May 19, 1981

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of FLORIDA POWER AND LIGHT COMPANY (Turkey Point Nuclear Generating Unit Nos. 3 and 4)	Docket Nos. 50-250 50-251 (Proposed Amendments to Facility Operating License To Permit Steam Generator Repair)

ANSWER OPPOSING THE MOTION FOR SUMMARY JUDGMENT

Intervenor, Mark P. Oncavage, replies to the Motion For Summary Disposition filed by the staff of the Nuclear Regulatory Commission as follows:

Summary disposition should not be granted if the intervenor in his answer shows that there is a genuine issue of fact. 10 C.F.R. § 2.749(b). The burden is not on the intervenor to prove his case in this answer. His showing need be only "sufficient to require reasonable minds to inquire further." Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council, 435 US 519,554 (1978).

CONTENTION ONE

On August 30, 1979 the Intervenor submitted his contentions in this case to the Atomic Safety and Licensing Board. Contention 1 read:

> Whether pursuant to requirements of the National Environmental Policy Act (NEPA), 10 CFR Parts 50, 51, the Commission must prepare an Environmental Impact Statement on the proposed operating license (OL) amendments, with specific references to 10 CFR 50.90?
>
> a. Whether the requirements of the FWPCA. are met in the form of inclusion in a NEPA cost/benefit analysis?

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At the same time the intervenor submitted a proposed Contention 10, which read:

> The Commission's NEPA Analysis is inadequate in that it fails to adequately consider the following alternative procedures:
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> a. arresting tube support plate corrosion;
> b. in-place tube restoration (sleeving);
> c. in-place steam generator tube replacement
> d. derating;
> e. decommissioning:
> f. bioconversion:
> g. conservation:
> h. solar energy;
> i. natural gas; or
> j. coal

The staff of the NRC moved to strike both of these contentions. It asserted that its previously repaired Environmental Impact Appraisal had sufficiently examined the alternative of decommissioning and that the alternatives of conservation and solar entergy were "subsumed" within its consideration of decommissioning. NRC Staff Statement of Position On Contentions And Motions To Strike dated September 14, 1979 at p. 11. The licensee in its response to Contention 10 admitted that an Environmental Impact Statement would have to consider alternatives as well as contain a cost-benefit analysis. Licensee's Statement Concerning Intervenor's August 30, 1979 Contentions at p. 10.

The Board in its Order relative to Contentions And Discovery dated September 25, 1979 accepted the positions of the staff and the licensee and ruled that the proposed Contention 10 fell within Contention 1. Order Relative to Contentions And Discovery at p. 4. The importance of this history is that the staff, the licensee and the Board all have known, from the beginning of this case that the intervenor was

contending that the staff's NEPA analysis was inadequate because it failed to consider the alternatives listed in proposed Contention 10.

The Board, ignoring its prior order, ruled on April 2, 1981 that Contention 1 was not pleaded with specificity and ordered the intervenor to amend Contention 1 to show how the Final Environmental Statement does not legally or factually comply with NEPA. Memorandum And Order dated April 2, 1981 at p. 4. The intervenor calls the Board's attention to his predicament. When he specifically lists his NEPA contentions the staff, the licensee and the Board all object saying that these contentions are automatically subsumed in a general NEPA contention. On the other hand, when the intervenor makes a general NEPA contention the staff, the Board and the licensee all object that his contention is not pleaded with specificity.

In response to the Board's order the intervenor filed his Intervenor's Amendment To Contention 1. Inasmuch as the initial proposed Contention 10 was already a part of Contention 1, this amendment should be viewed as a supplement to and not a replacement for those specific contentions originally pleaded in proposed Contention 10.

The proposed Contention 10, that became a part of Contention 1, said that the staff's NEPA analysis was invalid because it failed to consider, among other things: derating, conservation and solar energy as alternatives to the repair. The April 20, 1981 amendment to Contention 1 said that: the analysis of these alternatives is inadequate under NEPA (Paragraph 11) and the EIS

fails to adequately discuss the alternatives to the proposed action (Paragraph 13).

The derating process is well known to the licensee and the staff of the NRC. There are established procedures for derating these two units which have been a continuous worry to both as the percentage of plugged tubes in the steam generators have increased. The term "conservation", as used in this context, is not an uncertain or ambiguous one. It has been defined in the Report of the Energy Project at the Harvard Business School as a combination of curtailment of energy use, overhaul of life and work style and the production of energy efficient consumer and capital goods. Stobaugh and Yergin eds., Report of the Energy Project at the Harvard Business School at p. 138 (New York, 1979).

In his Comments on NUREG-0743, Draft Environmental Statement for Turkey Point Steam Generator Repairs at p. 32, the intervenor sets forth the alternative of using the money that would be spent on the project to implement the conservation strategies spelled out in Chapter 6 of the Harvard Report.

The particular types of conservation strategies that can be used with the money saved from derating the units and not undertaking the repairs are set forth in the affidavits of Roger A. Messinger and John H. Parker that are attached hereto as Exhibits A and B respectively.

Dr. Parker is an Associate Professor of Chemistry and Environmental Science at Florida International University in Miami,

Florida. He has examined the consumption of FPL's output and determined that 50% is by residential customers. For the average residential customer, 50% of his electrical consumption is for air conditioning.

Dr. Parker has performed experiments showing that Florida is an optimal area for using landscaping on the west and southern exposures of houses to reduce the energy used in air conditioning during the summer months. This landscaping reduces the energy consumed by: 1) reducing the temperature of exposed air conditioning units by shading; 2) reducing the temperature of walls on houses by shading; 3) reducing the heat gain through windows and 4) cooling of the houses through evapotranspiration. The use of this method of conservation for 100,000 houses in Florida would result in a reduction in utility system requirements of 260 megawatts. In examining this figure it should be remembered that the capacity of each of the units at Turkey Point is 660 megawatts, that historically they have operated at 65% of capacity and that even after the repairs they are expected to run at an average of 85% of capacity.

Dr. Parker's affidavit notes that the Seasonal Electrical Efficiency Rating (SEER) of air conditioners can be increased from the present average of 5 to an SEER of 10. For 300,000 houses this would reduce the system demand by 220 megawatts.

Timers can be placed on hot water heaters to reduce the consumption of electricity for hot water between 12 noon and 9 p.m. For every 100,000 customers who used these timers the system

demand would be reduced by 90 megawatts.

At 85% of capacity one unit at Turkey Point has a capacity of approximately 561 megawatts. The three procedures described above would reduce the required system demand by 570 megawatts. At the unit cost of $700 cited by Dr. Parker, the cost of landscaping for 100,000 residences would come to $70 MILLION. At the unit cost of $270 cited by Dr. Parker, the cost of doubling the SEER of residential air conditioners for 300,000 residences would be $81 MILLION. The cost of installing 100,000 hot water timers at $35 each is $3.5 MILLION. For a total of $154.5 MILLION, the energy demand on the FPL system could be reduced by an amount greater than the total generating capacity of one of the units at Turkey Point. Even the most optimistic estimate of the repairs indicates that the cost will be $468 MILLION. See Final Environmental Statement at p. 4-14. One half of that figure is $234 MILLION. Intervenor does not concede that the staff's estimate of the costs of the repair is correct. He asserts that his analysis, at page 19-23 of his Comments on NUREG-0743, showing a total figure of $731 MILLION is much closer to the actual cost of this project.

Dr. Roger A. Messinger is an associate professor of electrical engineering at Florida Atlantic University in Boca Raton, Florida. Dr. Messinger has examined the use of energy in the commercial sector where he has found the demand for electricity divided almost equally between lighting and airconditioning. It is his opinion that new lighting technology enables commercial establishments to use only 1 watt per square foot in their lighting as

opposed to the presently used 5 watts. His analysis of commercial air conditioning indicates that for a 3 ton air conditioner an investment of $1000 in 10 kilowatt heat stripping the seasonal peak load can be reduced by more than half. The avoidance cost of the more efficient air conditioner would be less than $200 per kilowatt with an added bonus of consuming nearly 5,000 kilowatt hours per year less in electricty. At a cost of $468 MILLION and an operating efficiency at 85%, the cost per kilowatt of capacity of the proposed repair comes to approximately $240.

The Final Environmental Statement disposes of the alternative of derating and conservation in one paragraph where it says:

> In the absence of methods to arrest or greatly reduce denting, the continuation of operation for an extended period in the present mode is impractical. With tube degradation and plugging continuing at the present rate, the units would of necessity likely be derated as discussed earlier in Section 4.2. FPL has estimated the cost of replacement power. Consequently, as discussed in Section 4.2, the present value cost of derating Turkey Point Units 3 and 4 would be about $840,000,000 for the first ten years. Also, the person-rem cost of occupational exposure during the inspection and plugging of degraded tubes would continue.
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> FES at p. 5-1.

Absolutely no analysis has been made by the NRC staff of investing the money saved from not perfoming these repairs in landscaping, insulating, more efficient air conditioning, timers on water heaters, advanced technology for commercial lighting or heat strips for commercial air conditioners.

In Save The Nairobi River Association v. Andrus, 483 F. Supp. 844 (D. Nep. 1979), the Army Corps of Engineers had proposed

the building of a dam. In preparing its Final Environment Statement, the Corps failed to analyze the alternative of investing the project funds in developing methods of improving livestock and crop production so that the water usage from irrigation could be reduced enough to allow normal ground reservoirs to accomodate agricultural needs without a dam. The U.S. District Court found that the FES was inadequate.

In Vermont Yankee Nuclear Power Corp. v. NRDC, supra, the U.S. Supreme Court placed the NRC on notice that in the future the question of energy conservation was to be considered as an alternative in preparing environmental impact statements. The court noted that prior to 1973 there was little serious thought in government circles of energy conservation alternatives, but

> that the concept of "alternatives" is an evolving one, requiring the agency to explore more or fewer alternatives as they become better known and understood
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> 435 U.S. at 552-553

In Vermont Yankee, the Supreme Court approved the threshold test for examining the alternatives of conservation that the alternative be readily available, that it curtail the demand for electricity to the extent of the proposed project and that it be susceptible of a reasonable degree of proof. As Drs. Messinger and Parker have shown, the technology presently exists, it can replace the power to be produced by the repairs and it is susceptible of proof.

Congress has directed that the requirements of NEPA shall be followed to the fullest extent possible. 42 U.S.C. §4232.

Under subsection 1(c) of the statute, the NRC staff is required to prepare a detailed statement of alternatives to the proposed project. The agency is not merely to glance over this Congressional directive, but is required to take a "hard look" at the consequenses of each alternative. Kleppe v. Sierra Club, 427 U.S. 390, 410 fon 21 (1976).

The examination of alternatives are the heart of an environmental impact statement. 40 C.F.R. §1502.14. The environmental statement

> should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public
>
> 40 C.F.R. §1502.14

This analysis shall

> Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits
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> 40 C.F.R. §1502.14(b)

NEPA was designed to insure a fully informed and well considered decision. Strycker's Bay Neighborhood Council v. Karlen, 444 U.S. 223, 227 (1980). The purpose of the EIS is to allow both the public and interested government departments to conveniently monitor and criticize the agency's action. Grazing Fields Farm v. Goldschmidt, 626 F.2d 1068, 1973 (1st Cir. 1980). It is to assist the endeavors of watchdogs who could reasonably be expected to publicize environmental issues and to promote propogation of information and sustenance of debate. Grazing Fields Farm, supra at 1073-1074.

NEPA is to serve as an environmental full disclosure law. Public Service Company v. Nuclear Regulatory Commission, 583 F.2d 77, 81 fon 17 (1st Cir. 1978). The final environmental impact statement represents an accessible means for opening up the agency decisionmaking process and subjecting it to critical evaluation by those outside the agency, including the public. Environmental Defense Fund v. Froehlke, 473 F.2d 346, 351 (8th Cir. 1972).

NEPA is premised on the assumption that all reasonable alternatives will be explored by the responsible agency. Concerned About Trident v. Rumsfeld, 555 F.2d 817, 825 (D.C. Cir. 1977). Those alternatives will include all appropriate methods of accomplishing the aim of the action, including those outside the agency's expertise and regulatory control. Environmental Defense Fund v. Corps of Engineers, 492 F.2d 1123, 1135 (5th Cir. 1974). The analysis is to be independent and in-depth. Swain v. Brinegar, 517 F.2d 766, 780 (7th Cir. 1975). An agency cannot abdicate its statutory duties by reflexively rubber stamping a statement make by others. The agency must independently perform its reviewing, analytical and judgment functions. Sierra Club v. Lynn, 502 F.2d 42, 59 (5th Cir. 1974)

It is absolutely essential to NEPA that the EIS provide the decisionmaker with a detailed and careful analysis of the relative environmental merits and demerits of the proposed action and possible alternatives, NRDC v. Callaway, 524 F.2d 79, 92 (2nd Cir. 1975), that allows him, as a responsible executive, to arrive at a reasonably accurate and informed decision regarding the benefits and detriments to be expected from program implementation. Sierra Club v. Morton, 486 F.2d 946, 950 (7th Cir. 1973).

The staff has ignored the commands of the regulations of the Council on Environmental Quality to present the benefits and detriments of the alternatives and the project in comparative form. It has also failed to present a detailed analysis of the alternatives of derating and conservation that would permit a responsible executive to make an accurate and informed decision. Instead of making an independent and in-depth analysis, it has accepted as gospel the licensee's assertion that the cost of derating will be $840 MILLION and dismissed this alternative in one paragraph without reviewing the assertion; collecting the available date on productive conservation; analyzing the detriments and benefits of landscaping, insulation, heat stripping, electrical efficiency improvements, timers on water heaters or improved commercial lighting technology; and making its own judgment on which alternative is best.

The statement fails as a full disclosure vehicle. It does not promote critical evaluation of the agency's decision by the public. It propogates no information on this very real alternative and can hardly be seen as providing sustenance for a debate on the issue of productive conservation as an alternative to this repair project.

This contention, that the alternative of derating the plant and investing the money from the project in active conservation has not been adequately presented in the Final Environmental Statement presents a genuine issue of fact.

CONTENTION 4(b)

The staff's motion for summary disposition on Contention 4(b) and the licensee's response fail to address the gravamen

of the intervenor's contention. That contention is outlined in the affidavits of Douglas King and Leonard Pardue that are attached to this answer as Exhibits C and D.

The licensee is limited, starting in October, 1981, to disposing only 57 cubic meters per month of radioactive waste at the Barnwell, South Carolina disposal site. This totals to 684 cubic meters per year. The normal amount of solid waste produced by the operations at Turkey Point is 575 cubic meters per unit per year. The repairs will generate between 1100 and 2300 cubic meters of solid waste, excluding the lawn assemblies. It is fairly obvious that all of the solid waste cannot be shipped to Barnwell and some must be kept on site.

The solid waste on site at Turkey Point is kept in drums. The drums are not fastened down or covered and are subject to weathering. These drums will be on site not only during the repair period but long after. The affidavit of Leonard Pardue shows that when a hurricane strikes the Turkey Point area, the loosely stacked drums will be scattered and can receive mechanical shocks from collissions with other subjects.

There is a genuine issue of fact that these stacked drums, filled with radioactive waste, will be the cause of radioactive releases.

DATED: 19th day of MAY, 1981.

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