and Order, supra, at 9 (Jan. 5, 1988). The Board made note of Joint Intervenors' assertion, Tr.

^{2/} The Board directed that in the adjudication of Contention 4 it must be established that the cost/benefit analysis for the system design of the proposed evaporator meets the ALARA standard. Memorandum and Order (Granting Joint Intervenors' Motion to Compel) at 3 (April 6, 1988).

^{3/} Amendments to Supplement to the Petition for Leave to Intervene for Susquehanna Valley Alliance (SVA) and Three Mile Island Alert (TMIA), Nov. 20, 1987, at 2.

18, "that the PEIS shows that there is no radioactive impact from storing the AGW on the island, and the financial cost of storing it would be almost zero." Id. Other parts of the proposed contention were held inadmissible, or were not included because they were repetitive of Contention 3. Id. at 9-10. The admitted Contention 2 therefore states as follows:

The EIS fails to comply with the requirements of the National Environmental Policy Act (42 USCS 4332, n.29). The NRC failed to conduct conclusive risk/benefit analysis of the "No Action Alternative."

Joint Intervenors clarified Contention 2 by explaining that "the no action alternative supposes that eventually the water will be disposed of." Tr. 65. During discovery, Joint Intervenors were asked to explain the length of time they claim, in this contention, the water should remain on-site. Joint Intervenors answered: "It is expected that the water may remain on-site at least until Unit 1 is decommissioned and for as long as Unit 2 remains in Post Defueling Monitored Storage."^{4/} Based upon this answer, Licensee has used a storage period of thirty (30) years in its analysis of the "no action" alternative.

^{4/} SVA/TMIA's Responses to NRC's Interrogatories, Feb. 22, 1988 (Interrogatory 5b).

C. Contention 3

Contention 3 states as follows:

The EIS fails to comply with the requirements of the National Environmental Policy Act. The EIS has not demonstrated that the benefits of the evaporation process will exceed the costs and risks to the public. The benefits are unclear whereas the risks include the following:

a. The release of radioactivity into the air will enter the water, food chain, human organisms and the entire ecosystem.

b. A solidified waste of possibly 88,000 cubic feet will be created. This waste will have to be trucked to a low level waste site.^{5/}

D. Contention 8

Contention 8 states as follows:

The NRC failed to give reasonable and due consideration to evaporation in a closed cycle with the bottoms and condensate being solidified and shipped to a Low Level Waste Site. They also failed to give reasonable consideration to disposing the water in tanks and storing it inside Unit Two.^{6/}

In ruling on Contention 8, the Board noted that the contention as written did not include an acceptable basis. The Board

^{5/} Amendments to Supplement to the Petition for Leave to Intervene for Susquehanna Valley Alliance (SVA) and Three Mile Island Alert (TMIA), Nov. 20, 1987, at 2; Memorandum and Order, supra, at 10-12 (Jan. 5, 1988).

^{6/} Amendments to Supplement to the Petition for Leave to Intervene for Susquehanna Valley Alliance (SVA) and Three Mile Island Alert (TMIA), Nov. 20, 1987, at 7.

found an acceptable basis, however, in the statements of Joint Intervenors' representative at the special prehearing conference. Memorandum and Order, supra, at 19 (Jan. 5, 1988).

For the use of closed-cycle evaporation and subsequent solidification of the recovered water, Joint Petitioners allege that this method would mean that the contaminants would be held (Tr. 64, 65, 67) and thus not released to the general public. We find this to be an adequate basis for litigation. Concerning the concept of inside-containment storage, the Joint Petitioners allege that (Tr. 65):

"... they didn't give enough consideration to disposing the water in tanks and storing it inside Unit 2. It is almost the same as the "no-action" alternative, except that the no-action alternative supposes that eventually the water will be disposed of. But storing it in tanks inside Unit 2, is saying that it would be left on the island and monitored as means of disposing of it."

The Board accepts this clarification as a basis for litigation.

Id. at 19-20.

E. Joint Intervenors' Alternatives

Three alternatives to Licensee's proposal are identified in Joint Intervenors' Contentions 1, 2, 3 and 8. Contention 2 advances interim, monitored on-site storage (30 years in tanks). Contention 8 suggests: (a) distillation (closed cycle evaporation), with on-site solidification and off-site burial; and (b) permanent in-containment disposal in tanks. Licensee would be well justified, in this motion, in analyzing only these three alternatives actually raised by the contentions.

In discovery on Contention 1, however, Joint Intervenors raised several other alternatives:

- ° on-site solidification with off-site burial;
- ° off-site evaporation; and,
- ° distillation (closed cycle evaporation), with on-site solidification and burial.^{7/}

For completeness, Licensee addresses in this motion these three alternatives, in addition to the three raised in the contentions.^{8/}

III. Applicable Law

A. NEPA Consideration of Alternatives

NEPA requires federal agencies to make an environmental review of major federal actions significantly affecting the environment. Consideration of alternatives has been called the "linchpin" of NEPA environmental analysis. See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), CLI-77-8, 5 N.R.C. 503, 522 (1977) affirmed sub nom., New England Coalition on Nuclear Pollution v. NRC, 582 F.2d 87, 95 (1st Cir. 1978), citing Monroe County Conservation Society, Inc. v. Volpe, 472

^{7/} SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 11-12 (Interrogatory 1-14).

^{8/} Distillation (closed cycle evaporation) with on-site solidification is to some extent treated as one alternative with two end-point variations: burial of the solidified distillate on-site and off-site.

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F.2d 693, 697-698 (2d Cir. 1972). The environmental review mandated by NEPA is subject to a "rule of reason", and it need not include speculative possibilities. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978); NRDC v. Morton, 458 F.2d 827, 837-838 (D.C. Cir. (1972)). Moreover, the environmental analysis under NEPA does not require consideration of "alternatives which could only be implemented after significant changes in governmental policy or legislation or which require similar alternatives to existing restrictions." NRDC v. Callaway, 524 F.2d 79, 93 (2d Cir. 1975); Sierra Club v. Lynn, 502 F.2d 43, 62 (5th Cir. 1974) cert. denied, 421 U.S. 994 (1975).

The litmus test for NEPA consideration of alternatives which the courts and the NRC have applied is whether the environmental consequences of each reasonable alternative have been accorded a hard look. Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976); Sierra Club v. Morton, 510 F.2d 813, 818-20 (5th Cir. 1975); NRDC v. Morton, supra, 458 F.2d at 838; Boston Edison Co. (Pilgrim Nuclear Generating Station, Unit 2), ALAB-479, 7 N.R.C. 774, 779 (1978). From the case law, the Appeal Board has distilled that the "hard look" standard requires the Staff to "go beyond mere assertions" and "provide a detailed, thoughtful analysis drawn from adequate data so that a reviewing body can decide on an objective basis whether the agency fairly assessed other courses of action which might realistically be substituted for the one proposed." Pilgrim, supra, ALAB-479, 7 N.R.C. at 779.

NEPA does not require that a proposed action be demonstrably the best among available alternatives. In determining whether a proposal is environmentally acceptable, the Licensing Board need only find that after giving each alternative a "hard look," none is found "obviously superior" to the one proposed by the licensee or the applicant. Seabrook, supra, CLI-77-8, 5 N.R.C. at 526. The "obviously superior" standard requires rejection of the applicant's proposal only if the alternative is "clearly and substantially superior." Rochester Gas and Electric Corp., (Sterling Power Project, Nuclear Unit No.), CLI-80-7, 11 N.R.C. 731, 736 (1980).

The "obviously superior" standard is based on two realities of the NEPA process. Seabrook, supra, CLI-79-8, 5 N.R.C. at 530. First, more information is available about the licensee's or the applicant's proposal, and it is usually therefore subject to lengthy and thorough review involving the NRC Staff, other interested governmental agencies, and the general public in addition to the scrutiny applied through the adjudicatory process. This extensive review is contrasted with the necessarily more limited analysis which reasonably can be accorded alternatives. Accordingly, "[c]ommon sense teaches that the more closely [an alternative] is analyzed, the more adverse environmental impacts are likely to be discovered." See id. at 529 (fn. omitted). Second, the NEPA cost/benefit analysis is an inherently imprecise process. " . . . [I]n the nuclear licensing context the factors to

be compared range from broad concerns of system planning, safety, engineering, economic and institutional factors to environmental concerns, including ecological, biological, aesthetic, sociological, recreational, and so forth." Id. at 528. Based on the above two factors, the Commission has held that the licensee's or the applicant's proposal may not be rejected in favor of an alternative that is marginally "better" but, rather, only one that is "obviously superior." Id. at 530.

The Commission's rationale for the "obviously superior" standard has been endorsed by the courts, and the test itself has been adopted by the courts in reviewing agency decisions on NEPA alternatives. See New England Coalition on Nuclear Pollution, supra, 582 F.2d at 93-95; Seacoast Anti-Pollution League v. NRC, 598 F.2d 1221, 1228-1233 (1st Cir. 1979); Roosevelt Campobello Intern Park v. EPA, 684 F.2d 1041, 1047 (1st Cir. 1982) (where EPA reasonably concluded no alternative would be substantially preferable to the proposed site, rule of reason made exhaustive inquiry into environmental impacts of other sites unnecessary).

B. The ALARA Standard

Not a model of clarity, Contention 1 attempts to establish not NEPA but the NRC's "as low as is reasonably achievable" ("ALARA") standards on radiological effluents as the exclusive basis for assessing the evaporation proposal against alternatives.^{9/} During discovery on this contention, Joint Intervenors

^{9/} As such, Contention 1 is inherently inconsistent with the NEPA underpinning of Contentions 2, 3 and 8.

clarified that their position indeed is that ALARA requires selection of the disposal alternative with the lowest radiological consequences.^{10/} They further contend that their reason for asserting that the evaporator proposal does not comply with ALARA is because it is not the option which will deliver the lowest radiological dose to the public.^{11/} Before even getting to the evidence, a review of the Commission's ALARA regulations makes clear that Contention 1 is erroneous as a matter of law.

Appendix I to 10 C.F.R. Part 50 contains ALARA standards for radioactive material in light water cooled nuclear power reactor effluents. In addition, ALARA has been expressly defined in 10 C.F.R. § 20.1(c) to mean "as low as is reasonably achievable taking into account the state of technology, and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest."

The attempt in Contention 1 to isolate ALARA standards and elevate them over NEPA and 10 C.F.R. Part 51 as the exclusive basis for NRC licensing decisions is clear legal error by Joint Intervenors. NEPA requires agency decision-making which balances the benefits of proposed actions against not one (i.e.,

^{10/} SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 10 (Interrogatory 1-8).

^{11/} Id. at 11 (Interrogatory 1-12).

radiological consequences) but all of the significant environmental impacts and costs. See 42 U.S.C. § 4331 et seq; 10 C.F.R. § 51.71(d). Alternatives must be considered on the same basis. Under NEPA, the agency may not isolate radiological impacts from all other environmental considerations and select an alternative solely on that basis.

Not totally unlike NEPA, the ALARA standard itself under 10 C.F.R. § 20.1 reflects a flexible general principle based upon an array of factors. It does not provide an absolutely rigid mandate that releases be kept to the lowest possible extent, but only as low as is reasonably achievable. This flexibility is clearly indicated by the language used in 10 C.F.R. § 20.1 -- that a licensee "should . . . make every reasonable effort" to maintain releases as low as is reasonably achievable. Moreover, a determination of what is as low as reasonably achievable depends on consideration of the "state of technology" and of "economic," "societal," and "socioeconomic" factors.

During discovery, Joint Intervenors appear to have agreed with this reading of NEPA and ALARA. They conceded that NEPA and ALARA require a cost/benefit analysis which includes considerations of cost,^{12/} federal and state regulatory policy,^{13/} societal considerations,^{14/} radiological consequences of the

^{12/} SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 6 (Interrogatory 0-1).

^{13/} Id. at 9 (Interrogatory 1-5).

^{14/} Id. at 10 (Interrogatories 1-6, 1-7).

proposed action,^{15/} and non-radiological consequences of the proposed action.^{16/} This clearly contradicts the discovery responses, discussed above, which would base the Board's decision solely on radiological grounds. In fact, on the same page of discovery responses, Joint Intervenors took the inherently contradictory positions that: (a) the disposal alternative with the lowest radiological consequences must be selected, and (b) the disposal alternative with the lowest radiological and non-radiological consequences must be selected.^{17/} Obviously, the alternative with the lowest radiological consequences need not be, and often is not, the one with the lowest non-radiological consequences.

Although Appendix I strictly applies only to normally operating reactors, its provisions give general guidance on compliance with ALARA. If Appendix I were applied,^{18/} a showing that effluents will not result in an annual dose of 5 millirem to an individual in an unrestricted area would evidence compliance with the ALARA principle. See 10 C.F.R. Part 50, App. I, § 1. Appendix I does call for further restrictions in releases if

^{15/} Id. at 10 (Interrogatory 1-9).

^{16/} Id.

^{17/} Id. at 10 (Interrogatories 1-8, 1-9).

^{18/} It is Joint Intervenors' position that Appendix I applies to disposal of the AGW. SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 11 (Interrogatory 1-13).

population dose reductions can be achieved at a cost of less than \$1,000 per total-body person-rem and \$1,000 per person-thyroid-rem.^{19/} Id., § II.D. But this provision does not require an applicant to perform a cost benefit evaluation of every conceivable technological improvement that might reduce a dose.

In publishing this rule, the NRC explained:

Additional radwaste augments will be required when, and only when, it can be shown that, where each is added sequentially and in order of diminishing cost-benefit return, the sum of its annualized cost of installation, its annual operating cost, and a reasonable allowance for its maintenance is less than the annual worth of the decreases in total-body man-rem and in man-thyroid-rem which the augment can achieve for the population within 50 miles of the reactor.

Rulemaking Hearing, Docket No. RM-50-2, CLI-75-5, 1 N.R.C. 277, 284 (1975). This statement is consistent with the general principle established by the Appeal Board in a pre-Appendix I case holding that where releases are only a small percentage of 10 C.F.R. Part 20 levels, an applicant is prima facie in compliance

^{19/} Pursuant to the Board's direction, Licensee addressed the ALARA cost/benefit analysis of the disposal system design, from an evidentiary standpoint, in conjunction with the other Contention 4 design issues. There Licensee concluded that there are no identifiable modifications to its \$4.1 million proposal which would further reduce the already insignificant collective dose to the 2.2 million people in the 50-mile radius below the Staff's estimated 3 person-rem (total body) and 6 person-rem (thyroid) for a cost of \$1,000 per person-rem. Licensee's Motion for Summary Disposition of Contentions 4b (in part), 4c and 4d, May 9, 1988, at 7, 8.

with the ALARA principle. Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 A.E.C. 857, 858 (1974) citing Vermont Yankee Nuclear Power Corp. (Vermont Yankee Nuclear Power Station), ALAB-179, 7 A.E.C. 165, 166 (1974). "As is customary, the presentation of a prima facie case shifts the burden of going forward to the adversary, i.e., to those asserting that the proposed system is inadequate." Id. Thus, the proponent of a radwaste adjunct has the burden of demonstrating in the first instance that a release below the Appendix I limits is warranted. Absent such a showing, compliance with the numerical guidelines of Appendix I is deemed a conclusive showing of compliance with the ALARA requirements of Part 50. Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-455, 7 N.R.C. 41, 58 (1978).

IV. Statement of the Case

A. Pre-Adjudication Review

In March of 1981, the Staff issued the Final Programmatic Environmental Impact Statement (PEIS) on the TMI-2 cleanup -- NUREG-0683. In the PEIS, the Staff addressed, based on the available information, the impacts of future disposal of the AGW. The Commission, in an April 27, 1981 Policy Statement (46 Fed. Reg. 24,764) accompanying the issuance of the PEIS, stated that any future proposal for disposition of the AGW shall be referred to the Commission for approval.

On July 31, 1986, GPUN filed with the NRC a report on the disposal of the processed, accident-generated water at TMI-2. In the report, GPUN identified and evaluated three disposal options on the basis of relative technical feasibility, regulatory compliance, environmental effects, costs, waste generated, and time required to accomplish. On the basis of the careful evaluation documented in that report, GPUN selected and proposed for NRC approval the option of evaporation and burial of the residue off-site as commercial low-level waste. One of the options GPUN evaluated was river disposal, an option which meets NRC regulations and licensing requirements. This alternative has not been raised in this proceeding for further evaluation. As GPUN stated in its July 1986 report:

On the basis of overall technical merit, analysis indicates that the controlled discharge of the processed, diluted water to the Susquehanna River is the simplest, least costly option and involves insignificant environmental impact, as do the competing options. However, GPU Nuclear has opted not to recommend discharge to the river in recognition of an existing public perception that unique health risks are associated with this disposal option.^{20/}

On December 29, 1986, the Staff issued for comment an updated Draft Supplement No. 2 to the PEIS which was devoted solely to the water disposal issue. The draft supplement assessed the environmental consequences of GPUN's proposal and a number of

^{20/} Licensee's Answers to SVA/TMIA's Interrogatories to GPU Nuclear Corporation, Feb. 19, 1988, at 7.

alternatives. ^{21/} Following a public comment period, the Staff prepared the Final Supplement No. 2, dated June 1987. See "Consideration of Issuance of Amendment to Facility Operating Licensing and Opportunity for Prior Hearing," 52 Fed. Reg. 27,091 (1987) (procedural history of the evolution of the PEIS). The Staff concluded that GPUN's proposed method of water disposal and eight alternative methods given detailed evaluation could each be implemented without significant environmental impact. PEIS Supp. No. 2 at 6.1.

In PEIS Supp. No. 2, section 6.0, the Staff concluded:

(1) the potential health impact to both workers and the offsite public from any of the nine alternatives is very small; (2) the most significant potential impact associated with taking action to dispose of the water is the risk of physical injury with transportation accidents; (3) no alternative is clearly preferable from an environmental impact perspective; (4) storage of the AGW on the TMI site only postpones action that will ultimately be required to dispose of the water; (5) extended storage of the AGW

^{21/} The Staff divided the alternatives into two categories: alternatives that were quantitatively evaluated, and alternatives that were considered but rejected. PEIS Supp. No. 2 at 3.1. The GPUN proposal and eight alternatives were quantitatively evaluated. Fifteen other alternatives for disposal of the AGW were considered but did not receive quantitative evaluation because they were found to be less desirable from a technical standpoint or clearly inferior to alternatives which received more detailed consideration. However, the PEIS contains a description of the rejected alternatives along with the basis for their rejection. PEIS Supp. No. 2 at 3.34-3.39.

presents no significant environmental advantage over relatively near-term action to dispose of the water; and (6) the GPUN evaporation proposal is an environmentally acceptable disposal method.

The Joint Intervenors contend that the Staff's NEPA analysis of alternatives was inadequate because the Staff failed to consider or consider sufficiently certain disposal alternatives for the 2.3 million gallons of AGW. The five alternatives that Joint Intervenors have identified in their contentions and discovery responses are:

- (1) on-site solidification with off-site burial;
- (2) off-site evaporation;
- (3) distillation (closed cycle evaporation);
 - (a) on-site solidification and burial;
 - (b) on-site solidification and off-site burial;
- (4) interim, monitored on-site storage (30 years in tanks);
- (5) permanent in-containment disposal in tanks.

All of the above options were considered by the Staff, and, as Licensee demonstrates below, the PEIS provides more than sufficient data to allow for a reasoned choice among the alternatives and the GPUN proposal.

The Staff reviewed GPUN's disposal proposal in PEIS Supp. No. 2, section 3.1.1 (Evaporation, Solidification of Bottoms, and Disposal at a Licensed Burial Ground). The Staff analyzed the necessary evolutions, environmental impacts, potential for traffic accidents, commitment of resources, and regulatory

considerations for the GPUN proposal. Id. The Staff's analysis reflected a conservative assessment of the available information regarding the GPUN proposal. On the basis of its review, the Staff concluded "[t]he licensee's proposed action of onsite evaporation combined with the offsite disposal of evaporator bottoms is an environmentally acceptable disposal method." Id. at 6.1.

Similarly, the five alternatives put forward by the Joint Intervenor were given detailed evaluation in the PEIS:

- (1) The alternative of on-site solidification of the AGW with off-site burial of the solidified blocks was considered in PEIS Supp. No. 2, section 3.3.2 (Solidification and Disposal at a Commercial Low-Level Burial Site).
- (2) The alternative of off-site evaporation was analyzed by the Staff in PEIS Supp. No. 2, section 3.2.1 (Offsite Evaporation at the Nevada Test Site).
- (3a) The Staff gave adequate consideration to the option of distillation (close cycle evaporation) followed by on-site solidification and burial of the distillate. In section 3.6.4, the Staff addressed the option of distillation and solidification of the distillate. There the Staff also referenced separate discussions on the two component parts of this option, closed cycle evaporation (section 3.1.3) and permanent on-site storage of solidified waste (section 3.3.1).
- (3b) Likewise, the variant of the previous alternative -- distillation (close cycle evaporation) of the AGW followed by solidification with off-site burial of the solidified distillate -- was addressed by the Staff. Closed cycle evaporation with solidification and disposal of bottoms was considered in section 3.1.3 (Distillation, Solidification and Disposal of Bottoms; River Discharge of Distillate).^{22/} Solidification of the condensate and shipment to a low-level waste site

^{22/} The river discharge portion of the discussion does not apply to the alternative put forward by the Joint Intervenor (Distillation, Solidification and Off-site Burial).

was evaluated in section 3.3.2 (Solidification and Disposal at a Commercial Low-Level Burial Site).

- (4) The alternative of interim, monitored on-site storage was addressed by the Staff, among other places, in PEIS Supp. No. 2, section 3.5.1 (Liquid Storage in Tanks).
- (5) The Staff gave measurable consideration to the permanent in containment storage option. Under the "no action" alternative of "Liquid Storage in Tanks" (section 3.5.1), the Staff assessed the idea of maintaining the AGW in tanks on-site for an indefinite period of time.

The Staff's analysis of the GPUN proposal and the five alternatives put forward by the Joint Intervenors more than adequately met the NEPA standard for consideration of alternatives. In varying forms and places, the Staff reviewed the system description and operation, environmental impacts, commitment of resources, accident analyses, and regulatory considerations for the GPUN proposal and the five alternatives. The Staff's analysis provided more than enough information upon which to base a reasonable choice among alternatives. Moreover, it is clear from the Staff's analysis that none of the alternatives put forward by the Joint Intervenors is "obviously superior" to GPUN's proposal. Therefore, for this reason alone, summary disposition should be granted on Contentions 1, 2, 3, and 8.

B. Licensee's Analysis of Alternatives

In addition to the Staff's analysis in the PEIS, GPUN assembled a team of seven experts from the fields of environmental science, mechanical engineering, nuclear licensing, environmental licensing, radiological engineering, waste management, and

probabilistic risk assessment to make an independent evaluation of GPUN's proposal and the five alternatives put forward by the Joint Intervenors. The findings of this team of experts are presented in the Joint Affidavit in support of the foregoing motion. The cost/benefit analysis in the Joint Affidavit demonstrates that GPUN's evaporator proposal complies with the ALARA principle and NEPA because it keeps the radiation dose as low as is reasonably achievable, and no alternative put forward by the Joint Intervenors is "obviously superior."

The Joint Affidavit first reviews GPUN's proposal to evaporate the AGW. The review includes a description of the disposal system, the content of the AGW, the radiological dose estimates, the projected waste management and transportation mechanisms, the environmental impacts and the costs for GPUN's proposal. The Joint Affidavit then examines each alternative put forward by the Joint Intervenors. The examination covers the transportation requirements, radiological effects, environmental impacts, licensing feasibility, and costs of each option. Finally, the Joint Affidavit compares GPUN's proposal with the five alternatives the Joint Intervenors have put forward and demonstrates that the Staff fulfilled its responsibility under NEPA by taking a hard look at alternatives and providing enough data for a reasoned choice among alternatives.

The Joint Affidavit demonstrates that GPUN's proposal is an environmentally acceptable, technologically sound, and cost

efficient disposal method. Joint Affidavit at ¶¶ 11-28. During the evaporation process, it is estimated that the highest average annual doses to the maximally exposed hypothetical off-site individual will be 2.7 mrem to the bone and 1.25 mrem total body. Id. at ¶ 20. Those doses are only 20% of the annual limit of 15 mrem and 25% of the annual limit of 5 mrem, respectively, given in Appendix I to 10 C.F.R. Part 50 for exposure from airborne releases. Id. Moreover, the average exposure to a member of the population is estimated to be 0.011 mrem to the bone and 0.008 mrem total body. These doses pale in comparison to the 300 mrem per year of natural background radiation to which a member of the local population is exposed. Id. Similarly, the occupational dose from evaporation of the AGW and the packaging of the evaporator bottoms is estimated to be 23 person-rem, a very small percentage of the total exposure to the work force estimated in the original PEIS at Table 10.5 (i.e., 2,000 to 8,000 person-rem). Id. at ¶ 22. As for transportation requirements, the evaporation option will require only 8 shipments to dispose of evaporator bottoms with corresponding expected accident and fatality rates of 0.032 and 0.0013, respectively.^{23/} Id. at ¶ 26. Accordingly, the probability of a traffic accident or fatality resulting from this option is practically zero. Moreover,

^{23/} This transportation requirement is exclusive of the shipments necessary to dispose of the liners which will be produced during the reprocessing of 31% of the AGW.

the evaporation proposal has the lowest potential for accidents and fatalities of any alternative with a transportation component. Id. at ¶ 95. In the area of licensing feasibility, excluding GPUN's pending request for a license amendment, which is necessary to implement any of the disposal options, there are no regulatory barriers to the evaporation proposal. Finally, at a cost of \$4.1 million, the evaporation proposal will result in a complete resolution of the water disposal issue. Id.

The on-site solidification with off-site burial option calls for the reprocessing of 31% of the AGW prior to solidifying all 2.3 million gallons of water into 8'X 8' X 3' cement blocks. The cement blocks then will be disposed of as Class A radioactive waste at an approved LLW disposal facility. Id. at ¶¶ 29-42. The dose to the maximally exposed hypothetical off-site individual is estimated to be 0.7 mrem to the total body from this option. While the latter dose estimate is lower than the GPUN evaporation proposal maximally exposed individual dose estimate, the occupational dose at the TMI site from the on-site solidification option is higher than the occupational dose for evaporation. Moreover, the on-site solidification option would require 150 times as many waste disposal shipments with an attendant increase in non-radiological transportation risks. While the probability of a traffic accident under the evaporation alternative is practically zero, the expected number of traffic accidents from the on-site solidification with off-site burial option is

4.9.^{24/} In terms of required regulatory approvals, the on-site solidification with off-site burial option would require an "unusual volume" allocation from DOE for the waste disposal which would amount to 58% of the total volume allocation for all waste disposers from 1986 through 1992.^{25/} This would constitute an unwarranted waste of scarce disposal space, and clearly would not be approved. Finally, the estimated cost of the on-site solidification with off-site burial option is \$40.7 million, more than ten times the cost of the evaporation proposal. See id.

The alternative of off-site evaporation calls for the reprocessing of at least 31% of the water inventory at TMI prior to loading it into tank trucks and transporting it to an off-site location (NTS) where the water would evaporate. Id. at ¶¶ 43-49. Although it is estimated that this option would not produce a maximally exposed hypothetical off-site individual dose or an additional occupational dose to workers on the TMI site, the non-radiological transportation risks involved in this alternative are higher than those presented by the GPUN evaporation proposal. The off-site evaporation option is estimated to require 460 truck shipments with an expected number of 1.9 traffic accidents.^{26/}

^{24/} This transportation requirement is exclusive of the shipments necessary to dispose of the liners which will be produced during the reprocessing of 31% of the AGW.

^{25/} In the PEIS, the Staff noted that this option would require DOE allocation of "a very significant portion of the available emergency [waste disposal] allocation." PEIS Supp. No. 2 at 3.25.

^{26/} This transportation requirement is exclusive of the shipments necessary to dispose of the liners which will be produced during the reprocessing of 31% of the AGW.

By comparison, the probability of a traffic accident under the GPUN evaporation proposal is practically zero. Moreover, off-site evaporation would require DOE authorization to use NTS.^{27/} This regulatory barrier to the off-site evaporation option should not be underestimated in view of DOE's past criticism of the off-site evaporation option. See PEIS Supp. No. 2 at A.31. Finally, the \$4.6 million estimated cost of this option is higher than the \$4.1 million estimated cost of GPUN's evaporation proposal. Joint Affidavit at ¶¶ 43-49.

The alternative of distillation (closed cycle evaporation) of the AGW followed by on-site solidification and burial of the captured distillate, like the other options put forward by the Joint Intervenor, is not preferable to GPUN's evaporation proposal. Id. at ¶ 50-72. The option of distillation and on-site solidification and burial is estimated to produce a dose of 0.7 mrem total body dose to the maximally exposed hypothetical off-site individual. Like all of the solidification options, the latter dose estimate is lower than the comparable estimated dose produced by the evaporation option. However, burial of the distillate on the TMI site is not feasible because of space limitations and the site's general location within the 100-year flood plain. In the area of regulatory approvals, FERC approval may be required if the distillate is buried on the Island, and approval

^{27/} The Staff analysis confirmed that DOE approval would be necessary to implement this option. PEIS Supp. No. 2 at 3.21.

of the Pennsylvania Department of Environmental Resources ("PADER") would be required.^{28/} It also should be noted that PADER approval is doubtful because of a Pennsylvania policy of limiting landfill permits to only those that are absolutely necessary. In addition, with each licensing proceeding, the risk associated with the continued storage of liquid radioactive waste will mount. Finally, the cost of the on-site solidification and burial option is approximately \$3 million dollars more than GPUN's evaporation proposal. See id.

A variant of the above alternative is distillation (closed cycle evaporation) of the AGW followed by on-site solidification with off-site burial of the solidified distillate. Id. at ¶¶ 73-78. However, this variant has greater non-radiological transportation risks than the evaporation proposal. See id. In addition, this variant would require DOE approval of an unusual volume allocation of more than half of the total national unusual volume allocation for six years. Finally, the on-site solidification and off-site burial option would cost ten times the amount of GPUN's evaporation proposal. Joint Affidavit at ¶¶ 73-78.

The option of interim, monitored on-site storage envisions storing the AGW in tanks on the TMI site. Id. at ¶¶ 79-86. This alternative is assumed to give essentially no worker or off-site

^{28/} It should be noted that the Staff observed that approval of the State of Pennsylvania would be required to construct a landfill on the TMI site. PEIS Supp. No. 2 at 3.14.

dose at the present time or in the near future. However, at the end of the storage period (assumed to be 30 years), the worker and off-site doses will be essentially the same as if the water was disposed of now. For this reason alone, there is no benefit to the interim monitored on-site storage option.^{29/} Moreover, the latter option presents the risk of an accidental release during storage. Finally, the estimated cost of the interim, monitored on-site storage option is \$1 million to \$1.5 million for current construction of tanks. In reality, however, the cost estimate for this option must include the additional costs for ultimate disposal of the AGW, which range from at least \$4 million for permanent storage in the Reactor Building (labor costs only) to \$42 million for distillation and off-site burial. See id.

The option of permanent in-containment storage of the AGW would require storage of the AGW in tanks within the TMI-2 Reactor Building indefinitely.^{30/} Id. at ¶¶ 87-93. While this alternative will present no dose to the public, the estimated

^{29/} The Staff observed further that the "no action" alternative is inconsistent with the Commission's policy that the cleanup, including the removal of radioactive waste from the TMI site, be carried out safely and expeditiously. PEIS Supp. No. 2 at 3.34; "Commission Statement of Policy Relative to the NRC Programmatic Environmental Impact Statement on the Cleanup of Three Mile Island Unit 2," 46 Fed. Reg. 24,764 (1981). Accordingly, under the NEPA rule of reason test, the Staff did not have to give this option any consideration. See Callaway, supra, 524 F.2d at 83 (alternatives which could only be implemented after significant changes in governmental policy need not be considered under NEPA).

^{30/} See note 29, supra.

occupational dose from construction of the tanks alone is 4,070 to 5,106 person-rem. Such a large dose more than offsets the dose savings to the public. As for licensing feasibility, this option would require NRC licensing pursuant to 10 CFR Part 61. Given TMI's failure to meet the site suitability criteria of Part 61 and this option's failure to meet the packaging criteria of Part 61, NRC approval of this option is doubtful. Finally, the \$4 million cost estimate (labor costs only) for the permanent in containment storage option does not include the additional cost for construction materials (e.g., tanks, pumps, piping, and necessary support steel), long term storage, and maintenance. See id.

V. Conclusions

A. Contention 1

As discussed above (§ III.B) in Licensee's analysis of the applicable law, Joint Intervenors have taken inconsistent positions during discovery on the legal basis for Contention 1. To the extent they continue to assert that the disposal option with the lowest radiological consequences must be selected, they misread both NEPA and the Commission's ALARA standards, which require a balancing and consideration of other factors. Moreover, the showing by Licensee that the evaporation proposal meets the numerical guidelines of Appendix I to 10 C.F.R. Part 50 is a prima facie demonstration of compliance with the ALARA

standard.^{31/}

The evidence shows that the evaporation proposal does not result in the lowest off-site doses when compared with the solidification options raised by Joint Intervenors. The highest average annual doses to the maximally exposed hypothetical off-site individual during evaporation is estimated to be 2.7 mrem to the bone and 1.25 mrem total body. Comparable estimates for the various solidification options are zero to 0.3 mrem to the bone and 0.7 mrem total body. (Average individual exposures are practically negligible.) These doses are all ALARA and, at these extremely low levels, where they are below the normal variations in the annual 300 mrem individual natural background dose, they should be considered equivalent.^{32/}

In any case, when other relevant factors are considered -- occupational doses, the risks of transportation accidents, cost, and licensing feasibility -- the Joint Affidavit shows that the evaporation proposal readily overcomes the almost immeasurable difference in projected public doses.

^{31/} It is Joint Intervenors' position that there is no safe level of exposure to radiation. SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 6 (Interrogatory 0-2). This position is fundamentally at odds with the Commission's regulations which permit releases as consistent with the public health and safety.

^{32/} While the second sentence of Contention 1 is largely irrelevant, it is also false and misleading. It is clear from the Joint Affidavit that all disposal alternatives release some radioactivity, and that the evaporator proposal does not release all of the radioactivity, but rather (with the exception of tritium) reduces it by a factor of 1,000.

B. Contention 2

Little basis was asserted for the contention that the NRC's "risk/benefit analysis" of the "no action alternative" was not "conclusive." During discovery, Joint Intervenors conceded that interim on-site storage for 30 years does have a cost^{33/} (not the "almost zero" they advanced, Tr. 18), and that there is a radiological impact (cf. Tr. 18) from ultimate disposal.^{34/} They also concede that the NRC's consideration of the environmental impacts of this option should include the impacts of eventual disposal in 30 years.^{35/}

This "no action" alternative is one of the nine fully and quantitatively evaluated by the NRC Staff in PEIS Supp. No. 2 (section 3.5.1). There the Staff described the alternative in terms of the required system and operation; assessed the environmental impact in terms of occupational radiation exposure, radiation exposure to the public and commitment of resources; considered the impacts of postulated accidents; and evaluated regulatory considerations. The Staff concluded that environmental impacts of the "no action" alternative arise principally at the time of eventual water disposal or in the event of tank

^{33/} SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 14 (Interrogatory 2-5).

^{34/} Id. (Interrogatory 2-4).

^{35/} Id. (Interrogatory 2-3).

failure. "Because the water contains relatively long-lived radiological contaminants, the environmental impacts from ultimate disposal are not expected to be significantly different from those impacts estimated for near-term disposal options." Id. at 3.33. Noting the absence of any overriding benefit from postponing disposal, which is required prior to facility decommissioning and termination of the TMI-2 license, the Staff supports safe and expeditious removal of the water. Id. at 3.34.

Chapter 5 of PEIS Supplement No. 2 compares the nine alternatives. Based on that comparative analysis of the radiological and non-radiological impacts of the alternatives and postulated accidents, as well as the commitment of resources, the NRC Staff concluded, inter alia, that:

Storage of the accident-generated water on the TMI site for an indefinite period, even though it involves small potential environmental impact, is inappropriate because it only postpones action that will ultimately be required to dispose of the existing water. Additionally, extended storage presents no significant environmental advantage over relatively near-term action to dispose of the water. Because of the relatively long radiological half-life and relatively small quantity of contaminants in the water, the environmental impacts of disposal following even a relatively long storage period would not be significantly different from impacts associated with near-term disposal.

Id. at 6.1; see also id. at viii.

Licensee's own evaluation of the interim storage option totally supports the Staff's conclusions. Licensee's expert shows that because of the critical role of strontium in the dose

ass. assessment of the assumed presence of other isotopes at levels less than lower limits of detection, radioisotopic decay for 30 years would not reduce the dose to any significant degree. Joint Affidavit at ¶¶ 80-81. In addition, this option requires the expenditure of \$1 to \$1.5 million for tanks, plus the cost of eventual disposal, and presents the risk of accidental release during storage. Id. at ¶¶ 79, 83-85. Most importantly, Licensee also concluded that the no action alternative is inconsistent with Commission policy on the cleanup, and postpones disposal of the AGW for no off-setting benefit. Id. at ¶ 86.

C. Contention 3

While Joint Intervenors contend that the benefits of the evaporation proposal are unclear, Licensee's Joint Affidavit demonstrates that a major benefit of the proposal is the removal of the risks associated with the storage at Three Mile Island of radioactive waste in a mobile form. Joint Affidavit at ¶¶ 83-85, 95. Unlike some of Joint Intervenors' suggested alternatives, the evaporation proposal represents complete disposition and leaves none of the waste at the site. Unlike some alternatives of Joint Intervenors, evaporation does not leave the problem of accident-generated water disposal for our children or subsequent generations to address. Finally, disposal of the AGW would represent a major step toward completion of the TMI-2 cleanup program -- which should universally be viewed to be in the public interest.

Contention 3 cites the risk of releasing radioactive material into the air. This risk is common to all NRC licensed activities. Here, both the NRC Staff and the Licensee have assessed the radiological releases from evaporator disposal operations, estimated doses to the maximally exposed individual, and the estimated dose to the the population.^{36/} PEIS Supp. No. 2 at 3.7; Joint Affidavit at ¶¶ 18-21. As discussed above in response to Contention 1, these doses are small fractions of regulatory limits and are so low as to be insignificant.

Joint Intervenors also assert in Contention 3 the risk of creating as much as 88,000 cubic feet of solidified radioactive waste, which must be trucked to a low level waste disposal site. This part of the contention is based on an upper-bound Staff estimate which was provided before detailed information on Licensee's specific system was available. Licensee's proposal will produce an estimated waste volume of only 4,425 cubic feet. Joint Affidavit at ¶¶ 23-26. The transportation requirement for the evaporator bottoms is an estimated 8 shipments, which provides the lowest potential for traffic accidents and fatalities of any alternative with a transportation component. Id. and at ¶ 95.

^{36/} The health effects of these releases are addressed in Joint Intervenors' Contention 5(d), and Licensee's separate motion for summary disposition of that contention.

Accordingly, contrary to Contention 3, the benefits of Licensee's proposal have been shown to outweigh the carefully considered, minor risks involved.

D. Contention 8

As discussed above (§ II.D) the asserted basis for Joint Intervenors' alternative of closed-cycle evaporation, followed by solidification of the distillate and burial off-site, is the contention that the contaminants would be held and not released to the general public. As Licensee demonstrates, however, half of the tritium would be released during curing of the concrete, resulting in an estimated total body dose of 0.7 mrem to the maximally exposed off-site individual, and a 50-mile population dose of 7.5 person-rem to the total body. Joint Affidavit at ¶ 74. In addition, the general population dose from transportation of the bottoms is estimated to be 5.2 person-rem. Id. at ¶ 76. Consequently, the only basis advanced by Joint Intervenors has been shown to be flat wrong. In addition, this alternative would require DOE approval of an unusual volume allocation (467,000 cubic feet) of more than half the national allocation from 1986 through 1992, would cost ten times the amount of Licensee's proposal, and would involve greater non-radiological transportation risks. Id. at ¶¶ 73-76.

Joint Intervenors advanced no basis for the other Contention 8 alternative -- permanent, in-containment storage -- other than

their opinion that it ought to be considered. The NRC Staff in both the original PEIS and in Supplement No. 2 considered the idea of maintaining the AGW in tanks for an indefinite period of time. See, e.g., PEIS Supp. No. 2 at 3.32-34. The reduction of tritium to a level comparable to the EPA limit for drinking water would take approximately 150 years.^{37/} Id. at 3.32. "In effect, the TMI site would become a low-level waste disposal site for radioactivity in mobile form." NUREG-0683 (1981) at 7-49. The NRC Staff reasonably rejected this alternative because TMI is not a licensed low-level waste disposal site. Id. Attempting to license TMI as a low-level disposal site pursuant to 10 C.F.R. Part 61 would raise regulatory and institutional issues which could not be resolved within a reasonable period of time.^{38/} Moreover, as a matter of policy the NRC Staff has concluded that TMI should not become a permanent waste disposal site. Id. at 2-3, 12-2.

In an effort to quantify this alternative, Licensee's engineers devised a hypothetical means of in-containment storage in tanks. Aside from the policy reasons which suggest rejection of this option, it would require a significant occupational dose

^{37/} Joint Intervenors have stated to the NRC their opinion that tritium "will be toxic for 120 years." PEIS Supp. No. 2 at A.64.

^{38/} Joint Intervenors concede that Three Mile Island may not be a suitable site for long-term storage of the AGW. SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 16 (Interrogatory 2-9).

which is unwarranted by the small dose savings to the public,^{39/} and long-term costs which exceed the evaporation proposal. Further, it is Licensee's judgment that NRC licensing of the site under Part 61 is doubtful. Joint Affidavit at ¶¶ 87-93. Clearly, it has been shown that this non-alternative has been given more than adequate consideration and has been properly rejected.

E. Summary Disposition

The Supreme Court has stated that "administrative proceedings should not be a game or forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that 'ought to be' considered. . .". Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553-54 (1978). Joint Intervenor, having little in the way of basis at the outset, have provided in discovery no technical information which would suggest why the five alternatives they suggest "ought to be" considered more than they have been, or why any of the alternatives is "obviously superior" to the evaporation proposal. Indeed, the Joint Intervenor will not even select one of their alternatives over the others as the one they would have the Licensing Board endorse. Joint Intervenor make the remarkable concession that they are not well enough informed to make a choice. See

^{39/} During discovery, Joint Intervenor did not know whether this option would result in occupational doses greater than for the evaporator proposal. SVA/TMIA's Responses to NRC's Interrogatories, Feb. 22, 1988 (Interrogatory 11).

SVA/TMIA's Responses to Licensee's Interrogatories and Request for Documents, Feb. 15, 1988, at 7 (Interrogatory 0-6) and 28 (Interrogatory 8-3). In this circumstance, the issues are ripe for summary disposition and an evidentiary hearing would be unwarranted.

The Staff and Licensee have thoroughly evaluated the GPUN proposal and Joint Intervenors' five alternatives. The Joint Affidavit shows that the Staff's evaluation in PEIS Supplement No. 2 was adequate. The Board need only find that no alternative is "obviously superior" to Licensee's proposal. Not only has Licensee met its burden of showing that the alternatives are not obviously superior, but Licensee has also shown that its proposal is in fact the superior one. For all of the foregoing reasons, Licensee submits that there is no genuine issue of material fact to be heard with respect to Contentions 1, 2, 3, and 8. Licensee is entitled to decision in its favor on these contentions as a

matter of law, and this motion for summary disposition should be granted.

Respectfully submitted,

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