



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

THE ATOMIC SAFETY AND LICENSING BOARD

Sheldon J. Wolfe, Esquire, Chairman
Dr. E. Leonard Cheatum, Member
Gustave A. Linenberger, Jr., Member

SERVED NOV 14 1980

In the Matter of)
)
HOUSTON LIGHTING AND POWER COMPANY)
)
(Allens Creek Nuclear Generating)
Station, Unit 1))

Docket No. 50-466 CP

ORDER RULING UPON MOTIONS
FOR SUMMARY DISPOSITION OF
ENVIRONMENTAL CONTENTIONS
(November 13, 1980)

As discussed hereinafter we rule upon various motions for summary disposition of several environmental contentions filed by the Applicant and by certain Intervenors. As reflected in our Order of October 3, 1980 and in our letter to the parties dated October 15, 1980, written direct testimonies relating to environmental contentions which are not dismissed herein shall be filed by no later than December 18, 1980.

Marrack Contention 2(c)

Neither the FES nor the FSFES addresses the impact upon migratory waterfowl along the transmission routes beyond the plant site, nor considers that this impact could be minimized by constructing the power lines to follow the Brazos River to the south of the site, then east and then north to the O'Brien substation.

Dr. Marrack filed a Motion For Summary Disposition on September 12, 1980, which the Staff and Applicant opposed in Responses of October 2, 1980.

Dr. Marrack has not complied with § 2.749(a) of our Rules of Practice which specifies that there shall be annexed to a motion for summary disposition "a separate, short and concise statement of the material facts as to which the moving party contends that there is no genuine issue to be heard". Our patience

has been tested again by Intervenor's failure to read or failure to comply with our rules; however, one more time we will overlook such failures. Cutting through the verbiage and arguments in the instant motion, we conclude that Dr. Marrack contends that there is no genuine issue to be heard as to the following two material facts: (1) The Final Environmental Statement (FES) and the Final Supplement thereto (FSFES) inadequately analyze the impact upon migratory waterfowl along the two transmission routes (1A and 2C) proposed by the Applicant and concurred in by the Staff, and (2) The FES and the FSFES inadequately analyze that this impact upon migratory waterfowl, which would occur along the aforementioned two proposed transmission routes, could be minimized by constructing the power lines to follow the Brazos River to the south of the site, then east and then north to the O'Brien substation.^{1/}

We have read the sections of the FES and FSFES cited by Dr. Marrack, by the Staff and by the Applicant. While the Staff argues, as supported by the affidavit of a research staff member, that the Staff did consider the impacts of the proposed transmission lines on waterfowl and did conclude no obviously superior routing is available, the Staff's evaluation and/or analysis is not set forth in the FES and the FSFES. Applicant's arguments, as supported by an affidavit of an environmental scientist, likewise miss the mark because the FES and FSFES do not set forth the Staff's evaluation and/or analysis.

^{1/} In the instant motion, Dr. Marrack improperly attempts to enlarge the scope of his contention (as reworded by the Board in the Order of March 10, 1980) by arguing that the FES and FSFES inadequately considered alternative transmission routes which could have minimized the impact upon migratory waterfowl. Our Order of August 21, 1980 at page 3 had denied as untimely his motion to correct the reworded contention, and thus we do not consider this argument.

Accordingly, we grant the instant motion for summary disposition upon the narrow basis that the FES and the FSFES are deficient in these two respects. However, the matter does not end here because, as the Staff correctly points out, if the FES and FSFES are deficient, pursuant to 10 C.F.R. § 51.52(b)(3) and the Appeal Board's opinion in Philadelphia Electric Co. (Limerick Generating Station, Units 1 and 2), ALAB-262, 1 NRC 163, 196-97 and n. 54 (1975)^{2/}, the Licensing Board is authorized to proceed to hear and to fully test the evidence adduced during the hearing and to modify the FES and the FSFES if deficient.^{3/} Accordingly, we request that Staff and Applicant, and Dr. Marrack, if he so desires, present evidence at the forthcoming hearing^{4/} analyzing (a) the impact upon migratory waterfowl along the two transmission routes (1A and 2C) proposed by the Applicant and concurred in by the Staff, and (b) whether the impact upon migratory waterfowl could be minimized by constructing the power lines to follow the Brazos River to the south of the site, then east and then north to the O'Brien substation.

2/ See also Public Service Company of Oklahoma, et al. (Black Fox Station, Units 1 and 2), ALAB-573, 10 NRC 775, 785-86 (1979); Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), CLI-78-1, 7 NRC 1, 29, n. 43 (1978), affirmed sub nom. New England Coalition v. NRC, 582 F2d 87, 93 (1978); Niagara Mohawk Power Corporation (Nine Mile Point Nuclear Station, Unit 2), 1 NRC 347, 371-72 (1975); Texas Utilities Generating Company (Comanche Peak Steam Electric Station, Units 1 and 2), 1 NRC 51, 55 (1975).

3/ Indeed, in admitting Marrack Contention 2(c) as reworded by the Board, and in posing Board Question 11 in our Order of July 31, 1980, we had already put both Applicant and Staff on notice that we expected them to present evidence regarding these deficiencies.

4/ We note, at page 1 of his motion for summary disposition that Dr. Marrack, mistakenly believing that Applicant prepared the FES and FSFES, requested that we only order Applicant to present a thorough analysis at the forthcoming hearing.

TexPirg Additional Contention 1 (consolidated with Hinderstein 3)

S.4.5.1 (3) on P9 S. 4-14 of the Final Supplement to the Final Environmental Impact Statement (FSFEIS) does not adequately disclose and analyze the alternatives chosen for the transport of construction related components to the site. In particular, the Applicant has not clearly determined whether waterway barge transit will be used for transportation of large reactor components to the site.

Such a transportation scheme would require dredging and channelizing of sections of the San Bernard River or Brazos River. Such activity would disrupt marine life in that river, create excessive turbidity, and clouding of the water, destroy river bottom life, require environmental destruction during spoil disposal and initiate secondary impact in the form of increased industrial uses of the rivers. Petitioner contends that Applicant's commitment to transportation of the reactor vessel should be expressed more specifically and that the Board should either deny the license wholly or require the alternative site action sought by TexPirg in Contention 1 of the "Stipulation between TexPirg and the NRC Staff", if the dredging and channelizing is necessary.

The final EIS does not specify how the reactor vessel will be transported to the construction site and what means have to be taken to effect this transportation. The probability that this transportation will have an environmental impact necessitates its coverage in a final EIS for construction. For example, dredging, widening or otherwise altering the Brazos River to bring the vessel to the site by barge would have an environmental effect.

It is requested that the construction permit not be issued until the reactor vessel transportation is sufficiently addressed.

TexPirg filed a Motion For Summary Disposition on October 8, 1980, which the Applicant and Staff opposed respectively on October 22, and November 3, 1980.

TexPirg indicates that there is no genuine issue to be heard as to the material facts that neither the FES nor the FSFEIS (1) shows the impact on the environment of the use of barging to transport the reactor vessel, (2) adequately discusses alternative methods of transporting the reactor vessel to the ACNGS, (3) adequately discusses the environmental impacts of transporting the reactor vessel to alternative sites such as the South Texas site. As a matter of law, TexPirg

argues that, pursuant to Commission regulations, a hearing upon any further supplementation to the FES cannot be conducted until after the FES, as supplemented, has been circulated for comment and made available to the public.

We grant the motion for summary disposition upon the narrow basis that the FES and FSFES are deficient in not analyzing the aforementioned three factual issues. However, pursuant to 10 C.F.R. § 51.52(b)(3) and the cases cited in our discussion of Marrack Contention 2(c), supra, we are authorized to proceed to hear and to fully test the evidence adduced during the hearing and to modify the FES and supplements thereto if deficient. The Staff advises that the second supplement to the FES, which will assess the environmental impacts of barging and the alternatives to that proposed method of transportation, will be published in November 1980.^{5/} If the second supplement to the FES is indeed published in November 1980, TexPirg should have ample opportunity to submit written direct testimony, if any, by December 18, 1980, and/or to prepare for cross-examination. If TexPirg is unable to file its written direct testimony by the due date, upon a timely filed motion showing good cause, the Board may set forward the schedule for the taking of evidence upon the barging issue.

TexPirg Contention 1 (consolidated with Bishop 23(a); Conn 2; Cumings 4; Doggett 2; Johnston 5-2 and 6-1; Lemmer 2)

"The South Texas site is obviously superior to Allens Creek as the site for an additional nuclear power plant because:

^{5/} We note that the Staff's description of the scope of the second supplement does not include an assessment of the environmental impacts of transporting the reactor vessel to alternative sites such as STP. Further, we remind the parties that the Order of March 30, 1979 stated that we would hear evidence on certain additional matters in connection with the instant consolidated contention.

(1) Two nuclear power plants are already under construction at South Texas, and a third unit could be added without disturbing the unspoiled site at Allens Creek;

(2) the cooling lake at South Texas is large enough to accommodate a third unit;

(3) a third unit at South Texas would use less additional land than would a unit at Allens Creek;

(4) a third unit at South Texas would use significantly less water than would a unit at Allens Creek;

(5) a third unit at South Texas would require less additional land for transmission lines than would a unit at Allens Creek; and

(6) the present and projected population density around South Texas is significantly less than around Allens Creek."

TexPirg's undated motion for summary disposition of its Contention 1 was received on September 16, 1980. Applicant and Staff filed opposing responses on October 2, 1980.

Relying upon affidavits of Clarence Johnson and Howard Saxion, Intervenor's motion asserts that there are no genuine issues to be heard as to certain material facts. These material facts, stated in TexPirg's motion, unfortunately, in some instances, do not relate to the subject matter of the above six elements of the contention as submitted. Hence, in order to determine how much of this contention is to be litigated, we discuss the above six elements to the extent specifically addressed by TexPirg.

(1) It is uncontroverted that two nuclear power plants are already under construction at South Texas. It is axiomatic that if an additional plant were instead built at South Texas, the ACNGS site would not be disturbed thereby. However, Applicant's affiant R. M. McCuiston states that because of existing co-participant protective agreements at South Texas, Applicant cannot unilaterally decide to site an additional plant there for its own use. Considerable and substantive negotiations with Applicant's co-participants at South Texas would be

required, the outcome of which is far from certain. McCuiston also states that Applicant owns the entire Allens Creek site, and, if precluded from building a nuclear plant, would favor the siting of a non-nuclear plant at Allens Creek because features of the site are deemed desirable by Applicant. Intervenor fails to address the above aspect of relocation and the possibility that non-nuclear plants built at Allens Creek could give rise to some of the same effects it seeks to avoid. The Board concludes that there are clearly controverted issues of material fact as to whether the South Texas site is a viable option to Applicant and whether the ACNGS site would remain unspoiled.

(2) Both of Intervenor's affiants state that the South Texas site was chosen to accommodate four nuclear generating units. No citations or bases are given for such an assertion, however, neither Applicant nor Staff explicitly challenges it. Without addressing the adequacy of the South Texas cooling lake size, McCuiston discusses the complex legal considerations associated with the taking of sufficient water from the Colorado River to support the two units now abuilding at South Texas and the legal uncertainties of whether enough additional water can be taken to support a third unit. Staff's affiant C. W. Moon concludes that there would be significant adverse impacts on aquatic ecology, should additional water be taken and discharged, a matter not addressed by the Intervenor. We find triable issues of material fact regarding the adequacy of water resources and the acceptability of aquatic impacts should a third nuclear unit be sited at South Texas.

(3) Affiants for Intervenor and for Applicant fail to provide information that would permit a comparison of the amounts of land required at the two sites. However, Section 9.2 of the FSFES states that about 5,620 fewer acres of land would be involved at the South Texas site compared with the Allens

Creek site. Hence, we conclude that there is no controverted issue of material fact regarding this element.

(4) Staff's affiant Moon states the Staff's conclusion that the Allens Creek site rated preferable to the South Texas site as regards consumptive water use. However, we note a contradiction in that Section 9.2 of the FSFES (cited in the Moon affidavit) states that construction and operation of a third nuclear unit at South Texas instead of at Allens Creek would result in a significant reduction in the consumptive use of water. Intervenor's affiant Johnson also notes this same Staff conclusion. Applicant does not address this matter. The Board finds that there is a litigable issue of material fact regarding comparative water usage.

(5) Neither Intervenor's affiant Johnson nor Applicant's and Staff's affiants address a comparison of land requirements for transmission lines. Saxion's affidavit perhaps implies that the South Texas requirement would be less because rights-of-way across agricultural land would permit existing agricultural use to continue except at the base of each tower. Mr. Saxion's statement is at best inferential and thus is not dispositive of this element of the contention. A litigable issue of material fact exists.

(6) Present and projected population densities around the proposed Allens Creek site comprise an issue previously admitted for litigation, the impact of which cannot be anticipated here. Hence, there is a genuine issue of material fact and we will hear testimony upon this element of the contention.

In summary, we find that Intervenor has prevailed only with respect to element (3) above, and grant the motion for summary disposition with respect to that factual issue alone. Accordingly, we find that a third unit at STP would use about 5,620 fewer acres of land than would a unit at ACNGS.

TexPirg Contention A8 (as amended on September 12, 1979)

"Intervenor alleges that the PID did not consider the alternative of new natural gas fueled generating facilities; and that such a facility is feasible and will result in less environmental damage than the action envisioned in the application sought here. Specifically, the above-noted PID and the FSFES did not consider the following factors weighing in favor of constructing a new natural gas fueled generator, extending the lifetime of gas generators presently planned for early shutdown, and/or increasing the capacity of presently operable natural gas fueled generator units; and these factors form the basis for alleging the inadequacies of those analyses:

- A. The conclusion of the FSFES and the PID's apparently implicit conclusion that supply of natural gas outstrips demand is not totally accurate, because --
 1. A present "glut" of natural gas exists in the market, at least partially due to price deregulation and the fuel switches which have occurred.
 2. The conclusions do not consider improved seismic and holographic techniques at 30,000 feet or more.
- B. Supposed legal constraints upon the use of natural gas have been improperly used as a basis for dismissing the potential of natural gas because:
 1. The circumstances described in (A) above may lead to modification or repeal of constraining portions of P.L. 93-319 and the Industrial Fuel Use Act of 1976, just as the Texas Railroad Commission has suspended similar legal restraints in Docket 600; and regardless, the legal modifications of those laws are reasonable and must be considered as an alternative federal action to the licensing of ACNGS under NEPA;
 2. The Industrial Fuel Use Act of 1976 has exemptions for areas with poor air quality, and Houston is classed as an air quality 'non-attainment area'; therefore, the granting of such an exemption is plausible and must be considered as an alternative federal action under NEPA.
- C. Both the 1974 FES used for the PID and the FSFES (1978) inaccurately conclude that natural gas prices eliminate this alternative, and this is shown by:
 1. the fact that Applicant has prepared projections of natural gas prices for the future which indicate the price as adjusted for inflation will decline;

2. the numerous analyses of historical data (including the Staff's own study by Sandia) regarding the capacity factors for nuclear units of the type similar to ACNGS, which thus show that ACNGS' likely efficiency has been overestimated by the Applicant and Staff, increasing its cost relative to natural gas generation; and
 3. the historical data for recent vintage nuclear plants indicate that the capital cost of ACNGS is probably underestimated, also increasing its relative cost.
- D. Natural gas generation is environmentally superior to ACNGS because:
1. Natural gas has negligible sulphur dioxide and radioactive air emissions, and the remainder of air emissions, are manageable; while nuclear generators emit radioactive releases to the air in both normal operations and design basis accidents;
 2. Natural gas ash content is negligible, resulting in no disposal problems, while nuclear waste disposal results in numerous environmental impacts;
 3. Natural gas generators require less physical land space than ACNGS; and the natural gas fuel cycle entails less land damage, as well as less occupational risk, during the fuel extraction process;
 4. Natural gas generators consume less water than ACNGS, and do not increase ambient water temperatures as high as ACNGS.
 5. Natural gas facilities are more economically built in smaller multiple units than a nuclear power plant, which allows a lower necessary reserve margin and a consequent reduction in the amount of resources committed for installed capacity to produce given amounts of electricity."

On September 12, 1980, TexPirg filed a motion for summary disposition of this contention. On October 2, 1980, Applicant and Staff each submitted responses in opposition. Applicant's response also contained what it characterized as a "Cross-Motion" for summary disposition in favor of Applicant. Said cross-motion being untimely, we decline to consider it.

We consider that the thrust of this contention, regarding alleged deficiencies of the Board's Partial Initial Decision (2 NRC 776 (1975)) (PID) and the Staff's final supplement to its FES (FSFES) (NUREG-0470, August 1978), is contained in the first paragraph, above, and that the subsequent paragraphs A through D comprise the supporting bases, as noted in the contention.

Having reviewed and considered in detail Intervenor's motion and the opposing responses of Applicant and Staff, we find ourselves confronted by a perplexing situation: none of the parties addresses what, to the Board's mind, is the underlying thrust of the contention - namely, whether the PID and the FSFES adequately assess the utilization of natural gas for electricity generation as a viable alternative to the proposed Allens Creek nuclear generating station (ACNGS), and hence whether there remains a genuine issue of material fact (with respect to that question) to be litigated. With respect to said underlying issue, we readily conclude that the PID and the FSFES are inadequate, and, on this narrow basis, we grant Intervenor's motion for summary disposition. (See subsequent discussion) To leave the matter here, however, would be to ignore the incompleteness of the record on the following three important questions:

- (1) Does more recent information than used by Staff in the FSFES concerning the availability and the cost of natural gas change the conclusion reached therein that natural gas is not a viable alternative energy source, and why?
- (2) Do the legal and regulatory implications of the Powerplant and Industrial Fuel Use Act (PIFUA) preclude the Applicant from obtaining exemptions that could obviate the need for the ACNGS?

- (3) Would a new natural gas fueled generating facility result in less environmental damage than the proposed nuclear plant?

We request that Applicant and Staff, and TexPirg, if it so desires, address the above three questions during the evidentiary phase of the hearing scheduled to begin on January 12, 1980. We now discuss our reasoning. The subject of alternative energy sources was not addressed by the Board in its PID. Owing to the hiatus in the proceeding, the Board now has its first opportunity to receive evidence on this subject. The contention asserts, and we agree, that the PID is incomplete, albeit not by oversight. Further, the FSFES was not published until August 1978. The discussion of natural gas in Section 9, thereof, relies on information published at considerably earlier dates, the most up-to-date citation bearing a publication date of February 1976. The more recent impacts of inflation, deregulation, the enactment of the PIFUA in 1978, and 10 C.F.R. 500 are not, and could not have been, assessed. Again, as alleged by the contention, the FSFES does not portray a sufficiently up-to-date status to satisfy the needs of the current record, and we will receive evidence on the three questions posed above.

TexPirg Contentions 2 and 4 (consolidated with Griffith 4 and McCorkle 2)

[TexPirg 2] The smaller cooling lake size and changed location of the lake vis a vis the original proposal will render the lake useless as a viable recreational fishery because:

- a. the changed location eliminates the Bluff area as a recreational and fish spawning area;
- b. the amount of chlorine which will be released to the lake has more than doubled, which will result in significant fish kills;

- c. sewer discharges from Wallis, Sealy and the nuclear plant will cause an excessive algae growth in the lake;
- d. the heavy metal concentrations in the lake will result in heavy metals concentrating in the fish and will make them inedible; and
- e. thermal shock will kill large numbers of fish during the winter when plant shutdowns occur.

[TexPirg 4] Even if a cooling lake is approved by the Board, the Board should require that it be redesigned to be more of an environmental benefit and less of an environmental burden. Specifically, the dam (levee) should be extended northward to a point just east of its present northeast corner so that the runoff can go into the lake and so that the north bluff area can be a viable fish spawning area.

TexPirg filed a motion for summary disposition that was mailed on October 8, 1980, which the Applicant opposed in its response of October 22, 1980, and the Staff opposed in its Response of November 3, 1980. Intervenor's motion merely consists of the following statement of material facts as to which it contends that there is no genuine issue to be heard:

1. The Allens Creek cooling lake is not designed to promote the growth and reproduction of game fish.
2. Game fish reproduction would be enhanced if the lake was redesigned to include the "North bluff" area.
3. Game fish growth, health, and reproduction would be better if a coal or lignite plant of same capacity was used because of the higher thermal efficiency would cause less heat input into the lake.

4. The ACNGS cooling lake will not be an attractive recreational lake because of the poor fishing, high water temperatures in summer, excessive algae growth, excessive growth of water plants that get so thick that it is impossible to drive a boat through it, high bacterial populations caused in part by the sewer discharges from Wallis, and Sealy, dead fish from excessive chlorine discharges, and public fears of eating fish exposed to radioactivity, sewer discharges, and heavy metals that are concentrated by the cooling lake. S.5.3.2.2.
5. The method of estimating recreational usage of the cooling lake is improper and inaccurate because it compares nonheated lakes with the problems listed above with Allens Creek lake. On the other hand if it was accurate, the huge numbers of park users and its associated growth in businesses would make it much more difficult to evacuate the area near the plant soon enough to meet the NRC regulations or to adequately protect the public health and safety. S.5.6.2.3.

We note that three facts asserted in this statement represent an impermissible broadening of the scope of the contentions:

- (a) A comparison of fossil fired facilities with nuclear facilities as regards heat input to the cooling lake;

- (b) A challenge to Staff's methodology for estimating the recreational usage of the cooling lake; and
- (c) The perceived difficulty of evacuating people using the lake, if Staff's estimate is correct.

The remaining three asserted facts are unsupported by affidavits or by evidentiary material, and merely constitute a restatement of the contention with a reference to one section of the FSFES. We find that nothing in the motion and in the reference to the FSFES is dispositive of the contention. As the Supreme Court held in Adickes v. Kress & Co., 398 U.S. 144, 157 (1970), the moving party has the burden of showing the absence of a genuine issue as to any material fact. Here the Intervenor did not carry its burden. Accordingly, TexPirg's motion for summary disposition of its Contentions 2 and 4 is denied.

TexPirg Contentions 5, 7, A8, and A12

TexPirg filed a motion for summary disposition of the four above-numbered contentions on October 8, 1980. Applicant and Staff respectively responded in opposition to the motion on October 22 and November 3, 1980. We first note that this is Intervenor's second attempt to dispose of Contention A8^{6/}. The first such motion, directed exclusively to this one contention, is dealt with above; we do not afford it further consideration here. The remaining three contentions

^{6/} TexPirg's instant motion labeled this as Contention 8. The motion makes it clear, however, that Intervenor is addressing Contention A8.

are now summarized, supporting bases being omitted for brevity.

- Contention 5 (consolidated with Cummings 6 (b)) contends that neither the Applicant nor the Staff has given adequate consideration to the combustion of solid waste as an alternative energy source.
- Contention 7a-c (consolidated with Doggett 1(i)) contends that there has not been a dispositive assessment of the energy demand reduction potential that might derive from conservation measures available to the Applicant.
- Contention 7d (consolidated with Cummings 6(c)) contends that the increased use of passive solar techniques has not been considered by the Applicant and the Staff.
- Contention A12 contends that the Applicant can obviate the need for the ACNGS by interconnecting with other electrical systems across the nation.

TexPirg's motion consists solely of the following statement of material facts as to which it contends that there is no genuine issue to be heard:

1. The fact that the Applicant has announced that it is building and has bought other sources of electricity since it did its projections for the need for Allens Creek show conclusively that it does not need Allens Creek electricity any more. Since the Table S.8.13 was published, the Applicant has added Parrish #8 (600 MW); Site W (1,500MW); Site X (1,500 MW); negotiated to buy a Texas Utilities plant that they

do not need because of excess capacity; Contracted to buy 500 MW/yr from the City of Austin; Agreed to interconnect with other utilities with excess power; and could buy the City of San Antonio's part of the South Texas Project; and could buy other excess capacity from the City of San Antonio (they have discussed selling to Mexico in exchange for natural gas).

2. The City of Houston has announced that they will build a system to burn its solid waste to generate power.
3. There is now an excess of natural gas, and the Applicant could operate many of its natural gas plants past 1990.
4. It is now both national and state policy to encourage the use of cogeneration and solar energy and to encourage conservation.
5. There is no doubt that the Applicant could replace the need for ACNGS in a reasonable time and at a reasonable cost by a combination of the use of conservation, interconnection with surrounding utilities with more excess capacity, cogeneration, solid waste fuel, use natural gas in present plants until their natural life expires, and their already announced coal and lignite plants.

These asserted facts are unsupported by any affidavits or other evidentiary material, are in part conclusional, and one such fact (1) improperly expands the scope of the contention in addressing need for power (see Orders of September 26 and November 7, 1979). TexPirg has not met its burden. Accordingly, its motion for summary disposition of Contentions 5, 7 and A12 is denied.

Potthoff Contention 6

In the FES, the Staff states that biomass production is "not now a reasonable alternative" to ACNGS. However, Project Independence estimates fuels from biomass production (urban waste, agricultural waste, terrestrial crops, marine crops) would amount to 3×10^{16} gross BTUs per year, and that large quantities of marine crops can be grown and harvested without subsidies when oil hits \$11 per barrel. Project Independence estimates a 100,000 acre marine biomass farm, producing 27×10^{12} BTUs/year, would cost \$578 million. I contend building and operating a marine biomass farm, or other biomass production systems, would be environmentally preferable to ACNGS, and ask the Board to deny the permit under the NEPA. 7/

In its unpublished Order of March 10, 1980 (p. 11, para. 6) the Board rejected this contention on the ground that Mr. Potthoff had not provided a basis for alleging that such a large scale marine biomass farm would be an environmentally superior alternative to ACNGS. Mr. Potthoff appealed and was upheld by the Appeal Board with one dissenting opinion (ALAB-590, 11 NRC 542, (1980)). In brief, the Appeal Board held that, because of his citing of Project Independence and because of his assertion respecting the environmental superiority of a marine biomass farm, Mr. Potthoff had provided a sufficient basis for admitting the contention, whether or not it might prove to have merit.

7/ During the course of the special prehearing conference on October 16, 1979, Mr. Potthoff specified that he meant a marine biomass farm growing kelp (Tr. 931).

Applicant moved for summary disposition of this contention on August 4, 1980. In support of its motion, Applicant appended the affidavit of Dr. Herbert H. Woodson, now Director of the Center for Energy Studies, University of Texas, Austin. In substance, Applicant asserts the following material facts as to which it contends there is no genuine issue to be heard:

1. The 100,000 acre marine biomass farm proposed by Potthoff cannot possibly produce the energy equivalent of ACNGS. Using Intervenor's postulated energy output figures, a farm of some 400,000 acres would be required, not accounting for preprocessing energy requirements. (Woodson affid., p. 3).

2. Utilizing current estimates of energy conversion potential of marine plants with highest energy yield, and which can be grown on a large scale, a marine biomass farm of over 576,000 acres would be required to produce energy equivalent to ACNGS, again not accounting for preprocessing energy requirements. (Woodson, affid., p. 4).

3. No biomass farm of even a significant fraction of this size is in existence or known to be under development. The one-fifth acre test farm deployed off the California coast in 1978 can in no way be classified as a prototype for a practical marine biomass energy farm. (Woodson affid., pps. 5-6).

4. At least thirty years of research and development of marine biomass production and conversion technologies will be required before the technical viability of a several thousand acre demonstration plant would be widely accepted. A commercial-scale marine biomass energy production system could not possibly be available for another ten years (by the year 2020) at the earliest, if ever. (Woodson affid., pps. 2-3, 5, 8-9).

5. There appears to be no reasonable means for Applicant to obtain title to and use of between 15 - 25 percent of the usable acreage of the Gulf of Mexico from the Mississippi River to Mexico for the operation of a farm of the size required to replace ACNGS. (Woodson affid., pps. 9-10).

6. The environmental impacts of this large a farm are numerous and potentially extremely significant, and there is no evidence that such a biomass farm would be environmentally preferable to a nuclear power plant. (Woodson affid., pps. 10-11).

7. Substitute natural gas from kelp costs \$20.7million BTU. A gas fired plant burning fuel at \$20/million BTU would result in a fuel charge of roughly \$2/kWh in 1977 dollars. Compared with national average production costs of nuclear plants of 1.5 cents/kWh in 1977, the cost of gas from bioconversion of kelp is not competitive by a wide margin with ACNGS for production of electricity. (Woodson affid., pps. 6-7).

Applicant argues that there is no genuine issue of disputed material fact in that it is clear that a biomass farm, on a scale necessary to replace ACNGS, is not a presently reasonable, viable alternative, and that, as a matter of law, since NEPA does not require the Nuclear Regulatory Commission to consider remote and speculative alternatives, its motion should be granted and the contention should be dismissed.

In an undated Answer received on October 6, 1980, Mr. Potthoff opposed Applicant's Motion. Therein, in substance, he set forth the following material facts, as to which he contends there are genuine issues to be heard:

1. A marine biomass farm located in the Gulf of Mexico would be a feasible alternative to ACNGS because the design of a 100 foot diameter prototype marine biomass farm, which has been successfully tested off the California coast, could be enlarged. Pursuant to such an enlarged design, a 195,840 acre (306 sq. mi.)^{8/} marine biomass farm could produce annually the energy equivalent of ACNGS, inclusive of preprocessing energy requirements - i.e., 6.7 billion kWh, and thus could replace the proposed nuclear plant (Potthoff's opposing Answer, pps. 2-4).

2. The cost of constructing a 195,840 acre marine biomass farm in the Gulf of Mexico would be \$1.6 billion. (Potthoff's opp. Ans., p. 4).^{9/}

3. A marine biomass farm is environmentally preferable to ACNGS because there will be no disturbance to land or water resources and because all pollutants can be removed using current pollution controls (Potthoff's opp. Ans., pp. 2, 4).

8/ We note that Intervenor has almost doubled the size of the marine biomass farm alluded to in his Contention 6.

9/ We note also that a document (Reference 3) relied upon by Mr. Potthoff does not contain cost information from which his \$1.6 billion figure is derived.

In effect, Mr. Potthoff argues that there are triable issues of fact since he has shown that a marine biomass farm is environmentally superior to ACNGS and that it is a reasonable and viable alternative.

On October 2, 1980, the Staff filed a Response in support of Applicant's Motion For Summary Disposition.^{10/} Apparently because the Staff's affiant had stated that kelp, a cold water species, probably could not survive in the Gulf of Mexico's warm environmental conditions, Mr. Potthoff filed an undated Supplement wherein he substituted red algae as the species to be cultivated in lieu of kelp. According to the Intervenor, red algae equals the energy yield of kelp.

Section 102 of the National Environmental Policy Act of 1969, 42 U.S.C. 4332, requires, inter alia, a detailed environmental impact statement upon alternatives to the proposed action.^{11/} However, NEPA does not require an agency to examine every conceivable alternative, but only those that are reasonable. Friends Of The Earth v. Coleman, 513 F2d 295, 297 (1975). Moreover, NEPA does not require the exploration of every extreme possibility which might be conjectured but rather requires a consideration of alternatives as they exist and are likely to exist. Carolina Environmental Study Group v. United States, 510 F2d 796, 801 (1975). Further, in Natural Resources Defense Council, Inc. v. Morton, 458 F2d 827, 837-38 (1972), the Court stated:

Furthermore, the requirement in NEPA of discussion as to reasonable alternatives does not require "crystal ball" inquiry. Mere administrative difficulty does not interpose

10/ While we read Staff's Response, we gave no consideration to it because the then effective § 2.749(a) provided only for the submission of an answer opposing a motion for summary disposition.

11/ S.9-7 of the Allens Creek FSFES (August 1978) stated that the production of methane on a large scale converted from terrestrially produced organic material "is not now a reasonable alternative". This section did not discuss a marine biomass farm as an alternative to the proposed nuclear plant.

such flexibility into the requirements of NEPA as to undercut the duty of compliance "to the fullest extent possible." But if this requirement is not rubber, neither is it iron. The statute must be constructed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible, given the obvious that the resources of energy and research - and time - available to meet the Nation's needs are not infinite.

x x x

We do not suppose Congress intended an agency to devote itself to extended discussion of the environmental impact of alternatives so remote from reality as to depend on, say, the repeal of the antitrust laws.

In the last analysis, the requirement as to alternatives is subject to a construction of reasonableness, and we say this with full awareness that this approach necessarily has both strengths and weaknesses. Where the environmental aspects of alternatives are readily identifiable by the agency, it is reasonable to state them - for ready reference by those concerned with the consequences of the decision and its alternatives. As already noted, the agency may make references to studies already made by other agencies (including impact statements) or appearing in responsible journals.

There is reason for concluding that NEPA was not meant to require detailed discussion of the environmental effects of "alternatives" put forward in comments when these effects cannot be readily ascertained and the alternatives are deemed only remote and speculative possibilities, in view of basic changes required in statutes and policies of other agencies - making them available, if at all, only after protracted debate and litigation not meaningfully compatible with the time-frame of the needs to which the underlying proposal is addressed.

Finally, in Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978), the Supreme Court said:

. . . Common sense also teaches us that the "detailed statement of alternatives" cannot be found wanting simply because the agency failed to include every alternative device and thought conceivable by the mind of man. Time and resources are simply too limited to hold that an impact statement fails because the agency failed to ferret out every possible alternative, regardless of how uncommon or unknown that alternative may have been at the time the project was approved.

Guided by these precedents, we must now determine whether there is a genuine issue of material fact which must be tried. As indicated above, with respect to material facts 3 and 4 as to which Applicant asserts there is no genuine issue to be heard, Applicant's well-qualified expert, Dr. Woodson, relies in part upon two cited studies^{12/} in support of his opinion (a) that a test farm deployed in September 1978 off the coast of California, which is 1,000,000 times smaller than that needed to replace ACNGS, is still only experimental and cannot be classified as a prototype for a practical marine biomass energy farm, and (b) that at least thirty years of research and development of marine biomass production and conversion technologies will be required before the technical viability of a several thousand acre demonstration plant

12/ "EPRI/GRI Workshop on Biomass Resources and Conversion", WS 78-89, Electric Power Research Institute, Palo Alto, CA., July 1979; "Comparative Assessment of Marine Biomass Materials", AF-1169, prepared by Science Applications, Inc. for Electric Power Research Institute, Palo Alto, CA., September 1979.

Dr. Woodson also deposed that he had examined the 1974 Project Independence report cited by Mr. Potthoff in his contention and that it established that further research was needed to establish the commercial viability of biomass conversion. (Woodson affid., p. 1).

would be widely accepted, and that a commercial-scale marine biomass energy system could not be available until the year 2020, if ever. In an attempt to raise a genuine issue of triable fact, Mr. Potthoff barrenly alleges that, because this 100 foot diameter prototype marine biomass farm was successfully tested in 1978 off the California coast, "This successful design can be used in the Gulf, in a larger design", and that, pursuant to such an enlarged design, a 195,840 (306 sq. mi.) marine biomass farm could produce annually the energy equivalent of ACNGS. (Potthoff opposing Answer, pps. 2-4). While § 2.749 of our Rules of Practice does not require that an answer opposing a motion for summary disposition must be supported by an affidavit, it does specify that "a party opposing the motion may not rest upon the mere allegations or denials of his answer" and that, in the absence of an affidavit, depositions and/or answers to interrogatories should be submitted which must set forth the specific facts showing that there is a genuine issue of fact. While we appreciate that Mr. Potthoff is appearing pro se and while we do not exalt procedural form over substance, he failed at a bare minimum to cite any countering documentary material to show that there is a genuine issue of triable fact.^{13/} Mere conclusional, fanciful allegations or denials in an answer will not defeat a motion for summary disposition. Virginia Electric and Power Company (North Anna Nuclear Power Station, Units 1 and 2), ALAB-584, 11 NRC 451, 453 (1980); Gulf States Utilities Company (River Bend Station, Units 1 and 2), LBP-75-10, 1 NRC 246, 248 (1975).

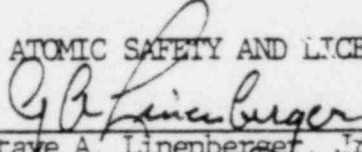
13/ As his reference 3, Mr. Potthoff did cite "Marine Biomass Energy Project", General Electric Company Re-Entry Systems Division, October 11, 1979, which, at page 1, reported that such "an open ocean test farm has been successfully deployed off the coast of southern California for the purpose of cultivating kelp on an artificial substrate". However, this document states neither that the test farm was a prototype nor that the test farm design, as enlarged, could be used on a large scale commercial basis in the Gulf of Mexico, growing red algae instead of

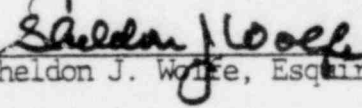
We grant Applicant's Motion for Summary Disposition. There is no genuine issue of material fact in that it has been clearly established that a marine biomass farm is not now, nor, within the time frame of ACNGS, will it be a reasonable and feasible alternative to the proposed Allens Creek plant. Since such a biomass system is so remote and speculative, we are not required to reach and decide the environmental impacts thereof vis-a-vis those of the proposed nuclear facility. Moreover, the FES, as supplemented, cannot be found wanting simply because it failed to include every alternative device and thought conceivable by the mind of man. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 551 (1978). Accordingly, Contention 6 is dismissed and Mr. Potthoff is dismissed as a party-intervenor.

Dr. Cheatum concurs but was unavailable to sign the instant Order.

IT IS SO ORDERED.

THE ATOMIC SAFETY AND LICENSING BOARD


Gustave A. Linenberger, Jr., Member


Sheldon J. Wolfe, Esquire, Chairman

Dated at Bethesda, Maryland
this 13th day of November 1980.

Footnote 13 (cont'd):

Id. p. Indeed, at pages 27-28, the document states that "it must be remembered that this first test farm is in no way a prototype of what is perceived for large scale commercial farms", and, at page 29 states the following:

. . . The results of this work have provided the incentive to proceed with the determinations of attainable sustained yield, and investigation of the many other biological, microbiological and engineering parameters that must be addressed prior to the accurate assessment of the technical and economic feasibility of the marine biomass concept.

There is much work to be done and the risks are considerable; however, in view of the potential rewards in terms of providing a very large renewable energy supply, the effort and the risks are certainly justified.