

NRC PUBLIC DOCUMENT ROOM  
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION



BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
ARIZONA PUBLIC SERVICE )  
COMPANY, et al. )  
(Palo Verde Nuclear Generating )  
Station, Units 4 and 5) )

Docket Nos. STN 50-592  
STN 50-593

PETITION FOR LEAVE TO INTERVENE

The Environmental Defense Fund (EDF) on its own behalf and on behalf of its members petitions the Nuclear Regulatory Commission (NRC) for leave to intervene in the above-captioned matter pursuant to 10 CFR §2.714.

Identification of Petitioner<sup>1/</sup>

EDF is organized as a not-for-profit corporation under the laws of the State of New York. It maintains offices in

<sup>1/</sup> Allegations concerning the identification and interest of EDF are supported, in part, by the Affidavit of William A. Butler, EDF Executive Director (acting) and General Counsel, attached as Exhibit A.

New York, New York; Washington, D.C.; Denver, Colorado; and Berkeley, California.

EDF has more than 43,000 members nationwide, including over 7,500 members in California, over 400 members in Arizona, over 500 members in Texas and over 50 members in Nevada. Many EDF members reside in the service districts of the electric utilities applying for the permit to construct Units 4 and 5 of the Palo Verde Nuclear Generating Station, and over 200 reside in Maricopa County, Arizona, the proposed construction site. EDF member David Anderson resides in Santa Barbara, California within the service district of applicant Southern California Edison Company. EDF member Dana Loomis resides in Los Angeles, California within the service district of applicant Los Angeles Department of Water and Power. EDF member Edith A. MacLachlin resides in San Diego, California within the service district of applicant San Diego Gas and Electric Company. EDF member Dora Jacobs resides in Phoenix, Arizona within the service district of applicant Arizona Public Service Company and approximately 35 miles from the proposed site. EDF member Valerie Melton resides in the Harquahala Valley, Maricopa County, Arizona within the service district of applicant Arizona Public Service Company and approximately 12 miles from the proposed site.

EDF is dedicated to the protection and rational use of natural resources and to the preservation and enhancement of the human

environment. It and its staff of scientists, economists, lawyers, and others pursue these goals through scientific research and monitoring, and administrative, judicial and political action.

Over the last four years, EDF's staff has conducted extensive research on the extent to which energy conservation and alternative energy sources can meet future energy needs, and has presented its results through participation in numerous legal proceedings before, inter alia, the California Public Utilities Commission, the Arkansas Public Service Commission, the Washington Utilities and Transportation Commission, the Colorado Public Utilities Commission, the Federal Energy Regulatory Commission, and in state and federal court. In its work, EDF's staff has developed a computer based analytic model which facilitates a comprehensive and detailed comparison among various energy supply alternatives. In previous cases, EDF has made use of the supply plans, demand forecasts, and financial projections of a specific utility, along with such utility's own calculating methods, as a basis for systematic comparison between that utility's supply plans on the one hand, and alternative energy supply sources--currently available to the same utility--on the other. The California Public Utilities Commission recently described one such EDF analysis (covering the Pacific Gas and Electric Company) as "an admirable job of demonstrating the potential benefits . . . of investments

in conservation, as opposed to new plant, under various ratemaking scenarios"; declared itself "impressed" with EDF's results, and announced its intention to investigate every major utility in California using the methods developed by EDF. See California Public Utilities Commission Decision 89316 at 20, 59 (September 6, 1978). In January 1979 the United States Department of Energy proposed to require utilities to submit similar analyses using its authority under the Power Plant and Industrial Fuel Act of 1978, Pub. L. No. 95-620, 44 Fed. Reg. 5808, 5813-14 (January 29, 1979), explicitly basing its proposal on EDF's work; and that proposal was singled out for strong and enthusiastic support in comments by, inter alia, the following state regulatory bodies and officials: the California Public Utilities Commission, the Arkansas Public Service Commission, the Governor of Arkansas, the Washington Utilities and Transportation Commission (Chairman), the Idaho Public Utilities Commission (President), the Oregon Public Utility Commissioner, and the Speaker of the House of the Michigan Legislature. See comments submitted to U.S. Department of Energy, Economic Regulatory Administration, Proposed Rules to Implement the Power Plant and Industrial Fuel Use Act of 1978 (Docket No. ERA-R-78-19).

This petition has been authorized by EDF in compliance with its bylaws and its regular case approval procedures.

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### Interest of Petitioner

The National Environmental Policy Act of 1969, 42 U.S.C. §4321 et seq. (NEPA), requires the NRC to consider feasible alternative sources of energy, as a condition precedent to the approval of a construction permit for a nuclear generating station. NEPA §102(2)(C)(iii), 42 U.S.C. §4332(2)(C)(iii); NEPA §102(2)(E), 42 U.S.C. §4332(2)(E).

EDF and its members are directly affected by the environmental and financial consequences of constructing and operating large central-station electric generating plants, including nuclear power plants, and they have a direct interest in minimizing the construction and operation of such plants and substituting alternative energy sources and energy conservation measures wherever possible, consistent with providing reliable electrical service at lowest total cost. Therefore, EDF and its members have a substantial interest in ensuring that federal decision-makers take serious and systematic consideration of feasible alternatives which are currently available, economically sound, and demonstrably capable of substituting for central-station electric generating plants such as nuclear power plants, before deciding whether to approve the construction of such power plants. EDF is an example of the "concerned public and private organizations" that Congress expressly envisioned would play a large role in enforcing NEPA. NEPA §§101(a), 205(2), 42 U.S.C. §§4331(a), 4345(2).

### Contention of Petitioner

EDF contends that there are feasible, presently available alternatives to the construction of Palo Verde Nuclear Generating Station Units 4 and 5 which will provide the same energy yield in the same time period, and which are cleaner, safer, more reliable, and cheaper. Approval of a construction permit for Units 4 and 5 would permit the investment of very large amounts of capital in these nuclear facilities, and would thereby impede and perhaps foreclose the development of superior alternatives, for want of available capital.

These alternatives--which the NRC and the applicants have either ignored or dismissed without serious analysis--include, inter alia: (1) on-site solar space and water heating (direct use of heat from the sun by customers); (2) increased end-use efficiency (often called "conservation"); (3) co-generation; (4) load management; (5) geothermal; (6) and wind. EDF contends that an objective analysis will show such alternatives, if pursued instead of Palo Verde Units 4 and 5, will provide an equivalent energy supply, with environmentally superior consequences, without any additional burden--either financial or social--on the applicants' customers. EDF's contention is based on its unique expertise and extensive experience gained from performing similar analyses over the last three years and presenting the results in regulatory proceedings.

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The Draft Environmental Statement on Units 4 and 5-- which EDF received on May 1, 1979--reveals that no consideration was given either to direct solar heating or to co-generation as an alternative method of meeting all or any part of the energy demand, or "need," which Units 4 and 5 are intended to satisfy. See Draft Environmental Statement related to construction of Palo Verde Nuclear Generating Station Units 4 and 5, Arizona Public Service Company, et al., published April 1979 by the U.S. Nuclear Regulatory Commission Office of Nuclear Reactor Regulation (hereafter DES), chapter 9.1 "Alternative Energy Sources," pp. 9-1 through 9-21. Conservation, in the form of increased end-use efficiency, received only one short paragraph of consideration; and that was limited to the conservation already being projected by applicant utilities, which reflects only voluntary and regulatory measures and does not account in any way for the conservation potentials which could result from direct utility investment in various forms of increased end-use efficiency. See DES ch. 9.1.1.7, p. 9-4. There is no direct discussion of load management; discussion of potential load management devices is scattered and similarly limited. See, e.g., DES ch. 9.1.1.3 and 9.1.1.6, pp. 9-2 and 9-3. Geothermal and wind generation also received cursory discussions, of less than one-half page each, which concluded that "significant amounts" of either source of electricity are not expected to

be available within the 1990 time frame of Units 4 and 5. See DES ch. 9.1.2.2 and 9.1.2.3, pp. 9-5 and 9-6.<sup>2/</sup> Most significantly, no economic comparisons were undertaken to determine the relative costs of pursuing any of these alternatives, or any combination of them, instead of Units 4 and 5; such comparison was performed only for the alternative of constructing coal-fired power plants.

Preliminary analysis of data in this specific case strongly supports EDF's contention that there are alternatives available which could feasibly substitute for Palo Verde Units 4 and 5 in meeting the needs of applicant utilities. For example, the combined annual sales of three of the applicants--Southern California Edison Company, Los Angeles Department of Water and Power, and San Diego Gas and Electric Company--is expected in 1985 to be approximately 69,000 GWH per year. These applicants' share of Palo Verde Units 4 and 5 is approximately 8750 GWH per year. A preliminary EDF analysis indicates that the potential energy savings, from increased efficiency in many residential

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<sup>2/</sup>At least for the California applicants, such conclusions are contradicted by the draft 1979 official California energy forecast, which projects 2700 megawatts of geothermal development in California by the year 1991, in three of its five major demand scenarios. See Energy Choices for California -- Looking Ahead, an introduction to the 1979 Biennial Report of the California Energy Commission, dated February 23, 1979, at Tables V-5, V-6, and V-7. The same document projects between 1300 and 2700 megawatts of co-generation in the same time period, in various scenarios. Id.

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and commercial end-uses alone, could result in annual savings of approximately 17,000 GWH for these utilities if they invested in conservation instead of Palo Verde Units 4 and 5-- in other words, approximately twice their total share from those units. It is to pursue systematic analysis of such alternatives that EDF seeks to intervene in this proceeding.

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### Reasons for Granting This Nontimely Petition

EDF's nontimely petition should be granted in accordance with 10 C.F.R. §2.714(a)(1) for the following reasons:

1. EDF was not aware until it received the Draft Environmental Impact Statement on the proposed Palo Verde Nuclear Generating Station Units 4 and 5 on May 1, 1979 that the NRC, in meeting its statutory obligation to consider alternatives to the proposed nuclear units, would fail to give adequate consideration to conservation and other feasible alternative energy sources. See discussion above. The accident at the Three Mile Island nuclear generating plant near Middletown, Pennsylvania, underscores the importance of giving the fullest possible consideration to genuine alternatives before deciding whether to permit construction of new nuclear power plants.
2. EDF seeks to participate as an intervenor in this proceeding in order to protect its interests and those of its members. EDF requires substantial data, in particular form, in order to analyze the applicants' nuclear construction and investment plans, and to make a fair and effective comparison with available alternatives, using its computer model. To conduct the necessary discovery, EDF must have intervenor status.

If EDF is not permitted to present such analytic results to the NRC, and if the proposed nuclear generating units are allowed to proceed, development of alternatives, including energy sources which are or may be cleaner, cheaper, safer, and more reliable than nuclear power, will be largely foreclosed, since the necessary funds will be committed to nuclear development instead, and the public will or may be subjected to unnecessary risk, environmental degradation and expense.

3. EDF's participation will ensure the development of a sound record. The NRC is required to take a "hard look for a superior alternative" as a condition precedent to determining that the applicants' proposal is acceptable under NEPA, Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2) ALAB-471, 7 NRC 477 (April 1978).
4. No present participant in these proceedings appears to be willing and able to present a comprehensive and systematic comparison between the applicants' plans for nuclear development on the one hand, and alternative expansion plans based upon conservation and alternative sources on the other, which would permit the identification of technically and economically feasible alternatives in appropriate orders of magnitude. EDF's staff is uniquely qualified, by experience and expertise, to

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provide such analytic information.

5. EDF participation will not broaden the issues or delay the proceeding, since the NRC is required by NEPA to consider all feasible alternatives to the construction of the proposed nuclear units. EDF's participation will focus on specific, currently available alternatives which, it contends, are required by law to be considered in this proceeding. EDF is prepared to proceed immediately upon its petition being granted, and expects to meet the currently anticipated schedule for hearings, assuming cooperation in discovery from other parties.

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Conclusion

Wherefore, EDF on its own behalf and on behalf of its members requests leave to intervene in this proceeding.

Respectfully submitted,

DAVID MASTBAUM  
1657 Pennsylvania Street  
Denver, Colorado 80203  
303/831-7559

DAVID B. ROE  
2606 Dwight Way  
Berkeley, California 94704  
415/548-8906

May 3, 1979

By: 

DESIGNATION OF PERSONS ON WHOM

SERVICE SHOULD BE MADE

The following persons are designated to receive service on behalf of the Environmental Defense Fund:

David Mastbaum  
David B. Roe  
Environmental Defense Fund  
2606 Dwight Way  
Berkeley, California 94704

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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AFFIDAVIT OF WILLIAM A. BUTLER

William A. Butler being duly sworn, deposes and says:

1. I am Executive Director (acting) and General Counsel of the Environmental Defense Fund (EDF). My duties as Executive Director include supervision of all EDF activities and programs, including membership, fundraising, legal affairs and public education.

1. EDF is a not-for-profit, public membership corporation organized and existing under the laws of the State of New York, with its principal place of business at 475 Park Avenue South, New York, New York 10016. EDF maintains branch offices in Washington, D.C.; Denver, Colorado; and Berkeley, California. EDF is dedicated to the protection and rational use of natural resources and to the preservation and enhancement of the human environment. EDF and its staff of scientists, economists, lawyers and others pursue these goals through scientific research and

EXHIBIT A

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monitoring, and administrative, judicial, and political action.

3. EDF has approximately 43,000 members throughout the United States, of whom over 7,500 reside in California, over 750 in Texas, over 400 in Arizona, including over 200 in Maricopa County, and over 80 in Nevada.

4. EDF and its members have a personal interest in the maintenance of a safe, healthful and productive environment and in promoting sound economic and environmental government planning. EDF members have contributed financially to EDF in part so that they may obtain adequate representation of their legally protected interests to further these goals, which representation they may not otherwise be able to afford individually.

5. EDF and its members are directly affected by the environmental and financial consequences of constructing and operating large central-station electric generating plants, including nuclear power plants, and they have a direct interest in minimizing the construction and operation of such plants and in substituting alternative energy sources and energy conservation measures wherever possible, consistent with providing reliable electrical service at lowest total cost. Therefore, EDF and its members have a substantial interest in ensuring that federal decision-makers take serious and systematic consideration of feasible alternatives which are currently available, economically sound, and demonstrably capable of substituting for central-station electric generating plants such as nuclear power plants, before approving the construction of nuclear power plants.

6. Because of the serious concerns of EDF and its members about the construction of central-station electric generating plants, EDF's staff has conducted extensive research on the extent to which energy conservation and alternative energy sources can meet future energy needs, and has presented the results through participation in numerous administrative proceedings and in state and federal court. In its work, EDF's staff has developed a computer-based analytic model which facilitates a comprehensive and detailed comparison among various energy supply alternatives.

7. Many of EDF's members reside in the service districts of the electric utilities applying for the permit to construct Palo Verde Generating Station Units 4 and 5, and have a direct and substantial interest in the cost, reliability and environmental impacts of the proposed facilities. Many of EDF's members also use and enjoy the land, air, water, historic, archaeological, aesthetic and wildlife resources of lands that will be impacted by development of Palo Verde Nuclear Generating Station Units 4 and 5. EDF members' interests in fully informed governmental decision-making and their use and enjoyment of these resources will be adversely affected by the approval of a construction permit for Palo Verde Units 4 and 5 without adequate consideration of all feasible alternatives.

8. The interests of EDF, its members and its supporters will be vitally affected by this proceeding, and the protection of their interests requires the participation of EDF. EDF has a strong demonstrated involvement in numerous aspects of national energy policy, with specific emphasis on the choice among energy supply options, and the superiority of energy conservation and alternative energy sources to traditional large central-station



generating plants including nuclear power plants. EDF is committed to the extensive development of energy conservation methods and alternative energy technologies such as improved end-use efficiency, cogeneration, solar hot water and space heating, voltage regulation, adjustments to reserve margin, improved efficiency of transmission and distribution, geothermal generation, and wind generation. These alternative approaches to meeting energy needs are safer, cleaner, more reliable and economically more affordable than the large central-station generating plants which the applicants in this proceeding presently intend to build, and on which they presently intend to rely. EDF has repeatedly urged, in both federal and state forums, that the choice of large central-station generating plants, such as nuclear plants, effectively precludes substantial investment in, and therefore reliance on, conservation and alternative energy sources.

9. EDF's participation in this matter has been authorized in compliance with EDF's by-laws and its regular case approval procedures.

William A. Butler

WILLIAM A. BUTLER

District of Columbia

Subscribed and sworn to in my presence this 2<sup>nd</sup> day of <sup>May</sup>~~April~~, 1979.

Bridanna E. Delosky  
Notary Public  
my commission expires 3-14-84

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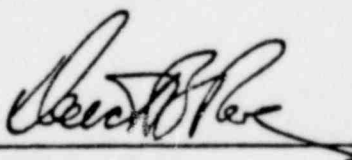
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Station, Units 4 and 5) )

NOTICE OF APPEARANCE

David B. Roe, admitted to practice before the Supreme Court of the State of California, enters his appearance as counsel of record in the above-captioned matter on behalf of the Environmental Defense Fund, Inc., 475 Park Avenue South, New York, New York, 10016.



David B. Roe  
Environmental Defense Fund  
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(415) 548-8906

Dated: May 3, 1979

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

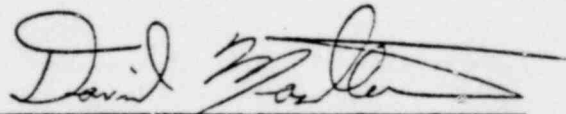
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NOTICE OF APPEARANCE

David Mastbaum, admitted to practice before the Supreme Court of the United States and the Supreme Court of the State of Colorado, enters his appearance as counsel of record in the above-captioned matter on behalf of the Environmental Defense Fund, Inc., 475 Park Avenue South, New York, New York, 10016.



David Mastbaum  
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(303) 831-7559

Dated: May 3, 1979

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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Petition for Leave to Intervene and Notices of Appearance for the Environmental Defense Fund have been mailed, postage prepaid, or hand delivered this 3d day of May, 1979, to the following:

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